

TECHNICAL APPENDICES

SIERRA

San Diego County, California
May 12, 2017

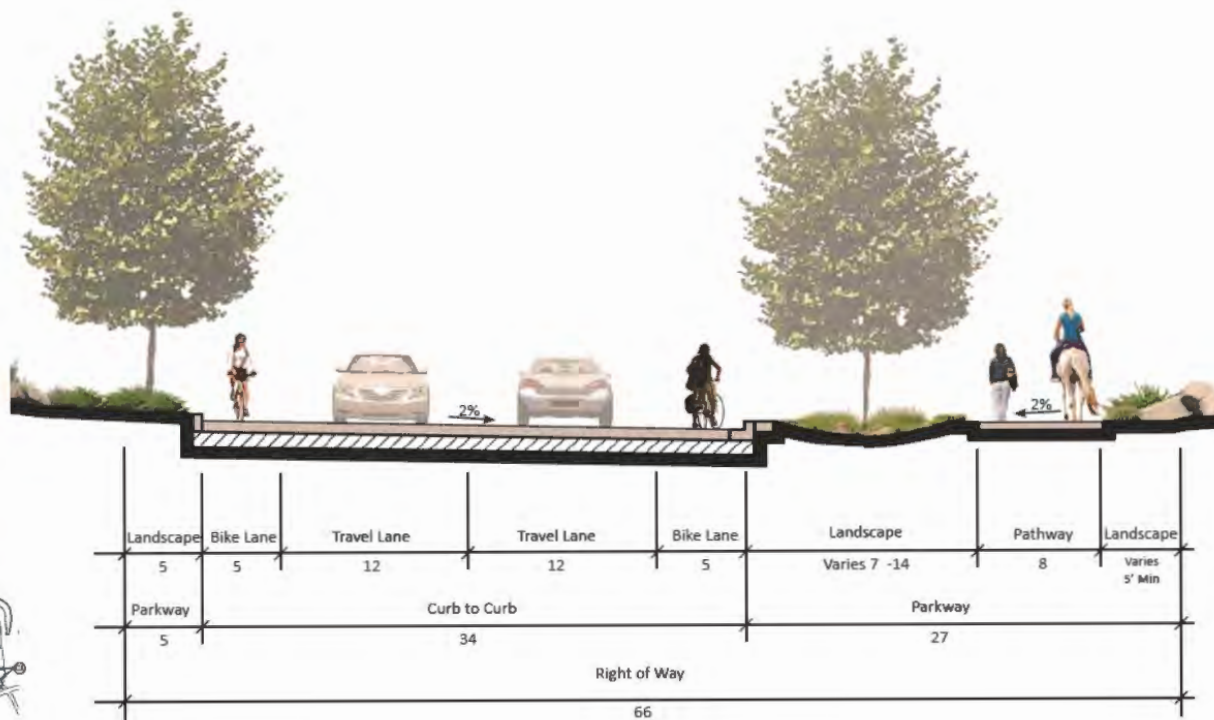
LLG Ref. 3-12-2177

APPENDIX A

PROPOSED PROJECT AND EXISTING CONDITIONS

APPENDIX A-1

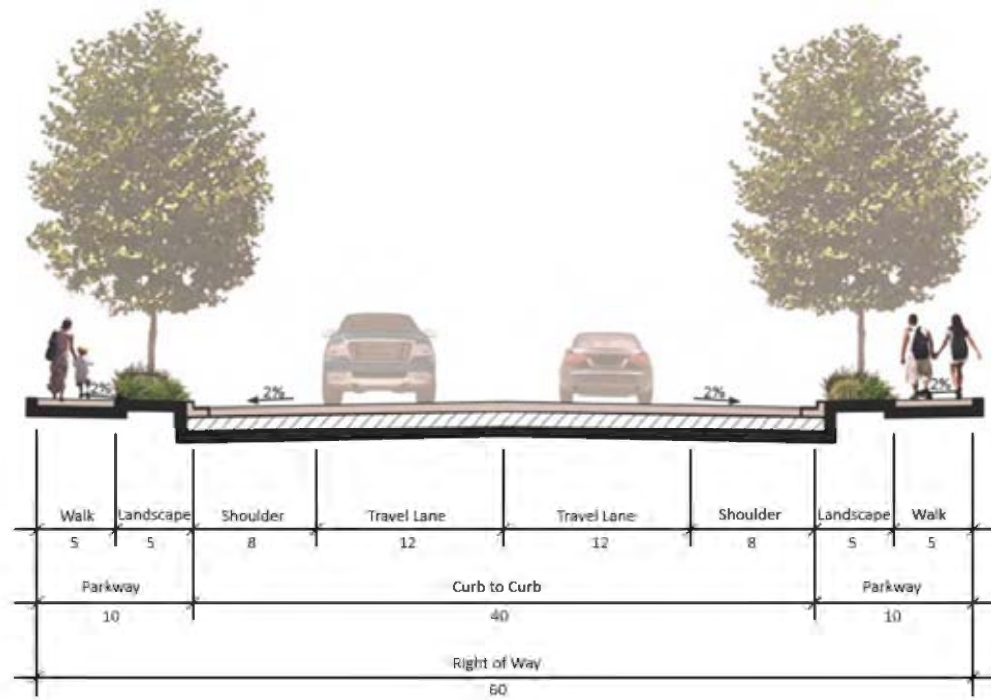
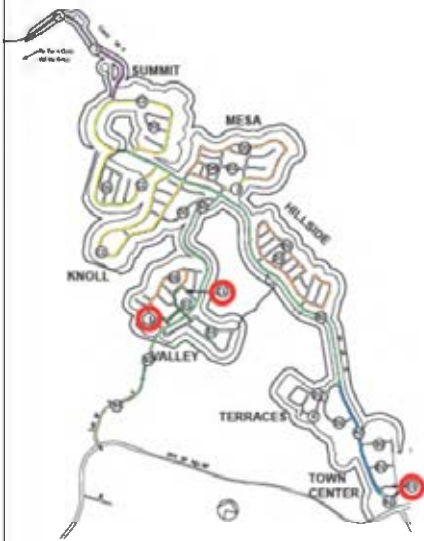
INTERNAL ROADWAY CROSS SECTIONS



B2

FIGURE 18
Public Modified Light Collector with Reduced Shoulder

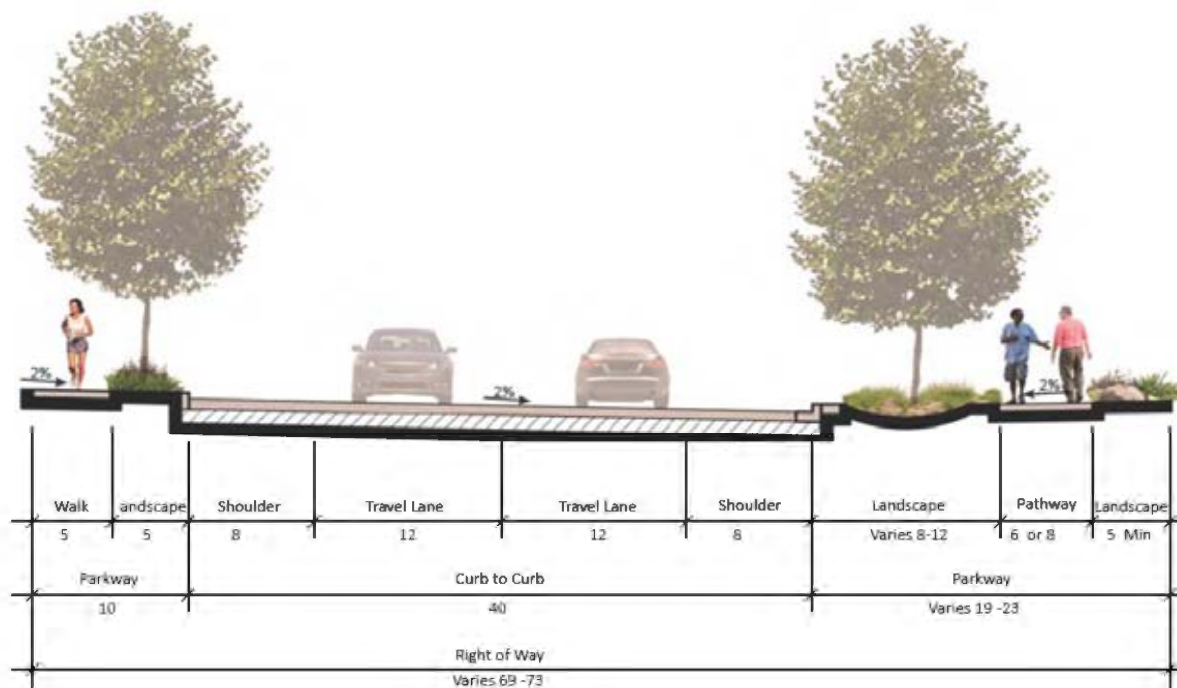
Newland Sierra - Road Sections
2015.01.20



C1

FIGURE 19
Public Residential Collector

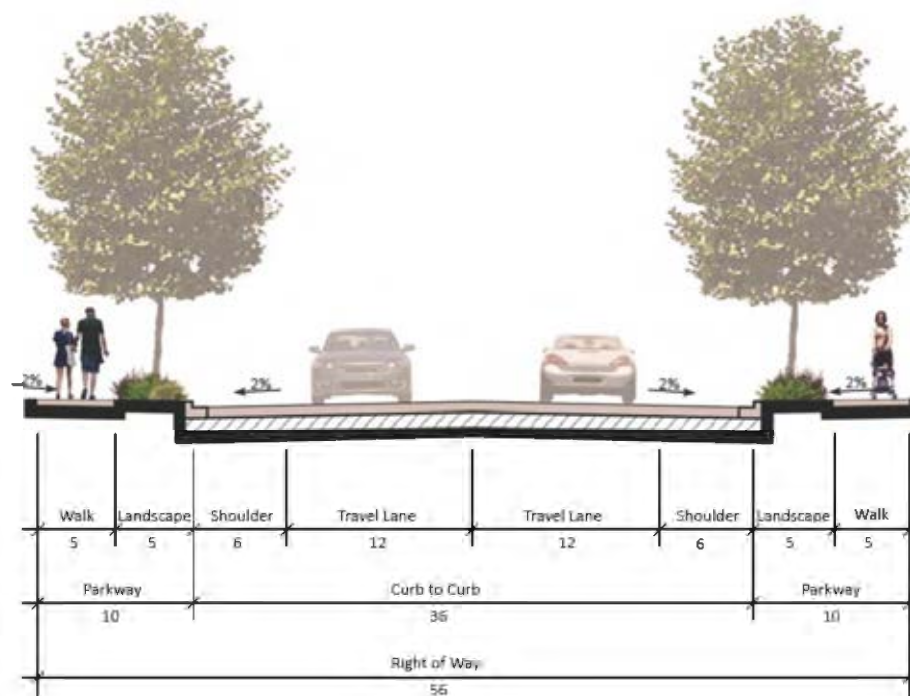
Newland Sierra - Road Sections
2015.01.20



C2

FIGURE 20
Public Modified Residential Collector

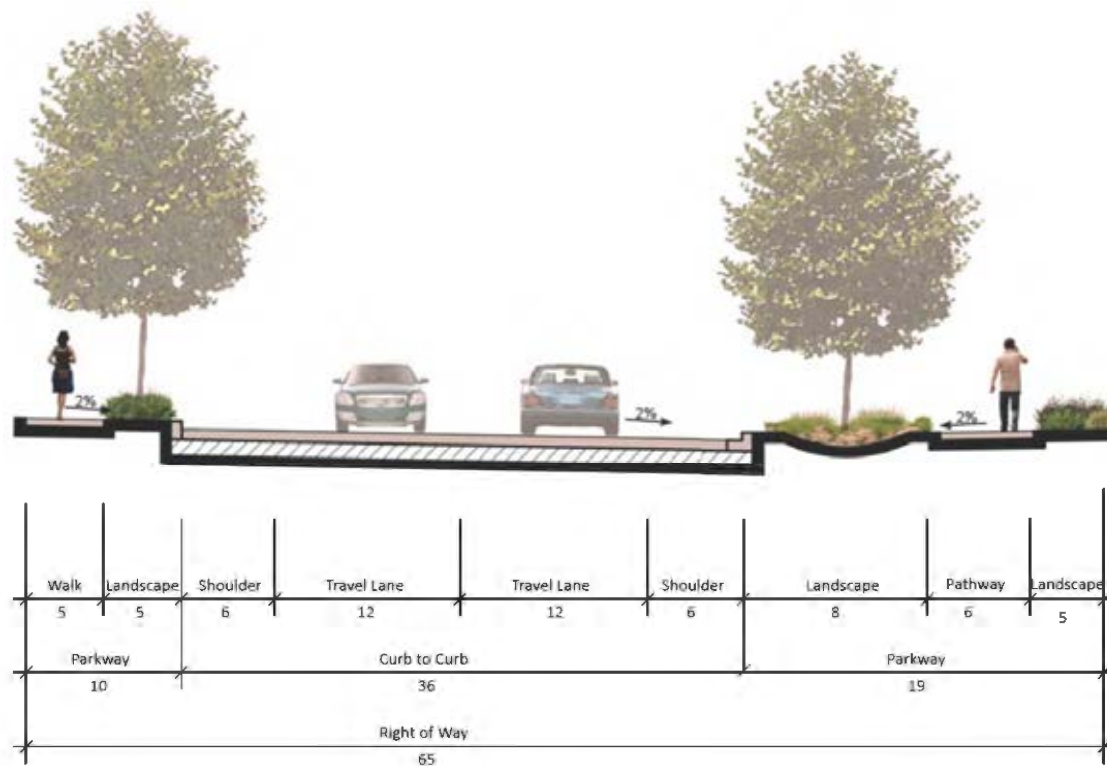
Newland Sierra - Road Sections
2015.01.20



D1

FIGURE 21
Public Residential Road

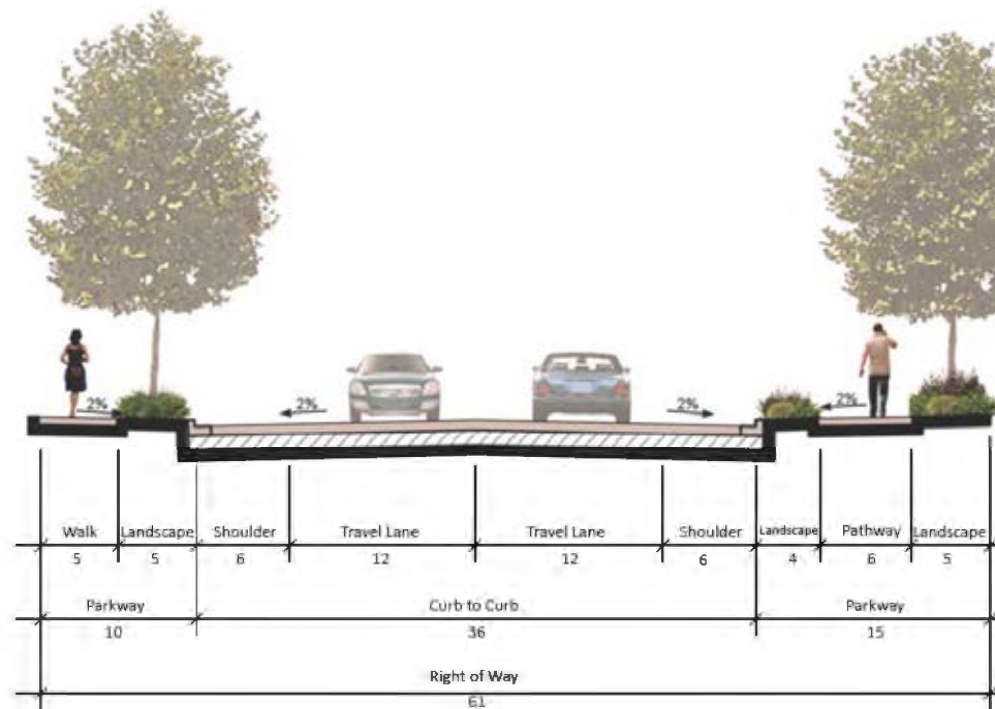
Newland Sierra - Road Sections
2015.01.20



D2

FIGURE 22
Public Modified Residential Road

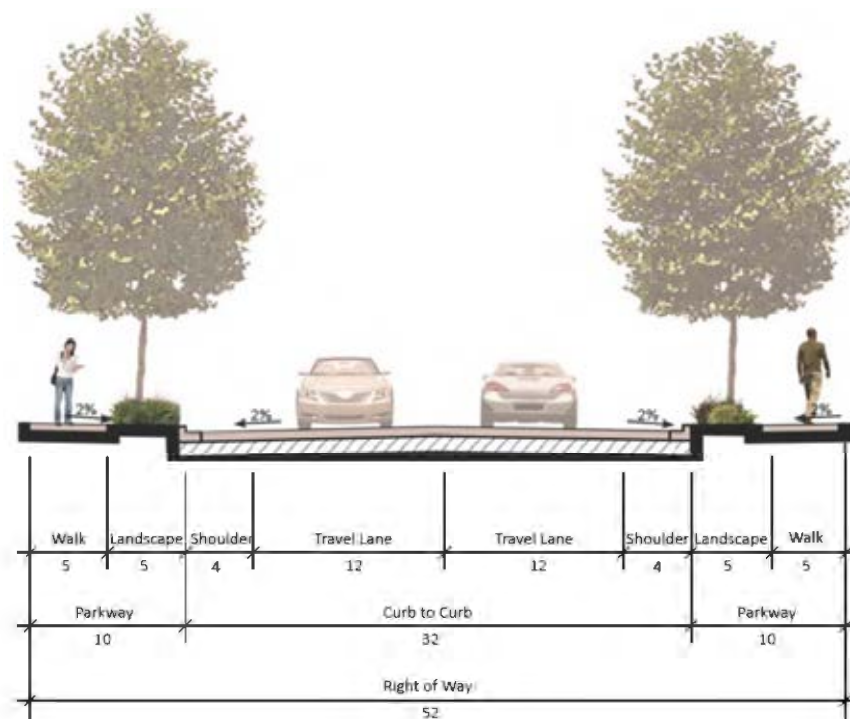
Newland Sierra - Road Sections
2015.01.20



D3

FIGURE 23
Public Modified Residential Road with Parkway

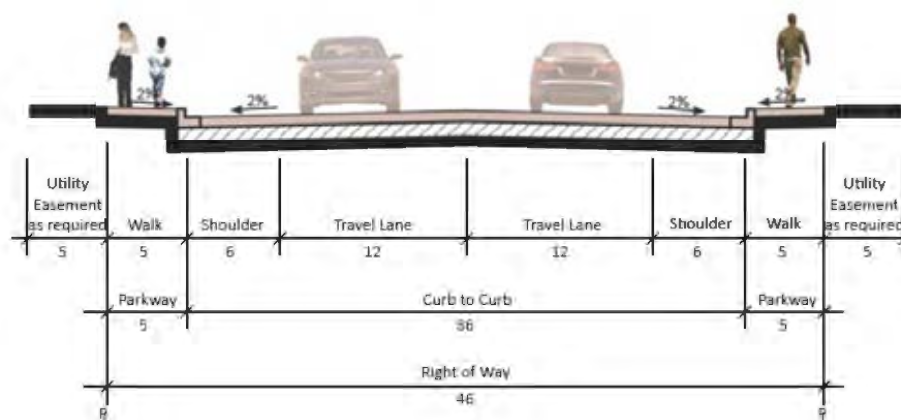
Newland Sierra - Road Sections
2015.01.20



D4

FIGURE 24
Public Residential Loop

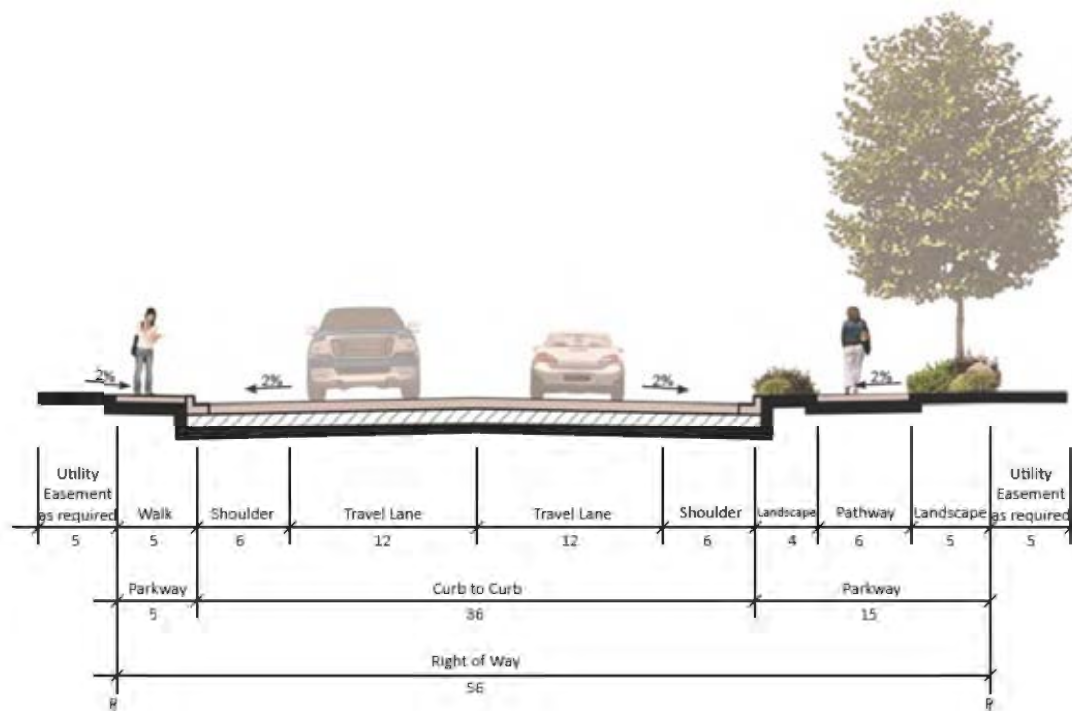
Newland Sierra - Road Sections
2015.01.20



E1

FIGURE 25
Public Modified Residential Road

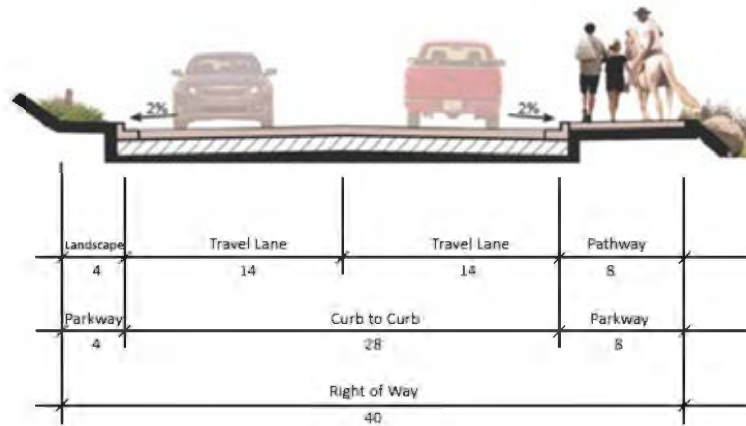
Newland Sierra - Road Sections
2015.01.20



E2

FIGURE 26
Public Modified Residential Road with Parkway

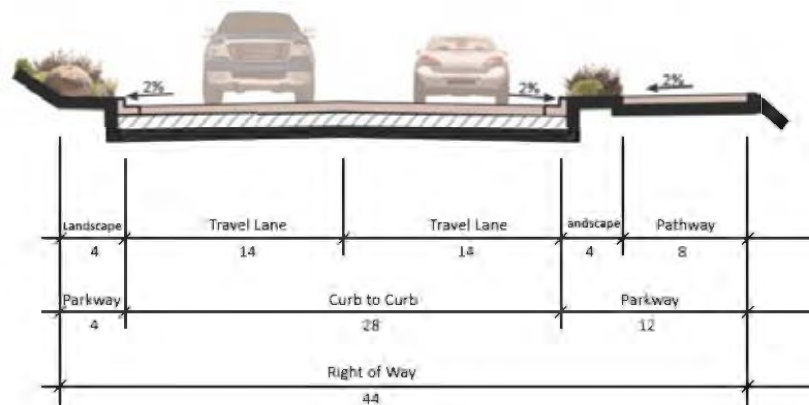
Newland Sierra - Road Sections
2015.01.20



F1

FIGURE 27
Public Modified Hillside Residential Street

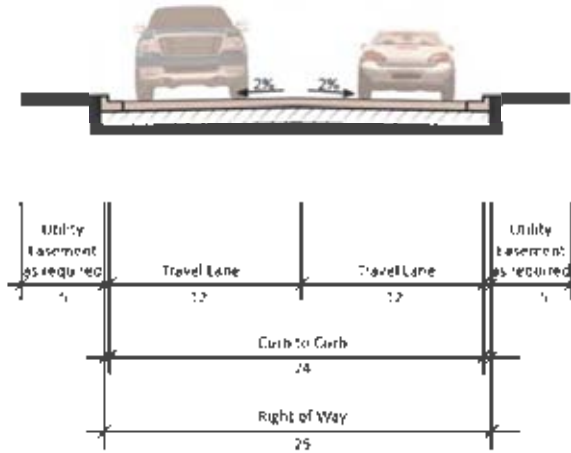
Newland Sierra - Road Sections
2015.01.20



F2

FIGURE 2B
Public Modified Hillside Residential Street

Newland Sierra - Road Sections
2015.01.20



G

FIGURE 20
Utility Access Road
Newland Homes Road Section
2015.01.20

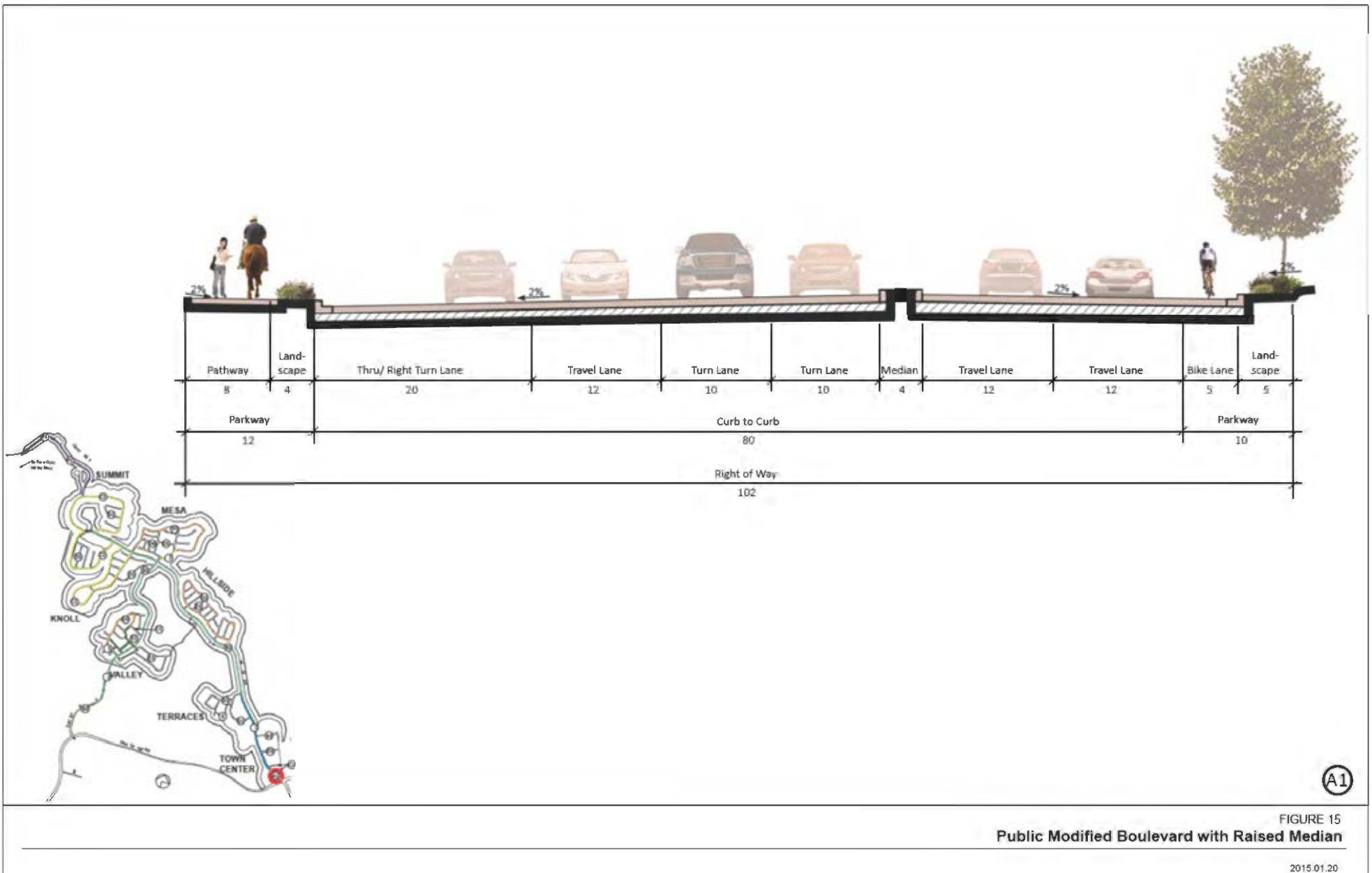
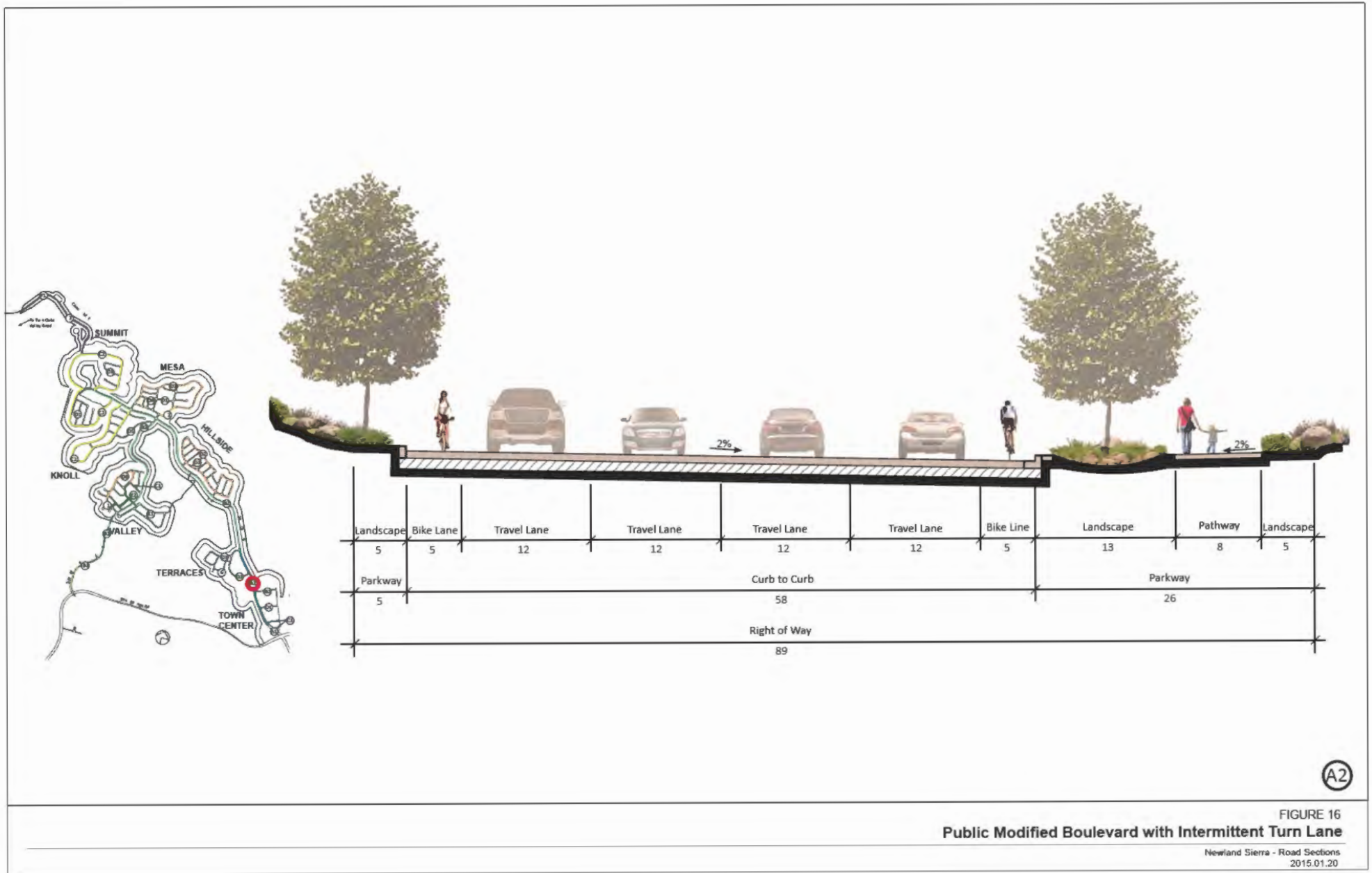


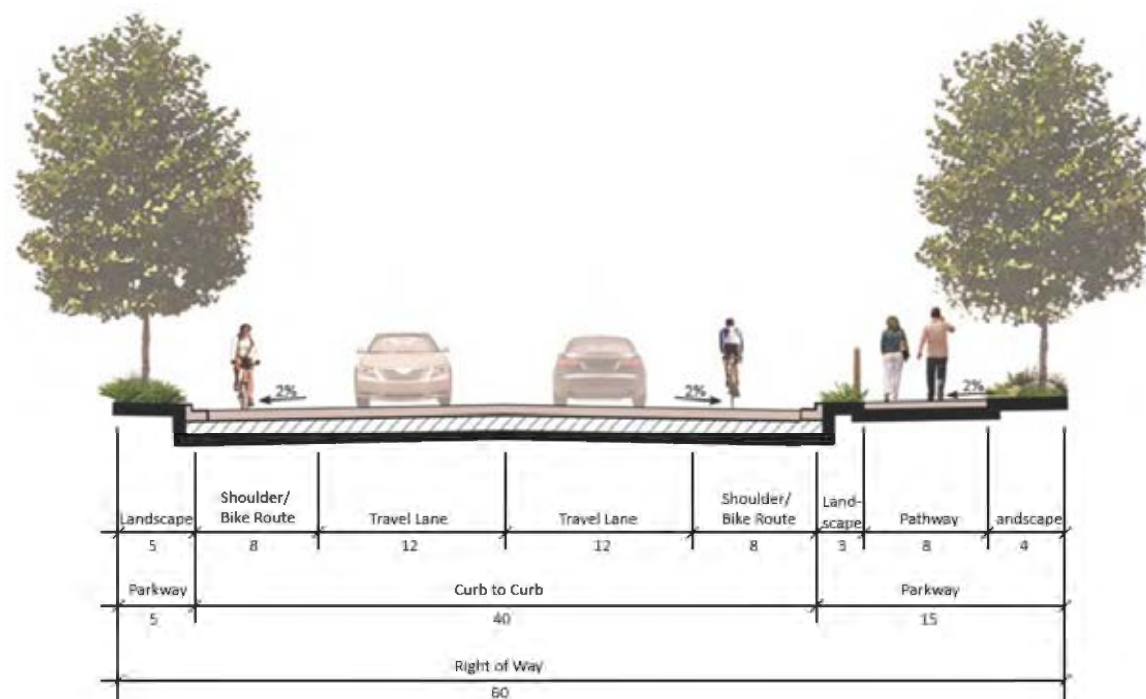
FIGURE 15
Public Modified Boulevard with Raised Median



A2

FIGURE 16
Public Modified Boulevard with Intermittent Turn Lane

Newland Sierra - Road Sections
2015.01.20



B1

FIGURE 17
Public Modified Light Collector with No Median

Newland Sierra - Road Sections
2015.01.20

APPENDIX A-2

INTERSECTION AND SEGMENT MANUAL COUNT SHEETS

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Gopher Canyon Road @ Champagne Boulevard

Date of Count: Thursday, April 16, 2015

Analysts: LV/CD

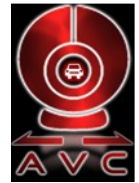
Weather: Sunny

AVC Proj No: 15-0338



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Gopher Canyon Road @ Champagne Boulevard

AM Period (7:00 AM - 9:00 AM)							
	Southbound			Northbound		Eastbound	
	Right	Thru		Thru	Left	Right	Left
7:00 AM	103	74		18	64	29	38
7:15 AM	140	68		13	53	25	44
7:30 AM	139	66		27	72	37	25
7:45 AM	79	53		20	55	52	41
8:00 AM	112	62		22	53	38	34
8:15 AM	90	45		20	64	48	46
8:30 AM	77	38		22	59	42	49
8:45 AM	69	25		19	44	35	49
Total	809	431		161	464	306	326
							2,497

AM Intersection Peak Hour : **7:00 AM - 8:00 AM**

Intersection PHF : **0.91**

	Southbound			Northbound		Eastbound		TOTAL
	Right	Thru		Thru	Left	Right	Left	
Volume	461	261		78	244	143	148	1,335
PHF	0.82	0.88		0.72	0.85	0.69	0.84	0.91
Movement PHF		0.87		0.81		0.78		0.91

PM Period (4:00 PM - 6:00 PM)							
	Southbound			Northbound		Eastbound	
	Right	Thru		Thru	Left	Right	Left
4:00 PM	67	48		72	52	51	106
4:15 PM	91	59		79	57	51	119
4:30 PM	95	55		91	56	71	99
4:45 PM	86	36		72	60	67	113
5:00 PM	52	37		60	65	65	109
5:15 PM	62	34		65	56	69	104
5:30 PM	36	30		71	55	66	119
5:45 PM	53	31		63	44	58	85
Total	542	330		573	445	498	854

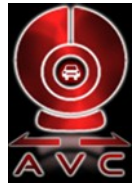
PM Intersection Peak Hour : **4:00 PM - 5:00 PM**

Intersection PHF : **0.94**

	Southbound			Northbound		Eastbound		TOTAL
	Right	Thru		Thru	Left	Right	Left	
Volume	339	198		314	225	240	437	1753
PHF	0.89	0.839		0.863	0.938	0.845	0.918	0.94
Movement PHF		0.90		0.92		0.94		0.94

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Old Castle Road @ Champagne Boulevard

Date of Count: Thursday, April 16, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0338



Location: Old Castle Road @ Champagne Boulevard

AM Period (7:00 AM - 9:00 AM)							
	Southbound		Westbound		Northbound		
	Thru	Left	Right	Left	Right	Thru	TOTAL
7:00 AM	64	29	64	24	4	14	199
7:15 AM	57	44	55	25	7	11	199
7:30 AM	61	42	73	37	8	24	245
7:45 AM	63	49	60	19	8	14	213
8:00 AM	70	23	61	10	8	19	191
8:15 AM	46	44	63	17	6	21	197
8:30 AM	30	45	62	13	6	19	175
8:45 AM	34	26	46	12	8	19	145
Total	425	302	484	157	55	141	1,564

AM Intersection Peak Hour : **7:00 AM - 8:00 AM**

Intersection PHF : **0.87**

	Southbound		Westbound		Northbound		
	Thru	Left	Right	Left	Right	Thru	TOTAL
Volume	245	164	252	105	27	63	856
PHF	0.96	0.84	0.86	0.71	0.84	0.66	0.87
Movement PHF	0.91		0.81			0.70	0.87

PM Period (4:00 PM - 6:00 PM)							
	Southbound		Westbound		Northbound		
	Thru	Left	Right	Left	Right	Thru	TOTAL
4:00 PM	35	69	44	13	24	79	264
4:15 PM	20	56	49	10	16	73	224
4:30 PM	37	92	51	8	26	122	336
4:45 PM	15	95	46	19	27	76	278
5:00 PM	30	76	50	12	20	76	264
5:15 PM	34	71	53	6	22	70	256
5:30 PM	25	64	50	16	14	74	243
5:45 PM	22	66	41	7	18	74	228
Total	218	589	384	91	167	644	2,093

PM Intersection Peak Hour : **4:30 PM - 5:30 PM**

Intersection PHF : **0.84**

	Southbound		Westbound		Northbound		
	Thru	Left	Right	Left	Right	Thru	TOTAL
Volume	116	334	200	45	95	344	1134
PHF	0.784	0.879	0.943	0.592	0.88	0.705	0.84
Movement PHF	0.87		0.94			0.74	0.84

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Lawrence Welk Drive @ Champagne Boulevard

Date of Count: Thursday, April 16, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0338



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Lawrence Welk Drive @ Champagne Boulevard

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	1	82	5	2	0	4	9	17	1	1	0	0	122
7:15 AM	0	78	6	2	1	7	6	18	1	1	0	1	121
7:30 AM	0	94	7	4	0	8	14	27	1	3	0	1	159
7:45 AM	1	66	13	1	0	2	12	21	0	1	0	0	117
8:00 AM	1	57	14	7	0	2	18	29	2	2	0	0	132
8:15 AM	2	42	19	9	0	3	19	28	2	3	0	0	127
8:30 AM	1	37	10	4	1	12	18	20	1	0	0	2	106
8:45 AM	1	38	9	9	0	13	12	25	1	2	0	1	111
Total	7	494	83	38	2	51	108	185	9	13	0	5	995

AM Intersection Peak Hour : **7:30 AM - 8:30 AM**

Intersection PHF : **0.84**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	4	259	53	21	0	15	63	105	5	9	0	1	535
PHF	0.50	0.69	0.70	0.58	#####	0.47	0.83	0.91	0.63	0.75	#####	0.25	0.84
Movement PHF		0.78			0.75			0.88			0.63		0.84

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	1	25	15	16	0	10	18	85	1	1	0	1	173
4:15 PM	0	29	9	12	1	16	9	85	1	1	0	1	164
4:30 PM	0	33	15	9	0	17	19	128	0	1	0	0	222
4:45 PM	0	37	9	10	0	19	15	89	0	0	0	0	179
5:00 PM	1	28	7	15	0	21	16	82	2	0	0	1	173
5:15 PM	0	49	6	11	0	18	11	73	4	1	0	1	174
5:30 PM	0	36	6	11	0	17	11	72	1	0	0	2	156
5:45 PM	0	27	9	14	0	16	11	89	0	0	0	0	166
Total	2	264	76	98	1	134	110	703	9	4	0	6	1,407

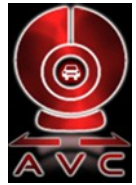
PM Intersection Peak Hour : **4:30 PM - 5:30 PM**

Intersection PHF : **0.84**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	1	147	37	45	0	75	61	372	6	2	0	2	748
PHF	0.25	0.75	0.617	0.75	#####	0.893	0.803	0.727	0.375	0.5	#####	0.5	0.84
Movement PHF		0.84			0.83			0.75			0.50		0.84

Turn Count Summary

Accurate Video Counts Inc
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(619) 987-5136



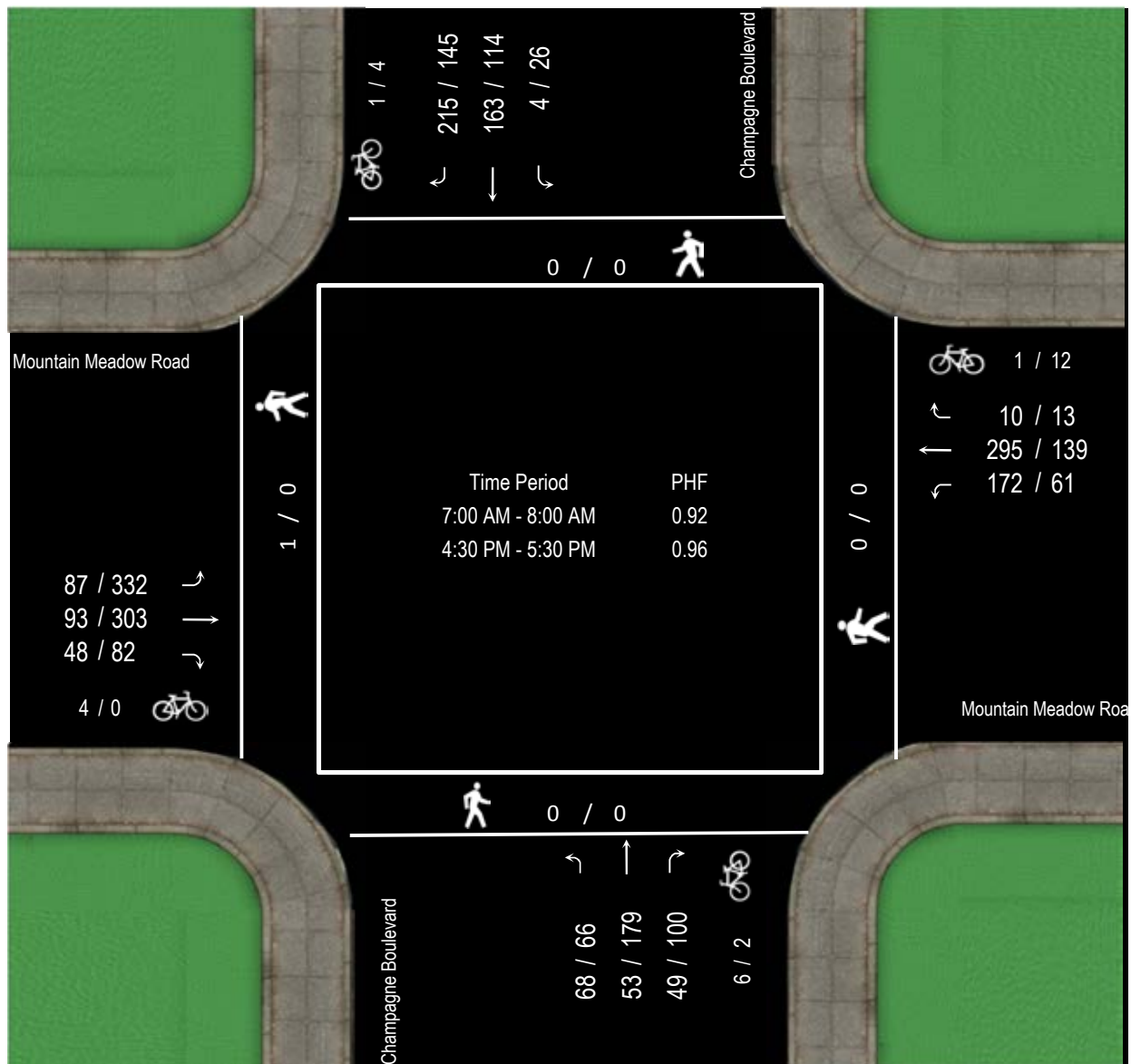
Location: Mountain Meadow Road @ Champagne Boulevard

Date of Count: Thursday, April 16, 2015

Analysts: LV/CD

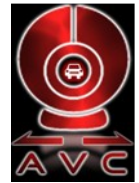
Weather: Sunny

AVC Proj No: 15-0338



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Mountain Meadow Road @ Champagne Boulevard

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	51	30	0	2	79	38	5	10	24	12	19	19	289
7:15 AM	58	46	2	2	74	37	11	9	19	7	20	21	306
7:30 AM	66	43	1	4	73	48	11	14	14	18	24	24	340
7:45 AM	40	44	1	2	69	49	22	20	11	11	30	23	322
8:00 AM	41	32	3	0	76	15	20	17	15	8	12	42	281
8:15 AM	29	22	8	3	85	16	15	21	15	7	34	32	287
8:30 AM	56	13	2	3	60	9	12	16	9	9	30	20	239
8:45 AM	48	22	3	5	77	5	14	13	14	5	35	29	270
Total	389	252	20	21	593	217	110	120	121	77	204	210	2,334

AM Intersection Peak Hour : **7:00 AM - 8:00 AM**

Intersection PHF : **0.92**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	215	163	4	10	295	172	49	53	68	48	93	87	1,257
PHF	0.81	0.89	0.50	0.63	0.93	0.88	0.56	0.66	0.71	0.67	0.78	0.91	0.92
Movement PHF		0.87			0.95			0.80			0.86		0.92

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	31	22	9	5	37	12	11	47	14	19	74	65	346
4:15 PM	36	18	1	5	26	11	23	37	24	20	62	66	329
4:30 PM	23	29	4	2	49	13	23	32	16	22	58	116	387
4:45 PM	37	29	9	0	27	10	31	53	16	21	69	76	378
5:00 PM	46	27	6	5	42	18	21	48	26	15	68	67	389
5:15 PM	39	29	7	6	21	20	25	46	8	24	108	73	406
5:30 PM	27	24	4	4	29	9	29	41	18	15	80	49	329
5:45 PM	33	24	4	8	36	5	21	36	11	25	101	76	380
Total	272	202	44	35	267	98	184	340	133	161	620	588	2,944

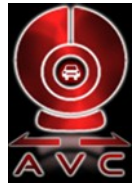
PM Intersection Peak Hour : **4:30 PM - 5:30 PM**

Intersection PHF : **0.96**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	145	114	26	13	139	61	100	179	66	82	303	332	1560
PHF	0.79	0.983	0.722	0.542	0.709	0.763	0.806	0.844	0.635	0.854	0.701	0.716	0.96
Movement PHF		0.90			0.82			0.86			0.87		0.96

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Deer Springs Road @ I-15 NB Ramps

Date of Count: Thursday, April 16, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0338



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Deer Springs Road @ I-15 NB Ramps

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	0	0	0	19	135	0	22	1	23	0	28	44	272
7:15 AM	0	0	0	11	140	0	19	0	30	0	29	53	282
7:30 AM	0	0	0	13	140	0	34	0	31	0	32	75	325
7:45 AM	0	0	0	9	111	0	32	1	38	0	32	45	268
8:00 AM	0	0	0	9	123	0	32	1	30	0	30	42	267
8:15 AM	0	0	0	17	112	0	54	2	28	0	19	60	292
8:30 AM	0	0	0	5	120	0	38	0	42	0	21	59	285
8:45 AM	0	0	0	17	122	0	36	3	29	0	33	57	297
Total	0	0	0	100	1,003	0	267	8	251	0	224	435	2,288

AM Intersection Peak Hour : **7:30 AM - 8:30 AM**

Intersection PHF : **0.89**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	0	0	0	48	486	0	152	4	127	0	113	222	1,152
PHF	#####	#####	#####	0.71	0.87	#####	0.70	0.50	0.84	#####	0.88	0.74	0.89
Movement PHF	#DIV/0!			0.87			0.84			0.78			0.89

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	0	0	0	9	73	0	82	1	63	0	76	184	488
4:15 PM	0	0	0	11	75	0	86	3	70	0	62	197	504
4:30 PM	0	0	0	17	71	0	112	0	48	0	84	167	499
4:45 PM	0	0	0	10	70	0	98	3	57	0	68	184	490
5:00 PM	0	0	0	12	102	0	100	3	53	0	50	175	495
5:15 PM	0	0	0	1	67	0	132	0	58	0	73	200	531
5:30 PM	0	0	0	4	70	0	90	0	70	0	54	186	474
5:45 PM	0	0	0	9	71	0	128	2	73	0	74	174	531
Total	0	0	0	73	599	0	828	12	492	0	541	1,467	4,012

PM Intersection Peak Hour : **5:00 PM - 6:00 PM**

Intersection PHF : **0.96**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	0	0	0	26	310	0	450	5	254	0	251	735	2031
PHF	#####	#####	#####	0.542	0.76	#####	0.852	0.417	0.87	#####	0.848	0.919	0.96
Movement PHF	#DIV/0!			0.74			0.87			0.90			0.96

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Deer Springs Road @ I-15 SB Ramps

Date of Count: Thursday, April 16, 2015

Analysts: LV/CD

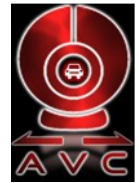
Weather: Sunny

AVC Proj No: 15-0338



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Deer Springs Road @ I-15 SB Ramps

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	184	20	7	0	91	67	0	0	0	54	65	0	488
7:15 AM	229	4	1	0	98	72	0	0	0	54	81	0	539
7:30 AM	184	1	8	0	101	70	0	0	0	52	99	0	515
7:45 AM	170	0	7	0	87	62	0	0	0	37	70	0	433
8:00 AM	131	1	6	0	79	74	0	0	0	43	66	0	400
8:15 AM	161	1	7	0	72	68	0	0	0	47	72	0	428
8:30 AM	176	3	6	0	90	72	0	0	0	40	74	0	461
8:45 AM	158	0	7	0	64	87	0	0	0	40	83	0	439
Total	1,393	30	49	0	682	572	0	0	0	367	610	0	3,703

AM Intersection Peak Hour : **7:00 AM - 8:00 AM**

Intersection PHF : **0.92**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	767	25	23	0	377	271	0	0	0	197	315	0	1,975
PHF	0.84	0.31	0.72	#####	0.93	0.94	#####	#####	#####	0.91	0.80	#####	0.92
Movement PHF		0.87			0.95		#DIV/0!				0.85		0.92

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	73	0	11	0	99	37	0	0	0	36	249	0	505
4:15 PM	84	0	9	0	95	50	0	0	0	42	250	0	530
4:30 PM	95	1	11	0	81	38	0	0	0	51	240	0	517
4:45 PM	88	1	8	0	78	49	0	0	0	52	244	0	520
5:00 PM	74	1	4	0	97	58	0	0	0	42	221	0	497
5:15 PM	80	1	22	0	78	47	0	0	0	49	251	0	528
5:30 PM	78	0	7	0	95	45	0	0	0	40	233	0	498
5:45 PM	74	0	15	0	90	54	0	0	0	29	233	0	495
Total	646	4	87	0	713	378	0	0	0	341	1,921	0	4,090

PM Intersection Peak Hour : **4:00 PM - 5:00 PM**

Intersection PHF : **0.98**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	340	2	39	0	353	174	0	0	0	181	983	0	2072
PHF	0.89	0.5	0.886	#####	0.891	0.87	#####	#####	#####	0.87	0.983	#####	0.98
Movement PHF		0.89			0.91		#DIV/0!				0.98		0.98

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Deer Springs Road @ Mesa Rock Road

Date of Count: Thursday, April 16, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0338



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Deer Springs Road @ Mesa Rock Road

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	5	2	17	23	248	4	2	0	5	2	100	5	413
7:15 AM	8	2	26	42	282	3	6	2	3	0	103	6	483
7:30 AM	9	4	30	17	264	4	3	0	0	3	118	2	454
7:45 AM	5	1	15	19	238	0	2	0	4	8	90	4	386
8:00 AM	4	0	22	26	182	2	2	0	2	1	85	6	332
8:15 AM	7	0	29	31	201	1	1	0	5	3	89	10	377
8:30 AM	7	3	27	34	225	7	3	0	3	1	84	7	401
8:45 AM	6	2	22	20	199	3	1	0	2	6	100	1	362
Total	51	14	188	212	1,839	24	20	2	24	24	769	41	3,208

AM Intersection Peak Hour : **7:00 AM - 8:00 AM**

Intersection PHF : **0.90**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	27	9	88	101	1,032	11	13	2	12	13	411	17	1,736
PHF	0.75	0.56	0.73	0.60	0.91	0.69	0.54	0.25	0.60	0.41	0.87	0.71	0.90
Movement PHF		0.72			0.87			0.61			0.90		0.90

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	4	1	35	32	132	8	8	1	5	2	242	7	477
4:15 PM	7	0	33	38	137	4	3	1	2	2	256	10	493
4:30 PM	8	1	45	30	143	3	6	0	5	8	240	13	502
4:45 PM	2	1	38	34	128	4	6	2	7	2	252	4	480
5:00 PM	8	0	40	30	139	2	7	1	0	5	216	7	455
5:15 PM	5	0	41	23	130	5	4	3	5	5	255	11	487
5:30 PM	7	0	26	29	142	2	4	1	2	3	243	7	466
5:45 PM	3	0	43	29	135	0	3	0	3	6	216	9	447
Total	44	3	301	245	1,086	28	41	9	29	33	1,920	68	3,807

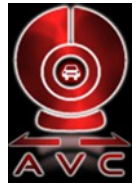
PM Intersection Peak Hour : **4:00 PM - 5:00 PM**

Intersection PHF : **0.97**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	21	3	151	134	540	19	23	4	19	14	990	34	1952
PHF	0.66	0.75	0.839	0.882	0.944	0.594	0.719	0.5	0.679	0.438	0.967	0.654	0.97
Movement PHF		0.81			0.97			0.77			0.97		0.97

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Deer Springs Road @ Sarver Lane

Date of Count: Thursday, August 14, 2014

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 14-0240



Location: Deer Springs Road @ Sarver Lane

AM Period (7:00 AM - 9:00 AM)								
	Southbound		Westbound			Eastbound		
	Right	Left	Right	Thru		Thru	Left	TOTAL
7:00 AM	3	4	2	209		92	4	314
7:15 AM	1	0	1	259		82	3	346
7:30 AM	4	3	0	226		85	1	319
7:45 AM	2	1	3	237		94	6	343
8:00 AM	2	1	0	193		78	0	274
8:15 AM	3	0	0	160		100	2	265
8:30 AM	2	0	0	166		84	3	255
8:45 AM	1	1	2	128		80	0	212
Total	18	10	8	1,578		695	19	2,328

AM Intersection Peak Hour : **7:00 AM - 8:00 AM**

Intersection PHF : **0.96**

	Southbound		Westbound			Eastbound		
	Right	Left	Right	Thru		Thru	Left	TOTAL
Volume	10	8	6	931		353	14	1,322
PHF	0.63	0.50	0.50	0.90		0.94	0.58	0.96
Movement PHF		0.64		0.90		0.92		0.96

PM Period (4:00 PM - 6:00 PM)								
	Southbound		Westbound			Eastbound		
	Right	Left	Right	Thru		Thru	Left	TOTAL
4:00 PM	0	1	2	119		250	4	376
4:15 PM	2	3	0	141		266	3	415
4:30 PM	1	0	0	155		253	2	411
4:45 PM	0	1	2	136		290	4	433
5:00 PM	3	3	2	130		255	3	396
5:15 PM	0	0	2	150		265	3	420
5:30 PM	1	0	2	148		289	3	443
5:45 PM	1	0	2	94		212	3	312
Total	8	8	12	1,073		2,080	25	3,206

PM Intersection Peak Hour : **4:45 PM - 5:45 PM**

Intersection PHF : **0.95**

	Southbound		Westbound			Eastbound		
	Right	Left	Right	Thru		Thru	Left	TOTAL
Volume	4	4	8	564		1099	13	1692
PHF	0.33	0.333	1	0.94		0.947	0.813	0.95
Movement PHF		0.33		0.94		0.95		0.95



Location: Sycamore Road @ Deer Springs Road

Date of Count: Wednesday, April 15, 2015

Analysts: LV/CD

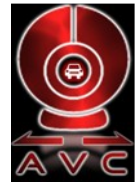
Weather: Sunny

AVC Proj No: 15-0338



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Sycamore Road @ Deer Springs Road

AM Period (7:00 AM - 9:00 AM)								
	Southbound		Westbound		Northbound			TOTAL
	Thru	Left	Right	Left	Right	Thru		
7:00 AM	274	4	1	0	1	113		393
7:15 AM	261	4	1	0	0	82		348
7:30 AM	245	3	1	0	1	92		342
7:45 AM	231	3	2	1	1	81		319
8:00 AM	275	2	1	0	1	91		370
8:15 AM	222	2	1	0	0	92		317
8:30 AM	241	1	2	0	0	106		350
8:45 AM	230	1	1	0	1	103		336
Total	1,979	20	10	1	5	760		2,775

AM Intersection Peak Hour : **7:00 AM - 8:00 AM**

Intersection PHF : **0.89**

	Southbound		Westbound		Northbound			TOTAL
	Thru	Left	Right	Left	Right	Thru		
Volume	1,011	14	5	1	3	368		1,402
PHF	0.92	0.88	0.63	0.25	0.75	0.81		0.89
Movement PHF	0.92		0.50			0.81		0.89

PM Period (4:00 PM - 6:00 PM)								
	Southbound		Westbound		Northbound			TOTAL
	Thru	Left	Right	Left	Right	Thru		
4:00 PM	138	1	3	0	0	220		362
4:15 PM	137	1	3	0	0	248		389
4:30 PM	127	1	1	1	1	194		325
4:45 PM	150	1	1	0	1	188		341
5:00 PM	145	1	3	0	1	219		369
5:15 PM	122	1	4	1	0	202		330
5:30 PM	151	2	2	1	1	233		390
5:45 PM	170	1	2	0	1	198		372
Total	1140	9	19	3	5	1,702		2,878

PM Intersection Peak Hour : **5:00 PM - 6:00 PM**

Intersection PHF : **0.94**

	Southbound		Westbound		Northbound			TOTAL
	Thru	Left	Right	Left	Right	Thru		
Volume	588	5	11	2	3	852		1461
PHF	0.865	0.625	0.688	0.5	0.75	0.914		0.94
Movement PHF	0.87		0.65			0.91		0.94



Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Camino Mayor @ Twin Oaks Valley Road

Date of Count: Thursday, August 14, 2014

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 14-0240



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Camino Mayor @ Twin Oaks Valley Road

AM Period (7:00 AM - 9:00 AM)							
	Southbound		Westbound		Northbound		
	Thru	Left	Right	Left	Right	Thru	TOTAL
7:00 AM	5	0	0	0	0	2	7
7:15 AM	3	0	0	0	0	2	5
7:30 AM	2	0	0	0	0	5	7
7:45 AM	3	0	0	0	0	2	5
8:00 AM	4	0	0	0	0	1	5
8:15 AM	4	0	0	0	0	5	9
8:30 AM	5	0	0	0	0	4	9
8:45 AM	2	0	0	0	0	5	7
Total	28	0	0	0	0	26	54

AM Intersection Peak Hour : **8:00 AM - 9:00 AM**

Intersection PHF : **0.83**

	Southbound		Westbound		Northbound		
	Thru	Left	Right	Left	Right	Thru	TOTAL
Volume	15	0	0	0	0	15	30
PHF	0.75	#####	#####	#####	#####	0.75	0.83
Movement PHF	0.75		#DIV/0!			0.75	0.83

PM Period (4:00 PM - 6:00 PM)							
	Southbound		Westbound		Northbound		
	Thru	Left	Right	Left	Right	Thru	TOTAL
4:00 PM	0	0	0	0	0	3	3
4:15 PM	2	0	0	0	0	1	3
4:30 PM	2	0	0	0	0	3	5
4:45 PM	1	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	5	5
5:15 PM	2	0	0	0	0	0	2
5:30 PM	2	0	0	0	0	2	4
5:45 PM	4	0	0	0	0	0	4
Total	13	0	0	0	0	14	27

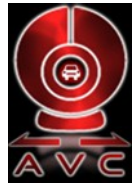
PM Intersection Peak Hour : **5:00 PM - 6:00 PM**

Intersection PHF : **0.75**

	Southbound		Westbound		Northbound		
	Thru	Left	Right	Left	Right	Thru	TOTAL
Volume	8	0	0	0	0	7	15
PHF	0.5	#####	#####	#####	#####	0.35	0.75
Movement PHF	0.50		#DIV/0!			0.35	0.75

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Deer Springs Road @ Twin Oaks Valley Road

Date of Count: Wednesday, April 15, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0350



Location: Deer Springs Road @ Twin Oaks Valley Road

AM Period (7:00 AM - 9:00 AM)								
	Southbound		Westbound			Eastbound		
	Right	Left	Right	Thru		Thru	Left	TOTAL
7:00 AM	25	9	8	262		109	32	445
7:15 AM	22	9	1	268		84	14	398
7:30 AM	20	9	8	263		86	17	403
7:45 AM	21	6	11	227		80	23	368
8:00 AM	14	6	10	276		89	21	416
8:15 AM	24	5	11	237		91	21	389
8:30 AM	10	4	14	223		106	17	374
8:45 AM	20	6	8	230		91	23	378
Total	156	54	71	1,986		736	168	3,171

AM Intersection Peak Hour : **7:00 AM - 8:00 AM**

Intersection PHF : **0.91**

	Southbound		Westbound			Eastbound		
	Right	Left	Right	Thru		Thru	Left	TOTAL
Volume	88	33	28	1,020		359	86	1,614
PHF	0.88	0.92	0.64	0.95		0.82	0.67	0.91
Movement PHF		0.89		0.97		0.79		0.91

PM Period (4:00 PM - 6:00 PM)								
	Southbound		Westbound			Eastbound		
	Right	Left	Right	Thru		Thru	Left	TOTAL
4:00 PM	22	7	7	133		213	19	401
4:15 PM	26	8	5	137		256	35	467
4:30 PM	46	8	8	129		209	29	429
4:45 PM	47	10	11	145		172	27	412
5:00 PM	118	19	8	147		215	30	537
5:15 PM	48	5	5	124		203	21	406
5:30 PM	53	5	11	167		239	24	499
5:45 PM	17	8	11	187		197	19	439
Total	377	70	66	1,169		1,704	204	3,590

PM Intersection Peak Hour : **5:00 PM - 6:00 PM**

Intersection PHF : **0.88**

	Southbound		Westbound			Eastbound		
	Right	Left	Right	Thru		Thru	Left	TOTAL
Volume	236	37	35	625		854	94	1881
PHF	0.50	0.487	0.795	0.836		0.893	0.783	0.88
Movement PHF		0.50		0.83		0.90		0.88

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Buena Creek Road @ Twin Oaks Valley Road

Date of Count: Wednesday, April 15, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0338



Location: Buena Creek Road @ Twin Oaks Valley Road

AM Period (7:00 AM - 9:00 AM)							
	Southbound			Northbound		Eastbound	
	Right	Thru		Thru	Left	Right	Left
7:00 AM	90	198		69	19	32	72
7:15 AM	69	218		47	19	36	51
7:30 AM	75	205		65	30	50	37
7:45 AM	80	171		52	45	54	51
8:00 AM	79	207		77	23	30	30
8:15 AM	70	189		64	17	30	47
8:30 AM	64	168		77	43	30	47
8:45 AM	49	195		77	19	24	33
Total	576	1,551		528	215	286	368

AM Intersection Peak Hour : **7:00 AM - 8:00 AM**

Intersection PHF : **0.96**

	Southbound			Northbound		Eastbound		TOTAL
	Right	Thru		Thru	Left	Right	Left	
Volume	314	792		233	113	172	211	1,835
PHF	0.87	0.91		0.84	0.63	0.80	0.73	0.96
Movement PHF		0.96		0.89		0.91		0.96

PM Period (4:00 PM - 6:00 PM)							
	Southbound			Northbound		Eastbound	
	Right	Thru		Thru	Left	Right	Left
4:00 PM	49	103		153	51	57	77
4:15 PM	37	124		208	54	45	80
4:30 PM	50	125		148	53	53	89
4:45 PM	66	124		133	42	58	64
5:00 PM	90	171		155	33	48	88
5:15 PM	62	111		131	47	60	92
5:30 PM	73	145		179	46	53	78
5:45 PM	66	135		135	41	49	78
Total	493	1038		1,242	367	423	646

PM Intersection Peak Hour : **5:00 PM - 6:00 PM**

Intersection PHF : **0.93**

	Southbound			Northbound		Eastbound		TOTAL
	Right	Thru		Thru	Left	Right	Left	
Volume	291	562		600	167	210	336	2166
PHF	0.81	0.822		0.838	0.888	0.875	0.913	0.93
Movement PHF		0.82		0.85		0.90		0.93

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Cassou Road @ Twin Oaks Valley Road

Date of Count: Thursday, April 16, 2015

Analysts: LV/CD

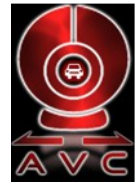
Weather: Sunny

AVC Proj No: 15-0338



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Cassou Road @ Twin Oaks Valley Road

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	4	219	0	0	0	1	4	73	20	9	0	4	334
7:15 AM	7	228	1	0	0	2	4	56	39	41	1	6	385
7:30 AM	2	236	5	0	0	4	5	83	11	14	0	4	364
7:45 AM	3	216	9	5	1	20	37	81	8	13	1	1	395
8:00 AM	1	212	7	4	4	56	42	85	12	8	1	3	435
8:15 AM	2	199	16	7	3	55	65	82	5	9	2	4	449
8:30 AM	4	179	17	14	4	66	51	88	0	9	3	3	438
8:45 AM	1	209	1	6	0	22	6	86	3	3	0	1	338
Total	24	1,698	56	36	12	226	214	634	98	106	8	26	3,138

AM Intersection Peak Hour : **7:45 AM - 8:45 AM**

Intersection PHF : **0.96**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	10	806	49	30	12	197	195	336	25	39	7	11	1,717
PHF	0.63	0.93	0.72	0.54	0.75	0.75	0.75	0.95	0.52	0.75	0.58	0.69	0.96
Movement PHF		0.95			0.71			0.91			0.95		0.96

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	4	145	0	0	0	1	4	190	6	7	0	6	363
4:15 PM	2	157	1	2	0	3	3	234	5	5	0	2	414
4:30 PM	6	157	0	1	0	6	5	183	14	14	0	2	388
4:45 PM	4	167	0	0	0	4	4	170	17	11	0	3	380
5:00 PM	6	189	1	2	0	1	7	187	14	21	0	5	433
5:15 PM	3	164	0	1	0	3	3	168	19	13	0	5	379
5:30 PM	4	173	3	0	0	0	5	186	13	12	2	2	400
5:45 PM	0	169	0	0	0	4	5	170	8	13	0	6	375
Total	29	1321	5	6	0	22	36	1,488	96	96	2	31	3,132

PM Intersection Peak Hour : **4:15 PM - 5:15 PM**

Intersection PHF : **0.93**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	18	670	2	5	0	14	19	774	50	51	0	12	1615
PHF	0.75	0.886	0.5	0.625	#####	0.583	0.679	0.827	0.735	0.607	#####	0.6	0.93
Movement PHF		0.88			0.68			0.87			0.61		0.93



Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: La Cienega @ Twin Oaks Valley Road

Date of Count: Wednesday, April 15, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0338



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location:

La Cienega @ Twin Oaks Valley Road

AM Period (7:00 AM - 9:00 AM)							
	Southbound		Westbound		Northbound		
	Thru	Left	Right	Left	Right	Thru	TOTAL
7:00 AM	205	9	16	46	15	75	366
7:15 AM	238	17	18	46	20	92	431
7:30 AM	235	14	15	65	16	86	431
7:45 AM	199	19	45	51	21	110	445
8:00 AM	256	11	50	57	12	136	522
8:15 AM	226	9	47	26	11	135	454
8:30 AM	238	14	51	36	13	131	483
8:45 AM	220	4	11	22	9	102	368
Total	1,817	97	253	349	117	867	3,500

AM Intersection Peak Hour : **7:45 AM - 8:45 AM**

Intersection PHF : **0.91**

	Southbound		Westbound		Northbound		
	Thru	Left	Right	Left	Right	Thru	TOTAL
Volume	919	53	193	170	57	512	1,904
PHF	0.90	0.70	0.95	0.75	0.68	0.94	0.91
Movement PHF	0.91		0.85			0.96	0.91

PM Period (4:00 PM - 6:00 PM)							
	Southbound		Westbound		Northbound		
	Thru	Left	Right	Left	Right	Thru	TOTAL
4:00 PM	134	21	6	20	25	186	392
4:15 PM	145	17	12	15	31	213	433
4:30 PM	164	23	13	27	21	213	461
4:45 PM	170	27	11	22	24	204	458
5:00 PM	149	24	9	24	29	211	446
5:15 PM	158	38	5	20	31	176	428
5:30 PM	123	32	9	15	33	154	366
5:45 PM	156	22	9	16	23	168	394
Total	1199	204	74	159	217	1,525	3,378

PM Intersection Peak Hour : **4:15 PM - 5:15 PM**

Intersection PHF : **0.98**

	Southbound		Westbound		Northbound		
	Thru	Left	Right	Left	Right	Thru	TOTAL
Volume	628	91	45	88	105	841	1798
PHF	0.924	0.843	0.865	0.815	0.847	0.987	0.98
Movement PHF	0.91		0.83			0.97	0.98

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Del Roy Drive @ Twin Oaks Valley Road

Date of Count: Thursday, April 16, 2015

Analysts: LV/CD

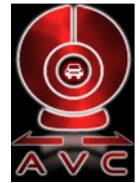
Weather: Sunny

AVC Proj No: 15-0338



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Del Roy Drive @ Twin Oaks Valley Road

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	0	252	2	0	0	0	2	69	3	8	0	1	337
7:15 AM	0	254	1	1	0	1	11	77	4	17	0	1	367
7:30 AM	1	259	2	1	0	1	7	98	2	21	0	5	397
7:45 AM	3	274	3	0	0	1	4	125	7	6	0	4	427
8:00 AM	7	250	0	1	0	1	7	145	5	15	0	4	435
8:15 AM	1	290	2	0	0	0	2	132	8	6	0	2	443
8:30 AM	0	323	3	0	0	1	7	155	3	14	0	1	507
8:45 AM	1	259	3	0	0	1	6	84	3	8	0	0	365
Total	13	2,161	16	3	0	6	46	885	35	95	0	18	3,278

AM Intersection Peak Hour : **7:45 AM - 8:45 AM**

Intersection PHF : **0.89**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	11	1,137	8	1	0	3	20	557	23	41	0	11	1,812
PHF	0.39	0.88	0.67	0.25	#####	0.75	0.71	0.90	0.72	0.68	#####	0.69	0.89
Movement PHF		0.89			0.50			0.91			0.68		0.89

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	1	148	4	3	0	4	4	222	13	12	0	0	411
4:15 PM	2	147	0	4	0	9	14	219	12	7	0	1	415
4:30 PM	1	166	0	2	0	6	1	204	9	6	0	1	396
4:45 PM	3	172	0	1	0	3	5	183	13	11	0	2	393
5:00 PM	1	172	0	3	0	7	3	249	22	5	0	1	463
5:15 PM	1	182	4	2	0	4	4	199	5	7	0	5	413
5:30 PM	0	152	1	1	0	4	4	183	9	7	0	1	362
5:45 PM	1	165	1	1	1	4	2	198	9	7	0	2	391
Total	10	1304	10	17	1	41	37	1,657	92	62	0	13	3,244

PM Intersection Peak Hour : **4:15 PM - 5:15 PM**

Intersection PHF : **0.90**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	7	657	0	10	0	25	23	855	56	29	0	5	1667
PHF	0.58	0.955	#####	0.625	#####	0.694	0.411	0.858	0.636	0.659	#####	0.625	0.90
Movement PHF		0.95			0.67			0.85			0.65		0.90

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Windy Way @ Twin Oaks Valley Road

Date of Count: Wednesday, April 15, 2015

Analysts: LV/CD

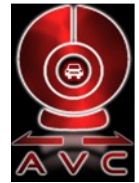
Weather: Sunny

AVC Proj No: 15-0338



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Windy Way @ Twin Oaks Valley Road

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	8	262	0	0	0	0	0	93	11	7	1	1	383
7:15 AM	16	282	0	0	0	0	0	116	21	12	0	2	449
7:30 AM	6	316	0	0	0	0	0	99	11	11	0	0	443
7:45 AM	31	254	0	0	0	0	0	135	9	15	1	2	447
8:00 AM	15	319	0	0	0	0	0	166	18	8	0	3	529
8:15 AM	10	279	0	0	0	0	0	141	14	10	0	2	456
8:30 AM	5	284	0	0	0	0	2	140	8	10	0	3	452
8:45 AM	5	261	0	0	0	0	0	106	11	9	0	0	392
Total	96	2,257	0	0	0	0	2	996	103	82	2	13	3,551

AM Intersection Peak Hour : **7:45 AM - 8:45 AM**

Intersection PHF : **0.89**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	61	1,136	0	0	0	0	2	582	49	43	1	10	1,884
PHF	0.49	0.89	#####	#####	#####	#####	0.25	0.88	0.68	0.72	0.25	0.83	0.89
Movement PHF		0.90		#DIV/0!				0.86			0.75		0.89

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	1	149	0	0	0	0	0	234	8	15	0	8	415
4:15 PM	2	168	1	0	0	0	1	224	6	8	0	4	414
4:30 PM	0	189	0	0	0	0	1	197	10	15	0	2	414
4:45 PM	2	187	1	0	0	0	0	185	19	13	0	3	410
5:00 PM	5	168	0	0	0	0	1	214	5	14	0	5	412
5:15 PM	1	185	0	0	0	0	0	155	12	8	0	2	363
5:30 PM	2	155	0	0	0	0	0	179	9	7	0	2	354
5:45 PM	0	133	23	0	0	0	0	178	10	10	0	2	356
Total	13	1334	25	0	0	0	3	1,566	79	90	0	28	3,138

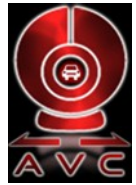
PM Intersection Peak Hour : **4:00 PM - 5:00 PM**

Intersection PHF : **1.00**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	5	693	2	0	0	0	2	840	43	51	0	17	1653
PHF	0.63	0.917	0.5	#####	#####	#####	0.5	0.897	0.566	0.85	#####	0.531	1.00
Movement PHF		0.92		#DIV/0!				0.91			0.74		1.00

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Borden Road @ Twin Oaks Valley Road

Date of Count: Thursday, August 14, 2014

Analysts: LV/CD

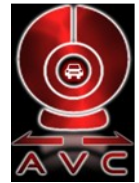
Weather: Sunny

AVC Proj No: 14-0240



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Borden Road @ Twin Oaks Valley Road

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	17	165	5	6	14	42	8	78	17	34	12	5	403
7:15 AM	48	176	4	5	21	42	7	93	17	55	6	14	488
7:30 AM	21	200	3	6	24	39	8	65	16	56	8	11	457
7:45 AM	17	194	1	8	19	58	9	88	22	51	13	15	495
8:00 AM	17	161	3	5	20	43	10	85	24	48	12	9	437
8:15 AM	21	163	2	12	14	43	6	101	24	54	6	13	459
8:30 AM	19	158	1	4	23	35	7	68	33	44	7	11	410
8:45 AM	19	133	5	5	24	25	9	75	25	52	12	5	389
Total	179	1,350	24	51	159	327	64	653	178	394	76	83	3,538

AM Intersection Peak Hour : **7:15 AM - 8:15 AM**

Intersection PHF : **0.95**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	103	731	11	24	84	182	34	331	79	210	39	49	1,877
PHF	0.54	0.91	0.69	0.75	0.88	0.78	0.85	0.89	0.82	0.94	0.75	0.82	0.95
Movement PHF		0.93			0.85			0.93			0.94		0.95

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	9	149	15	5	17	30	36	175	46	30	36	34	582
4:15 PM	17	131	14	5	40	27	37	177	48	35	34	35	600
4:30 PM	17	154	11	10	31	19	54	168	27	32	42	50	615
4:45 PM	27	166	11	7	36	30	42	190	47	34	40	40	670
5:00 PM	22	139	20	7	54	27	43	170	34	46	46	42	650
5:15 PM	29	137	15	12	40	34	53	179	59	52	49	32	691
5:30 PM	19	129	14	6	38	21	44	160	54	60	58	40	643
5:45 PM	13	123	7	13	30	20	39	162	44	38	32	36	557
Total	153	1128	107	65	286	208	348	1,381	359	327	337	309	5,008

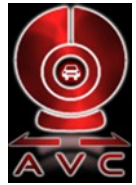
PM Intersection Peak Hour : **4:45 PM - 5:45 PM**

Intersection PHF : **0.96**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	97	571	60	32	168	112	182	699	194	192	193	154	2654
PHF	0.84	0.86	0.75	0.667	0.778	0.824	0.858	0.92	0.822	0.8	0.832	0.917	0.96
Movement PHF		0.89			0.89			0.92			0.85		0.96

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Richmar Drive @ Twin Oaks Valley Road

Date of Count: Wednesday, April 15, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0338



Location: Richmar Drive @ Twin Oaks Valley Road

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	29	285	12	0	0	5	2	153	9	16	0	16	527
7:15 AM	62	302	5	0	0	7	2	161	14	20	6	24	603
7:30 AM	81	319	8	0	3	5	5	142	5	37	1	35	641
7:45 AM	49	307	2	0	0	3	6	157	24	21	4	58	631
8:00 AM	47	315	8	1	3	6	3	183	9	21	4	47	647
8:15 AM	68	338	3	0	1	3	4	163	9	19	0	33	641
8:30 AM	35	309	6	0	0	4	2	172	11	15	1	23	578
8:45 AM	35	227	6	0	1	3	1	133	14	13	3	31	467
Total	406	2,402	50	1	8	36	25	1,264	95	162	19	267	4,735

AM Intersection Peak Hour : **7:30 AM - 8:30 AM**

Intersection PHF : **0.99**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	245	1,279	21	1	7	17	18	645	47	98	9	173	2,560
PHF	0.76	0.95	0.66	0.25	0.58	0.71	0.75	0.88	0.49	0.66	0.56	0.75	0.99
Movement PHF		0.94			0.63			0.91			0.84		0.99

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	29	274	16	0	3	4	7	291	27	19	0	65	735
4:15 PM	33	304	13	2	2	2	5	303	40	23	0	47	774
4:30 PM	53	307	11	0	0	0	8	316	32	18	3	62	810
4:45 PM	47	289	17	1	3	4	7	266	33	20	2	56	745
5:00 PM	41	319	20	0	1	6	5	334	16	22	6	45	815
5:15 PM	36	290	13	1	1	14	5	314	20	18	1	46	759
5:30 PM	29	246	13	1	3	13	5	291	32	18	2	51	704
5:45 PM	34	236	6	1	0	5	4	276	21	7	1	28	619
Total	302	2265	109	6	13	48	46	2,391	221	145	15	400	5,961

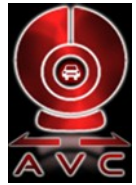
PM Intersection Peak Hour : **4:15 PM - 5:15 PM**

Intersection PHF : **0.96**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	174	1219	61	3	6	12	25	1219	121	83	11	210	3144
PHF	0.82	0.955	0.763	0.375	0.5	0.5	0.781	0.912	0.756	0.902	0.458	0.847	0.96
Movement PHF		0.96			0.66			0.96			0.92		0.96

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: San Marcos Boulevard @ Twin Oaks Valley Road

Date of Count: Wednesday, April 15, 2015

Analysts: LV/CD

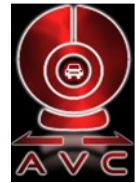
Weather: Sunny

AVC Proj No: 15-0338



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: San Marcos Boulevard @ Twin Oaks Valley Road

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	73	218	15	8	60	62	32	118	39	47	50	38	760
7:15 AM	61	238	30	11	102	86	85	125	40	48	59	41	926
7:30 AM	72	267	22	5	93	100	102	115	48	53	80	32	989
7:45 AM	53	253	25	10	122	80	100	144	70	48	62	33	1,000
8:00 AM	71	245	26	6	116	94	121	153	46	56	63	36	1,033
8:15 AM	51	287	22	11	113	90	84	116	72	68	64	49	1,027
8:30 AM	69	228	31	6	74	71	59	139	58	54	67	40	896
8:45 AM	45	169	29	11	82	75	84	95	64	52	79	42	827
Total	495	1,905	200	68	762	658	667	1,005	437	426	524	311	7,458

AM Intersection Peak Hour : **7:30 AM - 8:30 AM**

Intersection PHF : **0.98**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	247	1,052	95	32	444	364	407	528	236	225	269	150	4,049
PHF	0.86	0.92	0.91	0.73	0.91	0.91	0.84	0.86	0.82	0.83	0.84	0.77	0.98
Movement PHF		0.97			0.97			0.91			0.89		0.98

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	49	221	27	16	97	82	58	234	44	60	172	75	1,135
4:15 PM	52	244	33	16	82	87	55	229	64	45	138	103	1,148
4:30 PM	53	237	35	20	74	73	41	257	68	43	117	79	1,097
4:45 PM	54	227	32	12	89	96	61	217	124	52	148	77	1,189
5:00 PM	57	253	37	24	121	107	63	231	96	62	181	100	1,332
5:15 PM	55	240	27	22	88	85	67	256	56	48	154	61	1,159
5:30 PM	52	188	37	30	119	102	68	224	102	40	154	74	1,190
5:45 PM	62	142	44	16	102	86	106	214	89	47	174	71	1,153
Total	434	1752	272	156	772	718	519	1,862	643	397	1,238	640	9,403

PM Intersection Peak Hour : **4:45 PM - 5:45 PM**

Intersection PHF : **0.91**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	218	908	133	88	417	390	259	928	378	202	637	312	4,870
PHF	0.96	0.897	0.899	0.733	0.862	0.911	0.952	0.906	0.762	0.815	0.88	0.78	0.91
Movement PHF		0.91			0.89			0.97			0.84		0.91

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: SR 78 WB Ramps @ Twin Oaks Valley Road

Date of Count: Wednesday, April 15, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0338



Location: SR 78 WB Ramps @ Twin Oaks Valley Road

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	71	256	0	44	0	97	84	145	0	0	0	0	697
7:15 AM	88	284	0	43	0	101	91	207	0	0	0	0	814
7:30 AM	115	305	0	66	0	89	134	199	0	0	0	0	908
7:45 AM	120	261	0	58	0	109	101	256	0	0	0	0	905
8:00 AM	74	321	0	52	0	94	115	268	0	0	0	0	924
8:15 AM	81	364	0	68	0	114	104	204	0	0	0	0	935
8:30 AM	87	266	0	69	0	141	103	187	0	0	0	0	853
8:45 AM	74	222	0	75	0	141	116	168	0	0	0	0	796
Total	710	2,279	0	475	0	886	848	1,634	0	0	0	0	6,832

AM Intersection Peak Hour : **7:30 AM - 8:30 AM**

Intersection PHF : **0.98**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	390	1,251	0	244	0	406	454	927	0	0	0	0	3,672
PHF	0.81	0.86	#####	0.90	#####	0.89	0.85	0.86	#####	#####	#####	#####	0.98
Movement PHF		0.92			0.89			0.90		#DIV/0!			0.98

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	69	294	0	70	0	105	91	266	0	0	0	0	895
4:15 PM	58	317	1	104	0	121	108	244	0	0	0	0	953
4:30 PM	84	269	0	83	0	130	122	283	0	0	0	0	971
4:45 PM	76	299	0	86	0	135	98	316	0	0	0	0	1,010
5:00 PM	90	332	0	77	0	111	139	313	0	0	0	0	1,062
5:15 PM	80	293	0	81	0	130	154	298	0	0	0	0	1,036
5:30 PM	81	249	0	82	0	112	153	312	0	0	0	0	989
5:45 PM	68	207	0	106	0	147	69	303	0	0	0	0	900
Total	606	2260	1	689	0	991	934	2,335	0	0	0	0	7,816

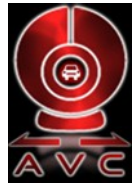
PM Intersection Peak Hour : **4:45 PM - 5:45 PM**

Intersection PHF : **0.96**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	327	1,173	0	326	0	488	544	1,239	0	0	0	0	4,097
PHF	0.91	0.883	#####	0.948	#####	0.904	0.883	0.98	#####	#####	#####	#####	0.96
Movement PHF		0.89			0.92			0.96		#DIV/0!			0.96

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: SR 78 EB Ramps @ Twin Oaks Valley Road

Date of Count: Wednesday, April 15, 2015

Analysts: LV/CD

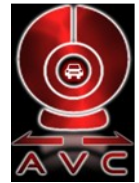
Weather: Sunny

AVC Proj No: 15-0338



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: SR 78 EB Ramps @ Twin Oaks Valley Road

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	0	261	92	0	0	0	118	150	0	126	3	79	829
7:15 AM	0	296	89	0	0	0	97	183	0	83	1	115	864
7:30 AM	0	315	79	0	0	0	128	191	0	144	1	142	1,000
7:45 AM	0	295	75	0	0	0	95	238	0	145	0	119	967
8:00 AM	0	329	86	0	0	0	121	250	0	119	4	133	1,042
8:15 AM	0	406	72	0	0	0	120	174	0	128	2	134	1,036
8:30 AM	0	325	82	0	0	0	122	192	0	170	0	98	989
8:45 AM	0	264	99	0	0	0	121	175	0	151	0	109	919
Total	0	2,491	674	0	0	0	922	1,553	0	1,066	11	929	7,646

AM Intersection Peak Hour : **7:30 AM - 8:30 AM**

Intersection PHF : **0.97**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	0	1,345	312	0	0	0	464	853	0	536	7	528	4,045
PHF	#####	0.83	0.91	#####	#####	#####	0.91	0.85	#####	0.92	0.44	0.93	0.97
Movement PHF		0.87		#DIV/0!				0.89			0.93		0.97

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	0	321	78	0	0	0	229	294	0	71	0	63	1,056
4:15 PM	0	343	95	0	0	0	202	286	0	64	10	66	1,066
4:30 PM	0	317	82	0	0	0	134	353	0	55	10	52	1,003
4:45 PM	0	355	79	0	0	0	152	344	0	80	3	70	1,083
5:00 PM	0	363	80	0	0	0	161	402	0	66	12	50	1,134
5:15 PM	0	325	98	0	0	0	160	410	0	66	8	42	1,109
5:30 PM	0	296	65	0	0	0	154	439	0	62	9	26	1,051
5:45 PM	0	283	71	0	0	0	129	315	0	63	7	57	925
Total	0	2603	648	0	0	0	1,321	2,843	0	527	59	426	8,427

PM Intersection Peak Hour : **4:45 PM - 5:45 PM**

Intersection PHF : **0.96**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	0	1339	322	0	0	0	627	1595	0	274	32	188	4377
PHF	#####	0.922	0.821	#####	#####	#####	0.974	0.908	#####	0.856	0.667	0.671	0.96
Movement PHF		0.94		#DIV/0!				0.94			0.81		0.96

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: South Santa Fe Avenue @ Robelini Drive

Date of Count: Tuesday, April 14, 2015

Analysts: LV/CD

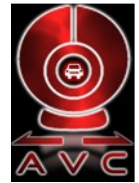
Weather: Sunny

AVC Proj No: 15-0338



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: South Santa Fe Avenue @ Robelini Drive

AM Period (7:00 AM - 9:00 AM)								
		Westbound		Northbound		Eastbound		TOTAL
		Thru	Left	Right	Left	Right	Thru	
7:00 AM		55	130	26	25	77	58	371
7:15 AM		59	145	40	27	129	89	489
7:30 AM		58	128	58	48	94	85	471
7:45 AM		39	114	46	26	140	97	462
8:00 AM		60	105	32	22	79	70	368
8:15 AM		34	113	76	38	109	54	424
8:30 AM		62	114	73	37	79	36	401
8:45 AM		43	116	44	47	62	65	377
Total		410	965	395	270	769	554	3,363

AM Intersection Peak Hour : **7:00 AM - 8:00 AM**

Intersection PHF : **0.92**

		Westbound		Northbound		Eastbound		TOTAL
		Thru	Left	Right	Left	Right	Thru	
Volume		211	517	170	126	440	329	1,793
PHF		0.89	0.89	0.73	0.66	0.79	0.85	0.92
Movement PHF		0.89		0.70		0.81		0.92

PM Period (4:00 PM - 6:00 PM)								
		Westbound		Northbound		Eastbound		TOTAL
		Thru	Left	Right	Left	Right	Thru	
4:00 PM		92	61	131	104	65	89	542
4:15 PM		96	60	115	88	69	118	546
4:30 PM		104	56	127	96	64	97	544
4:45 PM		98	52	106	89	68	117	530
5:00 PM		122	56	116	84	59	137	574
5:15 PM		123	50	100	89	57	110	529
5:30 PM		90	52	147	96	67	121	573
5:45 PM		92	61	137	95	52	87	524
Total		817	448	979	741	501	876	4,362

PM Intersection Peak Hour : **4:45 PM - 5:45 PM**

Intersection PHF : **0.96**

		Westbound		Northbound		Eastbound		TOTAL
		Thru	Left	Right	Left	Right	Thru	
Volume		433	210	469	358	251	485	2206
PHF		0.88	0.938	0.798	0.932	0.923	0.885	0.96
Movement PHF		0.90		0.85		0.94		0.96

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: SR 78 WB Ramps @ Sycamore Avenue

Date of Count: Tuesday, April 14, 2015

Analysts: LV/CD

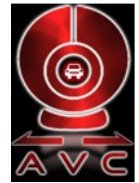
Weather: Sunny

AVC Proj No: 15-0338



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: SR 78 WB Ramps @ Sycamore Avenue

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	58	208	0	9	2	252	0	67	100	0	0	0	696
7:15 AM	73	214	0	28	0	274	0	93	103	0	0	0	785
7:30 AM	70	175	0	21	0	268	0	144	92	0	0	0	770
7:45 AM	96	232	0	31	0	310	0	121	73	0	0	0	863
8:00 AM	83	155	0	37	1	232	0	109	74	0	0	0	691
8:15 AM	66	160	0	41	0	245	0	138	74	0	0	0	724
8:30 AM	51	140	0	37	2	210	0	96	88	0	0	0	624
8:45 AM	67	185	0	37	0	263	0	105	110	0	0	0	767
Total	564	1,469	0	241	5	2,054	0	873	714	0	0	0	5,920

AM Intersection Peak Hour : **7:00 AM - 8:00 AM**

Intersection PHF : **0.90**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	297	829	0	89	2	1,104	0	425	368	0	0	0	3,114
PHF	0.77	0.89	#####	0.72	0.25	0.89	#####	0.74	0.89	#####	#####	#####	0.90
Movement PHF		0.86			0.88			0.84		#DIV/0!			0.90

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	109	178	0	58	1	137	0	229	174	0	0	0	886
4:15 PM	111	140	0	90	0	162	0	253	199	0	0	0	955
4:30 PM	95	135	0	66	0	108	0	239	204	0	0	0	847
4:45 PM	119	132	0	67	0	138	0	233	225	0	0	0	914
5:00 PM	138	109	0	72	1	155	0	230	220	0	0	0	925
5:15 PM	134	160	0	57	4	158	0	231	162	0	0	0	906
5:30 PM	132	120	0	79	1	126	0	262	199	0	0	0	919
5:45 PM	122	146	0	94	0	179	0	230	172	0	0	0	943
Total	960	1120	0	583	7	1,163	0	1,907	1,555	0	0	0	7,295

PM Intersection Peak Hour : **5:00 PM - 6:00 PM**

Intersection PHF : **0.98**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	526	535	0	302	6	618	0	953	753	0	0	0	3693
PHF	0.95	0.836	#####	0.803	0.375	0.863	#####	0.909	0.856	#####	#####	#####	0.98
Movement PHF		0.90			0.85			0.93		#DIV/0!			0.98

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: SR 78 EB Ramps @ Sycamore Avenue

Date of Count: Tuesday, April 14, 2015

Analysts: LV/CD

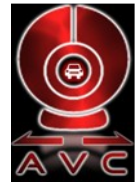
Weather: Sunny

AVC Proj No: 15-0338



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: SR 78 EB Ramps @ Sycamore Avenue

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	0	414	46	0	0	0	170	134	0	193	0	33	990
7:15 AM	0	440	48	0	0	0	155	155	0	230	0	41	1,069
7:30 AM	0	392	51	0	0	0	161	172	0	228	0	64	1,068
7:45 AM	0	479	63	0	0	0	150	124	0	230	1	70	1,117
8:00 AM	0	350	37	0	0	0	161	123	0	186	2	60	919
8:15 AM	0	346	59	0	0	0	174	143	0	177	2	69	970
8:30 AM	0	306	44	0	0	0	170	141	0	131	0	43	835
8:45 AM	0	407	41	0	0	0	156	166	0	153	1	49	973
Total	0	3,134	389	0	0	0	1,297	1,158	0	1,528	6	429	7,941

AM Intersection Peak Hour : **7:00 AM - 8:00 AM**

Intersection PHF : **0.95**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	0	1,725	208	0	0	0	636	585	0	881	1	208	4,244
PHF	#####	0.90	0.83	#####	#####	#####	0.94	0.85	#####	0.96	0.25	0.74	0.95
Movement PHF		0.89		#DIV/0!				0.92			0.91		0.95

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	0	284	31	0	0	0	155	291	0	94	0	112	967
4:15 PM	0	253	49	0	0	0	111	336	0	96	1	116	962
4:30 PM	0	221	22	0	0	0	120	346	0	121	1	97	928
4:45 PM	0	224	46	0	0	0	162	358	0	96	1	100	987
5:00 PM	0	226	38	0	0	0	151	361	0	100	0	89	965
5:15 PM	0	279	39	0	0	0	129	284	0	88	2	109	930
5:30 PM	0	200	46	0	0	0	138	356	0	79	1	105	925
5:45 PM	0	282	43	0	0	0	144	318	0	80	0	84	951
Total	0	1,969	314	0	0	0	1,110	2,650	0	754	6	812	7,615

PM Intersection Peak Hour : **4:00 PM - 5:00 PM**

Intersection PHF : **0.97**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	0	982	148	0	0	0	548	1331	0	407	3	425	3844
PHF	#####	0.864	0.755	#####	#####	#####	0.846	0.929	#####	0.841	0.75	0.916	0.97
Movement PHF		0.90		#DIV/0!				0.90			0.95		0.97

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Buena Creek Road @ South Santa Fe Avenue

Date of Count: Tuesday, April 14, 2015

Analysts: LV/CD

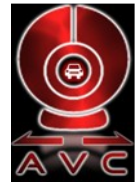
Weather: Sunny

AVC Proj No: 15-0338



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Buena Creek Road @ South Santa Fe Avenue

AM Period (7:00 AM - 9:00 AM)							
	Southbound		Westbound		Northbound		
	Thru	Left	Right	Left	Right	Thru	TOTAL
7:00 AM	56	28	135	31	25	50	325
7:15 AM	100	29	117	34	20	87	387
7:30 AM	99	44	119	34	17	67	380
7:45 AM	105	38	99	56	23	54	375
8:00 AM	79	23	104	46	23	61	336
8:15 AM	78	52	94	43	23	53	343
8:30 AM	71	38	113	37	25	63	347
8:45 AM	66	43	101	39	26	58	333
Total	654	295	882	320	182	493	2,826

AM Intersection Peak Hour : **7:15 AM - 8:15 AM**

Intersection PHF : **0.95**

	Southbound		Westbound		Northbound		
	Thru	Left	Right	Left	Right	Thru	TOTAL
Volume	383	134	439	170	83	269	1,478
PHF	0.91	0.76	0.92	0.76	0.90	0.77	0.95
Movement PHF	0.90		0.98		0.82		0.95

PM Period (4:00 PM - 6:00 PM)							
	Southbound		Westbound		Northbound		
	Thru	Left	Right	Left	Right	Thru	TOTAL
4:00 PM	99	121	45	31	46	108	450
4:15 PM	115	118	45	30	52	111	471
4:30 PM	113	111	49	33	36	111	453
4:45 PM	94	129	47	27	59	103	459
5:00 PM	110	143	47	25	47	131	503
5:15 PM	89	121	44	43	53	129	479
5:30 PM	128	140	38	28	50	104	488
5:45 PM	73	151	50	35	45	103	457
Total	821	1034	365	252	388	900	3,760

PM Intersection Peak Hour : **4:45 PM - 5:45 PM**

Intersection PHF : **0.96**

	Southbound		Westbound		Northbound		
	Thru	Left	Right	Left	Right	Thru	TOTAL
Volume	421	533	176	123	209	467	1929
PHF	0.822	0.932	0.936	0.715	0.886	0.891	0.96
Movement PHF	0.89		0.86		0.93		0.96

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Monte Vista Road @ Buena Creek Road

Date of Count: Tuesday, April 14, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0338



Location: Monte Vista Road @ Buena Creek Road

AM Period (7:00 AM - 9:00 AM)								
	Southbound			Northbound		Eastbound		
	Right	Thru		Thru	Left	Right	Left	TOTAL
7:00 AM	51	100		34	18	26	68	297
7:15 AM	44	88		25	22	32	70	281
7:30 AM	50	77		40	19	53	81	320
7:45 AM	47	85		33	29	37	86	317
8:00 AM	39	77		31	20	42	50	259
8:15 AM	46	90		39	27	35	49	286
8:30 AM	40	69		35	31	51	41	267
8:45 AM	42	84		33	22	41	42	264
Total	359	670		270	188	317	487	2,291

AM Intersection Peak Hour : **7:00 AM - 8:00 AM**

Intersection PHF : **0.95**

	Southbound			Northbound		Eastbound		
	Right	Thru		Thru	Left	Right	Left	TOTAL
Volume	192	350		132	88	148	305	1,215
PHF	0.94	0.88		0.83	0.76	0.70	0.89	0.95
Movement PHF		0.90		0.89		0.85		0.95

PM Period (4:00 PM - 6:00 PM)								
	Southbound			Northbound		Eastbound		
	Right	Thru		Thru	Left	Right	Left	TOTAL
4:00 PM	79	27		99	35	33	69	342
4:15 PM	87	37		79	36	26	63	328
4:30 PM	114	42		100	50	22	74	402
4:45 PM	72	26		66	60	22	78	324
5:00 PM	101	45		83	54	23	85	391
5:15 PM	88	41		91	41	26	72	359
5:30 PM	99	43		95	54	30	80	401
5:45 PM	67	35		65	42	17	64	290
Total	707	296		678	372	199	585	2,837

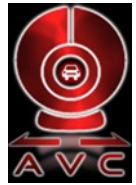
PM Intersection Peak Hour : **4:30 PM - 5:30 PM**

Intersection PHF : **0.92**

	Southbound			Northbound		Eastbound		
	Right	Thru		Thru	Left	Right	Left	TOTAL
Volume	375	154		340	205	93	309	1476
PHF	0.82	0.856		0.85	0.854	0.894	0.909	0.92
Movement PHF		0.85		0.91		0.93		0.92

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: WB Off Ramps @ San Marcos Boulevard

Date of Count: Tuesday, April 14, 2015

Analysts: LV/CD

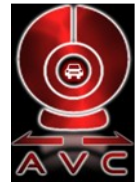
Weather: Sunny

AVC Proj No: 15-0338



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: WB Off Ramps @ San Marcos Boulevard

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	22	179	0	5	86	225	18	80	51	69	0	16	751
7:15 AM	28	206	0	10	93	284	18	81	82	81	0	31	914
7:30 AM	53	225	0	2	101	203	16	89	106	106	0	26	927
7:45 AM	27	178	0	2	92	236	15	105	70	117	0	35	877
8:00 AM	19	234	0	0	88	223	16	103	75	87	0	29	874
8:15 AM	21	216	0	4	67	198	26	123	62	77	0	22	816
8:30 AM	31	200	0	1	75	228	19	107	65	110	0	22	858
8:45 AM	25	182	0	8	81	212	16	139	63	89	0	21	836
Total	226	1,620	0	32	683	1,809	144	827	574	736	0	202	6,853

AM Intersection Peak Hour : **7:15 AM - 8:15 AM**

Intersection PHF : **0.97**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	127	843	0	14	374	946	65	378	333	391	0	121	3,592
PHF	0.60	0.90	#####	0.35	0.93	0.83	0.90	0.90	0.79	0.84	#####	0.86	0.97
Movement PHF		0.87			0.86			0.92			0.84		0.97

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	19	170	0	15	53	180	34	279	90	75	0	36	951
4:15 PM	24	171	0	13	58	183	39	235	84	83	0	35	925
4:30 PM	26	196	0	5	70	205	29	273	110	72	0	39	1,025
4:45 PM	25	207	0	12	65	221	29	223	94	74	0	47	997
5:00 PM	29	242	0	12	83	192	31	302	91	83	0	39	1,104
5:15 PM	28	228	0	9	92	227	21	248	76	85	0	24	1,038
5:30 PM	30	224	0	1	92	249	36	240	89	67	0	26	1,054
5:45 PM	28	207	0	10	74	194	19	196	72	82	0	46	928
Total	209	1645	0	77	587	1,651	238	1,996	706	621	0	292	8,022

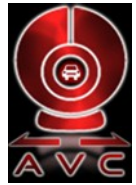
PM Intersection Peak Hour : **4:45 PM - 5:45 PM**

Intersection PHF : **0.95**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	112	901	0	34	332	889	117	1013	350	309	0	136	4193
PHF	0.93	0.931	#####	0.708	0.902	0.893	0.813	0.839	0.931	0.909	#####	0.723	0.95
Movement PHF		0.93			0.92			0.87			0.91		0.95

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: EB Off Ramps @ San Marcos Boulevard

Date of Count: Tuesday, April 14, 2015

Analysts: LV/CD

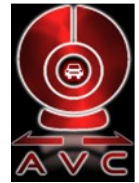
Weather: Sunny

AVC Proj No: 15-0338



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: EB Off Ramps @ San Marcos Boulevard

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	0	444	29	0	0	0	134	102	0	21	0	47	777
7:15 AM	0	543	28	0	0	0	140	131	0	19	0	50	911
7:30 AM	0	485	49	0	0	0	171	157	0	27	0	54	943
7:45 AM	0	487	44	0	0	0	184	148	0	31	0	42	936
8:00 AM	0	507	37	0	0	0	158	144	0	34	0	50	930
8:15 AM	0	452	39	0	0	0	180	179	0	23	0	32	905
8:30 AM	0	486	52	0	0	0	205	156	0	35	0	35	969
8:45 AM	0	409	74	0	0	0	149	191	0	27	1	27	878
Total	0	3,813	352	0	0	0	1,321	1,208	0	217	1	337	7,249

AM Intersection Peak Hour : **7:45 AM - 8:45 AM**

Intersection PHF : **0.96**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	0	1,932	172	0	0	0	727	627	0	123	0	159	3,740
PHF	#####	0.95	0.83	#####	#####	#####	0.89	0.88	#####	0.88	#####	0.80	0.96
Movement PHF		0.97		#DIV/0!				0.94			0.84		0.96

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	0	395	30	0	0	0	289	371	0	16	0	32	1,133
4:15 PM	0	409	28	0	0	0	269	326	0	17	0	32	1,081
4:30 PM	0	445	28	0	0	0	263	370	0	25	0	42	1,173
4:45 PM	0	478	24	0	0	0	272	289	0	14	1	57	1,135
5:00 PM	0	476	41	0	0	0	280	368	0	14	0	56	1,235
5:15 PM	0	502	38	0	0	0	268	276	0	25	0	69	1,178
5:30 PM	0	510	30	0	0	0	197	315	0	22	0	50	1,124
5:45 PM	0	452	31	0	0	0	218	242	0	35	0	45	1,023
Total	0	3667	250	0	0	0	2,056	2,557	0	168	1	383	9,082

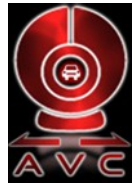
PM Intersection Peak Hour : **4:30 PM - 5:30 PM**

Intersection PHF : **0.96**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	0	1901	131	0	0	0	1083	1303	0	78	1	224	4721
PHF	#####	0.947	0.799	#####	#####	#####	0.967	0.88	#####	0.78	0.25	0.812	0.96
Movement PHF		0.94		#DIV/0!				0.92			0.81		0.96

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Mission Road @ Vineyard Road

Date of Count: Wednesday, April 15, 2015

Analysts: LV/CD

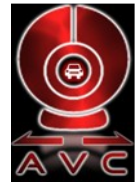
Weather: Sunny

AVC Proj No: 15-0338



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Mission Road @ Vineyard Road

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	7	51	12	9	105	60	35	9	3	3	38	1	333
7:15 AM	12	78	17	10	143	114	70	16	1	6	93	4	564
7:30 AM	7	92	39	20	164	134	89	4	2	3	103	5	662
7:45 AM	13	93	34	36	224	171	50	4	2	4	107	9	747
8:00 AM	17	60	6	13	191	169	44	10	3	7	55	7	582
8:15 AM	17	80	11	12	155	155	47	20	2	11	41	4	555
8:30 AM	9	53	3	11	153	103	50	9	3	9	44	6	453
8:45 AM	19	77	5	6	132	127	37	23	8	15	35	4	488
Total	101	584	127	117	1,267	1,033	422	95	24	58	516	40	4,384

AM Intersection Peak Hour : **7:15 AM - 8:15 AM**

Intersection PHF : **0.86**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	49	323	96	79	722	588	253	34	8	20	358	25	2,555
PHF	0.72	0.87	0.62	0.55	0.81	0.86	0.71	0.53	0.67	0.71	0.84	0.69	0.86
Movement PHF		0.84			0.81			0.78			0.84		0.86

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	8	36	8	29	131	55	130	47	15	12	217	32	720
4:15 PM	10	26	17	26	109	76	137	64	18	13	208	21	725
4:30 PM	11	31	6	19	115	83	87	49	18	15	207	28	669
4:45 PM	16	52	6	26	172	62	135	54	8	13	227	22	793
5:00 PM	7	36	5	22	91	65	100	73	20	22	199	29	669
5:15 PM	6	55	17	19	170	99	147	68	8	13	219	22	843
5:30 PM	10	33	10	28	199	79	166	49	11	12	149	22	768
5:45 PM	10	58	14	25	166	102	158	72	5	1	154	25	790
Total	78	327	83	194	1,153	621	1,060	476	103	101	1,580	201	5,977

PM Intersection Peak Hour : **4:45 PM - 5:45 PM**

Intersection PHF : **0.91**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	39	176	38	95	632	305	548	244	47	60	794	95	3073
PHF	0.61	0.8	0.559	0.848	0.794	0.77	0.825	0.836	0.588	0.682	0.874	0.819	0.91
Movement PHF		0.81			0.84			0.93			0.91		0.91

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Mesa Rock Road @ North Centre City Parkway
Date of Count: Thursday, April 16, 2015
Analysts: LV/CD
Weather: Sunny
AVC Proj No: 15-0338



Location: Mesa Rock Road @ North Centre City Parkway

AM Period (7:00 AM - 9:00 AM)								
	Southbound			Northbound		Eastbound		TOTAL
	Right	Thru		Thru	Left	Right	Left	
7:00 AM	0	70		16	5	4	0	95
7:15 AM	0	82		20	3	6	0	111
7:30 AM	0	83		20	2	12	0	117
7:45 AM	0	87		30	3	8	0	128
8:00 AM	0	49		26	4	5	0	84
8:15 AM	0	42		27	5	6	0	80
8:30 AM	1	26		30	2	4	1	64
8:45 AM	0	28		23	1	8	0	60
Total	1	467		192	25	53	1	739

AM Intersection Peak Hour : **7:00 AM - 8:00 AM**

Intersection PHF : **0.88**

	Southbound			Northbound		Eastbound		
	Right	Thru		Thru	Left	Right	Left	TOTAL
Volume	0	322		86	13	30	0	451
PHF	#####	0.93		0.72	0.65	0.63	#####	0.88
Movement PHF		0.93		0.75		0.63		0.88

PM Period (4:00 PM - 6:00 PM)								
	Southbound			Northbound		Eastbound		TOTAL
	Right	Thru		Thru	Left	Right	Left	
4:00 PM	0	37		54	2	7	0	100
4:15 PM	0	33		68	7	7	0	115
4:30 PM	0	34		59	6	9	0	108
4:45 PM	0	38		72	7	5	0	122
5:00 PM	0	36		69	10	4	0	119
5:15 PM	1	46		64	9	12	2	134
5:30 PM	0	31		64	6	4	0	105
5:45 PM	0	32		71	2	3	0	108
Total	1	287		521	49	51	2	911

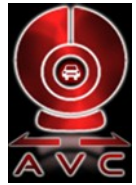
PM Intersection Peak Hour : **4:30 PM - 5:30 PM**

Intersection PHF : **0.90**

	Southbound			Northbound		Eastbound		
	Right	Thru		Thru	Left	Right	Left	TOTAL
Volume	1	154		264	32	30	2	483
PHF	0.25	0.837		0.917	0.8	0.625	0.25	0.90
Movement PHF		0.82		0.94		0.57		0.90

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



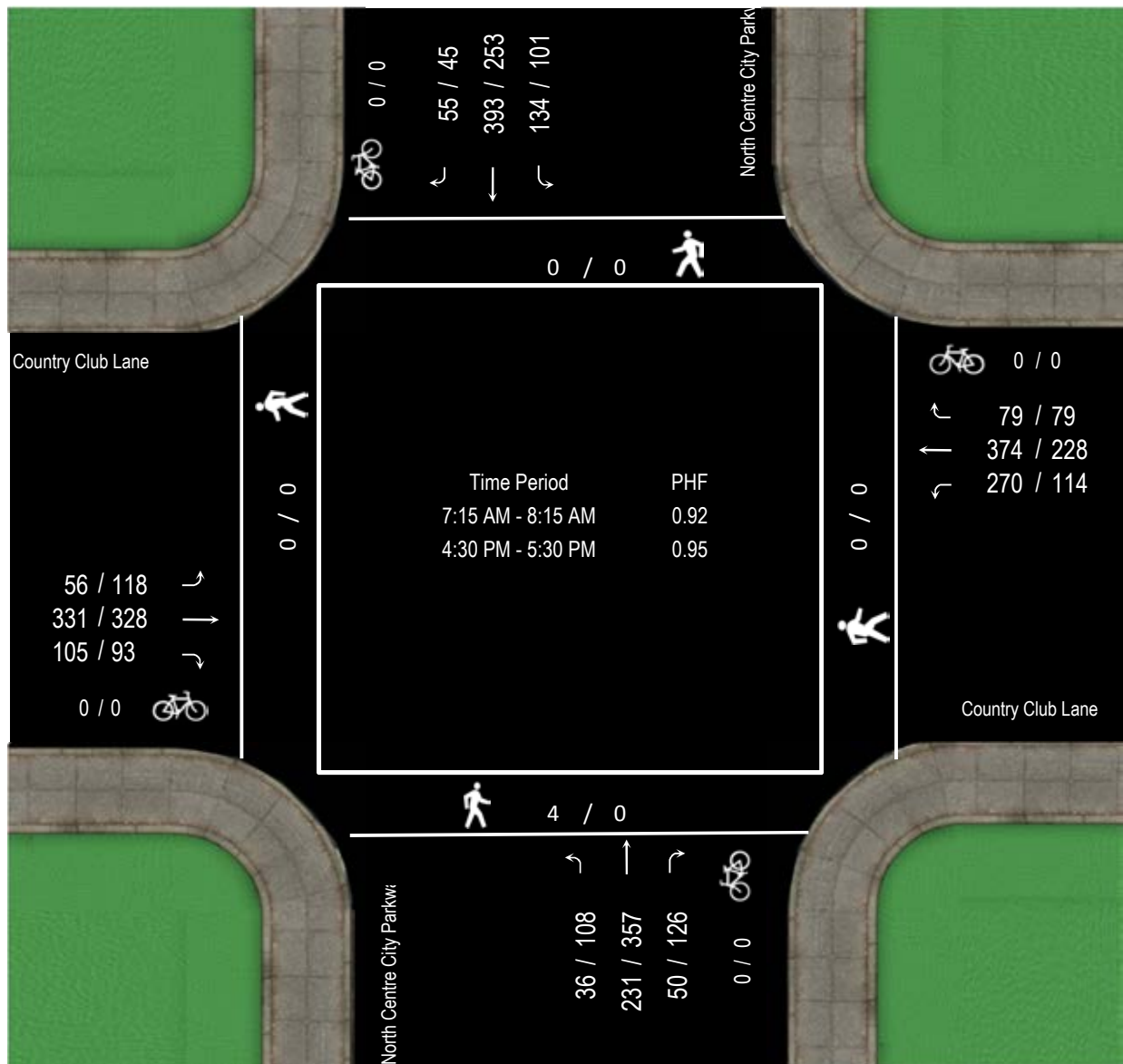
Location: Country Club Lane @ North Centre City Parkway

Date of Count: Thursday, April 16, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0338



Location: Country Club Lane @ North Centre City Parkway

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	5	95	39	16	66	57	1	27	3	16	69	8	402
7:15 AM	20	94	47	19	73	56	14	49	5	23	104	11	515
7:30 AM	16	123	33	20	82	61	19	45	14	35	88	19	555
7:45 AM	10	107	35	17	105	72	9	63	9	24	107	14	572
8:00 AM	9	69	19	23	114	81	8	74	8	23	32	12	472
8:15 AM	8	82	20	17	50	31	15	55	16	23	34	15	366
8:30 AM	8	54	6	19	57	46	18	43	10	31	23	13	328
8:45 AM	7	54	15	15	41	33	10	37	14	20	29	6	281
Total	83	678	214	146	588	437	94	393	79	195	486	98	3,491

AM Intersection Peak Hour : **7:15 AM - 8:15 AM**

Intersection PHF : **0.92**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	55	393	134	79	374	270	50	231	36	105	331	56	2,114
PHF	0.69	0.80	0.71	0.86	0.82	0.83	0.66	0.78	0.64	0.75	0.77	0.74	0.92
Movement PHF		0.85			0.83			0.88			0.85		0.92

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	9	60	26	21	42	30	32	71	25	12	79	25	432
4:15 PM	8	45	19	19	30	29	38	86	25	20	69	35	423
4:30 PM	15	45	20	24	58	34	28	99	21	21	72	25	462
4:45 PM	11	68	37	18	58	27	29	65	33	31	73	40	490
5:00 PM	5	60	20	17	52	34	36	99	29	22	83	27	484
5:15 PM	14	80	24	20	60	19	33	94	25	19	100	26	514
5:30 PM	11	54	34	20	56	29	22	78	25	21	75	25	450
5:45 PM	8	44	21	21	48	26	33	88	38	17	71	28	443
Total	81	456	201	160	404	228	251	680	221	163	622	231	3,698

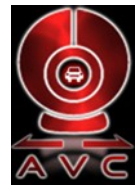
PM Intersection Peak Hour : **4:30 PM - 5:30 PM**

Intersection PHF : **0.95**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	45	253	101	79	228	114	126	357	108	93	328	118	1950
PHF	0.75	0.791	0.682	0.823	0.95	0.838	0.875	0.902	0.818	0.75	0.82	0.738	0.95
Movement PHF		0.85			0.91			0.90			0.93		0.95

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Discovery Street and Barham Driv @ Twin Oaks Valley Road

Date of Count: Thursday, December 03, 2015

Analysts: LV/CD

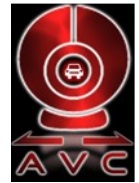
Weather: Sunny

AVC Proj No: 15-0455



Vehicular Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Discovery Street and Barham Drive @ Twin Oaks Valley Road

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	49	265	79	29	42	71	42	193	0	0	10	35	815
7:15 AM	71	209	129	39	57	64	45	228	0	1	19	53	915
7:30 AM	61	244	116	44	102	78	45	184	0	0	12	62	948
7:45 AM	84	278	87	52	94	46	40	218	0	0	21	44	964
8:00 AM	109	230	73	41	86	71	31	239	0	0	13	52	945
8:15 AM	115	237	81	38	97	78	35	217	0	0	17	69	984
8:30 AM	113	349	111	35	61	73	39	205	3	2	18	52	1,061
8:45 AM	118	296	159	82	70	71	29	214	2	3	20	79	1,143
Total	720	2,108	835	360	609	552	306	1,698	5	6	130	446	7,775

AM Intersection Peak Hour : **8:00 AM - 9:00 AM**

Intersection PHF : **0.90**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	455	1,112	424	196	314	293	134	875	5	5	68	252	4,133
PHF	0.96	0.80	0.67	0.60	0.81	0.94	0.86	0.92	0.42	0.42	0.85	0.80	0.90
Movement PHF		0.87			0.90			0.94			0.80		0.90

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	81	157	66	56	38	34	75	369	1	0	60	112	1,049
4:15 PM	86	171	71	31	30	47	59	309	2	3	57	98	964
4:30 PM	85	181	69	37	37	37	68	324	2	1	58	92	991
4:45 PM	84	145	99	37	30	39	71	348	2	3	82	119	1,059
5:00 PM	103	175	91	69	82	70	55	331	1	4	71	133	1,185
5:15 PM	94	151	134	82	86	91	65	340	0	1	72	101	1,217
5:30 PM	71	153	99	65	36	63	98	354	0	3	70	131	1,143
5:45 PM	67	163	96	38	66	86	64	249	0	2	54	94	979
Total	671	1296	725	415	405	467	555	2,624	8	17	524	880	8,587

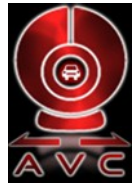
PM Intersection Peak Hour : **4:45 PM - 5:45 PM**

Intersection PHF : **0.95**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	352	624	423	253	234	263	289	1373	3	11	295	484	4604
PHF	0.85	0.891	0.789	0.771	0.68	0.723	0.737	0.97	0.375	0.688	0.899	0.91	0.95
Movement PHF		0.92			0.72			0.92			0.95		0.95

Bike Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: Discovery Street and Barham Driv @ Twin Oaks Valley Road

Date of Count: Thursday, December 03, 2015

Analysts: LV/CD

Weather: Sunny

AVC Proj No: 15-0455



Location: Discovery Street and Barham Drive @ Twin Oaks Valley Road

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	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	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	2	0	0	0	0	0	0	0	2
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	0	2	0	0	0	0	0	0	0	3

AM Intersection Peak Hour : **8:00 AM - 9:00 AM**

Intersection PHF : **0.38**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	0	1	0	0	2	0	0	0	0	0	0	0	3
PHF	#####	0.25	#####	#####	0.25	#####	#####	#####	#####	#####	#####	#####	0.38
Movement PHF		0.25			0.25		#DIV/0!			#DIV/0!			0.38

PM Period (4:00 PM - 6:00 PM)													
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	0	0	0	0	2	1	0	0	0	0	1	0	4
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
5:00 PM	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
5:30 PM	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
Total	0	1	0	0	3	1	0	0	0	0	1	0	6

PM Intersection Peak Hour : **4:00 PM - 5:00 PM**

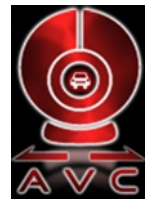
Intersection PHF : **0.38**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	0	1	0	0	3	1	0	0	0	0	1	0	6
PHF	#####	0.25	#####	#####	0.375	0.25	#####	#####	#####	#####	0.25	#####	0.38
Movement PHF		0.25			0.33		#DIV/0!				0.25		0.38



24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: 1. Deer Springs Road, Twin Oaks Valley Road to Sarver Lane

Orientation: North-South

Date of Count: Thursday, April 16, 2015

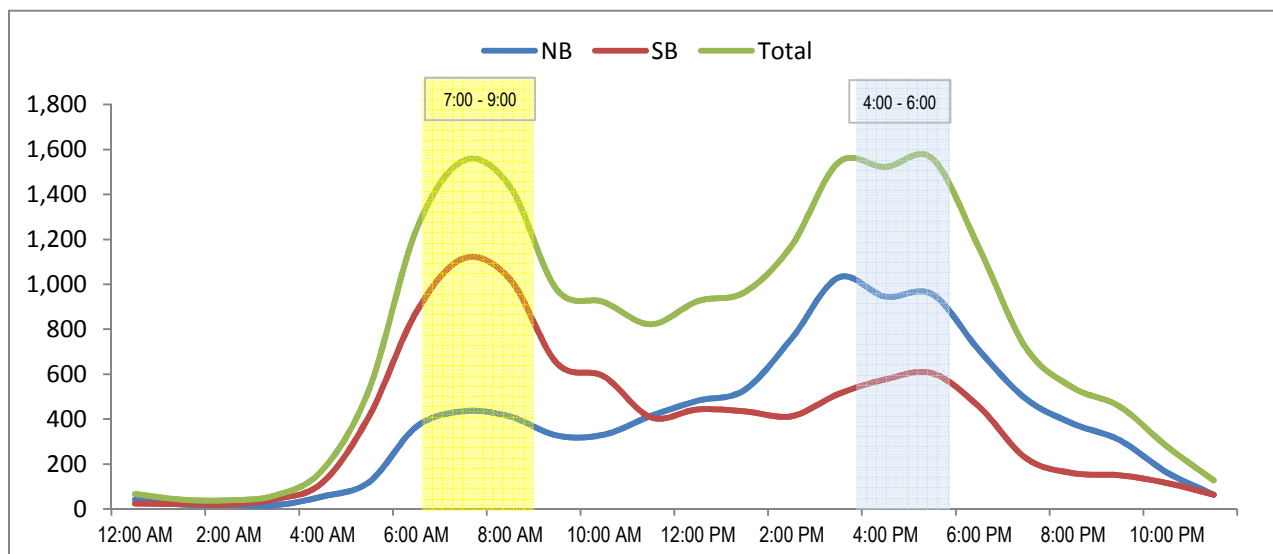
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0338

24 Hour Segment Volume						18,831				
Time		Hourly Volume				Time		Hourly Volume		
		NB	SB	Total				NB	SB	Total
12:00 AM - 1:00 AM		42	25	67		12:00 PM - 1:00 PM		482	443	925
1:00 AM - 2:00 AM		20	22	42		1:00 PM - 2:00 PM		530	435	965
2:00 AM - 3:00 AM		18	21	39		2:00 PM - 3:00 PM		759	413	1,172
3:00 AM - 4:00 AM		17	44	61		3:00 PM - 4:00 PM		1,030	512	1,542
4:00 AM - 5:00 AM		56	118	174		4:00 PM - 5:00 PM		945	577	1,522
5:00 AM - 6:00 AM		121	416	537		5:00 PM - 6:00 PM		956	604	1,560
6:00 AM - 7:00 AM		366	877	1,243		6:00 PM - 7:00 PM		706	455	1,161
7:00 AM - 8:00 AM		435	1,115	1,550		7:00 PM - 8:00 PM		490	226	716
8:00 AM - 9:00 AM		412	1,022	1,434		8:00 PM - 9:00 PM		380	160	540
9:00 AM - 10:00 AM		327	648	975	9:00 PM - 10:00 PM		306	150	456	
10:00 AM - 11:00 AM		331	590	921	10:00 PM - 11:00 PM		163	116	279	
11:00 AM - 12:00 PM		414	408	822	11:00 PM - 12:00 AM		64	64	128	
Total		2,559	5,306	7,865	Total		6,811	4,155	10,966	

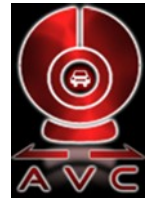
24-Hour	NB	Volume	9,370	24-Hour	SB	Volume	9,461
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24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: 2. Deer Springs Road, Sarver Lane to Mesa Rock Road

Orientation: East-West

Date of Count: Thursday, April 16, 2015

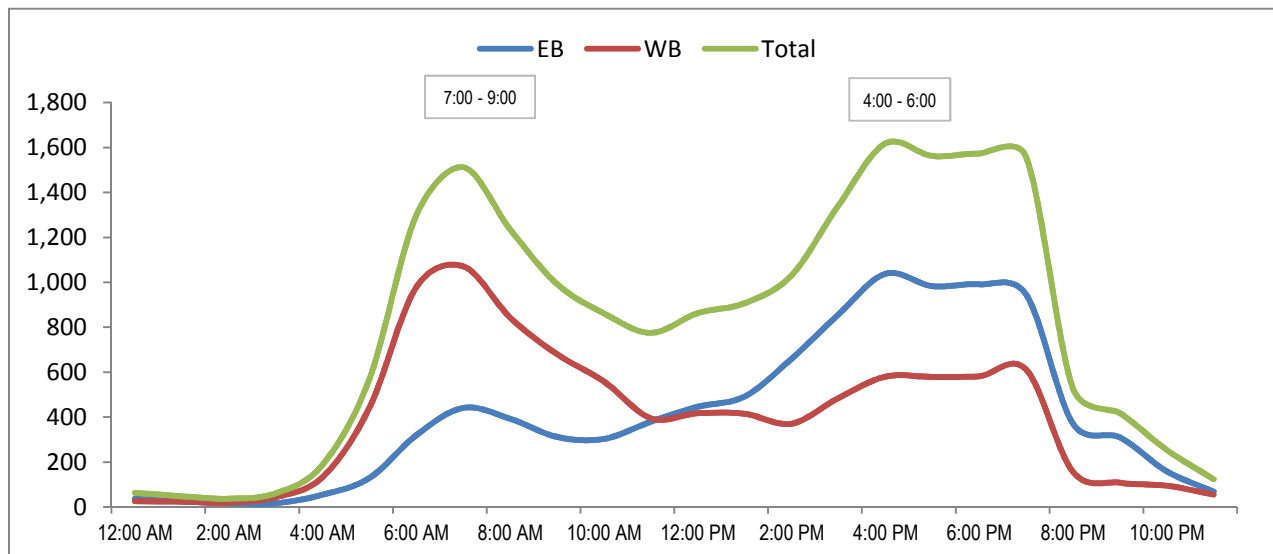
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0338

24 Hour Segment Volume						19,422				
Time		Hourly Volume				Time		Hourly Volume		
		EB	WB	Total				EB	WB	Total
12:00 AM - 1:00 AM		37	26	63		12:00 PM - 1:00 PM		446	417	863
1:00 AM - 2:00 AM		24	24	48		1:00 PM - 2:00 PM		492	415	907
2:00 AM - 3:00 AM		17	20	37		2:00 PM - 3:00 PM		660	371	1,031
3:00 AM - 4:00 AM		17	44	61		3:00 PM - 4:00 PM		857	485	1,342
4:00 AM - 5:00 AM		55	133	188		4:00 PM - 5:00 PM		1,038	580	1,618
5:00 AM - 6:00 AM		129	442	571		5:00 PM - 6:00 PM		983	579	1,562
6:00 AM - 7:00 AM		320	979	1,299		6:00 PM - 7:00 PM		991	582	1,573
7:00 AM - 8:00 AM		441	1,071	1,512		7:00 PM - 8:00 PM		946	612	1,558
8:00 AM - 9:00 AM		393	843	1,236		8:00 PM - 9:00 PM		371	157	528
9:00 AM - 10:00 AM		312	680	992		9:00 PM - 10:00 PM		310	108	418
10:00 AM - 11:00 AM		303	559	862		10:00 PM - 11:00 PM		159	95	254
11:00 AM - 12:00 PM		380	395	775	11:00 PM - 12:00 AM		69	55	124	
Total		2,428	5,216	7,644	Total		7,322	4,456	11,778	

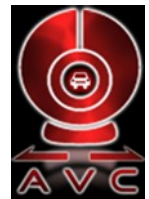
24-Hour	EB	Volume	9,750	24-Hour	WB	Volume	9,672
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24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: 3. Deer Springs Road, Mesa Rock Road to I-15

Orientation: East-West

Date of Count: Thursday, April 16, 2015

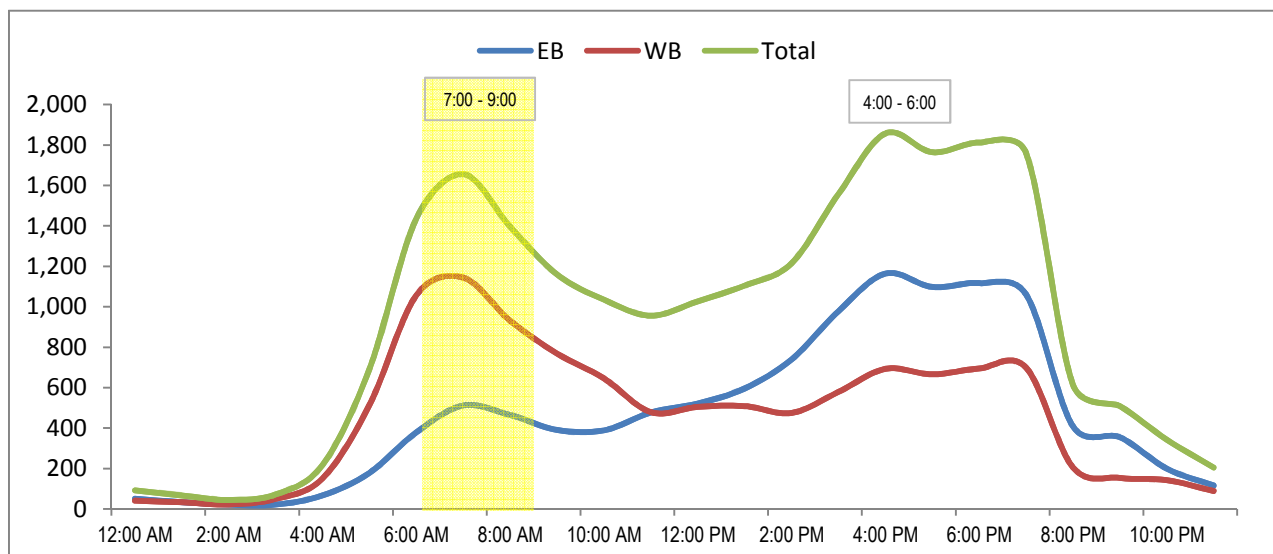
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0338

24 Hour Segment Volume						22,595				
Time		Hourly Volume				Time		Hourly Volume		
		EB	WB	Total				EB	WB	Total
12:00 AM - 1:00 AM		51	41	92		12:00 PM - 1:00 PM		522	505	1,027
1:00 AM - 2:00 AM		34	33	67		1:00 PM - 2:00 PM		596	509	1,105
2:00 AM - 3:00 AM		22	23	45		2:00 PM - 3:00 PM		740	475	1,215
3:00 AM - 4:00 AM		22	50	72		3:00 PM - 4:00 PM		978	579	1,557
4:00 AM - 5:00 AM		67	151	218		4:00 PM - 5:00 PM		1,164	693	1,857
5:00 AM - 6:00 AM		179	514	693		5:00 PM - 6:00 PM		1,098	666	1,764
6:00 AM - 7:00 AM		379	1,057	1,436		6:00 PM - 7:00 PM		1,117	695	1,812
7:00 AM - 8:00 AM		512	1,144	1,656		7:00 PM - 8:00 PM		1,061	699	1,760
8:00 AM - 9:00 AM		465	931	1,396		8:00 PM - 9:00 PM		409	206	615
9:00 AM - 10:00 AM		391	769	1,160	9:00 PM - 10:00 PM		355	154	509	
10:00 AM - 11:00 AM		389	646	1,035	10:00 PM - 11:00 PM		200	143	343	
11:00 AM - 12:00 PM		477	479	956	11:00 PM - 12:00 AM		116	89	205	
Total		2,988	5,838	8,826	Total		8,356	5,413	13,769	

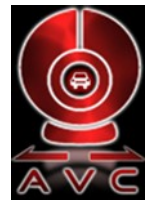
24-Hour	EB	Volume	11,344	24-Hour	WB	Volume	11,251
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24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: 4. Deer Springs Road, I-15 to Champagne Boulevard

Orientation: East-West

Date of Count: Thursday, April 16, 2015

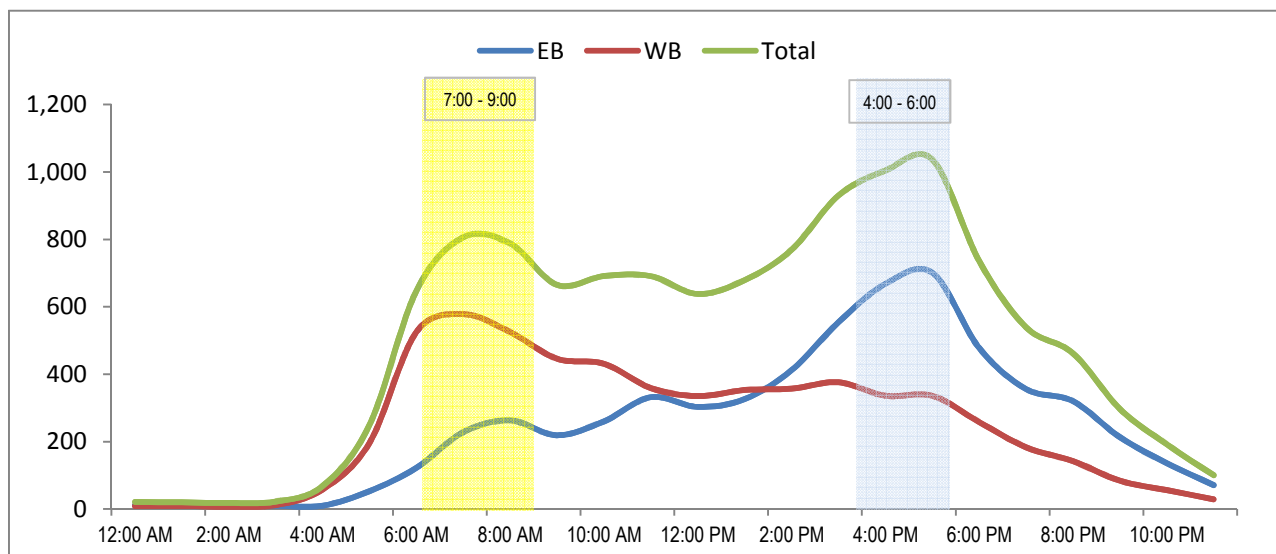
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0338

24 Hour Segment Volume						12,069				
Time		Hourly Volume				Time		Hourly Volume		
		EB	WB	Total				EB	WB	Total
12:00 AM - 1:00 AM		12	9	21		12:00 PM - 1:00 PM		303	335	638
1:00 AM - 2:00 AM		11	9	20		1:00 PM - 2:00 PM		326	353	679
2:00 AM - 3:00 AM		11	7	18		2:00 PM - 3:00 PM		412	357	769
3:00 AM - 4:00 AM		10	12	22		3:00 PM - 4:00 PM		554	376	930
4:00 AM - 5:00 AM		10	58	68		4:00 PM - 5:00 PM		668	336	1,004
5:00 AM - 6:00 AM		53	196	249		5:00 PM - 6:00 PM		701	336	1,037
6:00 AM - 7:00 AM		122	525	647		6:00 PM - 7:00 PM		478	258	736
7:00 AM - 8:00 AM		228	578	806		7:00 PM - 8:00 PM		356	183	539
8:00 AM - 9:00 AM		263	525	788		8:00 PM - 9:00 PM		320	142	462
9:00 AM - 10:00 AM		219	446	665		9:00 PM - 10:00 PM		213	84	297
10:00 AM - 11:00 AM		260	431	691	10:00 PM - 11:00 PM		136	56	192	
11:00 AM - 12:00 PM		332	359	691	11:00 PM - 12:00 AM		71	29	100	
Total		1,531	3,155	4,686	Total		4,538	2,845	7,383	

24-Hour	EB	Volume	6,069	24-Hour	WB	Volume	6,000
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24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: 5. Mountain Meadow Road, East of Champagne Boulevard

Orientation: East-West

Date of Count: Thursday, April 16, 2015

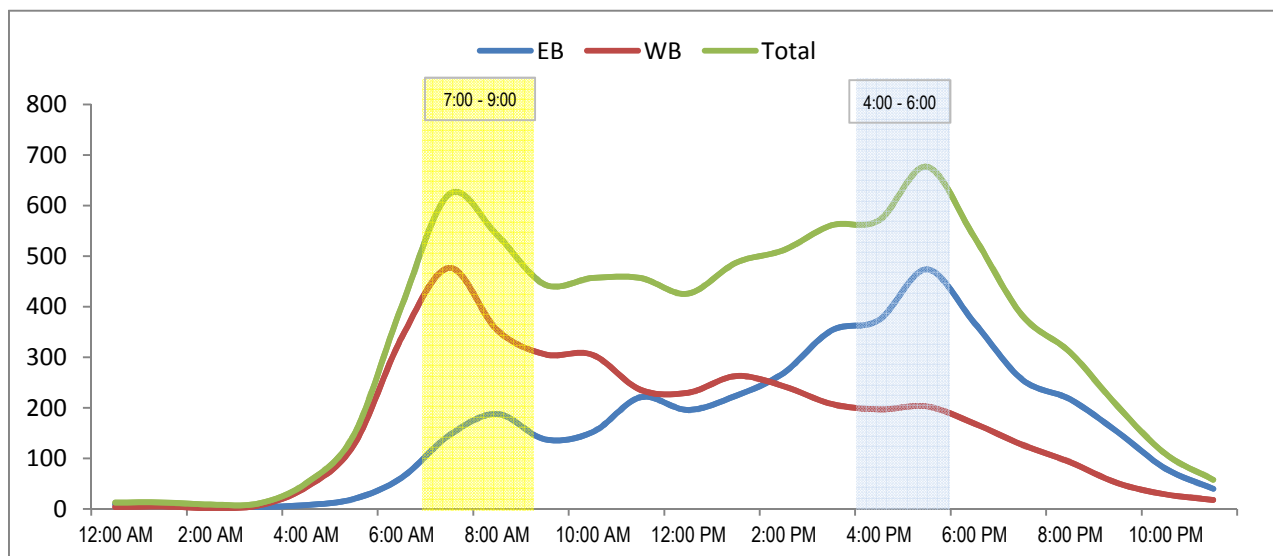
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0338

24 Hour Segment Volume						8,002				
Time		Hourly Volume				Time		Hourly Volume		
		EB	WB	Total				EB	WB	Total
12:00 AM - 1:00 AM		9	4	13		12:00 PM - 1:00 PM		196	230	426
1:00 AM - 2:00 AM		8	5	13		1:00 PM - 2:00 PM		224	263	487
2:00 AM - 3:00 AM		7	2	9		2:00 PM - 3:00 PM		269	243	512
3:00 AM - 4:00 AM		4	7	11		3:00 PM - 4:00 PM		353	208	561
4:00 AM - 5:00 AM		8	43	51		4:00 PM - 5:00 PM		374	197	571
5:00 AM - 6:00 AM		20	127	147		5:00 PM - 6:00 PM		474	203	677
6:00 AM - 7:00 AM		62	339	401		6:00 PM - 7:00 PM		368	169	537
7:00 AM - 8:00 AM		146	477	623		7:00 PM - 8:00 PM		256	127	383
8:00 AM - 9:00 AM		188	354	542		8:00 PM - 9:00 PM		217	93	310
9:00 AM - 10:00 AM		138	306	444	9:00 PM - 10:00 PM		152	51	203	
10:00 AM - 11:00 AM		152	305	457	10:00 PM - 11:00 PM		80	29	109	
11:00 AM - 12:00 PM		221	236	457	11:00 PM - 12:00 AM		40	18	58	
Total		963	2,205	3,168	Total		3,003	1,831	4,834	

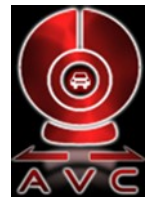
24-Hour	EB	Volume	3,966	24-Hour	WB	Volume	4,036
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24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: 6. Twin Oaks Valley Road, Solar Lane to Deer Springs Road

Orientation: North-South

Date of Count: Thursday, April 16, 2015

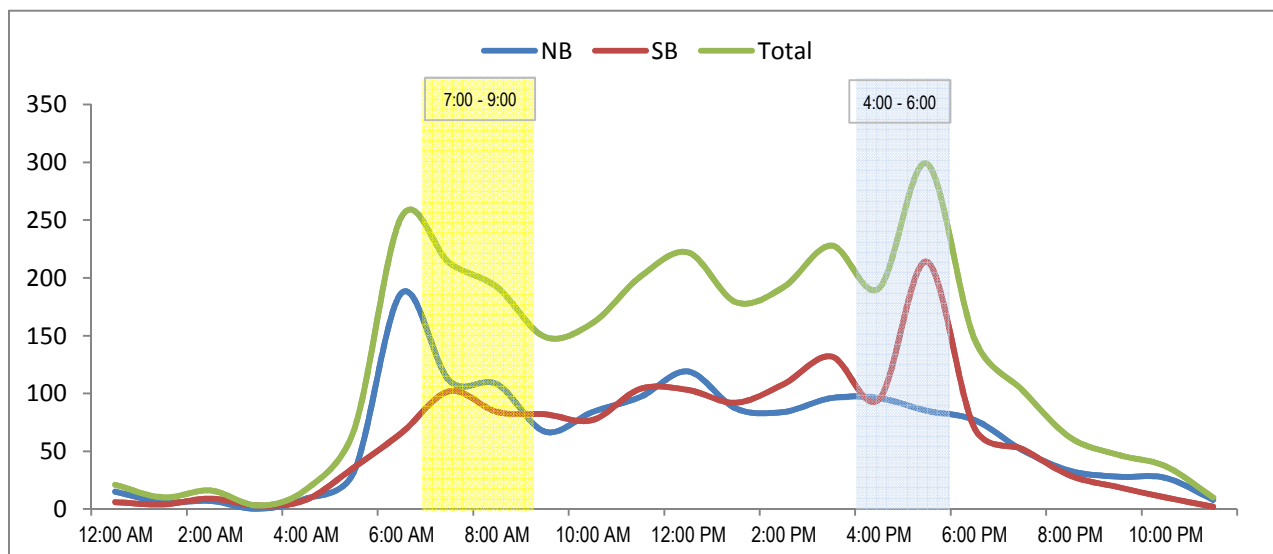
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0338

24 Hour Segment Volume						3,021				
Time		Hourly Volume				Time		Hourly Volume		
		NB	SB	Total				NB	SB	Total
12:00 AM - 1:00 AM		15	6	21		12:00 PM - 1:00 PM		119	103	222
1:00 AM - 2:00 AM		6	4	10		1:00 PM - 2:00 PM		87	92	179
2:00 AM - 3:00 AM		7	9	16		2:00 PM - 3:00 PM		84	108	192
3:00 AM - 4:00 AM		0	3	3		3:00 PM - 4:00 PM		96	132	228
4:00 AM - 5:00 AM		9	8	17		4:00 PM - 5:00 PM		96	95	191
5:00 AM - 6:00 AM		32	36	68		5:00 PM - 6:00 PM		85	214	299
6:00 AM - 7:00 AM		187	66	253		6:00 PM - 7:00 PM		77	70	147
7:00 AM - 8:00 AM		111	102	213		7:00 PM - 8:00 PM		51	52	103
8:00 AM - 9:00 AM		108	84	192		8:00 PM - 9:00 PM		33	29	62
9:00 AM - 10:00 AM		67	82	149	9:00 PM - 10:00 PM		28	19	47	
10:00 AM - 11:00 AM		84	77	161	10:00 PM - 11:00 PM		27	10	37	
11:00 AM - 12:00 PM		97	104	201	11:00 PM - 12:00 AM		8	2	10	
Total		723	581	1,304	Total		791	926	1,717	

24-Hour	NB	Volume	1,514	24-Hour	SB	Volume	1,507
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24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: 7. Twin Oaks Valley Road, Deer Springs Road to Buena Creek Road

Orientation: North-South

Date of Count: Wednesday, April 15, 2015

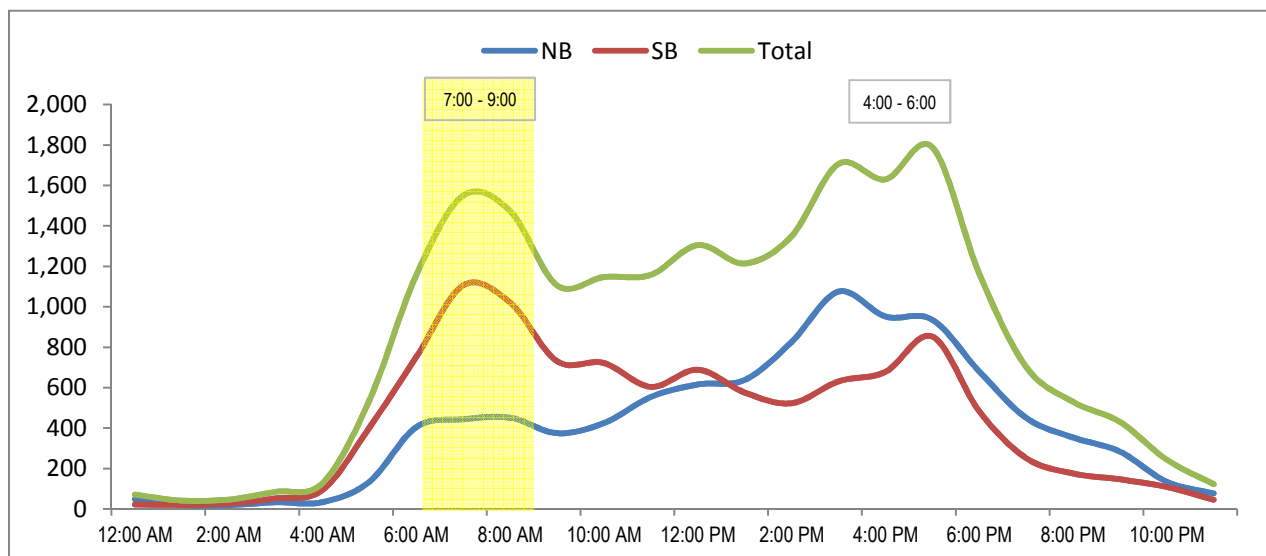
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0338

24 Hour Segment Volume						20,691				
Time		Hourly Volume				Time		Hourly Volume		
		NB	SB	Total				NB	SB	Total
12:00 AM - 1:00 AM		49	22	71		12:00 PM - 1:00 PM		616	689	1,305
1:00 AM - 2:00 AM		21	21	42		1:00 PM - 2:00 PM		638	576	1,214
2:00 AM - 3:00 AM		20	27	47		2:00 PM - 3:00 PM		826	523	1,349
3:00 AM - 4:00 AM		33	52	85		3:00 PM - 4:00 PM		1,075	631	1,706
4:00 AM - 5:00 AM		34	94	128		4:00 PM - 5:00 PM		952	678	1,630
5:00 AM - 6:00 AM		135	403	538		5:00 PM - 6:00 PM		936	853	1,789
6:00 AM - 7:00 AM		405	752	1,157		6:00 PM - 7:00 PM		681	484	1,165
7:00 AM - 8:00 AM		444	1,106	1,550		7:00 PM - 8:00 PM		451	252	703
8:00 AM - 9:00 AM		452	1,021	1,473		8:00 PM - 9:00 PM		354	176	530
9:00 AM - 10:00 AM		375	731	1,106	9:00 PM - 10:00 PM		284	147	431	
10:00 AM - 11:00 AM		425	722	1,147	10:00 PM - 11:00 PM		135	109	244	
11:00 AM - 12:00 PM		554	604	1158	11:00 PM - 12:00 AM		77	46	123	
Total		2,947	5,555	8,502	Total		7,025	5,164	12,189	

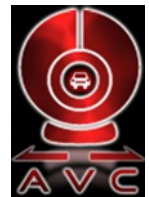
24-Hour	NB	Volume	9,972	24-Hour	SB	Volume	10,719
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24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: 8. Twin Oaks Valley Road, Buena Creek Road to Cassou Road

Orientation: North-South

Date of Count: Wednesday, April 15, 2015

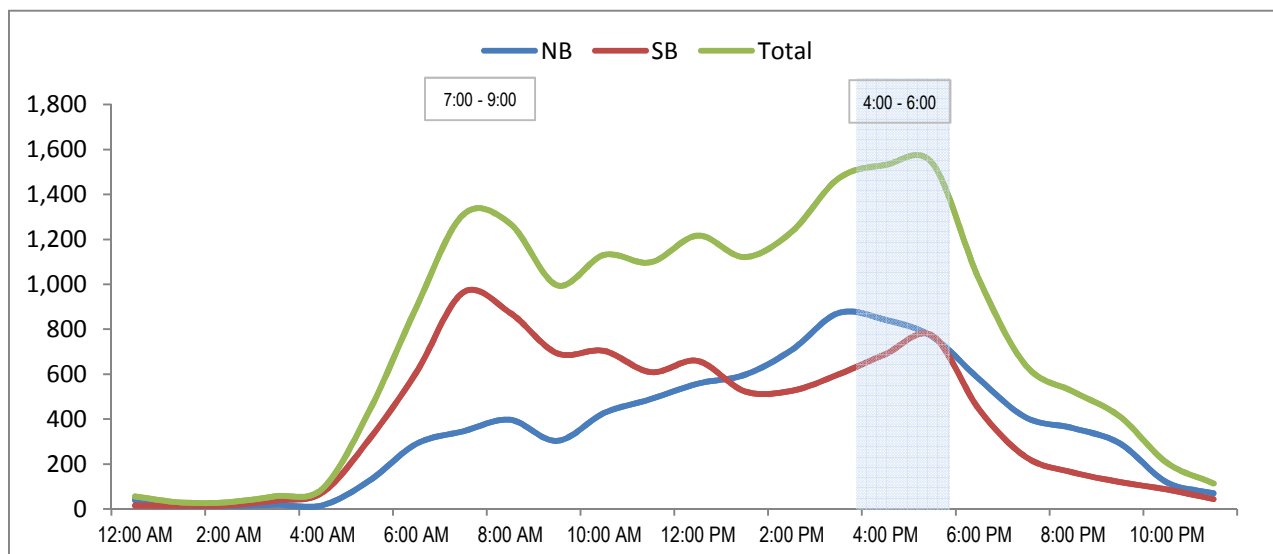
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0338

24 Hour Segment Volume						18,431				
Time		Hourly Volume				Time		Hourly Volume		
		NB	SB	Total				NB	SB	Total
12:00 AM - 1:00 AM		40	16	56		12:00 PM - 1:00 PM		558	659	1,217
1:00 AM - 2:00 AM		15	14	29		1:00 PM - 2:00 PM		597	524	1,121
2:00 AM - 3:00 AM		14	17	31		2:00 PM - 3:00 PM		707	526	1,233
3:00 AM - 4:00 AM		19	38	57		3:00 PM - 4:00 PM		872	599	1,471
4:00 AM - 5:00 AM		17	74	91		4:00 PM - 5:00 PM		842	689	1,531
5:00 AM - 6:00 AM		126	312	438		5:00 PM - 6:00 PM		767	772	1,539
6:00 AM - 7:00 AM		290	608	898		6:00 PM - 7:00 PM		578	443	1,021
7:00 AM - 8:00 AM		346	964	1,310		7:00 PM - 8:00 PM		407	231	638
8:00 AM - 9:00 AM		397	873	1,270		8:00 PM - 9:00 PM		360	163	523
9:00 AM - 10:00 AM		303	693	996	9:00 PM - 10:00 PM		292	120	412	
10:00 AM - 11:00 AM		427	704	1,131	10:00 PM - 11:00 PM		119	87	206	
11:00 AM - 12:00 PM		489	609	1098	11:00 PM - 12:00 AM		70	44	114	
Total		2,483	4,922	7,405	Total		6,169	4,857	11,026	

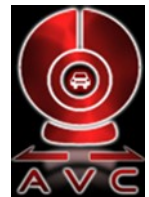
24-Hour	NB	Volume	8,652	24-Hour	SB	Volume	9,779
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24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: 9. Twin Oaks Valley Road, Cassou Road to La Cienega Road

Orientation: North-South

Date of Count: Thursday, April 16, 2015

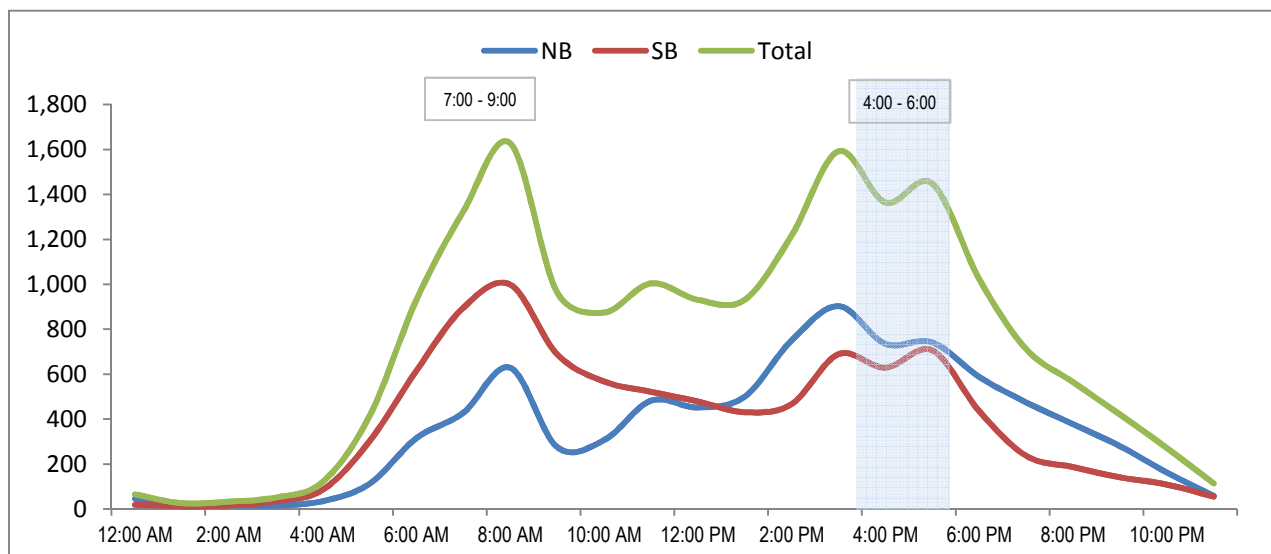
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0338

24 Hour Segment Volume						18,024				
Time		Hourly Volume				Time		Hourly Volume		
		NB	SB	Total				NB	SB	Total
12:00 AM - 1:00 AM		46	19	65		12:00 PM - 1:00 PM		452	479	931
1:00 AM - 2:00 AM		12	14	26		1:00 PM - 2:00 PM		500	431	931
2:00 AM - 3:00 AM		17	16	33		2:00 PM - 3:00 PM		750	467	1,217
3:00 AM - 4:00 AM		16	35	51		3:00 PM - 4:00 PM		903	689	1,592
4:00 AM - 5:00 AM		35	85	120		4:00 PM - 5:00 PM		735	629	1,364
5:00 AM - 6:00 AM		112	301	413		5:00 PM - 6:00 PM		742	706	1,448
6:00 AM - 7:00 AM		315	615	930		6:00 PM - 7:00 PM		588	436	1,024
7:00 AM - 8:00 AM		428	896	1,324		7:00 PM - 8:00 PM		475	237	712
8:00 AM - 9:00 AM		629	999	1,628		8:00 PM - 9:00 PM		378	187	565
9:00 AM - 10:00 AM		276	689	965		9:00 PM - 10:00 PM		280	141	421
10:00 AM - 11:00 AM		306	568	874	10:00 PM - 11:00 PM		163	109	272	
11:00 AM - 12:00 PM		482	522	1004	11:00 PM - 12:00 AM		59	55	114	
Total		2,674	4,759	7,433	Total		6,025	4,566	10,591	

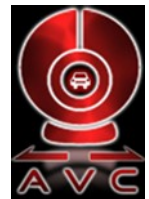
24-Hour	NB	Volume	8,699	24-Hour	SB	Volume	9,325
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24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: 10. Twin Oaks Valley Road, La Cienega Road to Windy Way

Orientation: North-South

Date of Count: Wednesday, April 15, 2015

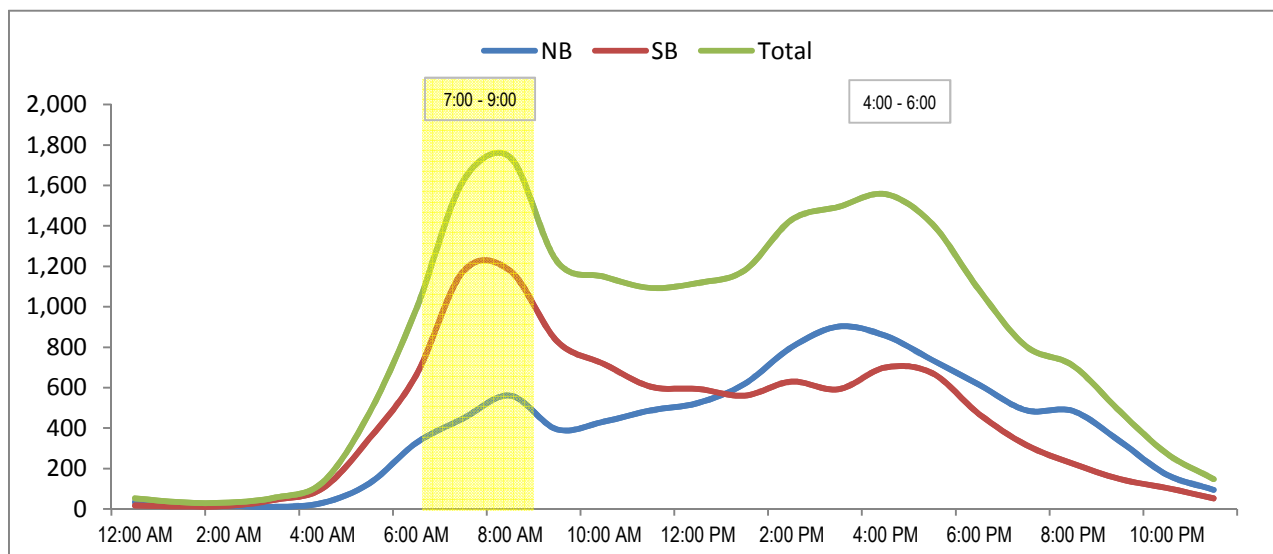
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0338

24 Hour Segment Volume						20,291				
Time		Hourly Volume				Time		Hourly Volume		
		NB	SB	Total				NB	SB	Total
12:00 AM	- 1:00 AM	35	18	53		12:00 PM	- 1:00 PM	524	594	1,118
1:00 AM	- 2:00 AM	20	13	33		1:00 PM	- 2:00 PM	619	561	1,180
2:00 AM	- 3:00 AM	16	16	32		2:00 PM	- 3:00 PM	800	630	1,430
3:00 AM	- 4:00 AM	11	46	57		3:00 PM	- 4:00 PM	902	592	1,494
4:00 AM	- 5:00 AM	30	102	132		4:00 PM	- 5:00 PM	857	700	1,557
5:00 AM	- 6:00 AM	127	349	476		5:00 PM	- 6:00 PM	737	672	1,409
6:00 AM	- 7:00 AM	327	663	990		6:00 PM	- 7:00 PM	614	469	1,083
7:00 AM	- 8:00 AM	448	1,175	1,623		7:00 PM	- 8:00 PM	488	317	805
8:00 AM	- 9:00 AM	561	1,178	1,739		8:00 PM	- 9:00 PM	485	224	709
9:00 AM	- 10:00 AM	394	830	1,224	9:00 PM	- 10:00 PM	335	148	483	
10:00 AM	- 11:00 AM	432	717	1,149	10:00 PM	- 11:00 PM	170	104	274	
11:00 AM	- 12:00 PM	488	605	1093	11:00 PM	- 12:00 AM	95	53	148	
Total		2,889	5,712	8,601	Total		6,626	5,064	11,690	

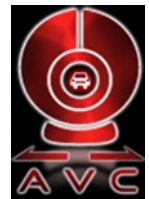
24-Hour	NB	Volume	9,515	24-Hour	SB	Volume	10,776
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24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: 11. Twin Oaks Valley Road, Windy Way to Borden Road

Orientation: North-South

Date of Count: Wednesday, April 15, 2015

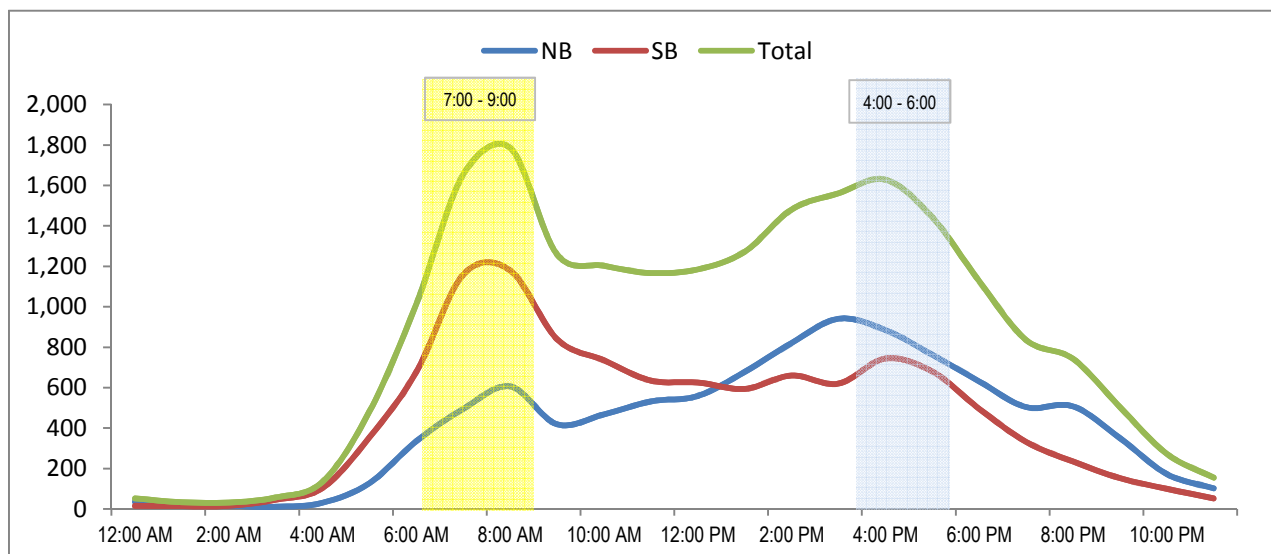
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0338

24 Hour Segment Volume						21,084				
Time		Hourly Volume				Time		Hourly Volume		
		NB	SB	Total				NB	SB	Total
12:00 AM - 1:00 AM		36	16	52		12:00 PM - 1:00 PM		559	626	1,185
1:00 AM - 2:00 AM		20	14	34		1:00 PM - 2:00 PM		678	594	1,272
2:00 AM - 3:00 AM		16	16	32		2:00 PM - 3:00 PM		821	660	1,481
3:00 AM - 4:00 AM		11	46	57		3:00 PM - 4:00 PM		941	620	1,561
4:00 AM - 5:00 AM		31	104	135		4:00 PM - 5:00 PM		885	744	1,629
5:00 AM - 6:00 AM		128	354	482		5:00 PM - 6:00 PM		763	680	1,443
6:00 AM - 7:00 AM		336	678	1,014		6:00 PM - 7:00 PM		631	496	1,127
7:00 AM - 8:00 AM		495	1,159	1,654		7:00 PM - 8:00 PM		504	332	836
8:00 AM - 9:00 AM		606	1,180	1,786		8:00 PM - 9:00 PM		508	235	743
9:00 AM - 10:00 AM		419	840	1,259	9:00 PM - 10:00 PM		351	153	504	
10:00 AM - 11:00 AM		468	735	1,203	10:00 PM - 11:00 PM		173	100	273	
11:00 AM - 12:00 PM		532	635	1167	11:00 PM - 12:00 AM		102	53	155	
Total		3,098	5,777	8,875	Total		6,916	5,293	12,209	

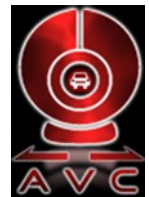
24-Hour	NB	Volume	10,014	24-Hour	SB	Volume	11,070
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24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: 12. Twin Oaks Valley Road, Borden Road to Richmar Avenue

Orientation: North-South

Date of Count: Thursday, April 16, 2015

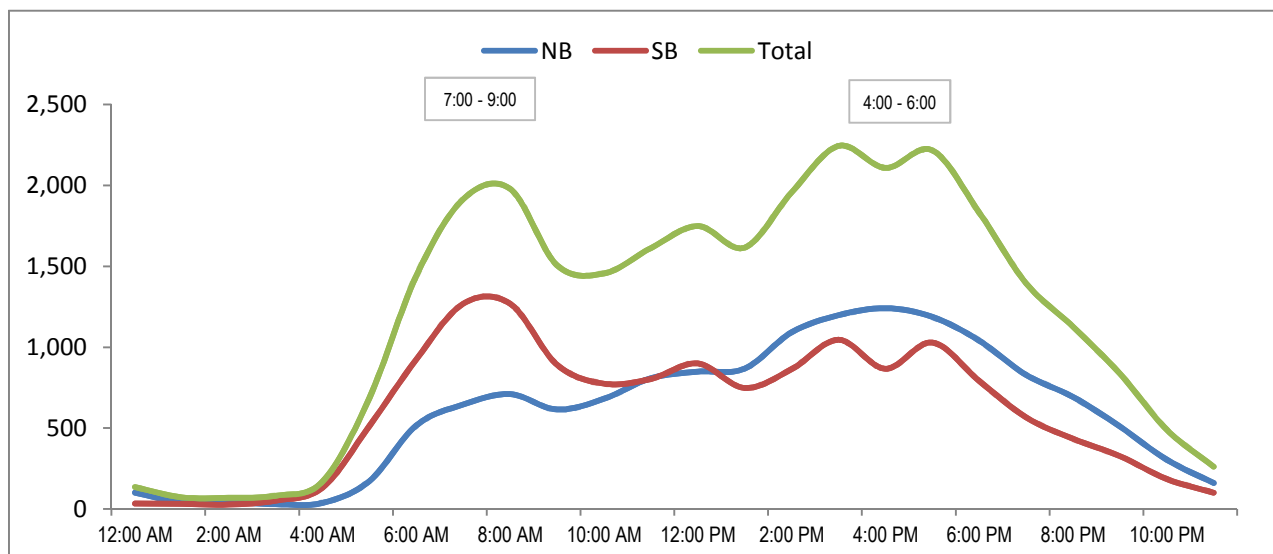
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0338

24 Hour Segment Volume						28,964				
Time		Hourly Volume				Time		Hourly Volume		
		NB	SB	Total				NB	SB	Total
12:00 AM - 1:00 AM		101	35	136		12:00 PM - 1:00 PM		849	900	1,749
1:00 AM - 2:00 AM		40	32	72		1:00 PM - 2:00 PM		868	748	1,616
2:00 AM - 3:00 AM		42	28	70		2:00 PM - 3:00 PM		1,092	864	1,956
3:00 AM - 4:00 AM		30	52	82		3:00 PM - 4:00 PM		1,198	1,046	2,244
4:00 AM - 5:00 AM		38	132	170		4:00 PM - 5:00 PM		1,241	867	2,108
5:00 AM - 6:00 AM		173	514	687		5:00 PM - 6:00 PM		1,188	1,029	2,217
6:00 AM - 7:00 AM		517	925	1,442		6:00 PM - 7:00 PM		1,041	792	1,833
7:00 AM - 8:00 AM		646	1,269	1,915		7:00 PM - 8:00 PM		829	567	1,396
8:00 AM - 9:00 AM		710	1,269	1,979		8:00 PM - 9:00 PM		693	434	1,127
9:00 AM - 10:00 AM		615	892	1,507	9:00 PM - 10:00 PM		510	327	837	
10:00 AM - 11:00 AM		681	775	1,456	10:00 PM - 11:00 PM		305	185	490	
11:00 AM - 12:00 PM		809	804	1613	11:00 PM - 12:00 AM		161	101	262	
Total		4,402	6,727	11,129	Total		9,975	7,860	17,835	

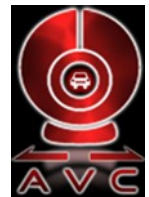
24-Hour	NB	Volume	14,377	24-Hour	SB	Volume	14,587
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24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: 13. Twin Oaks Valley Road, Richmar Avenue to San Marcos Boulevard

Orientation: North-South

Date of Count: Wednesday, April 15, 2015

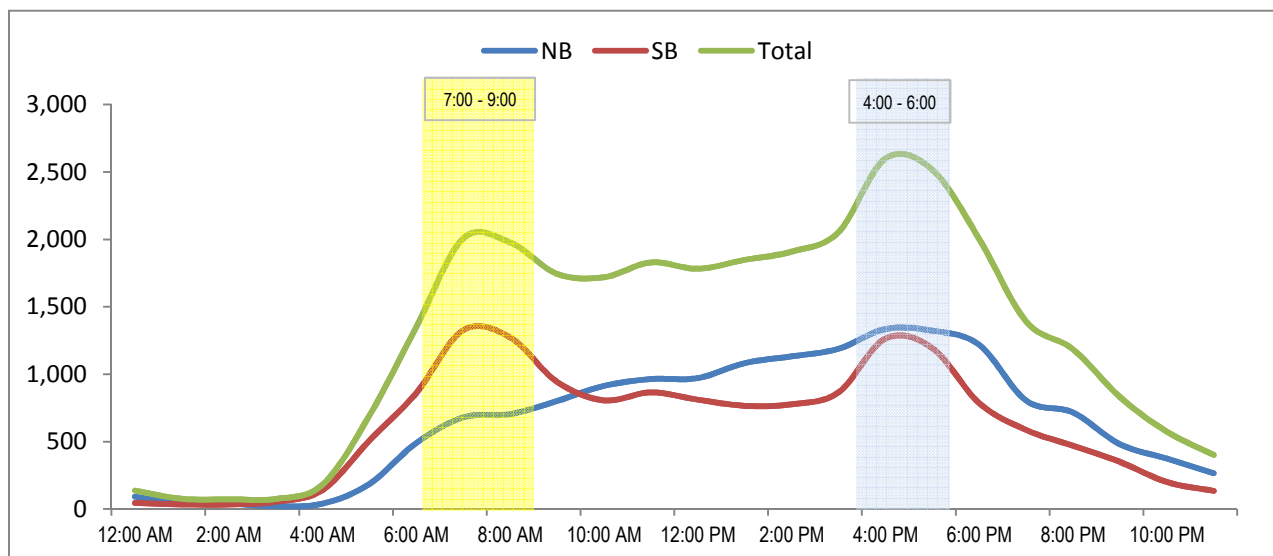
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0338

24 Hour Segment Volume						30,958				
Time		Hourly Volume				Time		Hourly Volume		
		NB	SB	Total				NB	SB	Total
12:00 AM - 1:00 AM		92	45	137		12:00 PM - 1:00 PM		971	811	1,782
1:00 AM - 2:00 AM		41	35	76		1:00 PM - 2:00 PM		1,082	766	1,848
2:00 AM - 3:00 AM		40	33	73		2:00 PM - 3:00 PM		1,132	777	1,909
3:00 AM - 4:00 AM		21	54	75		3:00 PM - 4:00 PM		1,188	865	2,053
4:00 AM - 5:00 AM		40	141	181		4:00 PM - 5:00 PM		1,335	1,264	2,599
5:00 AM - 6:00 AM		186	508	694		5:00 PM - 6:00 PM		1,323	1,194	2,517
6:00 AM - 7:00 AM		490	861	1,351		6:00 PM - 7:00 PM		1,218	786	2,004
7:00 AM - 8:00 AM		680	1,327	2,007		7:00 PM - 8:00 PM		805	587	1,392
8:00 AM - 9:00 AM		704	1,273	1,977		8:00 PM - 9:00 PM		716	469	1,185
9:00 AM - 10:00 AM		801	943	1,744	9:00 PM - 10:00 PM		481	350	831	
10:00 AM - 11:00 AM		913	806	1,719	10:00 PM - 11:00 PM		374	200	574	
11:00 AM - 12:00 PM		964	865	1829	11:00 PM - 12:00 AM		266	135	401	
Total		4,972	6,891	11,863	Total		10,891	8,204	19,095	

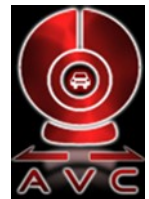
24-Hour	NB	Volume	15,863	24-Hour	SB	Volume	15,095
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24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: 14. Twin Oaks Valley Road, San Marcos Boulevard to SR 78 WB Ramps

Orientation: North-South

Date of Count: Wednesday, April 15, 2015

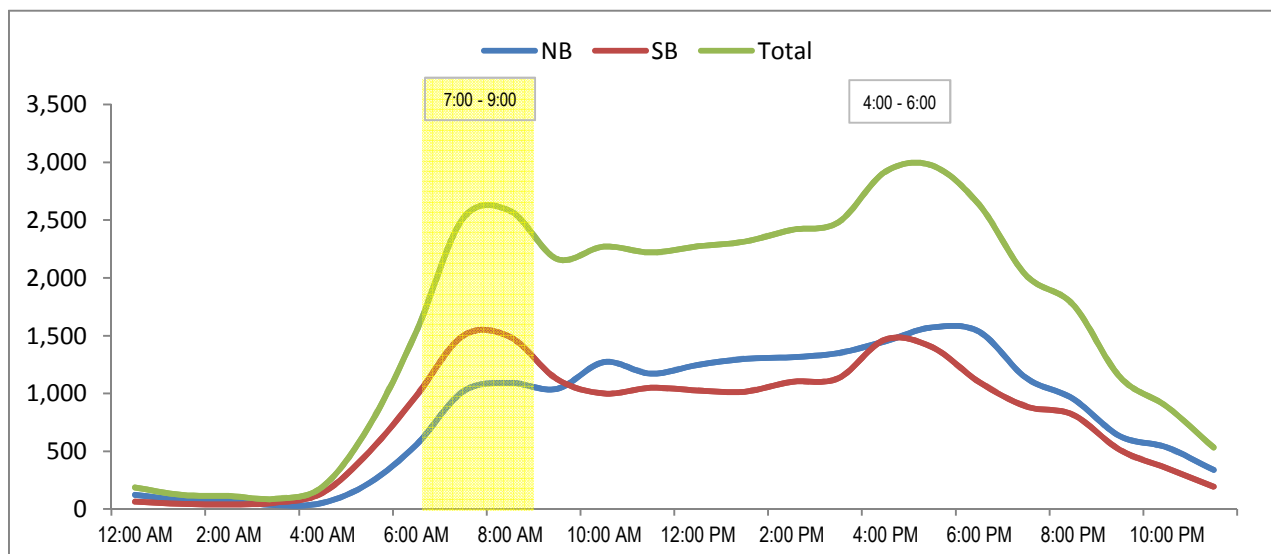
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0338

24 Hour Segment Volume						39,078				
Time		Hourly Volume				Time		Hourly Volume		
		NB	SB	Total				NB	SB	Total
12:00 AM - 1:00 AM		123	64	187		12:00 PM - 1:00 PM		1,247	1,026	2,273
1:00 AM - 2:00 AM		78	44	122		1:00 PM - 2:00 PM		1,299	1,015	2,314
2:00 AM - 3:00 AM		74	39	113		2:00 PM - 3:00 PM		1,314	1,101	2,415
3:00 AM - 4:00 AM		33	55	88		3:00 PM - 4:00 PM		1,350	1,132	2,482
4:00 AM - 5:00 AM		53	140	193		4:00 PM - 5:00 PM		1,452	1,467	2,919
5:00 AM - 6:00 AM		226	497	723		5:00 PM - 6:00 PM		1,572	1,400	2,972
6:00 AM - 7:00 AM		557	979	1,536		6:00 PM - 7:00 PM		1,534	1,099	2,633
7:00 AM - 8:00 AM		1,018	1,500	2,518		7:00 PM - 8:00 PM		1,135	888	2,023
8:00 AM - 9:00 AM		1,091	1,489	2,580		8:00 PM - 9:00 PM		954	816	1,770
9:00 AM - 10:00 AM		1,040	1,124	2,164	9:00 PM - 10:00 PM		631	512	1,143	
10:00 AM - 11:00 AM		1,271	1,000	2,271	10:00 PM - 11:00 PM		534	353	887	
11:00 AM - 12:00 PM		1,171	1,049	2220	11:00 PM - 12:00 AM		338	194	532	
Total		6,735	7,980	14,715	Total		13,360	11,003	24,363	

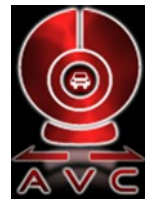
24-Hour	NB	Volume	20,095	24-Hour	SB	Volume	18,983
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24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: 15. Buena Creek Road, S. Santa Fe Avenue to Monte Vista Drive

Orientation: North-South

Date of Count: Wednesday, April 15, 2015

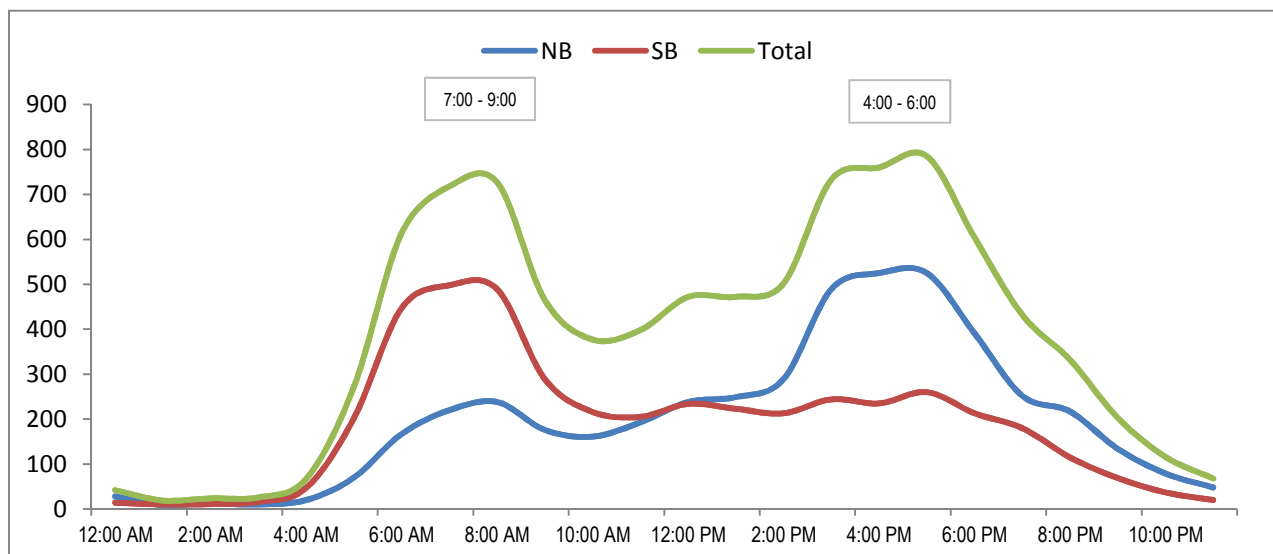
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0338

24 Hour Segment Volume						9,228				
Time		Hourly Volume				Time		Hourly Volume		
		NB	SB	Total				NB	SB	Total
12:00 AM - 1:00 AM		28	14	42		12:00 PM - 1:00 PM		238	234	472
1:00 AM - 2:00 AM		9	10	19		1:00 PM - 2:00 PM		249	223	472
2:00 AM - 3:00 AM		13	11	24		2:00 PM - 3:00 PM		289	213	502
3:00 AM - 4:00 AM		10	16	26		3:00 PM - 4:00 PM		489	244	733
4:00 AM - 5:00 AM		20	47	67		4:00 PM - 5:00 PM		525	235	760
5:00 AM - 6:00 AM		70	202	272		5:00 PM - 6:00 PM		525	260	785
6:00 AM - 7:00 AM		167	447	614		6:00 PM - 7:00 PM		391	213	604
7:00 AM - 8:00 AM		220	498	718		7:00 PM - 8:00 PM		252	180	432
8:00 AM - 9:00 AM		238	489	727		8:00 PM - 9:00 PM		217	115	332
9:00 AM - 10:00 AM		176	289	465	9:00 PM - 10:00 PM		134	69	203	
10:00 AM - 11:00 AM		161	216	377	10:00 PM - 11:00 PM		79	37	116	
11:00 AM - 12:00 PM		193	205	398	11:00 PM - 12:00 AM		48	20	68	
Total		1,305	2,444	3,749	Total		3,436	2,043	5,479	

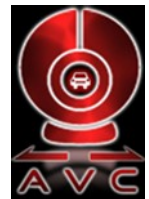
24-Hour	NB	Volume	4,741	24-Hour	SB	Volume	4,487
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24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: 16. Buena Creek Road, Monte Vista Drive to Deer Springs Road

Orientation: East-West

Date of Count: Wednesday, April 15, 2015

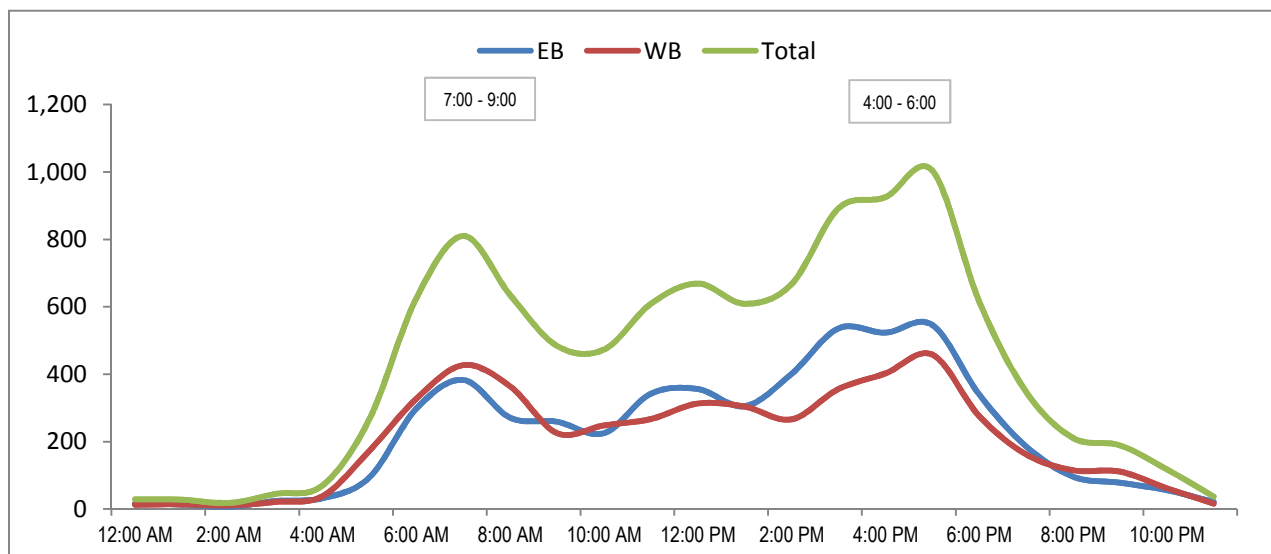
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0338

24 Hour Segment Volume						10,378				
Time		Hourly Volume				Time		Hourly Volume		
		EB	WB	Total				EB	WB	Total
12:00 AM - 1:00 AM		16	13	29		12:00 PM - 1:00 PM		356	313	669
1:00 AM - 2:00 AM		14	14	28		1:00 PM - 2:00 PM		305	304	609
2:00 AM - 3:00 AM		7	11	18		2:00 PM - 3:00 PM		401	266	667
3:00 AM - 4:00 AM		24	21	45		3:00 PM - 4:00 PM		536	356	892
4:00 AM - 5:00 AM		32	38	70		4:00 PM - 5:00 PM		523	402	925
5:00 AM - 6:00 AM		94	173	267		5:00 PM - 6:00 PM		546	458	1,004
6:00 AM - 7:00 AM		298	327	625		6:00 PM - 7:00 PM		340	276	616
7:00 AM - 8:00 AM		383	427	810		7:00 PM - 8:00 PM		186	162	348
8:00 AM - 9:00 AM		271	364	635		8:00 PM - 9:00 PM		96	115	211
9:00 AM - 10:00 AM		259	225	484		9:00 PM - 10:00 PM		78	111	189
10:00 AM - 11:00 AM		225	248	473	10:00 PM - 11:00 PM		56	62	118	
11:00 AM - 12:00 PM		342	267	609	11:00 PM - 12:00 AM		21	16	37	
Total		1,965	2,128	4,093	Total		3,444	2,841	6,285	

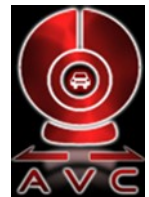
24-Hour	EB	Volume	5,409	24-Hour	WB	Volume	4,969
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24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: 17. Monte Vista Drive, Foothills Drive to Buena Creek Road

Orientation: East-West

Date of Count: Wednesday, April 15, 2015

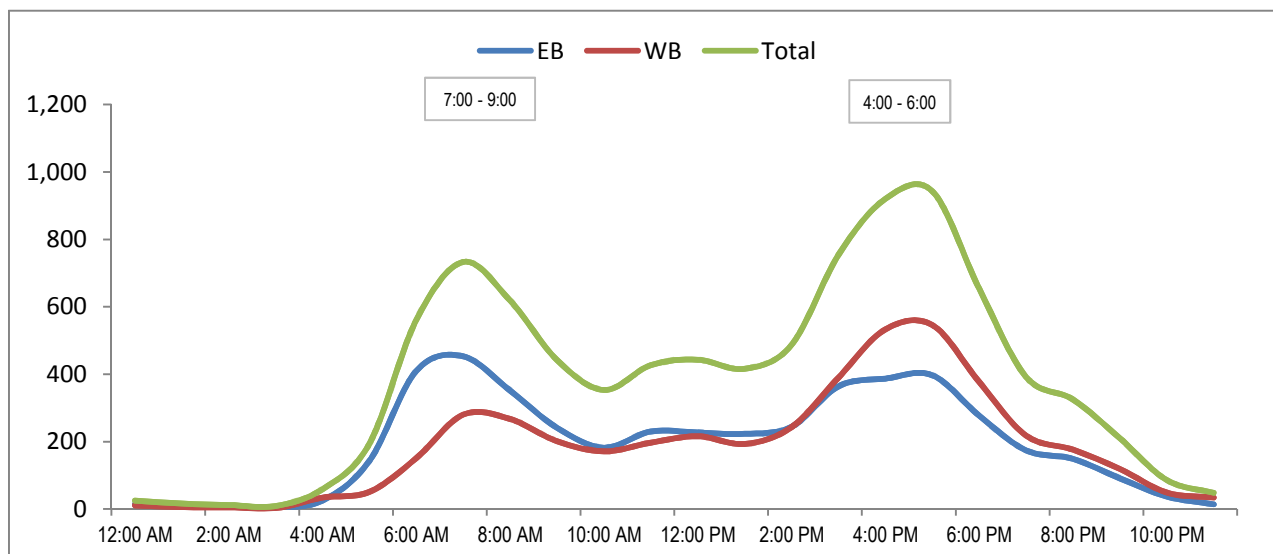
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0338

24 Hour Segment Volume						9,127				
Time		Hourly Volume				Time		Hourly Volume		
		EB	WB	Total				EB	WB	Total
12:00 AM - 1:00 AM		14	11	25		12:00 PM - 1:00 PM		227	216	443
1:00 AM - 2:00 AM		10	6	16		1:00 PM - 2:00 PM		223	193	416
2:00 AM - 3:00 AM		7	5	12		2:00 PM - 3:00 PM		244	243	487
3:00 AM - 4:00 AM		6	3	9		3:00 PM - 4:00 PM		364	390	754
4:00 AM - 5:00 AM		25	34	59		4:00 PM - 5:00 PM		387	533	920
5:00 AM - 6:00 AM		143	51	194		5:00 PM - 6:00 PM		397	546	943
6:00 AM - 7:00 AM		410	151	561		6:00 PM - 7:00 PM		277	377	654
7:00 AM - 8:00 AM		453	280	733		7:00 PM - 8:00 PM		174	218	392
8:00 AM - 9:00 AM		351	267	618		8:00 PM - 9:00 PM		149	176	325
9:00 AM - 10:00 AM		241	201	442	9:00 PM - 10:00 PM		91	119	210	
10:00 AM - 11:00 AM		182	171	353	10:00 PM - 11:00 PM		37	49	86	
11:00 AM - 12:00 PM		230	197	427	11:00 PM - 12:00 AM		14	34	48	
Total		2,072	1,377	3,449	Total		2,584	3,094	5,678	

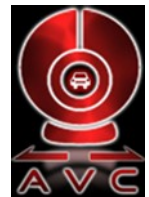
24-Hour	EB	Volume	4,656	24-Hour	WB	Volume	4,471
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24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: 18. Mesa Rock Road, Deer Springs Road to N. Centre City Parkway

Orientation: North-South

Date of Count: Thursday, April 16, 2015

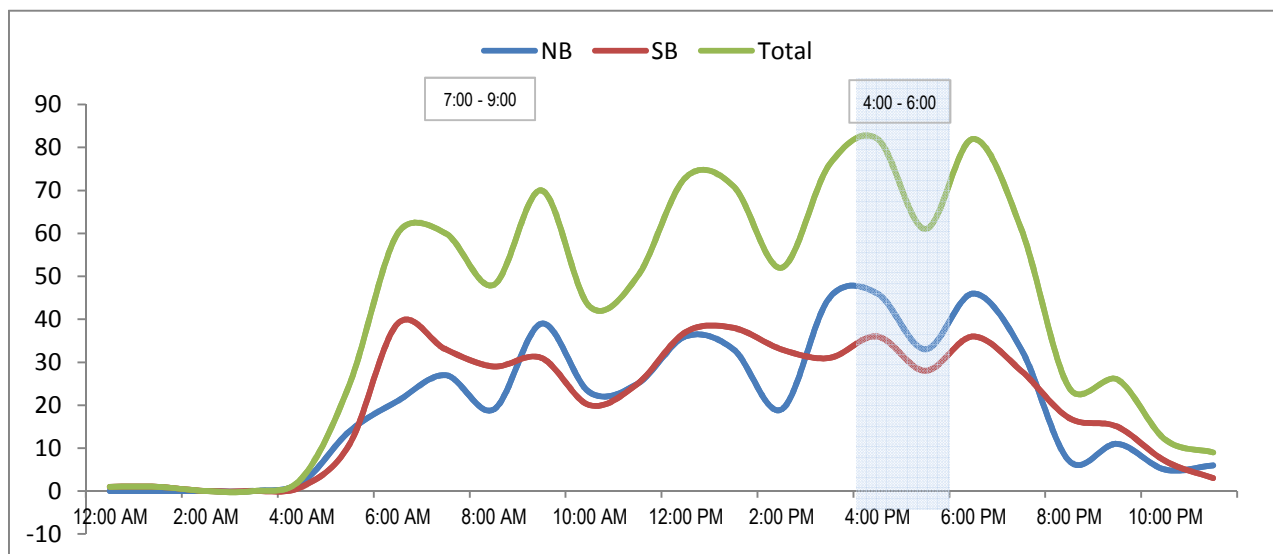
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0338

24 Hour Segment Volume						990				
Time		Hourly Volume				Time		Hourly Volume		
		NB	SB	Total				NB	SB	Total
12:00 AM - 1:00 AM		0	1	1		12:00 PM - 1:00 PM		36	37	73
1:00 AM - 2:00 AM		0	1	1		1:00 PM - 2:00 PM		33	38	71
2:00 AM - 3:00 AM		0	0	0		2:00 PM - 3:00 PM		19	33	52
3:00 AM - 4:00 AM		0	0	0		3:00 PM - 4:00 PM		45	31	76
4:00 AM - 5:00 AM		2	1	3		4:00 PM - 5:00 PM		46	36	82
5:00 AM - 6:00 AM		14	11	25		5:00 PM - 6:00 PM		33	28	61
6:00 AM - 7:00 AM		21	39	60		6:00 PM - 7:00 PM		46	36	82
7:00 AM - 8:00 AM		27	33	60		7:00 PM - 8:00 PM		33	28	61
8:00 AM - 9:00 AM		19	29	48		8:00 PM - 9:00 PM		7	17	24
9:00 AM - 10:00 AM		39	31	70		9:00 PM - 10:00 PM		11	15	26
10:00 AM - 11:00 AM		23	20	43	10:00 PM - 11:00 PM		5	7	12	
11:00 AM - 12:00 PM		25	25	50	11:00 PM - 12:00 AM		6	3	9	
Total		170	191	361	Total		320	309	629	

24-Hour	NB	Volume	490	24-Hour	SB	Volume	500
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24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: 19. Gopher Canyon Road, Little Gopher Canyon Road to I-15 SB Ramps

Orientation: East-West

Date of Count: Thursday, April 16, 2015

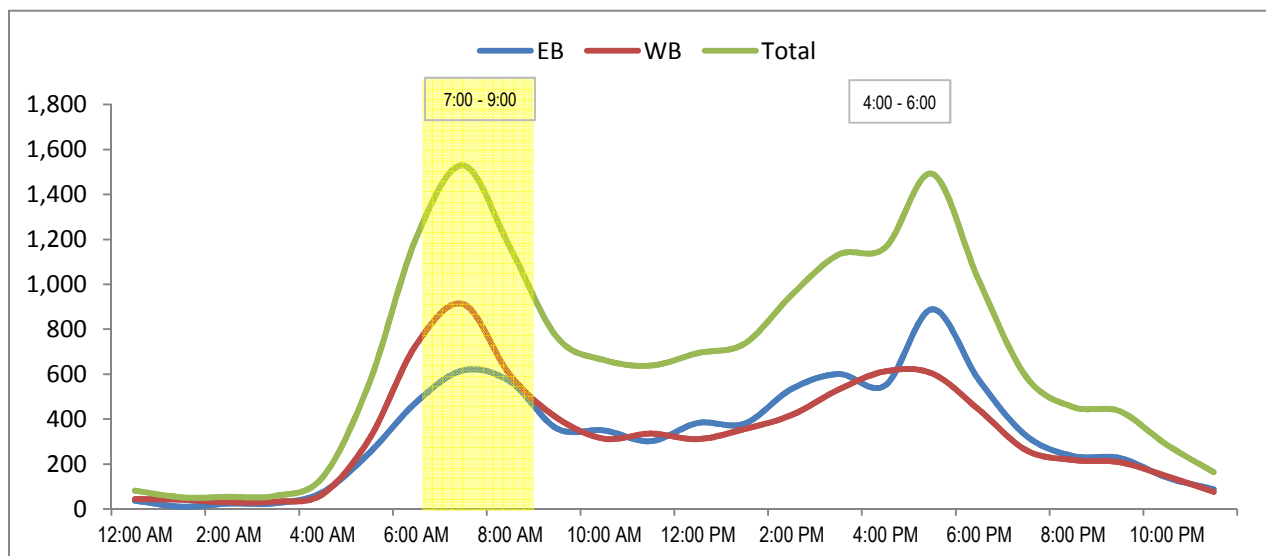
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0338

24 Hour Segment Volume						16,028				
Time		Hourly Volume				Time		Hourly Volume		
		EB	WB	Total				EB	WB	Total
12:00 AM - 1:00 AM		37	45	82		12:00 PM - 1:00 PM		383	311	694
1:00 AM - 2:00 AM		11	41	52		1:00 PM - 2:00 PM		380	356	736
2:00 AM - 3:00 AM		24	30	54		2:00 PM - 3:00 PM		534	418	952
3:00 AM - 4:00 AM		26	33	59		3:00 PM - 4:00 PM		601	531	1,132
4:00 AM - 5:00 AM		75	66	141		4:00 PM - 5:00 PM		551	613	1,164
5:00 AM - 6:00 AM		250	313	563		5:00 PM - 6:00 PM		889	603	1,492
6:00 AM - 7:00 AM		476	732	1,208		6:00 PM - 7:00 PM		573	441	1,014
7:00 AM - 8:00 AM		617	912	1,529		7:00 PM - 8:00 PM		327	262	589
8:00 AM - 9:00 AM		567	596	1,163		8:00 PM - 9:00 PM		236	218	454
9:00 AM - 10:00 AM		358	406	764	9:00 PM - 10:00 PM		227	208	435	
10:00 AM - 11:00 AM		350	313	663	10:00 PM - 11:00 PM		140	146	286	
11:00 AM - 12:00 PM		302	336	638	11:00 PM - 12:00 AM		88	76	164	
Total		3,093	3,823	6,916	Total		4,929	4,183	9,112	

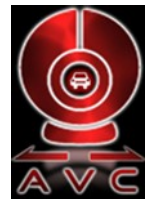
24-Hour	EB	Volume	8,022	24-Hour	WB	Volume	8,006
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24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: 20. Gopher Canyon Road, I-15 NB Ramps to Champagne Boulevard

Orientation: East-West

Date of Count: Thursday, April 16, 2015

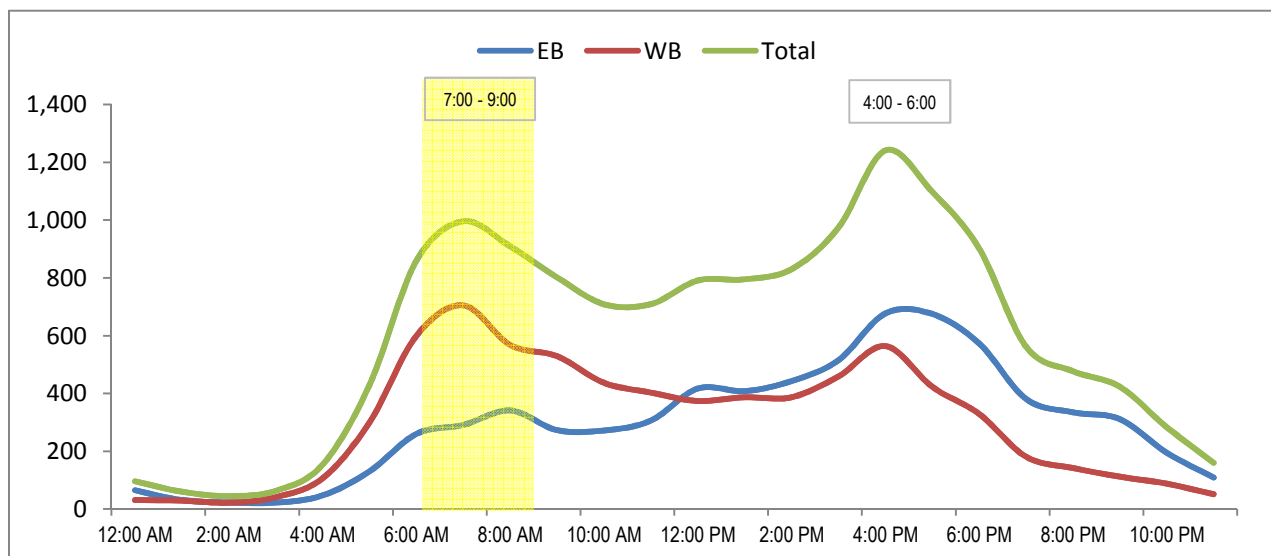
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0338

24 Hour Segment Volume						14,366				
Time		Hourly Volume				Time		Hourly Volume		
		EB	WB	Total				EB	WB	Total
12:00 AM	- 1:00 AM	65	31	96		12:00 PM	- 1:00 PM	417	374	791
1:00 AM	- 2:00 AM	31	29	60		1:00 PM	- 2:00 PM	408	387	795
2:00 AM	- 3:00 AM	23	22	45		2:00 PM	- 3:00 PM	443	387	830
3:00 AM	- 4:00 AM	22	41	63		3:00 PM	- 4:00 PM	515	459	974
4:00 AM	- 5:00 AM	47	106	153		4:00 PM	- 5:00 PM	677	564	1,241
5:00 AM	- 6:00 AM	130	299	429		5:00 PM	- 6:00 PM	675	423	1,098
6:00 AM	- 7:00 AM	260	599	859		6:00 PM	- 7:00 PM	573	329	902
7:00 AM	- 8:00 AM	291	705	996		7:00 PM	- 8:00 PM	381	181	562
8:00 AM	- 9:00 AM	341	568	909		8:00 PM	- 9:00 PM	335	142	477
9:00 AM	- 10:00 AM	273	529	802		9:00 PM	- 10:00 PM	311	112	423
10:00 AM	- 11:00 AM	272	437	709	10:00 PM	- 11:00 PM	195	88	283	
11:00 AM	- 12:00 PM	306	403	709	11:00 PM	- 12:00 AM	109	51	160	
Total		2,061	3,769	5,830	Total		5,039	3,497	8,536	

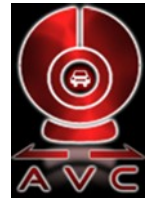
24-Hour	EB	Volume	7,100	24-Hour	WB	Volume	7,266
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24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: 21. Champagne Boulevard, Old Castle Road to Lawrence Welk Drive

Orientation: North-South

Date of Count: Thursday, April 16, 2015

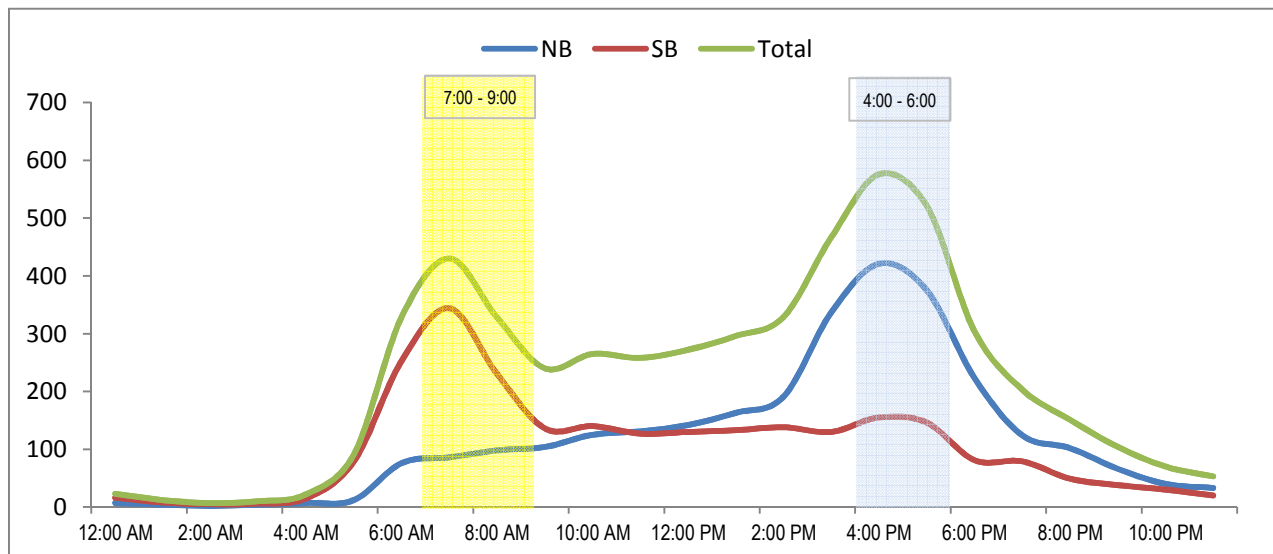
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0338

24 Hour Segment Volume						5,361				
Time		Hourly Volume				Time		Hourly Volume		
		NB	SB	Total				NB	SB	Total
12:00 AM - 1:00 AM		7	16	23		12:00 PM - 1:00 PM		142	130	272
1:00 AM - 2:00 AM		4	8	12		1:00 PM - 2:00 PM		163	133	296
2:00 AM - 3:00 AM		2	5	7		2:00 PM - 3:00 PM		191	138	329
3:00 AM - 4:00 AM		4	6	10		3:00 PM - 4:00 PM		337	130	467
4:00 AM - 5:00 AM		7	15	22		4:00 PM - 5:00 PM		421	155	576
5:00 AM - 6:00 AM		12	79	91		5:00 PM - 6:00 PM		375	146	521
6:00 AM - 7:00 AM		76	253	329		6:00 PM - 7:00 PM		223	81	304
7:00 AM - 8:00 AM		86	344	430		7:00 PM - 8:00 PM		124	79	203
8:00 AM - 9:00 AM		98	230	328		8:00 PM - 9:00 PM		102	49	151
9:00 AM - 10:00 AM		104	136	240		9:00 PM - 10:00 PM		66	38	104
10:00 AM - 11:00 AM		125	140	265	10:00 PM - 11:00 PM		40	30	70	
11:00 AM - 12:00 PM		131	127	258	11:00 PM - 12:00 AM		33	20	53	
Total		656	1,359	2,015	Total		2,217	1,129	3,346	

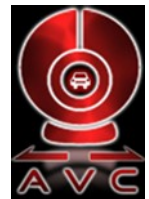
24-Hour	NB	Volume	2,873	24-Hour	SB	Volume	2,488
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24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: 22. Champagne Boulevard, Lawrence Welk Drive to Mountain Meadow Road

Orientation: North-South

Date of Count: Thursday, April 16, 2015

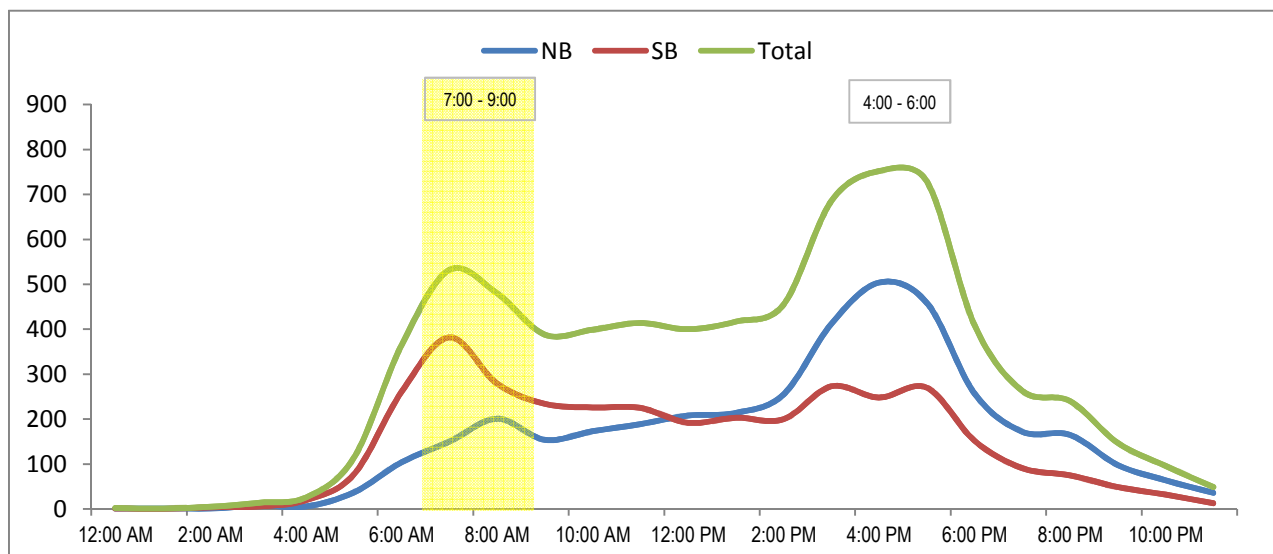
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0338

24 Hour Segment Volume						7,382				
Time		Hourly Volume				Time		Hourly Volume		
		NB	SB	Total				NB	SB	Total
12:00 AM - 1:00 AM		1	1	2		12:00 PM - 1:00 PM		208	192	400
1:00 AM - 2:00 AM		1	0	1		1:00 PM - 2:00 PM		214	203	417
2:00 AM - 3:00 AM		1	4	5		2:00 PM - 3:00 PM		255	200	455
3:00 AM - 4:00 AM		8	6	14		3:00 PM - 4:00 PM		412	273	685
4:00 AM - 5:00 AM		6	20	26		4:00 PM - 5:00 PM		504	248	752
5:00 AM - 6:00 AM		37	77	114		5:00 PM - 6:00 PM		459	270	729
6:00 AM - 7:00 AM		104	261	365		6:00 PM - 7:00 PM		257	152	409
7:00 AM - 8:00 AM		150	382	532		7:00 PM - 8:00 PM		172	91	263
8:00 AM - 9:00 AM		201	279	480		8:00 PM - 9:00 PM		165	75	240
9:00 AM - 10:00 AM		154	234	388	9:00 PM - 10:00 PM		98	49	147	
10:00 AM - 11:00 AM		173	226	399	10:00 PM - 11:00 PM		64	32	96	
11:00 AM - 12:00 PM		189	225	414	11:00 PM - 12:00 AM		36	13	49	
Total		1,025	1,715	2,740	Total		2,844	1,798	4,642	

24-Hour	NB	Volume	3,869	24-Hour	SB	Volume	3,513
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24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: 23. North Centre City Parkway, Mountain Meadow Road to I-15 Ramps

Orientation: North-South

Date of Count: Thursday, April 16, 2015

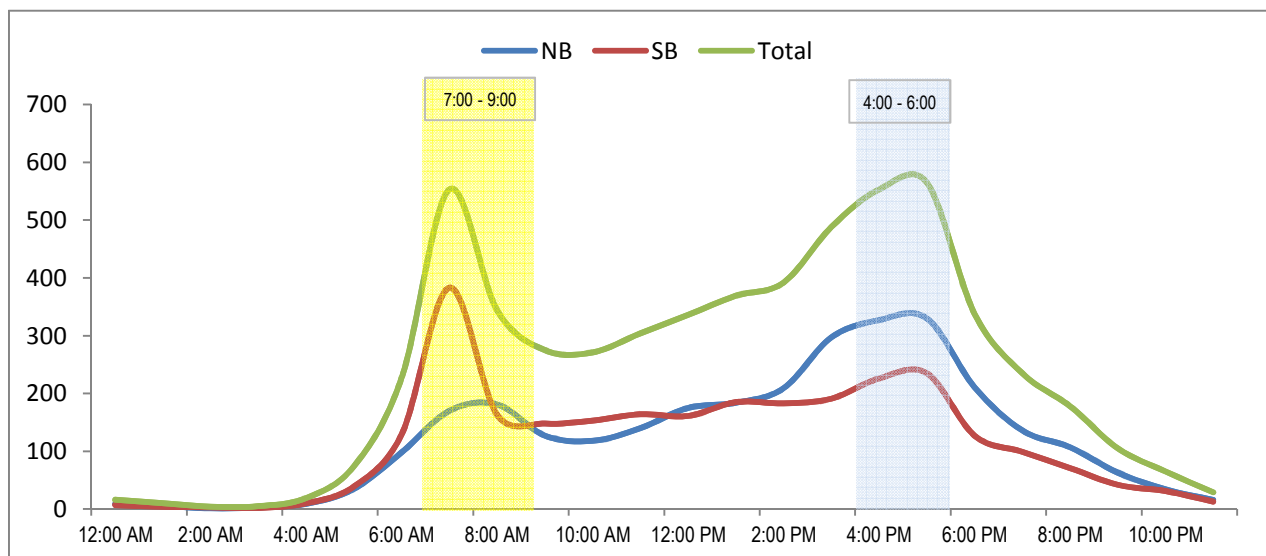
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0338

24 Hour Segment Volume							5,755			
Time		Hourly Volume				Time		Hourly Volume		
		NB	SB	Total				NB	SB	Total
12:00 AM - 1:00 AM		9	7	16		12:00 PM - 1:00 PM		175	161	336
1:00 AM - 2:00 AM		6	4	10		1:00 PM - 2:00 PM		184	185	369
2:00 AM - 3:00 AM		1	3	4		2:00 PM - 3:00 PM		209	183	392
3:00 AM - 4:00 AM		3	2	5		3:00 PM - 4:00 PM		297	191	488
4:00 AM - 5:00 AM		9	10	19		4:00 PM - 5:00 PM		327	226	553
5:00 AM - 6:00 AM		35	39	74		5:00 PM - 6:00 PM		330	235	565
6:00 AM - 7:00 AM		98	129	227		6:00 PM - 7:00 PM		211	127	338
7:00 AM - 8:00 AM		170	383	553		7:00 PM - 8:00 PM		136	99	235
8:00 AM - 9:00 AM		181	163	344		8:00 PM - 9:00 PM		107	71	178
9:00 AM - 10:00 AM		127	148	275	9:00 PM - 10:00 PM		63	42	105	
10:00 AM - 11:00 AM		118	153	271	10:00 PM - 11:00 PM		34	31	65	
11:00 AM - 12:00 PM		140	164	304	11:00 PM - 12:00 AM		16	13	29	
Total		897	1,205	2,102	Total		2,089	1,564	3,653	

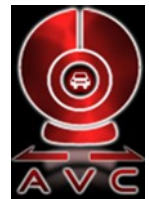
24-Hour	NB	Volume	2,986	24-Hour	SB	Volume	2,769
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24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: 24. North Centre City Parkway, I-15 Ramps to Country Club Lane

Orientation: North-South

Date of Count: Wednesday, April 15, 2015

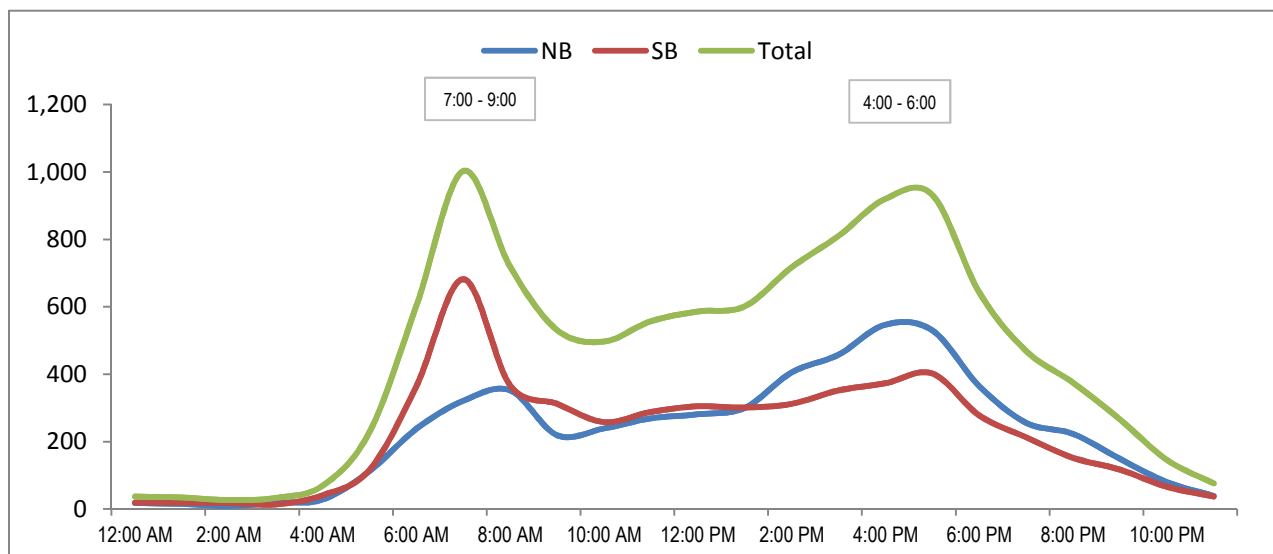
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0338

24 Hour Segment Volume						10,878				
Time		Hourly Volume				Time		Hourly Volume		
		NB	SB	Total				NB	SB	Total
12:00 AM - 1:00 AM		18	19	37		12:00 PM - 1:00 PM		281	305	586
1:00 AM - 2:00 AM		15	19	34		1:00 PM - 2:00 PM		300	301	601
2:00 AM - 3:00 AM		9	18	27		2:00 PM - 3:00 PM		405	312	717
3:00 AM - 4:00 AM		19	14	33		3:00 PM - 4:00 PM		458	352	810
4:00 AM - 5:00 AM		28	41	69		4:00 PM - 5:00 PM		547	373	920
5:00 AM - 6:00 AM		112	116	228		5:00 PM - 6:00 PM		530	402	932
6:00 AM - 7:00 AM		238	364	602		6:00 PM - 7:00 PM		365	278	643
7:00 AM - 8:00 AM		321	682	1,003		7:00 PM - 8:00 PM		256	213	469
8:00 AM - 9:00 AM		352	367	719		8:00 PM - 9:00 PM		223	152	375
9:00 AM - 10:00 AM		219	312	531		9:00 PM - 10:00 PM		149	117	266
10:00 AM - 11:00 AM		239	258	497	10:00 PM - 11:00 PM		80	66	146	
11:00 AM - 12:00 PM		269	288	557	11:00 PM - 12:00 AM		39	37	76	
Total		1,839	2,498	4,337	Total		3,633	2,908	6,541	

24-Hour	NB	Volume	5,472	24-Hour	SB	Volume	5,406
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24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: 25. Robelini Dr, Sycamore Ave to South Santa Fe Ave

Orientation: North-South

Date of Count: Wednesday, April 15, 2015

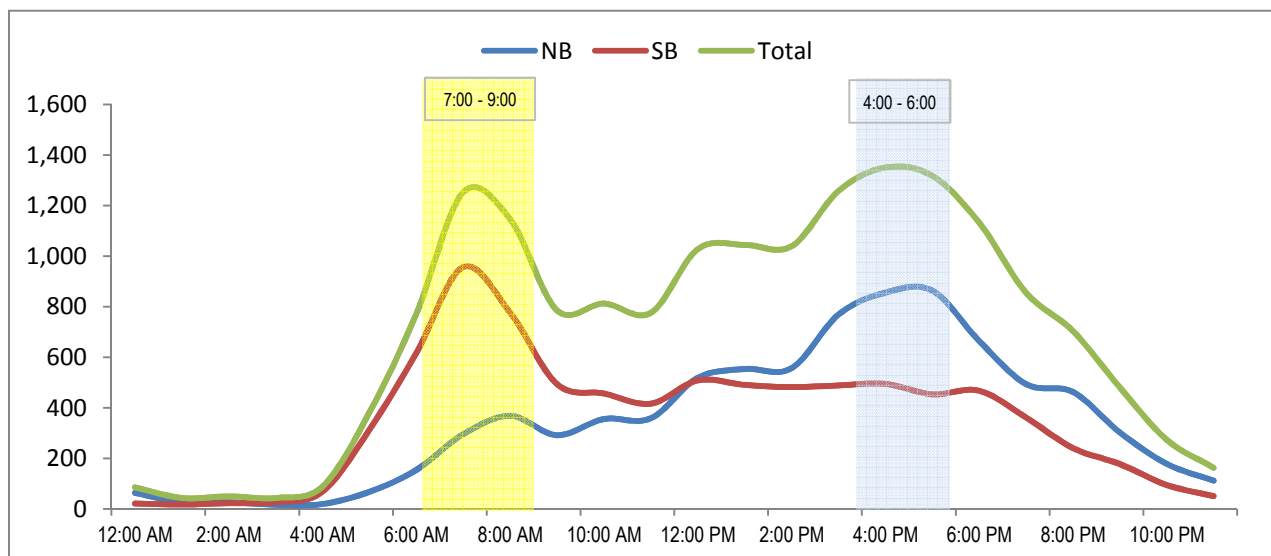
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0338

24 Hour Segment Volume						16,891				
Time		Hourly Volume				Time		Hourly Volume		
		NB	SB	Total				NB	SB	Total
12:00 AM - 1:00 AM		64	22	86		12:00 PM - 1:00 PM		519	509	1,028
1:00 AM - 2:00 AM		26	18	44		1:00 PM - 2:00 PM		554	491	1,045
2:00 AM - 3:00 AM		27	23	50		2:00 PM - 3:00 PM		557	482	1,039
3:00 AM - 4:00 AM		17	27	44		3:00 PM - 4:00 PM		769	489	1,258
4:00 AM - 5:00 AM		20	69	89		4:00 PM - 5:00 PM		856	495	1,351
5:00 AM - 6:00 AM		68	314	382		5:00 PM - 6:00 PM		864	454	1,318
6:00 AM - 7:00 AM		155	617	772		6:00 PM - 7:00 PM		665	468	1,133
7:00 AM - 8:00 AM		296	957	1,253		7:00 PM - 8:00 PM		494	362	856
8:00 AM - 9:00 AM		369	777	1,146		8:00 PM - 9:00 PM		463	241	704
9:00 AM - 10:00 AM		292	494	786		9:00 PM - 10:00 PM		303	178	481
10:00 AM - 11:00 AM		356	457	813	10:00 PM - 11:00 PM		179	95	274	
11:00 AM - 12:00 PM		359	417	776	11:00 PM - 12:00 AM		112	51	163	
Total		2,049	4,192	6,241	Total		6,335	4,315	10,650	

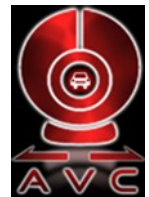
24-Hour	NB	Volume	8,384	24-Hour	SB	Volume	8,507
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24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136



Location: 26. South Santa Fe Ave, Woodland Dr to Buena Creek Rd

Orientation: East-West

Date of Count: Wednesday, April 15, 2015

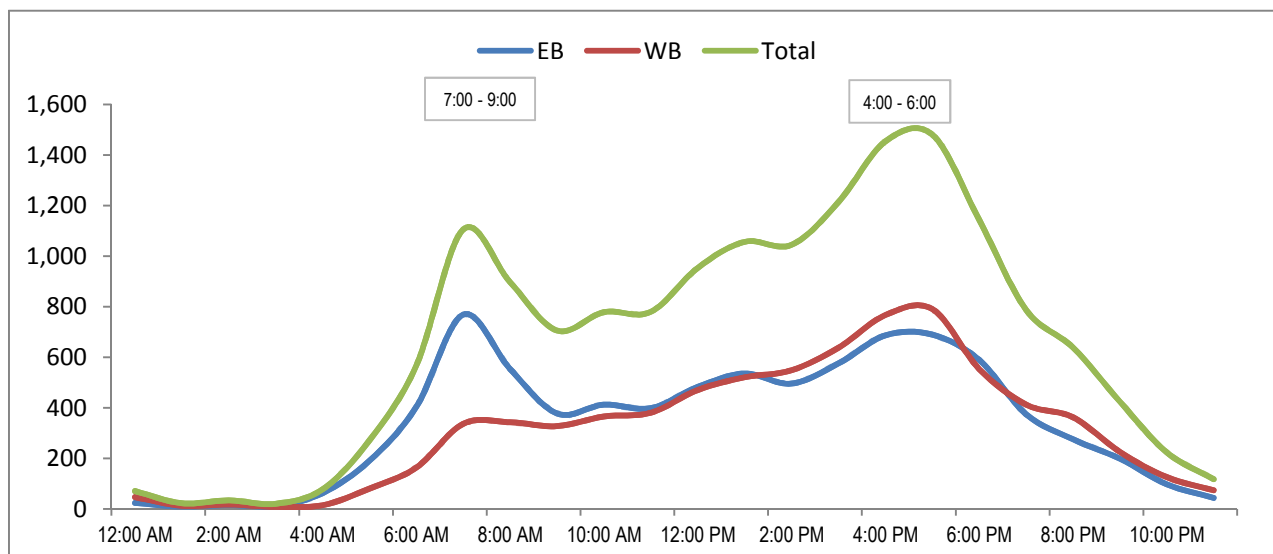
Analysts: DASH

Weather: Sunny

AVC Proj. No: 15-0338

24 Hour Segment Volume						15,878				
Time		Hourly Volume				Time		Hourly Volume		
		EB	WB	Total				EB	WB	Total
12:00 AM - 1:00 AM		24	47	71		12:00 PM - 1:00 PM		483	471	954
1:00 AM - 2:00 AM		10	13	23		1:00 PM - 2:00 PM		536	521	1,057
2:00 AM - 3:00 AM		16	18	34		2:00 PM - 3:00 PM		496	549	1,045
3:00 AM - 4:00 AM		12	9	21		3:00 PM - 4:00 PM		576	638	1,214
4:00 AM - 5:00 AM		63	15	78		4:00 PM - 5:00 PM		687	767	1,454
5:00 AM - 6:00 AM		191	81	272		5:00 PM - 6:00 PM		690	791	1,481
6:00 AM - 7:00 AM		404	164	568		6:00 PM - 7:00 PM		590	554	1,144
7:00 AM - 8:00 AM		769	337	1,106		7:00 PM - 8:00 PM		375	413	788
8:00 AM - 9:00 AM		554	343	897		8:00 PM - 9:00 PM		276	363	639
9:00 AM - 10:00 AM		378	328	706	9:00 PM - 10:00 PM		199	226	425	
10:00 AM - 11:00 AM		413	366	779	10:00 PM - 11:00 PM		98	126	224	
11:00 AM - 12:00 PM		399	381	780	11:00 PM - 12:00 AM		44	74	118	
Total		3,233	2,102	5,335	Total		5,050	5,493	10,543	

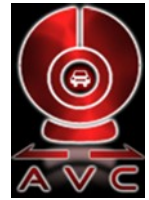
24-Hour	EB	Volume	8,283	24-Hour	WB	Volume	7,595
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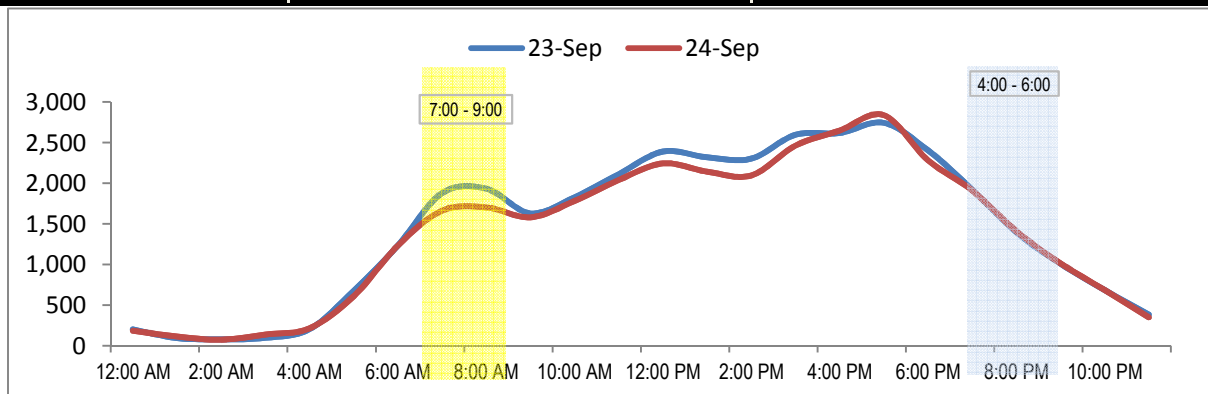
2-Day Segment Counts Summary

Accurate Video Counts Inc
 info@accuratevideocounts.com
 (619) 987-5136



Location: Sycamore Ave btwn University Dr and SR 78 Ramps
Orientation: North-South
Day 1 Tuesday, September 23, 2014
Day 2 Wednesday, September 24, 2014
AVC Proj. No: 14-0257

Average Daily Traffic		34,086
Highest Daily Traffic		34,744
Time	Hourly Volume	
	23-Sep	24-Sep
12:00 AM - 1:00 AM	201	184
1:00 AM - 2:00 AM	95	114
2:00 AM - 3:00 AM	80	75
3:00 AM - 4:00 AM	97	138
4:00 AM - 5:00 AM	204	216
5:00 AM - 6:00 AM	677	610
6:00 AM - 7:00 AM	1,235	1,233
7:00 AM - 8:00 AM	1,879	1,663
8:00 AM - 9:00 AM	1,933	1,703
9:00 AM - 10:00 AM	1,629	1,581
10:00 AM - 11:00 AM	1,828	1,782
11:00 AM - 12:00 PM	2,113	2,040
12:00 PM - 1:00 PM	2,390	2,244
1:00 PM - 2:00 PM	2,319	2,143
2:00 PM - 3:00 PM	2,303	2,096
3:00 PM - 4:00 PM	2,597	2,463
4:00 PM - 5:00 PM	2,618	2,649
5:00 PM - 6:00 PM	2,743	2,838
6:00 PM - 7:00 PM	2,404	2,283
7:00 PM - 8:00 PM	1,923	1,911
8:00 PM - 9:00 PM	1,398	1,411
9:00 PM - 10:00 PM	1,009	1,014
10:00 PM - 11:00 PM	685	686
11:00 PM - 12:00 AM	384	350
Total	34,744	33,427



APPENDIX A-3

INTERSECTION AND RAMP METER SIGNAL TIMING AND FREEWAY MAINLINE TRUCK FACTORS

	INTERVAL	PHASE TIMING								9	PRE-EMPTION		F															
		1	2	3	4	5	6	7	8		E		FLAG	1	2	3	4	5	6	7	8							
0	WALK	1	7	1	1	1	7	1	1	CLK RST	EV SEL	0	PERMIT	1	2	3	4	5	6	7	8	0						
1	DONT WALK	1	10	1	1	1	10	1	1		RR1 CLR	15	RED LOCK					5			8	1						
2	MIN GREEN	1	5	1	5	5	5	1	5		EVA DLY	0	YEL LOCK									2						
3	TYPE 3 DET	0	0	0	0	0	0	0	0		EVA CLR	5	V RECALL		2				6			3						
4	ADD/VEH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		EVD DLY	0	P RECALL									4						
5	PASSAGE	0.9	2.0	0.9	2.0	4.0	2.0	0.9	2.0		EVB CLR	5	PED PHASES		2				6			5						
6	MAX GAP	0.9	2.0	0.9	2.0	5.0	2.0	0.9	2.0		EVC DLY	0	RT OLA									6						
7	MIN GAP	0.9	2.0	0.9	2.0	2.0	2.0	0.9	2.0		EVC CLR	5	RT OLB									7						
8	MAX EXT	9	30	9	15	40	20	9	15		EVD DLY	0	DBL ENTRY				4				8	8						
9	MAX 2					65				YR	EVD CLR	5	MAX 2 PHASES					5				9						
A	MAX 3									MO	MAX EV	255	LAG PHASES	READ ONLY														A
B										DAY	RR2 CLR	15	RED REST									B						
C	REDUCE BY	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	DOW			REST-IN-WALK									C						
D	EVERY	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	RR			MAX 3 PHASES									D						
E	YELLOW	3.0	4.3	3.0	3.6	3.2	4.3	3.0	3.6	MIN			YEL START UP		2				6			E						
F	RED	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	SEC			FIRST PHASE			3				7		F						
35	PED XING FT		48				47							1	2	3	4	5	6	7	8							
	BIKE XING FT		48				47																					

NOTES: ENTRIES IN THESE LOCATIONS CAN BE CHANGED IN CC1 FLASH ONLY

FOC LONG FAILURE	
FOD SHORT FAILURE	
FOE	0
FOF	5

FCO	3
FC1	3
FC2	10
FCA	0.0
FCB	0.0
FCC	0.0
FCD	0.0

FDO TB SELECT	1
FD3 PED SELECT	0
FD4 7 WIRE	0
FD5 PERMISSIVE	0
FDE OS SEEKING	1

CO5 FLASH TYPE	1
CE2 DOWNLOAD	1

C PAGE

		CONTROL PLANS									Y-COORD			LAG PHASE	FLAGS															
		1	2	3	4	5	6	7	8	9		C	D	E	F	1	2	3	4	5	6	7	8							
0	CYCLE LENGTH		90	100			90	100	120						LAG FZ FREE		2		4		6		8	0						
1	FZ1 GRN FCTR		0	0			0	0	0					GAPOUT CP1	LAG FZ CP 1									1						
2														GAPOUT CP2	0 LAG FZ CP 2		2		4	5			8	2						
3	FZ3 GRN FCTR		0	0			0	0	0					GAPOUT CP3	0 LAG FZ CP 3		2		4	5			8	3						
4	FZ4 GRN FCTR		12	12			10	10	10		PERM TIME			GAPOUT CP4	LAG FZ CP 4									4						
5	FZ5 GRN FCTR		30	35			40	50	65		LAG OFFSET			GAPOUT CP5	LAG FZ CP 5									5						
6											FORCE OFF			GAPOUT CP6	1 LAG FZ CP 6		2		4	5			8	6						
7	FZ7 GRN FCTR		0	0			0	0	0		LONG GRN			GAPOUT CP7	0 LAG FZ CP 7		2		4	5			8	7						
8	FZ8 GRN FCTR		15	20			12	12	12		NO GREEN			GAPOUT CP8	0 LAG FZ CP 8		2		4	5			8	8						
9	MULTI CYCLE		0	0			0	0	0					GAPOUT CP9	LAG FZ CP 9									9						
A	OFFSET A		15	15			65	65	65		OFFSET				LAG C COORD									A						
B	OFFSET B		15	15			65	65	65						LAG D COORD									B						
C	OFFSET C		15	15			65	65	65						COORD FAZES		2				6			C						
D	FZ 3 EXT																							D						
E	FZ 7 EXT																							E						
F	OFFSET INTRPT																							F						
																	1	2	3	4	5	6	7	8						

CO1 MANUAL CP

CO2 MASTER CP

CO3 CURRENT CP SYSTEM MASTER:

CO4 LAST CP RTE 15 NB RAMP

CO7 TRNSMT CP

COD MANUAL OFFSET

CAO LOCAL CYCLE TIMER

CBO MASTER CYCLE TIMER

CAA LOCAL OFFSET

CBA MASTER OFFSET

FEATURE

	OFF	ON
1		
2		
3		
4		
5		
6		
7		
8		

LOCATION

	OFF	ON
1		1
2		
3		
4		
5		
6		
7		
8		

COO = 1

CCB/CDB OFFSET TIMER

CCC/CDC LAG GREEN TIMER

CCD/CDD FORCE OFF TIMER

CCE/CDE LONG GREEN TIMER

CCF/CDF NO GREEN TIMER

D PAGE

E PAGE

	D	FLAGS								E	FLAGS								F	FLAGS							
	MAX	1	2	3	4	5	6	7	8	MIN	1	2	3	4	5	6	7	8	PED	1	2	3	4	5	6	7	8
0	RCL									RCL									RCL								
1	CP 1									CP 1									CP 1								
2	CP 2									CP 2					5			8	CP 2								
3	CP 3									CP 3					5			8	CP 3								
4	CP 4									CP 4									CP 4								
5	CP 5									CP 5									CP 5								
6	CP 6									CP 6					5			8	CP 6								
7	CP 7									CP 7					5			8	CP 7								
8	CP 8									CP 8					5			8	CP 8								
9	CP 9									CP 9									CP 9								
A																			RCL 1								
B																			RCL 2								
C																											
D																											
E																											
F																											
		1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8

LAST POWER FAILURE REGISTER

HOUR = D-A-E

MINUTE = D-B-E

DAY = D-C-E

RCL 1 = TIME OF DAY MAX RECALL (1ST SELECT) PHASES

(CALL ACTIVE LIGHTS)

RCL 2 = TIME OF DAY MAX RECALL (2ND SELECT) PHASES

(CALL ACTIVE LIGHTS)

LAST FLASH TIME REGISTER

HOUR = D-A-F

MINUTE = D-B-F

DAY = D-C-F

D-E-E = C8 VERSION NUMBER

D-E-F = LITHIUM BATTERY CONDITION

84 = BAD

85 = GOOD

	E	FLAGS								F	FLAGS							
	FUNCTION	1	2	3	4	5	6	7	8	FUNCTION	1	2	3	4	5	6	7	8
0										CODE 4								0
1										CODE 5								1
2										C-RECALL								2
3										D-RECALL								3
4										EXCLUSIVE								4
5										2 PED	2							5
6										5 PED					6			6
7										4 PED				4				7
8										8 PED							8	8
9																		9
A	OLA NOT									OLA ON								A
B	OLB NOT									OLB ON								B
C	OLC NOT									OLC ON								C
D	OLD NOT									OLD ON								D
E																		E
F																		F
		1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8

[illegible]

ACTIVITY CODE

- ```

1 TYPE OF MAX TERMINATION
2 MAX 2
3 MAX 3
4 COND SERV (1ST SELECT)
5 COND SERV (2ND SELECT)
6 ENERGIZE AUX OUTPUT-RED
7 ENERGIZE AUX OUTPUT-GREEN

```

[illegible]

- ```

8 ENERGIZE AUX OUTPUT-YELLOW

9 TIME OF DAY MAX RECALL (1ST SELECT)
A TRAFFIC ACT. MAX 2 OPERATION
B TIME OF DAY MAX RECALL (2ND SELECT)
C YELLOW YIELD COORDINATION
D YELLOW YIELD COORDINATION
E TIME OF DAY FREE OPERATION
F FLASHING OPERATION

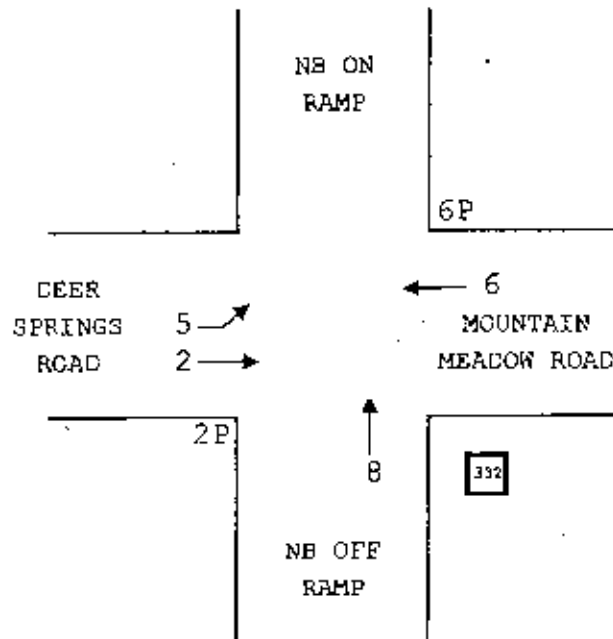
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[illegible]

DATE: 4/29/04

LOCATION: Rte 15 NB @ Deer Springs Road - Mountain Meadow Road

CONFLICT MONITOR PROGRAM



LOCATION: Rte 15 SB @ Deer Springs Road

CALTRANS C6 Version 3

DATE: 9/16/10

PAGE 1

F PAGE

	INTERVAL	PHASE TIMING								9	PRE-EMPTION		F																
		1	2	3	4	5	6	7	8		E		FLAGS	1	2	3	4	5	6	7	8								
0	WALK	1	7	1	1	1	7	1	1	CLK RST	EV SEL	0	PERMIT	1	2	3	4	5	6	7	8								
1	DONT WALK	1	10	1	1	1	10	1	1		RR1 CLR	15	RED LOCK	1															
2	MIN GREEN	5	6	1	5	5	6	1	1		EVA DLY	0	YEL LOCK																
3	TYPE 3 DET	0	0	0	0	0	0	0	0		EVA CLR	5	V RECALL		2				6										
4	ADD/VEH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		EVB DLY	0	P RECALL																
5	PASSAGE	2.0	2.0	0.9	2.0	2.0	2.0	0.9	0.9		EVB CLR	5	PED PHASES		2				6										
6	MAX GAP	2.0	2.0	0.9	2.0	2.0	2.0	0.9	0.9		EVC DLY	0	RT OLA																
7	MIN GAP	2.0	2.0	0.9	2.0	2.0	2.0	0.9	0.9		EVC CLR	5	RT OLB																
8	MAX EXT	25	35	9	20	20	40	9	9		EVD DLY	0	DBL ENTRY				4				8								
9	MAX 2	35				30				YR	EVD CLR	5	MAX 2 PHASES	1				5											
A	MAX 3									MO	MAX EV	255	LAG PHASES	READ ONLY															
B										DAY	RR2 CLR	15	RED REST																
C	REDUCE BY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	EDW			REST-IN-WALK																
D	EVERY	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	HR			MAX 3 PHASES																
E	YELLOW	3.2	4.3	3.0	3.6	3.2	4.3	3.0	3.6	MIN			YEL START UP		2				6										
F	RED	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	SEC			FIRST PHASE			3				7									
3.5	PED XING FT		47				50							1	2	3	4	5	6	7	8								
	BIKE XING FT		60				65																						

NOTES:

OLA = F25

ENTRIES IN THESE LOCATIONS CAN BE CHANGED IN CCI FLASH ONLY



FOC LONG FAILURE	
FOD SHORT FAILURE	
FOE	0
FOF	5

FCO	3
FC1	3
FC2	10
FC3	0.0
FCB	0.0
FCC	0.0
FCD	0.0

FD0 TB SELECT	1
FD3 PED SELECT	0
FD4 7 WIRE	0
FD5 PERMISSIVE	0
FD8 OS SEEKING	1

CC5 FLASH TYPE	1
CC2 DOWNLOAD	1

C PAGE

		CONTROL PLANS									Y-COORD			LAG PHASE	FLAGE									
		1	2	3	4	5	6	7	8	9		C	D	E	F	1	2	3	4	5	6	7	8	
0	CYCLE LENGTH		90	100	120		90	100	120						LAG FZ FREE		2		4		6		8	0
1	FZ1 GRN FCTR		25	30	40		25	25	27					GAPCUT CP1	LAG FZ CP 1									1
2														GAPCUT CP2	LAG FZ CP 2	1			4		6		8	2
3	FZ3 GRN FCTR		0	0	0		0	0	0					GAPCUT CP3	LAG FZ CP 3	1			4		6		8	3
4	FZ4 GRN FCTR		10	10	15		10	10	10		PERM TIME			GAPCUT CP4	LAG FZ CP 4	1			4		6		8	4
5	FZ5 GRN FCTR		15	20	35		10	10	10		LAG OFFSET			GAPCUT CP5	LAG FZ CP 5									5
6											FORCE OFF			GAPCUT CP6	LAG FZ CP 6	1			4		6		8	6
7	FZ7 GRN FCTR		0	0	0		0	0	0		LONG GRN			GAPCUT CP7	LAG FZ CP 7	1			4		6		8	7
8	FZ8 GRN FCTR		0	0	0		0	0	0		NO GREEN			GAPCUT CP8	LAG FZ CP 8	1			4		6		8	8
9	MULTI CYCLE		0	0	0		0	0	0					GAPCUT CP9	LAG FZ CP 9									9
A	OFFSET A		15	15	15		5	5	5		OFFSET				LAG C COORD									A
B	OFFSET B		15	15	15		5	5	5						LAG D COORD									B
C	OFFSET C		15	15	15		5	5	5						COORD FAZES		2				6			C
D	FZ 3 EXT																							D
E	FZ 7 EXT																							E
F	OFFSET INTRPT																							F
																1	2	3	4	5	6	7	8	

CO1 MANUAL CP

CO2 MASTER CP

CO3 CURRENT CP

CO4 LAST CP

CO7 TRNSMT CP

COD MANUAL OFFSET

CAO LOCAL CYCLE TIMER

CBO MASTER CYCLE TIMER

CAA LOCAL OFFSET

CBA MASTER OFFSET

FEATURE

	OFF	ON
1		
2		
3		
4		
5		
6		
7		
8		

LOCATION

	OFF	ON
1		
2		2
3		
4		
5		
6		
7		
8		

COO = 2

CCB/CDB OFFSET TIMER

CCC/CDC LAG GREEN TIMER

CCD/CDD FORCE OFF TIMER

CCE/CDE LONG GREEN TIMER

CCF/CDF NO GREEN TIMER

D PAGE

E PAGE

	D	FLAGS								E	FLAGS								F	FLAGS									
	MAX RCL	1	2	3	4	5	6	7	8	MIN RCL	1	2	3	4	5	6	7	8	PEU RCL	1	2	3	4	5	6	7	8		
0	RCL									RCL									RCL										
1	CP 1									CP 1									CP 1										
2	CP 2									CP 2	1			4	5				CP 2										
3	CP 3									CP 3	1			4	5				CP 3										
4	CP 4									CP 4	1			4	5				CP 4										
5	CP 5									CP 5									CP 5										
6	CP 6									CP 6	1			4					CP 6										
7	CP 7									CP 7	1			4					CP 7										
8	CP 8									CP 8	1			4					CP 8										
9	CP 9									CP 9									CP 9										
A																			RCL 1										
B																			RCL 2										
C																													
D																													
E																													
F																													
		1	2	3	4	5	6	7	8			1	2	3	4	5	6	7	8			1	2	3	4	5	6	7	8

LAST POWER FAILURE REGISTER

HOUR = D-A-E

MINUTE = D-B-E

DAY = D-C-E

RCL 1 = TIME OF DAY MAX RECALL (1ST SELECT) PHASES

(CALL ACTIVE LIGHTS)

RCL 2 = TIME OF DAY MAX RECALL (2ND SELECT) PHASES

(CALL ACTIVE LIGHTS)

LAST FLASH TIME REGISTER

HOUR = D-A-F

MINUTE = D-B-F

DAY = D-C-F

D-E-E = C8 VERSION NUMBER

D-E-F = LITHIUM BATTERY CONDITION

84 = BAD

85 = GOOD

	E		FLAGS								F		FLAGS								
	FUNCTION		1	2	3	4	5	6	7	8	FUNCTION		1	2	3	4	5	6	7	8	
0										CODE 4											0
1										CODE 5											1
2										C-RECALL											2
3										D-RECALL											3
4										EXCLUSIVE											4
5										2 PED		2									5
6										5 PED							6				6
7										4 PED				4							7
E										8 PED										8	8
9																					9
A	OLA NOT									OLA ON											A
B	OLB NOT									OLB ON											B
C	OLC NOT									OLC ON											C
D	OLD NOT									OLD ON											D
E																					E
F																					F
			1	2	3	4	5	6	7	8			1	2	3	4	5	6	7	8	

TIME OF DAY ACTIVITY TABLE											
7+EVENT+HR+MIN+ACT+"E"+ON/OFF+DOW LTS											
	HR	MIN	ACT	ON/	S	M	T	W	T	F	S
				OFF	1	2	3	4	5	6	7
0	06	30	2	ON		2	3	4	5	6	
1	08	05	2			2	3	4	5	6	
2											
3											
4											
5											
6											
7											
8											
9											
A											
B											
C	06	30	E			2	3	4	5	6	
D	08	05	E	ON	1	2	3	4	5	6	7
E	14	00	E			2	3	4	5	6	
F	19	00	E	ON	1	2	3	4	5	6	7

ACTIVITY CODE

- ```

1 TYPE OF MAX TERMINATION
2 MAX 2
3 MAX 3
4 COND SERV (1ST SELECT)
5 COND SERV (2ND SELECT)
6 ENERGIZE AUX OUTPUT-RED
7 ENERGIZE AUX OUTPUT-GREEN

```

[illegible]

- ```

8 ENERGIZE AUX OUTPUT-YELLOW

9 TIME OF DAY MAX RECALL (1ST SELECT)
A TRAFFIC ACT. MAX 2 OPERATION
B TIME OF DAY MAX RECALL (2ND SELECT)
C YELLOW YIELD COORDINATION
D YELLOW YIELD COORDINATION
E TIME OF DAY FREE OPERATION
F FLASHING OPERATION

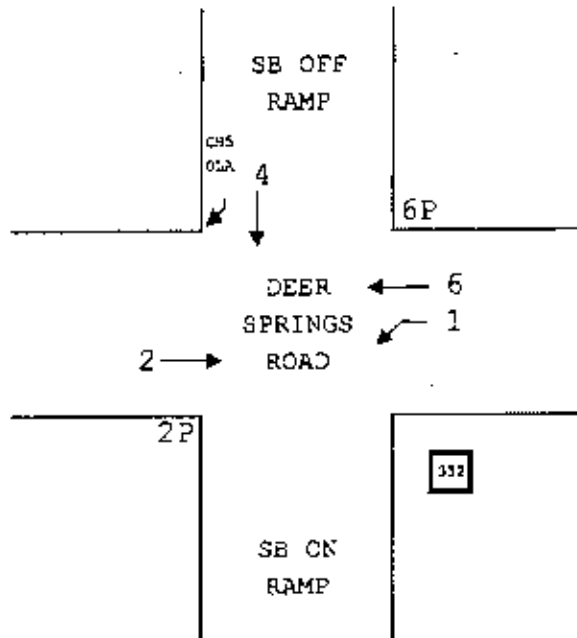
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[illegible]

DATE: 5/23/07

LOCATION: Rte 15 SB @ Deer Springs Road

CONFLICT MONITOR PROGRAM



LOCATION: RTE 78 WB @ SAN MARCOS BLVD - KNOLL ROAD

CALTRANS C8 Version 3

DATE: 3/2/11

PAGE 1

F PAGE

	INTERVAL	PHASE TIMING								9	PRE-EMPTION		F													
		1	2	3	4	5	6	7	8		E	FLAGS	1	2	3	4	5	6	7	8						
0	WALK	1	1	1	1	1	7	1	7	CLK RST	EV SEL	70	PERMIT	1	2	3	4	5	6	7	8	0				
1	DONT WALK	1	1	1	1	1	21	1	28		RR1 CLR	15	RED LOCK			3		5		7		1				
2	MIN GREEN	1	9	5	1	12	8	11	5		EVA DLY	0	YEL LOCK									2				
3	TYPE 3 DET	0	0	0	0	15	0	0	0		EVA CLR	5	V RECALL		2				6			3				
4	ADD/VEH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		EVB DLY	0	P RECALL									4				
5	PASSAGE	0.9	2.0	1.0	0.9	2.0	2.0	1.0	1.0		EVB CLR	5	PED PHASES					6		8		5				
6	MAX GAP	0.9	4.0	1.0	0.9	4.0	4.0	1.0	1.0		EVC DLY	0	RT OLA									6				
7	MIN GAP	0.9	1.0	1.0	0.9	1.5	1.0	1.0	1.0		EVC CLR	5	RT OLB									7				
8	MAX EXT	9	25	38	9	10	25	9	20		EVD DLY	0	DBL ENTRY			3					8	8				
9	MAX 2									YR	EVD CLR	5	MAX 2 PHASES									9				
A	MAX 3									MO	MAX EV	255	LAG PHASES	READ ONLY								A				
B										DAY	RR2 CLR	15	RED REST									B				
C	REDUCE BY	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	DOW			REST-IN-WALK									C				
D	EVERY	1.0	1.0	1.0	1.0	0.5	0.5	1.0	1.0	HR			MAX 3 PHASES									D				
E	YELLOW	3.0	4.3	3.6	3.6	3.2	4.3	3.6	3.6	MIN			YEL START UP		2			6				E				
F	RED	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	SEC			FIRST PHASE			3				7		F				
3.5	PED XING FT						97		118					1	2	3	4	5	6	7	8					
	BIKE XING FT		121			151	105	141																		

NOTES:

OLA = FZ 5

ENTRIES IN THESE LOCATIONS CAN BE CHANGED IN CC1 FLASH ONLY

YELLOW YIELD TO GRAND AVE #2 (NB SAN MARCOS BLVD)

FOC LONG FAILURE	
FOD SHORT FAILURE	
FOE	0
FOF	5

FCO	3
FC1	3
FC2	10
FCA	0.0
FCB	0.0
FCC	0.0
FCD	0.0

FDO TB SELECT	1
FD3 PED SELECT	0
FD4 7 WIRE	0
FD5 PERMISSIVE	0
FD6 OS SEEKING	1

CC5 FLASH TYPE	1
CC2 DOWNLOAD	1

C PAGE

		CONTROL PLANS									Y-COORD			LAG PHASE	FLAG													
		1	2	3	4	5	6	7	8	9		C	D	E	F	1	2	3	4	5	6	7	8					
0	CYCLE LENGTH														LAG FZ FREE		2		4		6		8	0				
1	FZ1 GRN FCTR													GAPOUT CP1	LAG FZ CP 1									1				
2														GAPOUT CP2	LAG FZ CP 2									2				
3	FZ3 GRN FCTR													GAPOUT CP3	LAG FZ CP 3									3				
4	FZ4 GRN FCTR										PERM TIME	5		GAPOUT CP4	LAG FZ CP 4									4				
5	FZ5 GRN FCTR										LAG OFFSET	10		GAPOUT CP5	LAG FZ CP 5									5				
6											FORCE OFF	150		GAPOUT CP6	LAG FZ CP 6									6				
7	FZ7 GRN FCTR										LONG GRN	70		GAPOUT CP7	LAG FZ CP 7									7				
8	FZ8 GRN FCTR										NO GREEN	125		GAPOUT CP8	LAG FZ CP 8									8				
9	MULTI CYCLE													GAPOUT CP9	LAG FZ CP 9									9				
A	OFFSET A										OFFSET	42			LAG C COORD		2		4		6		8	A				
B	OFFSET B														LAG D COORD									B				
C	OFFSET C														COORD PHASES		2				6			C				
D	FZ 3 EXT																							D				
E	FZ 7 EXT																							E				
F	OFFSET INTRPT																							F				
																1	2	3	4	5	6	7	8					

C01 MANUAL CP

C02 MASTER CP

C03 CURRENT CP SYSTEM MASTER:

C04 LAST CP RTE 78 WB RAMP

C07 TRNSMT CP @ KNOLL ROAD

COD MANUAL OFFSET

CA0 LOCAL CYCLE TIMER

CBO MASTER CYCLE TIMER

CAA LOCAL OFFSET

CBA MASTER OFFSET

FEATURE

	OFF	ON
1		
2		
3		
4		
5		
6		
7		
8		

LOCATION

	OFF	ON
1		
2		2
3		
4		
5		
6		
7		
8		

COC = 2

CCB/CDB OFFSET TIMER

CCC/CDC LAG GREEN TIMER

CCD/CDD FORCE OFF TIMER

CCE/CDE LONG GREEN TIMER

CCF/CDF NO GREEN TIMER

D PAGE

E PAGE

	D	FLAGS								E	FLAGS								F	FLAGS							
	MAX	1	2	3	4	5	6	7	8	MIN	1	2	3	4	5	6	7	8	PED	1	2	3	4	5	6	7	8
0	RCL									RCL									RCL								
1	CP 1									CP 1									CP 1								
2	CP 2									CP 2									CP 2								
3	CP 3									CP 3									CP 3								
4	CP 4									CP 4									CP 4								
5	CP 5									CP 5									CP 5								
6	CP 6									CP 6									CP 6								
7	CP 7									CP 7									CP 7								
8	CP 8									CP 8									CP 8								
9	CP 9									CP 9									CP 9								
A																			RCL 1								
B																			RCL 2								
C																											
D																											
E																											
F																											
		1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8

	E	FLAGS								F	FLAGS							
	FUNCTION	1	2	3	4	5	6	7	8	FUNCTION	1	2	3	4	5	6	7	8
0										CODE 4								
1										CODE 5								
2										C-RECALL		3						
3										D-RECALL								
4										EXCLUSIVE								
5										2 PED		2						
6										6 PED								
7										4 PED								
8										8 PED								
9																		
A	OLA NOT									OLA ON								
B	OLB NOT									OLB ON								
C	OLC NOT									OLC ON								
D	OLD NOT									OLD ON								
E																		
F																		

LAST POWER FAILURE REGISTER

HOUR = D-A-E

MINUTE = D-B-E

DAY = D-C-E

RCL 1 = TIME OF DAY MAX RECALL (1ST SELECT) PHASES
(CALL ACTIVE LIGHTS)RCL 2 = TIME OF DAY MAX RECALL (2ND SELECT) PHASES
(CALL ACTIVE LIGHTS)

LAST FLASH TIME REGISTER

HOUR = D-A-F

MINUTE = D-B-F

DAY = D-C-F

D-E-E = C8 VERSION NUMBER

D-E-F = LITHIUM BATTERY CONDITION

84 = BAD

85 = GOOD

$$c09 = 0 \text{ or } 1$$

C09 = 2

TIME OF DAY ACTIVITY TABLE											
7+EVENT+HR+MIN+ACT+"E"+ON/OFF+DOW LTS											
	HR	MIN	ACT	ON/ OFF	S	M	T	W	T	F	S
					1	2	3	4	5	6	7
0	06	29	E			2	3	4	5	6	
1	06	45	C	ON		2	3	4	5	6	
2	21	00	C			2	3	4	5	6	
3	21	01	E	ON		2	3	4	5	6	
4											
5											
6											
7											
8											
9											
A											
B											
C	07	59	E		1						7
D	08	15	C	ON	1						7
E	19	00	C		1						7
F	19	01	E	ON	1						7

ACTIVITY CODE

- ```

1 TYPE OF MAX TERMINATION
2 MAX 2
3 MAX 3
4 COND SERV (1ST SELECT)
5 COND SERV (2ND SELECT)
6 ENERGIZE AUX OUTPUT-RED
7 ENERGIZE AUX OUTPUT-GREEN

```

[illegible]

- ```

8 ENERGIZE AUX OUTPUT-YELLOW

9 TIME OF DAY MAX RECALL (1ST SELECT)
A TRAFFIC ACT. MAX 2 OPERATION
B TIME OF DAY MAX RECALL (2ND SELECT)
C YELLOW YIELD COORDINATION
D YELLOW YIELD COORDINATION
E TIME OF DAY FREE OPERATION
F FLASHING OPERATION

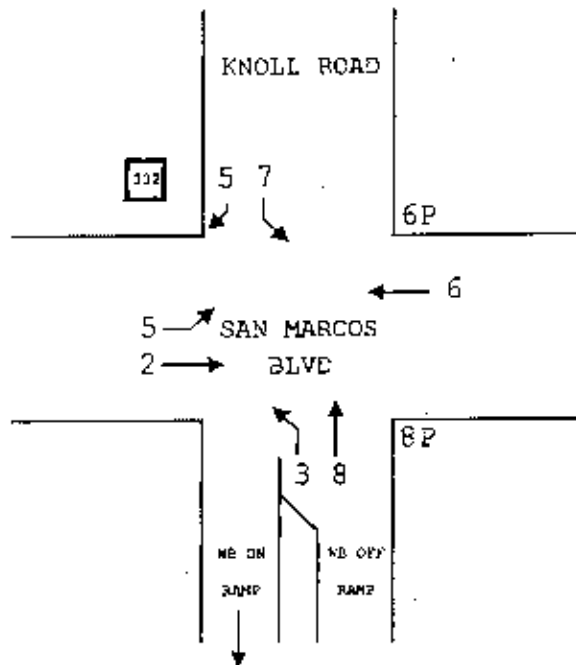
```

[illegible]

DATE: 2/27/05

LOCATION: RTE 78 WB @ SAN MARCOS BLVD - KNOLL ROAD

CONFLICT MONITOR PROGRAM



LOCATION: RTE 78 EB @ SAN MARCOS BLVD

CALTRANS C8 Version 3

DATE: 3/2/11

PAGE 1

F PAGE

	INTERVAL	PHASE TIMING								9	PRE-EMPTION		F																
		1	2	3	4	5	6	7	8		E	FLAGS	1	2	3	4	5	6	7	8									
0	WALK	1	1	1	1	1	7	1	1	CLK RST	EV SEL	0	PERMIT	1	2	3	4	5	6	7	8								
1	DONT WALK	1	1	1	1	1	24	1	1		RR1 CLR	15	RED LOCK	1			4												
2	MIN GREEN	5	5	1	5	1	12	1	1		EVA DLY	0	YEL LOCK																
3	TYPE 3 DET	0	0	0	0	0	0	0	0		EVA CLR	5	V RECALL		2				6										
4	ADD/VEH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		EVB DLY	0	P RECALL																
5	PASSAGE	2.0	1.0	0.9	2.0	0.9	1.0	0.9	0.9		EVB CLR	5	PED PHASES						6										
6	MAX GAP	4.0	1.0	0.9	4.0	0.9	1.0	0.9	0.9		EVC DLY	0	RT OLA																
7	MIN GAP	1.5	1.0	0.9	1.5	0.9	1.0	0.9	0.9		EVC CLR	5	RT OLB																
8	MAX EXT	17	35	9	25	9	35	9	9		EVD DLY	0	DBL ENTRY				4												
9	MAX 2									YR	EVD CLR	5	MAX 2 PHASES																
A	MAX 3									MO	MAX EV	255	LAG PHASES	READ ONLY															
B										DAY	RR2 CLR	15	RED REST																
C	REDUCE BY	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	DOW			REST-IN-WALK																
D	EVERY	0.5	1.0	1.0	0.5	1.0	1.0	1.0	1.0	HR			MAX 3 PHASES																
E	YELLOW	3.2	4.3	3.0	3.6	3.0	4.3	3.0	3.6	MIN			YEL START UP		2				6										
F	RED	2.0	2.0	1.0	2.0	1.0	2.0	1.0	2.0	SEC			FIRST PHASE			3									7				
3.5	PED XING FT						105								1	2	3	4	5	6	7	8							
	BIKE XING FT		71				167																						

NOTES:

OLA = FZ 2

ENTRIES IN THESE LOCATIONS CAN BE CHANGED IN CC1 FLASH ONLY

OLB = FZ 4

YELLOW YIELD TO GRAND AVE #2 (NB SAN MARCOS BLVD)

FOC LONG FAILURE	
FOD SHORT FAILURE	
FOE	0
FOF	5

FCO	3
FC1	3
FC2	10
FCA	0.0
FCB	0.0
FCC	0.0
FCD	0.0

FD0 TB SELECT	1
FD3 PED SELECT	0
FD4 7 WIRE	0
FD5 PERMISSIVE	0
FD8 OS SEEKING	1

CC5 FLASH TYPE	1
CC2 DOWNLOAD	1

C PAGE

		CONTROL PLANS									Y-COORD			LAG PHASE	FLAGS									
		1	2	3	4	5	6	7	8	9		C	D	E	F	1	2	3	4	5	6	7	8	
0	CYCLE LENGTH														LAG FZ FREE		2		4		6		8	0
1	FZ1 GRN FCTR													GAPOUT CP1	LAG FZ CP 1									1
2														GAPOUT CP2	LAG FZ CP 2									2
3	FZ3 GRN FCTR													GAPOUT CP3	LAG FZ CP 3									3
4	FZ4 GRN FCTR										PERM TIME	5		GAPOUT CP4	LAG FZ CP 4									4
5	FZ5 GRN FCTR										LAG OFFSET	10		GAPOUT CP5	LAG FZ CP 5									5
6											FORCE OFF	150		GAPOUT CP6	LAG FZ CP 6									6
7	FZ7 GRN FCTR										LONG GRN	70		GAPOUT CP7	LAG FZ CP 7									7
8	FZ8 GRN FCTR										NO GREEN	125		GAPOUT CP8	LAG FZ CP 8									8
9	MULTI CYCLE													GAPOUT CP9	LAG FZ CP 9									9
A	OFFSET A										OFFSET	11			LAG C COORD		2		4		6		8	A
B	OFFSET B														LAG D COORD									B
C	OFFSET C														COORD PHASES		2				6			C
D	FZ 3 EXT																							D
E	FZ 7 EXT																							E
F	OFFSET INTRPT																							F
																	1	2	3	4	5	6	7	8

CO1 MANUAL CP

CO2 MASTER CP

CO3 CURRENT CP

CO4 LAST CP

CO7 TRNSMT CP

COD MANUAL OFFSET

CAO LOCAL CYCLE TIMER

CBO MASTER CYCLE TIMER

CAA LOCAL OFFSET

CBA MASTER OFFSET

FEATURE

	OFF	ON
1		
2		
3		
4		
5		
6		
7		
8		

LOCATION

	OFF	ON
1		1
2		
3		
4		
5		
6		
7		
8		

COO = 1

CCB/CDB OFFSET TIMER

CCC/CDC LAG GREEN TIMER

CCD/CDD FORCE OFF TIMER

CCE/CDE LONG GREEN TIMER

CCF/CDF NO GREEN TIMER

D PAGE

E PAGE

	D	FLAGS							E	FLAGS							F	FLAGS									
	MAX	1	2	3	4	5	6	7	8	MIN	1	2	3	4	5	6	7	8	PED	1	2	3	4	5	6	7	8
0	RCL									RCL									RCL								
1	CP 1									CP 1									CP 1								
2	CP 2									CP 2									CP 2								
3	CP 3									CP 3									CP 3								
4	CP 4									CP 4									CP 4								
5	CP 5									CP 5									CP 5								
6	CP 6									CP 6									CP 6								
7	CP 7									CP 7									CP 7								
8	CP 8									CP 8									CP 8								
9	CP 9									CP 9									CP 9								
A																			RCL 1								
B																			RCL 2								
C																											
D																											
E																											
F																											
		1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8

	E	FLAGS								F	FLAGS							
	FUNCTION	1	2	3	4	5	6	7	8	FUNCTION	1	2	3	4	5	6	7	8
0										CODE 4								0
1										CODE 5								1
2										C-RECALL				4				2
3										D-RECALL								3
4										EXCLUSIVE								4
5										2 PED		2						5
6										56 PED					6			6
7										4 PED				4				7
8										8 PED							8	8
9																		9
A	OLA NOT									OLA ON								A
B	OLB NOT									OLB ON								B
C	OLC NOT									OLC ON								C
D	OLD NOT									OLD ON								D
E																		E
F																		F
		1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8

LAST POWER FAILURE REGISTER

HOUR = D-A-E

MINUTE = D-B-E

DAY = D-C-X

RCL 1 = TIME OF DAY MAX RECALL (1ST SELECT) PHASES
(CALL ACTIVE LIGHTS)RCL 2 = TIME OF DAY MAX RECALL (2ND SELECT) PHASES
(CALL ACTIVE LIGHTS)

LAST FLASH TIME REGISTER

HOUR = D-A-F

MINUTE = D-B-F

DAY = D-C-F

D-E-E = C8 VERSION NUMBER

D-E-F = LITHIUM BATTERY CONDITION

84 = BAD

85 = GOOD

TIME OF DAY ACTIVITY TABLE											
7+EVENT+HR+MIN÷ACT+"E"+ON/OFF+DOW LTS											
	HR	MIN	ACT	ON/ OFF	S	M	T	W	T	F	S
					1	2	3	4	5	6	7
0	06	29	E			2	3	4	5	6	
1	06	45	C	ON		2	3	4	5	6	
2	21	00	C			2	3	4	5	6	
3	21	01	E	ON		2	3	4	5	6	
4											
5											
6											
7											
8											
9											
A											
B											
C	07	59	E		1						7
D	08	15	C	ON	1						7
E	19	00	C		1						7
F	19	01	E	ON	1						7

ACTIVITY CODE

- ```

1 TYPE OF MAX TERMINATION
2 MAX 2
3 MAX 3
4 COND SERV (1ST SELECT)
5 COND SERV (2ND SELECT)
6 ENERGIZE AUX OUTPUT-RED
7 ENERGIZE AUX OUTPUT-GREEN

```

[illegible]

- ```

8 ENERGIZE AUX OUTPUT-YELLOW

9 TIME OF DAY MAX RECALL (1ST SELECT)
A TRAFFIC ACT. MAX 2 OPERATION
B TIME OF DAY MAX RECALL (2ND SELECT)
C YELLOW YIELD COORDINATION
D YELLOW YIELD COORDINATION
E TIME OF DAY FREE OPERATION
F FLASHING OPERATION

```

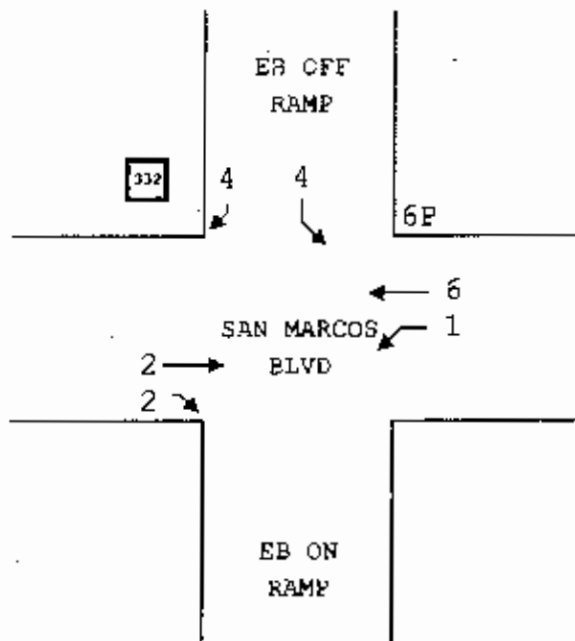
[illegible]

DATE:

2/27/05

LOCATION: RTE 78 EB @ SAN MARCOS BLVD

CONFLICT MONITOR PROGRAM



LOCATION: RTE 78 WB @ SYCAMORE AVENUE

CALTRANS C8 Version 3

DATE: 8/16/10

PAGE 1

F PAGE

	INTERVAL	PHASE TIMING								9	PRE-EMPTION		F															
		1	2	3	4	5	6	7	8		E	FLAGS	1	2	3	4	5	6	7	8								
C	WALK	1	7	1	1	1	7	1	14	CLK RST	EV SEL	0	PERMIT	1	2	3	4	5	6	7	8	0						
1	DONT WALK	1	14	1	1	1	12	1	1		RR1 CLR	15	RED LOCK					5			8	1						
2	MIN GREEN	1	7	1	1	10	7	1	5		EVA DLY	0	YEL LOCK														2	
3	TYPE 3 DET	0	0	0	0	0	0	0	0		EVA CLR	5	V RECALL		2				6								3	
4	ADD/VEH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		EVB DLY	0	P RECALL														4	
5	PASSAGE	0.9	2.0	0.9	0.9	3.0	2.0	0.9	2.0		EVB CLR	5	RED PHASES		2				6								5	
6	MAX GAP	0.9	2.0	0.9	0.9	5.0	2.0	0.9	2.0		EVC DLY	0	RT OLA														6	
7	MIN GAP	0.9	2.0	0.9	0.9	2.0	2.0	0.9	2.0		EVC CLR	5	RT OLB														7	
8	MAX EXT	9	35	9	9	30	30	9	30		EVD DLY	0	DBL ENTRY				4				8	8						
9	MAX 2									YA	EVD CLR	5	MAX 2 PHASES														9	
A	MAX 3									MO	MAX EV	255	LAG PHASES														A	
B										DAY	RR2 CLR	15	RED REST														B	
C	REDUCE BY	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	DOW			REST-IN-WALK														C	
D	EVERY	1.0	1.0	1.0	1.0	0.5	1.0	1.0	1.0	HR			MAX 3 PHASES														D	
E	YELLOW	3.0	4.0	3.0	3.6	3.2	4.0	3.0	3.6	MIN			YEL START UP		2				6								E	
F	RED	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	SEC			FIRST PHASE			3				7							F	
3.5	PED XING FT		67				59							1	2	3	4	5	6	7	8							
	BIKE XING FT		80				73																					

NOTES:

OLA = FZ 8

ENTRIES IN THESE LOCATIONS CAN BE CHANGED IN CC1 FLASH ONLY



FCC LONG FAILURE	
FOD SHORT FAILURE	
FOE	0
FOF	5

FCO	3
FC1	3
FC2	10
FCA	0.0
FCB	0.0
FCC	0.0
FCD	0.0

FD0 TB SELECT	1
FD3 PED SELECT	0
FD4 7 WIRE	0
FD5 PERMISSIVE	0
FD8 OS SEEKING	1

CC5 FLASH TYPE	1
CC2 DOWNLOAD	1

C PAGE

		CONTROL PLANS							AM	PM	Y-COORD			LAG PHASE	FLAGS										
		1	2	3	4	5	6	7			8	9			C	D	E	F	1	2	3	4	5	6	7
0	CYCLE LENGTH								110	110					LAG FZ FREE		2		4		6		8	0	
1	FZ1 GRN FCTR								0	0				GAPOUT CP1	LAG FZ CP 1									1	
2													GAPOUT CP2	LAG FZ CP 2										2	
3	FZ3 GRN FCTR								0	0				GAPOUT CP3	LAG FZ CP 3									3	
4	FZ4 GRN FCTR								0	0	PERM TIME			GAPOUT CP4	LAG FZ CP 4									4	
5	FZ5 GRN FCTR								30	30	LAG OFFSET			GAPOUT CP5	LAG FZ CP 5									5	
6											FORCE OFF			GAPOUT CP6	LAG FZ CP 6									6	
7	FZ7 GRN FCTR								0	0	LONG GRN			GAPOUT CP7	LAG FZ CP 7									7	
8	FZ8 GRN FCTR								30	30	NO GREEN			GAPOUT CP8	0 LAG FZ CP 8		2		4		6		8	8	
9	MULTI CYCLE								0	0				GAPOUT CP9	0 LAG FZ CP 9		2		4		6		8	9	
A	OFFSET A								55	55	OFFSET				LAG C COORD									A	
B	OFFSET B								55	55					LAG D COORD									B	
C	OFFSET C								55	55					COORD FAZES		2				6			C	
D	FZ 3 EXT																							D	
E	FZ 7 EXT																							E	
F	OFFSET INTRPT																							F	
																	1	2	3	4	5	6	7	8	

CO1 MANUAL CP

CO2 MASTER CP

CO3 CURRENT CP SYSTEM MASTER:

CO4 LAST CP RTE 78 EB RAMP

CO7 TRNSMT CP

CO0 MANUAL OFFSET

CA0 LOCAL CYCLE TIMER

CBO MASTER CYCLE TIMER

CAA LOCAL OFFSET

CBA MASTER OFFSET

FEATURE

	OFF	ON
1		
2		
3		
4		
5		
6		
7		
8		

LOCATION

	OFF	ON
1		
2		2
3		
4		
5		
6		
7		
8		

COO = 2

CCB/CDB OFFSET TIMER

CCC/CDC LAG GREEN TIMER

CCD/CDD FORCE OFF TIMER

CCE/CDE LONG GREEN TIMER

CCF/CDF NO GREEN TIMER

D PAGE

E PAGE

	D	FLAGS								E	FLAGS								F	FLAGS							
	MAX	1	2	3	4	5	6	7	8	MIN	1	2	3	4	5	6	7	8	PED	1	2	3	4	5	6	7	8
0	RCL									RCL									RCL								
1	CP 1									CP 1									CP 1								
2	CP 2									CP 2									CP 2								
3	CP 3									CP 3									CP 3								
4	CP 4									CP 4									CP 4								
5	CP 5									CP 5									CP 5								
6	CP 6									CP 6									CP 6								
7	CP 7									CP 7									CP 7								
8	CP 8									CP 8					5			8	CP 8								
9	CP 9									CP 9					5			8	CP 9								8
A																			RCL 1								
B																			RCL 2								
C																											
D																											
E																											
F																											
		1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8

LAST POWER FAILURE REGISTER

HOUR = D-A-E

MINUTE = D-B-E

DAY = D-C-E

RCL 1 = TIME OF DAY MAX RECALL (1ST SELECT) PHASES
(CALL ACTIVE LIGHTS)RCL 2 = TIME OF DAY MAX RECALL (2ND SELECT) PHASES
(CALL ACTIVE LIGHTS)**LAST FLASH TIME REGISTER**

HOUR = D-A-F

MINUTE = D-B-F

DAY = D-C-F

D-E-E = C8 VERSION NUMBER

D-E-F = LITHIUM BATTERY CONDITION

84 = BAD

85 = GOOD

	E	FLAGS								F	FLAGS							
	FUNCTION	1	2	3	4	5	6	7	8	FUNCTION	1	2	3	4	5	6	7	8
0										CODE 4								0
1										CODE 5								1
2										C-RECALL								2
3										D-RECALL								3
4										EXCLUSIVE								4
5										2 PED		2						5
6										5 PED						6		6
7										4 PED				4				7
8										6 PED							8	8
9																		9
A	OLA NOT									OLA ON								A
B	OLB NOT									OLB ON								B
C	OLC NOT									OLC ON								C
D	OLD NOT									OLD ON								D
E																		E
F																		F
		1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8

TIME OF DAY ACTIVITY TABLE											
7+EVENT+HR+MIN+ACT+"E"+ON/OFF+DOW LTS											
				ON/ OFF	S 1	M 2	T 3	W 4	T 5	F 6	S 7
	HR	MIN	ACT								
0											
1											
2											
3											
4											
5											
6											
7											
8											
9											
A											
B											
C											
D											
E	06	00	E		1	2	3	4	5	6	7
F	18	30	E	ON	1	2	3	4	5	6	7

ACTIVITY CODE

- ```

1 TYPE OF MAX TERMINATION
2 MAX 2
3 MAX 3
4 COND SERV (1ST SELECT)
5 COND SERV (2ND SELECT)
6 ENERGIZE AUX OUTPUT-RED
7 ENERGIZE AUX OUTPUT-GREEN

```

[illegible]

8 ENERGIZE AUX OUTPUT-YELLOW

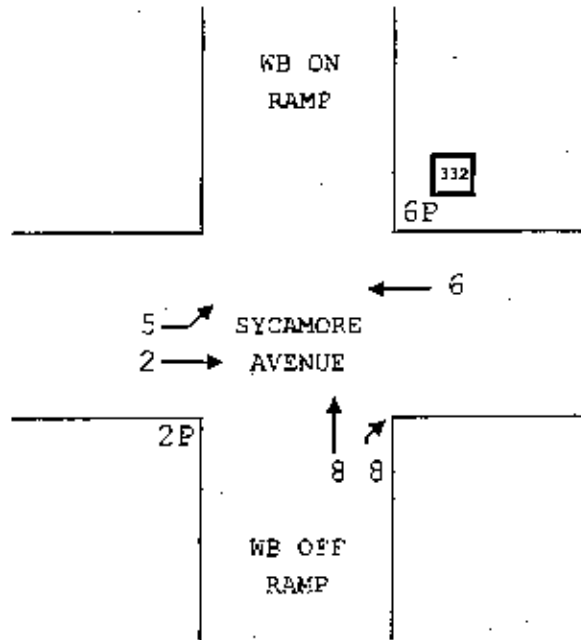
- 9 TIME OF DAY MAX RECALL (1ST SELECT)  
A TRAFFIC ACT. MAX 2 OPERATION  
B TIME OF DAY MAX RECALL (2ND SELECT)  
C YELLOW YIELD COORDINATION  
D YELLOW YIELD COORDINATION  
E TIME OF DAY FREE OPERATION  
F FLASHING OPERATION

[illegible]

DATE: 2/27/05

LOCATION: RTE 78 WB @ SYCAMORE AVENUE

### CONFLICT MONITOR PROGRAM



LOCATION: RTE 78 EB @ SYCAMORE AVENUE

CALTRANS C8 Version 3

DATE: 8/16/10

PAGE 1

F PAGE

|     | INTERVAL     | PHASE TIMING |     |     |     |     |     |     |     | 9       | PRE-EMPTION |       | F            |           |   |   |   |   |   |   |   |   |  |  |  |  |  |  |
|-----|--------------|--------------|-----|-----|-----|-----|-----|-----|-----|---------|-------------|-------|--------------|-----------|---|---|---|---|---|---|---|---|--|--|--|--|--|--|
|     |              | 1            | 2   | 3   | 4   | 5   | 6   | 7   | 8   |         | E           | FLAGS | 1            | 2         | 3 | 4 | 5 | 6 | 7 | 8 |   |   |  |  |  |  |  |  |
| 0   | WALK         | 1            | 7   | 1   | 1   | 1   | 7   | 1   | 1   | CLK RST | EV SEL      | 0     | PERMIT       | 1         | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 0 |  |  |  |  |  |  |
| 1   | DONT WALK    | 1            | 14  | 1   | 1   | 1   | 12  | 1   | 1   |         | RR1 CLR     | 15    | RED LOCK     | 1         |   |   | 4 |   |   |   |   | 1 |  |  |  |  |  |  |
| 2   | MIN GREEN    | 5            | 6   | 1   | 5   | 1   | 6   | 1   | 1   |         | EVA DLY     | 0     | YEL LOCK     |           |   |   |   |   |   |   |   | 2 |  |  |  |  |  |  |
| 3   | TYPE 3 DET   | 0            | 0   | 0   | 0   | 0   | 0   | 0   | 0   |         | EVA CLR     | 5     | V RECALL     |           | 2 |   |   |   | 6 |   |   | 3 |  |  |  |  |  |  |
| 4   | ADD/VEH      | 0.0          | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |         | EVB DLY     | 0     | P RECALL     |           |   |   |   |   |   |   |   | 4 |  |  |  |  |  |  |
| 5   | PASSAGE      | 3.0          | 2.0 | 0.9 | 2.0 | 0.9 | 2.0 | 0.9 | 0.9 |         | EVB CLR     | 5     | PED PHASES   |           | 2 |   |   |   | 6 |   |   | 5 |  |  |  |  |  |  |
| 6   | MAX GAP      | 5.0          | 2.0 | 0.9 | 2.0 | 0.9 | 2.0 | 0.9 | 0.9 |         | EVC DLY     | 0     | RT OLA       |           |   |   |   |   |   |   |   | 6 |  |  |  |  |  |  |
| 7   | MIN GAP      | 2.0          | 2.0 | 0.9 | 2.0 | 0.9 | 2.0 | 0.9 | 0.9 |         | EVC CLR     | 5     | RT OLB       |           |   |   |   |   |   |   |   | 7 |  |  |  |  |  |  |
| 8   | MAX EXT      | 25           | 30  | 9   | 35  | 9   | 35  | 9   | 9   |         | EVD DLY     | 0     | DBL ENTRY    |           |   |   | 4 |   |   |   | 8 | 8 |  |  |  |  |  |  |
| 9   | MAX 2        | 15           | 20  |     | 43  |     | 15  |     |     | YR      | EVD CLR     | 5     | MAX 2 PHASES | 1         | 2 |   | 4 |   | 6 |   |   | 9 |  |  |  |  |  |  |
| A   | MAX 3        |              |     |     |     |     |     |     |     | NO      | MAX EV      | 255   | LAG PHASES   | READ ONLY |   |   |   |   |   |   |   | A |  |  |  |  |  |  |
| B   |              |              |     |     |     |     |     |     |     | DAY     | RR2 CLR     | 15    | RED REST     |           |   |   |   |   |   |   |   | B |  |  |  |  |  |  |
| C   | REDUCE BY    | 0.1          | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | DOW     |             |       | REST-IN-WALK |           |   |   |   |   |   |   |   | C |  |  |  |  |  |  |
| D   | EVERY        | 0.5          | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | ER      |             |       | MAX 3 PHASES |           |   |   |   |   |   |   |   | D |  |  |  |  |  |  |
| E   | YELLOW       | 3.2          | 4.0 | 3.0 | 3.6 | 3.0 | 4.0 | 3.0 | 3.6 | MIN     |             |       | YEL START UP |           | 2 |   |   |   | 6 |   |   | E |  |  |  |  |  |  |
| F   | RED          | 1.0          | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | SEC     |             |       | FIRST PHASE  |           |   | 3 |   |   |   | 7 |   | F |  |  |  |  |  |  |
| 3.5 | PED XING FT  |              | 67  |     |     |     | 59  |     |     |         |             |       |              | 1         | 2 | 3 | 4 | 5 | 6 | 7 | 8 |   |  |  |  |  |  |  |
|     | BIKE XING FT |              | 60  |     |     |     | 67  |     |     |         |             |       |              |           |   |   |   |   |   |   |   |   |  |  |  |  |  |  |

|                   |   |
|-------------------|---|
| FOC LONG FAILURE  |   |
| FOD SHORT FAILURE |   |
| FOE               | 0 |
| FOF               | 5 |

|     |     |
|-----|-----|
| FCO | 3   |
| FC1 | 3   |
| FC2 | 10  |
| FCA | 0.0 |
| FCB | 0.0 |
| FCC | 0.0 |
| FCD | 0.0 |

|                |   |
|----------------|---|
| FDO TB SELECT  | 1 |
| FD3 PED SELECT | 0 |
| FD4 7 WIRE     | 0 |
| FD5 PERMISSIVE | 0 |
| FD8 OS SEEKING | 1 |

|                |   |
|----------------|---|
| CO5 FLASH TYPE | 1 |
| CC2 DOWNLOAD   | 1 |

## NOTES:

OLA = FZ 4

ENTRIES IN THESE LOCATIONS CAN BE CHANGED IN CC1 FLASH ONLY



C PAGE

|   |               | CONTROL PLANS |   |   |   |   |   |   |     | AM  | PM         | Y-COORD |   |   | LAG PHASE |             | FLAGS         |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |
|---|---------------|---------------|---|---|---|---|---|---|-----|-----|------------|---------|---|---|-----------|-------------|---------------|---|---|---|---|---|---|---|---|---|--|--|--|--|--|--|
|   |               | 1             | 2 | 3 | 4 | 5 | 6 | 7 | 8   | 9   |            | C       | D | E |           | F           | 1             | 2 | 3 | 4 | 5 | 6 | 7 | 8 |   |   |  |  |  |  |  |  |
| G | CYCLE LENGTH  |               |   |   |   |   |   |   | 110 | 110 |            |         |   |   |           | LAG FZ FREE |               | 2 |   | 4 |   | 6 |   | 8 | 0 |   |  |  |  |  |  |  |
| 1 | FZ1 GRN FCTR  |               |   |   |   |   |   |   | 23  | 16  |            |         |   |   |           | GAPOUT CP1  | LAG FZ CP 1   |   |   |   |   |   |   |   | 1 |   |  |  |  |  |  |  |
| 2 |               |               |   |   |   |   |   |   |     |     |            |         |   |   |           | GAPOUT CP2  | LAG FZ CP 2   |   |   |   |   |   |   |   | 2 |   |  |  |  |  |  |  |
| 3 | FZ3 GRN FCTR  |               |   |   |   |   |   |   | 0   | 0   |            |         |   |   |           | GAPOUT CP3  | LAG FZ CP 3   |   |   |   |   |   |   |   | 3 |   |  |  |  |  |  |  |
| 4 | FZ4 GRN FCTR  |               |   |   |   |   |   |   | 40  | 26  | PERM TIME  |         |   |   |           | GAPOUT CP4  | LAG FZ CP 4   |   |   |   |   |   |   |   | 4 |   |  |  |  |  |  |  |
| 5 | FZ5 GRN FCTR  |               |   |   |   |   |   |   |     |     | LAG OFFSET |         |   |   |           | GAPOUT CP5  | LAG FZ CP 5   |   |   |   |   |   |   |   | 5 |   |  |  |  |  |  |  |
| 6 |               |               |   |   |   |   |   |   |     |     | FORCE OFF  |         |   |   |           | GAPOUT CP6  | LAG FZ CP 6   |   |   |   |   |   |   |   | 6 |   |  |  |  |  |  |  |
| 7 | FZ7 GRN FCTR  |               |   |   |   |   |   |   | 0   | 0   | LONG GRN   |         |   |   |           | GAPOUT CP7  | LAG FZ CP 7   |   |   |   |   |   |   |   | 7 |   |  |  |  |  |  |  |
| 8 | FZ8 GRN FCTR  |               |   |   |   |   |   |   | 0   | 0   | NO GREEN   |         |   |   |           | GAPOUT CP8  | 0 LAG FZ CP 8 |   | 2 |   | 4 |   | 6 |   | 8 | 8 |  |  |  |  |  |  |
| 9 | MULTI CYCLE   |               |   |   |   |   |   |   | 0   | 0   |            |         |   |   |           | GAPOUT CP9  | 0 LAG FZ CP 9 |   | 2 |   | 4 |   | 6 |   | 8 | 9 |  |  |  |  |  |  |
| A | OFFSET A      |               |   |   |   |   |   |   | 0   | 0   | OFFSET     |         |   |   |           |             | LAG C COORD   |   |   |   |   |   |   |   | A |   |  |  |  |  |  |  |
| B | OFFSET B      |               |   |   |   |   |   |   | 0   | 0   |            |         |   |   |           |             | LAG D COORD   |   |   |   |   |   |   |   | B |   |  |  |  |  |  |  |
| C | OFFSET C      |               |   |   |   |   |   |   | 0   | 0   |            |         |   |   |           |             | COORD FAZES   |   | 2 |   |   |   | 6 |   | C |   |  |  |  |  |  |  |
| D | FZ 3 EXT      |               |   |   |   |   |   |   |     |     |            |         |   |   |           |             |               |   |   |   |   |   |   |   | D |   |  |  |  |  |  |  |
| E | FZ 7 EXT      |               |   |   |   |   |   |   |     |     |            |         |   |   |           |             |               |   |   |   |   |   |   |   | E |   |  |  |  |  |  |  |
| F | OFFSET INTRPT |               |   |   |   |   |   |   |     |     |            |         |   |   |           |             |               |   |   |   |   |   |   |   | F |   |  |  |  |  |  |  |
|   |               |               |   |   |   |   |   |   |     |     |            |         |   |   |           |             | 1             | 2 | 3 | 4 | 5 | 6 | 7 | 8 |   |   |  |  |  |  |  |  |

CO1 MANUAL CP

CO2 MASTER CP

CO3 CURRENT CP SYSTEM MASTER:

CO4 LAST CP RTE 78 EB RAMP

CO7 TRNSMT CP

COD MANUAL OFFSET

CAO LOCAL CYCLE TIMER

CBO MASTER CYCLE TIMER

CAA LOCAL OFFSET

CBA MASTER OFFSET

FEATURE

|   | OFF | ON |
|---|-----|----|
| 1 |     |    |
| 2 |     |    |
| 3 |     |    |
| 4 |     |    |
| 5 |     |    |
| 6 |     |    |
| 7 |     |    |
| 8 |     |    |

LOCATION

|   | OFF | ON |
|---|-----|----|
| 1 |     | 1  |
| 2 |     |    |
| 3 |     |    |
| 4 |     |    |
| 5 |     |    |
| 6 |     |    |
| 7 |     |    |
| 8 |     |    |

COO = 1

CCB/CDB OFFSET TIMER

CCC/CDC LAG GREEN TIMER

CCD/CDD FORCE OFF TIMER

CCE/CDE LONG GREEN TIMER

CCF/CDF NO GREEN TIMER

D PAGE

E PAGE

|   | D    | FLAGS |   |   |   |   |   |   |   | E    | FLAGS |   |   |   |   |   |   |   | F     | FLAGS |   |   |   |   |   |   |   |   |   |
|---|------|-------|---|---|---|---|---|---|---|------|-------|---|---|---|---|---|---|---|-------|-------|---|---|---|---|---|---|---|---|---|
|   | MAX  | 1     | 2 | 3 | 4 | 5 | 6 | 7 | 8 | MIN  | 1     | 2 | 3 | 4 | 5 | 6 | 7 | 8 | PED   | 1     | 2 | 3 | 4 | 5 | 6 | 7 | 8 |   |   |
| 0 | RCL  |       |   |   |   |   |   |   |   | RCL  |       |   |   |   |   |   |   |   | RCL   |       |   |   |   |   |   |   |   |   |   |
| 1 | CP 1 |       |   |   |   |   |   |   |   | CP 1 |       |   |   |   |   |   |   |   | CP 1  |       |   |   |   |   |   |   |   |   |   |
| 2 | CP 2 |       |   |   |   |   |   |   |   | CP 2 |       |   |   |   |   |   |   |   | CP 2  |       |   |   |   |   |   |   |   |   |   |
| 3 | CP 3 |       |   |   |   |   |   |   |   | CP 3 |       |   |   |   |   |   |   |   | CP 3  |       |   |   |   |   |   |   |   |   |   |
| 4 | CP 4 |       |   |   |   |   |   |   |   | CP 4 |       |   |   |   |   |   |   |   | CP 4  |       |   |   |   |   |   |   |   |   |   |
| 5 | CP 5 |       |   |   |   |   |   |   |   | CP 5 |       |   |   |   |   |   |   |   | CP 5  |       |   |   |   |   |   |   |   |   |   |
| 6 | CP 6 |       |   |   |   |   |   |   |   | CP 6 |       |   |   |   |   |   |   |   | CP 6  |       |   |   |   |   |   |   |   |   |   |
| 7 | CP 7 |       |   |   |   |   |   |   |   | CP 7 |       |   |   |   |   |   |   |   | CP 7  |       |   |   |   |   |   |   |   |   |   |
| 8 | CP 8 |       |   |   |   |   |   |   |   | CP 8 | 1     |   |   | 4 |   |   |   |   | CP 8  |       |   |   |   |   |   |   |   |   |   |
| 9 | CP 9 |       |   |   |   |   |   |   |   | CP 9 | 1     |   |   | 4 |   |   |   |   | CP 9  |       |   |   |   |   |   |   |   |   |   |
| A |      |       |   |   |   |   |   |   |   |      |       |   |   |   |   |   |   |   | RCL 1 |       |   |   |   |   |   |   |   |   |   |
| B |      |       |   |   |   |   |   |   |   |      |       |   |   |   |   |   |   |   | RCL 2 |       |   |   |   |   |   |   |   |   |   |
| C |      |       |   |   |   |   |   |   |   |      |       |   |   |   |   |   |   |   |       |       |   |   |   |   |   |   |   |   |   |
| D |      |       |   |   |   |   |   |   |   |      |       |   |   |   |   |   |   |   |       |       |   |   |   |   |   |   |   |   |   |
| E |      |       |   |   |   |   |   |   |   |      |       |   |   |   |   |   |   |   |       |       |   |   |   |   |   |   |   |   |   |
| F |      |       |   |   |   |   |   |   |   |      |       |   |   |   |   |   |   |   |       |       |   |   |   |   |   |   |   |   |   |
|   |      | 1     | 2 | 3 | 4 | 5 | 6 | 7 | 8 |      |       | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8     |       |   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

## LAST POWER FAILURE REGISTER

HOUR = D-A-E

MINUTE = D-B-E

DAY = D-C-E

RCL 1 = TIME OF DAY MAX RECALL (1ST SELECT) PHASES  
(CALL ACTIVE LIGHTS)RCL 2 = TIME OF DAY MAX RECALL (2ND SELECT) PHASES  
(CALL ACTIVE LIGHTS)

## LAST FLASH TIME REGISTER

HOUR = D-A-F

MINUTE = D-B-F

DAY = D-C-F

D-E-E = C8 VERSION NUMBER

D-E-F = LITHIUM BATTERY CONDITION

84 = BAD

85 = GOOD

|   | E        | FLAGS |   |   |   |   |   |   |   | F         | FLAGS |   |   |   |   |   |   |   |
|---|----------|-------|---|---|---|---|---|---|---|-----------|-------|---|---|---|---|---|---|---|
|   | FUNCTION | 1     | 2 | 3 | 4 | 5 | 6 | 7 | 8 | FUNCTION  | 1     | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 0 |          |       |   |   |   |   |   |   |   | CODE 4    |       |   |   |   |   |   |   | 0 |
| 1 |          |       |   |   |   |   |   |   |   | CODE 5    |       |   |   |   |   |   |   | 1 |
| 2 |          |       |   |   |   |   |   |   |   | C-RECALL  |       |   |   |   |   |   |   | 2 |
| 3 |          |       |   |   |   |   |   |   |   | D-RECALL  |       |   |   |   |   |   |   | 3 |
| 4 |          |       |   |   |   |   |   |   |   | EXCLUSIVE |       |   |   |   |   |   |   | 4 |
| 5 |          |       |   |   |   |   |   |   |   | 2 PED     |       | 2 |   |   |   |   |   | 5 |
| 6 |          |       |   |   |   |   |   |   |   | 6 PED     |       |   |   |   | 6 |   |   | 6 |
| 7 |          |       |   |   |   |   |   |   |   | 4 PED     |       |   |   | 4 |   |   |   | 7 |
| 8 |          |       |   |   |   |   |   |   |   | 8 PED     |       |   |   |   |   |   | 8 | 8 |
| 9 |          |       |   |   |   |   |   |   |   |           |       |   |   |   |   |   |   | 9 |
| A | OLA NOT  |       |   |   |   |   |   |   |   | OLA ON    |       |   |   |   |   |   |   | A |
| B | OLB NOT  |       |   |   |   |   |   |   |   | OLB ON    |       |   |   |   |   |   |   | B |
| C | OLC NOT  |       |   |   |   |   |   |   |   | OLC ON    |       |   |   |   |   |   |   | C |
| D | OLD NOT  |       |   |   |   |   |   |   |   | OLD ON    |       |   |   |   |   |   |   | D |
| E |          |       |   |   |   |   |   |   |   |           |       |   |   |   |   |   |   | E |
| F |          |       |   |   |   |   |   |   |   |           |       |   |   |   |   |   |   | F |
|   |          | 1     | 2 | 3 | 4 | 5 | 6 | 7 | 8 |           | 1     | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

| TIME OF DAY ACTIVITY TABLE            |    |     |     |     |   |   |   |   |   |   |   |
|---------------------------------------|----|-----|-----|-----|---|---|---|---|---|---|---|
| 7+EVENT+HR+MIN+ACT+"E"+ON/OFF+DOW LTS |    |     |     |     |   |   |   |   |   |   |   |
|                                       | HR | MIN | ACT | ON/ | S | M | T | W | T | F | S |
|                                       |    |     |     | OFF | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 0                                     | 05 | 30  | 2   | ON  |   | 2 | 3 | 4 | 5 | 6 |   |
| 1                                     | 05 | 59  | 2   |     |   | 2 | 3 | 4 | 5 | 6 |   |
| 2                                     |    |     |     |     |   |   |   |   |   |   |   |
| 3                                     |    |     |     |     |   |   |   |   |   |   |   |
| 4                                     |    |     |     |     |   |   |   |   |   |   |   |
| 5                                     |    |     |     |     |   |   |   |   |   |   |   |
| 6                                     |    |     |     |     |   |   |   |   |   |   |   |
| 7                                     |    |     |     |     |   |   |   |   |   |   |   |
| 8                                     |    |     |     |     |   |   |   |   |   |   |   |
| 9                                     |    |     |     |     |   |   |   |   |   |   |   |
| A                                     |    |     |     |     |   |   |   |   |   |   |   |
| B                                     |    |     |     |     |   |   |   |   |   |   |   |
| C                                     |    |     |     |     |   |   |   |   |   |   |   |
| D                                     |    |     |     |     |   |   |   |   |   |   |   |
| E                                     | 06 | 00  | E   |     | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| F                                     | 18 | 30  | E   | ON  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

## ACTIVITY CODE

- ```

1 TYPE OF MAX TERMINATION
2 MAX 2
3 MAX 3
4 COND SERV (1ST SELECT)
5 COND SERV (2ND SELECT)
6 ENERGIZE AUX OUTPUT-RED
7 ENERGIZE AUX OUTPUT-GREEN

```

[illegible]

- ```

B ENERGIZE AUX OUTPUT-YELLOW

9 TIME OF DAY MAX RECALL (1ST SELECT)
A TRAFFIC ACT. MAX 2 OPERATION
B TIME OF DAY MAX RECALL (2ND SELECT)
C YELLOW YIELD COORDINATION
D YELLOW YIELD COORDINATION
E TIME OF DAY FREE OPERATION
F FLASHING OPERATION

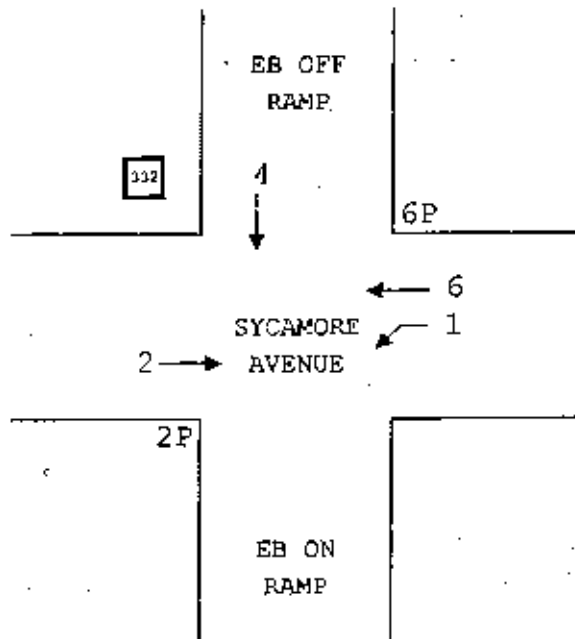
```

[illegible]

DATE: 4/22/06

LOCATION: RTE 78 EB @ SYCAMORE AVENUE

CONFLICT MONITOR PROGRAM



LOCATION: RTE 78 WB @ TWIN OAKS VALLEY ROAD

CALTRANS C8 Version 3

DATE: 8/16/10

PAGE 1

F PAGE

|     | INTERVAL     | PHASE TIMING |     |     |     |     |     |     |     | 9       | PRE-EMPTION |       | F            |           |   |   |   |   |   |   |   |   |  |   |  |  |  |  |
|-----|--------------|--------------|-----|-----|-----|-----|-----|-----|-----|---------|-------------|-------|--------------|-----------|---|---|---|---|---|---|---|---|--|---|--|--|--|--|
|     |              | 1            | 2   | 3   | 4   | 5   | 6   | 7   | 8   |         | E           | FLAGS | 1            | 2         | 3 | 4 | 5 | 6 | 7 | 8 |   |   |  |   |  |  |  |  |
| 0   | WALK         | 1            | 7   | 1   | 1   | 1   | 1   | 1   | 14  | CLK RST | EV SEL      | 0     | PERMIT       | 1         | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 0 |  |   |  |  |  |  |
| 1   | DONT WALK    | 1            | 30  | 1   | 1   | 1   | 1   | 1   | 1   |         | RR1 CLR     | 15    | RED LOCK     |           |   |   |   |   |   |   | 8 | 1 |  |   |  |  |  |  |
| 2   | MIN GREEN    | 1            | 11  | 1   | 1   | 1   | 5   | 1   | 5   |         | EVA DLY     | 0     | YEL LOCK     |           |   |   |   |   |   |   |   | 2 |  |   |  |  |  |  |
| 3   | TYPE 3 DET   | 0            | 0   | 0   | 0   | 0   | 0   | 0   | 0   |         | EVA CLR     | 5     | V RECALL     |           | 2 |   |   |   | 6 |   |   | 3 |  |   |  |  |  |  |
| 4   | ADD/VEH      | 0.0          | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |         | EVB DLY     | 0     | P RECALL     |           |   |   |   |   |   |   |   | 4 |  |   |  |  |  |  |
| 5   | PASSAGE      | 0.9          | 2.0 | 0.9 | 0.9 | 0.9 | 2.0 | 0.9 | 2.0 |         | EVB CLR     | 5     | PED PHASES   |           | 2 |   |   |   |   |   | 8 | 5 |  |   |  |  |  |  |
| 6   | MAX GAP      | 0.9          | 2.0 | 0.9 | 0.9 | 0.9 | 2.0 | 0.9 | 2.0 |         | EVC DLY     | 0     | RT OLA       |           |   |   |   |   |   |   |   | 6 |  |   |  |  |  |  |
| 7   | MIN GAP      | 0.9          | 2.0 | 0.9 | 0.9 | 0.9 | 2.0 | 0.9 | 2.0 |         | EVC CLR     | 5     | RT OLB       |           |   |   |   |   |   |   |   | 7 |  |   |  |  |  |  |
| 8   | MAX EXT      | 9            | 30  | 9   | 9   | 9   | 25  | 9   | 25  |         | EVD DLY     | 0     | DBL ENTRY    |           |   |   | 4 |   |   |   | 8 | 8 |  |   |  |  |  |  |
| 9   | MAX 2        |              |     |     |     |     |     |     | 40  | YR      | EVD CLR     | 5     | MAX 2 PHASES |           |   |   |   |   |   |   | 8 | 9 |  |   |  |  |  |  |
| A   | MAX 3        |              |     |     |     |     |     |     |     | MO      | MAX EV      | 255   | LAG PHASES   | READ ONLY |   |   |   |   |   |   |   |   |  | A |  |  |  |  |
| B   |              |              |     |     |     |     |     |     |     | DAY     | RR2 CLR     | 15    | RED REST     |           |   |   |   |   |   |   |   | B |  |   |  |  |  |  |
| C   | REDUCE BY    | 0.0          | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | DOW     |             |       | REST-IN-WALK |           |   |   |   |   |   |   |   | C |  |   |  |  |  |  |
| D   | EVERY        | 1.0          | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | HR      |             |       | MAX 3 PHASES |           |   |   |   |   |   |   |   | D |  |   |  |  |  |  |
| E   | YELLOW       | 3.0          | 4.3 | 3.0 | 3.6 | 3.0 | 4.3 | 3.0 | 3.6 | MIN     |             |       | YEL START UP |           | 2 |   |   |   | 6 |   |   | E |  |   |  |  |  |  |
| F   | RED          | 1.0          | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | SEC     |             |       | FIRST PHASE  |           |   | 3 |   |   |   | 7 |   | F |  |   |  |  |  |  |
|     | PED XING FT  |              | 124 |     |     |     |     |     |     |         |             |       |              | 1         | 2 | 3 | 4 | 5 | 6 | 7 | 8 |   |  |   |  |  |  |  |
| 3.5 | BIKE XING FT |              | 138 |     |     |     | 32  |     |     |         |             |       |              |           |   |   |   |   |   |   |   |   |  |   |  |  |  |  |

|                   |   |
|-------------------|---|
| FOC LONG FAILURE  |   |
| FOD SHORT FAILURE |   |
| FOE               | 0 |
| FOF               | 5 |

|     |     |
|-----|-----|
| FCO | 3   |
| FC1 | 3   |
| FC2 | 10  |
| FCA | 0.0 |
| FCB | 0.0 |
| FCC | 0.0 |
| FCD | 0.0 |

|                |   |
|----------------|---|
| FDO TB SELECT  | 1 |
| FD3 PED SELECT | 0 |
| FD4 7 WIRE     | 0 |
| FD5 PERMISSIVE | 0 |
| FD8 OS SEEKING | 1 |

|                |   |
|----------------|---|
| CO5 FLASH TYPE | 1 |
| CC2 DOWNLOAD   | 1 |

## NOTES:

OLA = FZ 8 (3 section WB to NB)

ENTRIES IN THESE LOCATIONS CAN BE CHANGED IN CC1 FLASH ONLY

OLB = FZ 8 (5 section NB to WB)

FZ 6 BIKE = 4 sec

C PAGE

|   |               | CONTROL PLANS |     |     |   |   |   |   |   |   | Y-COORD    |   |   | LAG PHASE  | FLAGS       |             |   |   |   |   |   |   |   |   |   |  |  |  |  |  |
|---|---------------|---------------|-----|-----|---|---|---|---|---|---|------------|---|---|------------|-------------|-------------|---|---|---|---|---|---|---|---|---|--|--|--|--|--|
|   |               | 1             | 2   | 3   | 4 | 5 | 6 | 7 | 8 | 9 |            | C | D | E          | F           | 1           | 2 | 3 | 4 | 5 | 6 | 7 | 8 |   |   |  |  |  |  |  |
| 0 | CYCLE LENGTH  | 120           | 120 | 120 |   |   |   |   |   |   |            |   |   |            | LAG FZ FREE |             | 2 |   | 4 |   | 6 |   | 8 | 0 |   |  |  |  |  |  |
| 1 | FZ1 GRN FCTR  | 0             | 0   | 0   |   |   |   |   |   |   |            |   |   | GAPOUT CP1 | 0           | LAG FZ CP 1 |   | 2 |   | 4 |   | 6 |   | 8 | 1 |  |  |  |  |  |
| 2 |               |               |     |     |   |   |   |   |   |   |            |   |   | GAPOUT CP2 | 0           | LAG FZ CP 2 |   | 2 |   | 4 |   | 6 |   | 8 | 2 |  |  |  |  |  |
| 3 | FZ3 GRN FCTR  | 0             | 0   | 0   |   |   |   |   |   |   |            |   |   | GAPOUT CP3 | 0           | LAG FZ CP 3 |   | 2 |   | 4 |   | 6 |   | 8 | 3 |  |  |  |  |  |
| 4 | FZ4 GRN FCTR  | 0             | 0   | 0   |   |   |   |   |   |   | PERM TIME  |   |   | GAPOUT CP4 |             | LAG FZ CP 4 |   |   |   |   |   |   |   |   | 4 |  |  |  |  |  |
| 5 | FZ5 GRN FCTR  | 0             | 0   | 0   |   |   |   |   |   |   | LAG OFFSET |   |   | GAPOUT CP5 |             | LAG FZ CP 5 |   |   |   |   |   |   |   |   | 5 |  |  |  |  |  |
| 6 |               |               |     |     |   |   |   |   |   |   | FORCE OFF  |   |   | GAPOUT CP6 |             | LAG FZ CP 6 |   |   |   |   |   |   |   |   | 6 |  |  |  |  |  |
| 7 | FZ7 GRN FCTR  | 0             | 0   | 0   |   |   |   |   |   |   | LONG GRN   |   |   | GAPOUT CP7 |             | LAG FZ CP 7 |   |   |   |   |   |   |   |   | 7 |  |  |  |  |  |
| 8 | FZ8 GRN FCTR  | 45            | 45  | 45  |   |   |   |   |   |   | NO GREEN   |   |   | GAPOUT CP8 |             | LAG FZ CP 8 |   |   |   |   |   |   |   |   | 8 |  |  |  |  |  |
| 9 | MULTI CYCLE   | 0             | 0   | 0   |   |   |   |   |   |   |            |   |   | GAPOUT CP9 |             | LAG FZ CP 9 |   |   |   |   |   |   |   |   | 9 |  |  |  |  |  |
| A | OFFSET A      | 4             | 26  | 6   |   |   |   |   |   |   | OFFSET     |   |   |            |             | LAG C COORD |   |   |   |   |   |   |   |   | A |  |  |  |  |  |
| B | OFFSET B      | 4             | 26  | 6   |   |   |   |   |   |   |            |   |   |            |             | LAG D COORD |   |   |   |   |   |   |   |   | B |  |  |  |  |  |
| C | OFFSET C      | 4             | 26  | 6   |   |   |   |   |   |   |            |   |   |            |             | COORD FAZES |   | 2 |   |   |   | 6 |   |   | C |  |  |  |  |  |
| D | FZ 3 EXT      |               |     |     |   |   |   |   |   |   |            |   |   |            |             |             |   |   |   |   |   |   |   |   | D |  |  |  |  |  |
| E | FZ 7 EXT      |               |     |     |   |   |   |   |   |   |            |   |   |            |             |             |   |   |   |   |   |   |   |   | E |  |  |  |  |  |
| F | OFFSET INTRPT |               |     |     |   |   |   |   |   |   |            |   |   |            |             |             |   |   |   |   |   |   |   |   | F |  |  |  |  |  |
|   |               |               |     |     |   |   |   |   |   |   |            |   |   |            |             |             | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |   |  |  |  |  |  |

CO1 MANUAL CP

CO2 MASTER CP

CO3 CURRENT CP SYSTEM MASTER;

CO4 LAST CP RTE 78 EB RAMP

CO7 TRNSMT CP

COD MANUAL OFFSET

CAO LOCAL CYCLE TIMER

CBO MASTER CYCLE TIMER

CAA LOCAL OFFSET

CBA MASTER OFFSET

FEATURE

|   | OFF | ON |
|---|-----|----|
| 1 |     |    |
| 2 |     |    |
| 3 |     |    |
| 4 |     |    |
| 5 |     |    |
| 6 |     |    |
| 7 |     |    |
| 8 |     |    |

LOCATION

|   | OFF | ON |
|---|-----|----|
| 1 |     |    |
| 2 |     | 2  |
| 3 |     |    |
| 4 |     |    |
| 5 |     |    |
| 6 |     |    |
| 7 |     |    |
| 8 |     |    |

COO = 2

CCB/CDB OFFSET TIMER

CCC/CDC LAG GREEN TIMER

CCD/CDD FORCE OFF TIMER

CCE/CDE LONG GREEN TIMER

CCF/CDF NO GREEN TIMER

D PAGE

E PAGE

|   | D    | FLAGS |   |   |   |   |   |   |   | E    | FLAGS |   |   |   |   |   |   |   | F     | FLAGS |   |   |   |   |   |   |   |
|---|------|-------|---|---|---|---|---|---|---|------|-------|---|---|---|---|---|---|---|-------|-------|---|---|---|---|---|---|---|
|   | MAX  | 1     | 2 | 3 | 4 | 5 | 6 | 7 | 8 | MIN  | 1     | 2 | 3 | 4 | 5 | 6 | 7 | 8 | PED   | 1     | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 0 | RCL  |       |   |   |   |   |   |   |   | RCL  |       |   |   |   |   |   |   |   | RCL   |       |   |   |   |   |   |   |   |
| 1 | CP 1 |       |   |   |   |   |   |   |   | CP 1 |       |   |   |   |   |   |   |   | CP 1  |       |   |   |   |   |   |   | 8 |
| 2 | CP 2 |       |   |   |   |   |   |   |   | CP 2 |       |   |   |   |   |   |   |   | CP 2  |       |   |   |   |   |   |   | 8 |
| 3 | CP 3 |       |   |   |   |   |   |   |   | CP 3 |       |   |   |   |   |   |   |   | CP 3  |       |   |   |   |   |   |   | 8 |
| 4 | CP 4 |       |   |   |   |   |   |   |   | CP 4 |       |   |   |   |   |   |   |   | CP 4  |       |   |   |   |   |   |   |   |
| 5 | CP 5 |       |   |   |   |   |   |   |   | CP 5 |       |   |   |   |   |   |   |   | CP 5  |       |   |   |   |   |   |   |   |
| 6 | CP 6 |       |   |   |   |   |   |   |   | CP 6 |       |   |   |   |   |   |   |   | CP 6  |       |   |   |   |   |   |   |   |
| 7 | CP 7 |       |   |   |   |   |   |   |   | CP 7 |       |   |   |   |   |   |   |   | CP 7  |       |   |   |   |   |   |   |   |
| 8 | CP 8 |       |   |   |   |   |   |   |   | CP 8 |       |   |   |   |   |   |   |   | CP 8  |       |   |   |   |   |   |   |   |
| 9 | CP 9 |       |   |   |   |   |   |   |   | CP 9 |       |   |   |   |   |   |   |   | CP 9  |       |   |   |   |   |   |   |   |
| A |      |       |   |   |   |   |   |   |   |      |       |   |   |   |   |   |   |   | RCL 1 |       |   |   |   |   |   |   |   |
| B |      |       |   |   |   |   |   |   |   |      |       |   |   |   |   |   |   |   | RCL 2 |       |   |   |   |   |   |   |   |
| C |      |       |   |   |   |   |   |   |   |      |       |   |   |   |   |   |   |   |       |       |   |   |   |   |   |   |   |
| D |      |       |   |   |   |   |   |   |   |      |       |   |   |   |   |   |   |   |       |       |   |   |   |   |   |   |   |
| E |      |       |   |   |   |   |   |   |   |      |       |   |   |   |   |   |   |   |       |       |   |   |   |   |   |   |   |
| F |      |       |   |   |   |   |   |   |   |      |       |   |   |   |   |   |   |   |       |       |   |   |   |   |   |   |   |
|   |      | 1     | 2 | 3 | 4 | 5 | 6 | 7 | 8 |      | 1     | 2 | 3 | 4 | 5 | 6 | 7 | 8 |       | 1     | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

|   | E        | FLAGS |   |   |   |   |   |   |   | F         | FLAGS |   |   |   |   |   |   |   |   |
|---|----------|-------|---|---|---|---|---|---|---|-----------|-------|---|---|---|---|---|---|---|---|
|   | FUNCTION | 1     | 2 | 3 | 4 | 5 | 6 | 7 | 8 | FUNCTION  | 1     | 2 | 3 | 4 | 5 | 6 | 7 | 8 |   |
| 0 |          |       |   |   |   |   |   |   |   | CODE 4    |       |   |   |   |   |   |   |   | 0 |
| 1 |          |       |   |   |   |   |   |   |   | CODE 5    |       |   |   |   |   |   |   |   | 1 |
| 2 |          |       |   |   |   |   |   |   |   | C-RECALL  |       |   |   |   |   |   |   |   | 2 |
| 3 |          |       |   |   |   |   |   |   |   | D-RECALL  |       |   |   |   |   |   |   |   | 3 |
| 4 |          |       |   |   |   |   |   |   |   | EXCLUSIVE |       |   |   |   |   |   |   |   | 4 |
| 5 |          |       |   |   |   |   |   |   |   | 2 PED     |       | 2 |   |   |   |   |   |   | 5 |
| 6 |          |       |   |   |   |   |   |   |   | 6 PED     |       |   |   |   |   | 6 |   |   | 6 |
| 7 |          |       |   |   |   |   |   |   |   | 4 PED     |       |   | 4 |   |   |   |   |   | 7 |
| 8 |          |       |   |   |   |   |   |   |   | 8 PED     |       |   |   |   |   |   |   | 8 | 8 |
| 9 |          |       |   |   |   |   |   |   |   |           |       |   |   |   |   |   |   |   | 9 |
| A | OLA NOT  |       |   |   |   |   |   |   |   | OLA ON    |       |   |   |   |   |   |   |   | A |
| B | OLB NOT  |       |   |   |   |   |   |   |   | OLB ON    |       |   |   |   |   |   |   |   | B |
| C | OLC NOT  |       |   |   |   |   |   |   |   | OLC ON    |       |   |   |   |   |   |   |   | C |
| D | OLD NOT  |       |   |   |   |   |   |   |   | OLD ON    |       |   |   |   |   |   |   |   | D |
| E |          |       |   |   |   |   |   |   |   |           |       |   |   |   |   |   |   |   | E |
| F |          |       |   |   |   |   |   |   |   |           |       |   |   |   |   |   |   |   | F |
|   |          | 1     | 2 | 3 | 4 | 5 | 6 | 7 | 8 |           | 1     | 2 | 3 | 4 | 5 | 6 | 7 | 8 |   |

## LAST POWER FAILURE REGISTER

HOUR = D-A-E  
 MINUTE = D-B-E  
 DAY = D-C-E

RCL 1 = TIME OF DAY MAX RECALL (1ST SELECT) PHASES  
 (CALL ACTIVE LIGHTS)  
 RCL 2 = TIME OF DAY MAX RECALL (2ND SELECT) PHASES  
 (CALL ACTIVE LIGHTS)

## LAST FLASH TIME REGISTER

HOUR = D-A-F  
 MINUTE = D-B-F  
 DAY = D-C-F

D-E-E = C8 VERSION NUMBER  
 D-E-F = LITHIUM BATTERY CONDITION  
 84 = BAD  
 85 = GOOD

| TIME OF DAY ACTIVITY TABLE            |    |     |     |            |   |   |   |   |   |   |   |
|---------------------------------------|----|-----|-----|------------|---|---|---|---|---|---|---|
| 7+EVENT+HR+MIN+ACT+"E"+ON/OFF+DOW LTS |    |     |     |            |   |   |   |   |   |   |   |
|                                       |    |     |     | ON/<br>OFF | S | M | T | W | T | F | S |
|                                       | HR | MIN | ACT |            | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 0                                     | 06 | 00  | 2   | ON         |   | 2 | 3 | 4 | 5 | 6 |   |
| 1                                     | 08 | 00  | 2   | ON         | 1 |   |   |   |   |   | 7 |
| 2                                     | 19 | 00  | 2   |            | 1 |   |   |   |   |   | 7 |
| 3                                     | 20 | 00  | 2   |            |   | 2 | 3 | 4 | 5 | 6 |   |
| 4                                     |    |     |     |            |   |   |   |   |   |   |   |
| 5                                     |    |     |     |            |   |   |   |   |   |   |   |
| 6                                     |    |     |     |            |   |   |   |   |   |   |   |
| 7                                     |    |     |     |            |   |   |   |   |   |   |   |
| 8                                     |    |     |     |            |   |   |   |   |   |   |   |
| 9                                     |    |     |     |            |   |   |   |   |   |   |   |
| A                                     |    |     |     |            |   |   |   |   |   |   |   |
| B                                     |    |     |     |            |   |   |   |   |   |   |   |
| C                                     | 06 | 00  | E   |            |   | 2 | 3 | 4 | 5 | 6 |   |
| D                                     | 08 | 00  | E   |            | 1 |   |   |   |   |   | 7 |
| E                                     | 19 | 00  | E   | ON         | 1 |   |   |   |   |   | 7 |
| F                                     | 20 | 00  | E   | ON         |   | 2 | 3 | 4 | 5 | 6 |   |

## ACTIVITY CODE

- ```

1 TYPE OF MAX TERMINATION
2 MAX 2
3 MAX 3
4 COND SERV (1ST SELECT)
5 COND SERV (2ND SELECT)
6 ENERGIZE AUX OUTPUT-RED
7 ENERGIZE AUX OUTPUT-GREEN

```

[illegible]

- ```

8 ENERGIZE AUX OUTPUT-YELLOW

9 TIME OF DAY MAX RECALL (1ST SELECT)
A TRAFFIC ACT. MAX 2 OPERATION
B TIME OF DAY MAX RECALL (2ND SELECT)
C YELLOW YIELD COORDINATION
D YELLOW YIELD COORDINATION
E TIME OF DAY FREE OPERATION
F FLASHING OPERATION

```

[illegible]

LOCATION: RTE 78 WB @ TWIN OAKS VALLEY ROAD

WB ON  
RAMP

← 6

TWIN OAKS VALLEY ROAD

2 →

WB OFF  
RAMP

332

LOCATION: RTE 78 EB @ TWIN OAKS VALLEY ROAD

CALTRANS C3 Version 3

DATE: 8/16/10

PAGE 1

F PAGE

|     | INTERVAL     | PHASE TIMING |     |     |     |     |     |     |     | 9       | PRE-EMPTION |     | F            |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |
|-----|--------------|--------------|-----|-----|-----|-----|-----|-----|-----|---------|-------------|-----|--------------|---|---|---|---|---|---|---|---|---|--|--|--|--|--|--|
|     |              | 1            | 2   | 3   | 4   | 5   | 6   | 7   | 8   |         | E           | 0   | FLAGS        | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 0 |  |  |  |  |  |  |
| 0   | WALK         | 1            | 7   | 1   | 7   | 1   | 7   | 1   | 1   | CLK RST | EV SEL      | 0   | PERMIT       | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 0 |  |  |  |  |  |  |
| 1   | DONT WALK    | 1            | 12  | 1   | 30  | 1   | 12  | 1   | 1   |         | RR1 CLR     | 15  | RED LOCK     | 1 |   |   | 4 |   |   |   |   | 1 |  |  |  |  |  |  |
| 2   | MIN GREEN    | 5            | 7   | 1   | 5   | 5   | 6   | 1   | 1   |         | EVA DLY     | 0   | YEL LOCK     |   |   |   |   |   |   |   |   | 2 |  |  |  |  |  |  |
| 3   | TYPE 3 DET   | 0            | 0   | 0   | 0   | 0   | 0   | 0   | 0   |         | EVA CLR     | 5   | V RECALL     |   | 2 |   |   |   | 6 |   |   | 3 |  |  |  |  |  |  |
| 4   | ADD/VEH      | 0.0          | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |         | EVB DLY     | 0   | P RECALL     |   |   |   |   |   |   |   |   | 4 |  |  |  |  |  |  |
| 5   | PASSAGE      | 3.0          | 2.0 | 0.9 | 2.0 | 2.0 | 2.0 | 0.9 | 0.9 |         | EVB CLR     | 5   | PED PHASES   |   | 2 |   | 4 |   | 6 |   |   | 5 |  |  |  |  |  |  |
| 6   | MAX GAP      | 5.0          | 2.0 | 0.9 | 2.0 | 2.0 | 2.0 | 0.9 | 0.9 |         | EVC DLY     | 0   | RT OLA       |   |   |   |   |   |   |   |   | 6 |  |  |  |  |  |  |
| 7   | MIN GAP      | 2.0          | 2.0 | 0.9 | 2.0 | 2.0 | 2.0 | 0.9 | 0.9 |         | EVC CLR     | 5   | RT OLB       |   |   |   |   |   |   |   |   | 7 |  |  |  |  |  |  |
| 8   | MAX EXT      | 35           | 25  | 9   | 35  | 15  | 30  | 9   | 9   |         | EVE DLY     | 0   | DBL ENTRY    |   |   |   | 4 |   |   |   | 8 | 8 |  |  |  |  |  |  |
| 9   | MAX 2        |              |     |     |     |     |     |     |     | YR      | EVD CLR     | 5   | MAX 2 PHASES |   |   |   |   |   |   |   |   | 9 |  |  |  |  |  |  |
| A   | MAX 3        |              |     |     |     |     |     |     |     | MO      | MAX EV      | 255 | LAG PHASES   |   |   |   |   |   |   |   |   | A |  |  |  |  |  |  |
| B   |              |              |     |     |     |     |     |     |     | DAY     | RR2 CLR     | 15  | RED REST     |   |   |   |   |   |   |   |   | B |  |  |  |  |  |  |
| C   | REDUCE BY    | 0.1          | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | DOW     |             |     | REST-IN-WALK |   |   |   |   |   |   |   |   | C |  |  |  |  |  |  |
| D   | EVERY        | 0.8          | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | HR      |             |     | MAX 3 PHASES |   |   |   |   |   |   |   |   | D |  |  |  |  |  |  |
| E   | YELLOW       | 3.2          | 4.3 | 3.0 | 3.6 | 3.6 | 4.3 | 3.0 | 3.6 | MIN     |             |     | YEL START UP |   | 2 |   |   |   | 6 |   |   | E |  |  |  |  |  |  |
| F   | RED          | 1.0          | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | SEC     |             |     | FIRST PHASE  |   |   | 3 |   |   |   | 7 |   | F |  |  |  |  |  |  |
| 3.5 | PED XING FT  |              | 58  |     | 118 |     | 61  |     |     |         |             |     |              | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |   |  |  |  |  |  |  |
|     | BIKE XING FT |              | 76  |     |     |     | 72  |     |     |         |             |     |              |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |

|                   |   |
|-------------------|---|
| FOC LONG FAILURE  |   |
| FOD SHORT FAILURE |   |
| FOE               | 0 |
| FOF               | 5 |

|     |     |
|-----|-----|
| FCO | 3   |
| FC1 | 3   |
| FC2 | 10  |
| FCA | 0.0 |
| FCB | 0.0 |
| FCC | 0.0 |
| FCD | 0.0 |

|                |   |
|----------------|---|
| FDO TB SELECT  | 1 |
| FD3 PED SELECT | 0 |
| FD4 7 WIRE     | 0 |
| FD5 PERMISSIVE | 0 |
| FD6 OS SEEKING | 1 |

|                |   |
|----------------|---|
| CG5 FLASH TYPE | 1 |
| CC2 DOWNLOAD   | 1 |

## NOTES:

OLA = FZ 5

ENTRIES IN THESE LOCATIONS CAN BE CHANGED IN CC1 FLASH ONLY



LOCATION: RTE 78 EB @ TWIN OAKS VALLEY ROAD

CALTRANS C8 Version 3

DATE: 6/22/10

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C PAGE

|   |                | CONTROL PLANS |     |     |   |   |   |   |   |   | Y-COORD    |   |            | LAG PHASE  | FLAGS       |             |   |   |   |   |   |   |   |   |   |  |  |  |  |  |
|---|----------------|---------------|-----|-----|---|---|---|---|---|---|------------|---|------------|------------|-------------|-------------|---|---|---|---|---|---|---|---|---|--|--|--|--|--|
|   |                | 1             | 2   | 3   | 4 | 5 | 6 | 7 | 8 | 9 |            | C | D          | E          | F           | 1           | 2 | 3 | 4 | 5 | 6 | 7 | 8 |   |   |  |  |  |  |  |
| 0 | CYCLE LENGTH   | 120           | 120 | 120 |   |   |   |   |   |   |            |   |            |            | LAG FZ FREE |             | 2 |   | 4 |   | 6 |   | 8 | 0 |   |  |  |  |  |  |
| 1 | FZ1 GRN FCTR   | 25            | 19  | 18  |   |   |   |   |   |   |            |   |            | GAPOUT CP1 | 0           | LAG FZ CP 1 |   | 2 |   | 4 |   | 6 |   | 8 | 1 |  |  |  |  |  |
| 2 |                |               |     |     |   |   |   |   |   |   |            |   | GAPOUT CP2 | 0          | LAG FZ CP 2 |             | 2 |   | 4 |   | 6 |   | 8 | 2 |   |  |  |  |  |  |
| 3 | FZ3 GRN FCTR   | 0             | 0   | 0   |   |   |   |   |   |   |            |   | GAPOUT CP3 | 0          | LAG FZ CP 3 |             | 2 |   | 4 |   | 6 |   | 8 | 3 |   |  |  |  |  |  |
| 4 | FZ4 GRN FCTR   | 33            | 32  | 32  |   |   |   |   |   |   | PERM TIME  |   | GAPOUT CP4 |            | LAG FZ CP 4 |             |   |   |   |   |   |   |   | 4 |   |  |  |  |  |  |
| 5 | FZ5 GRN FCTR   | 20            | 11  | 18  |   |   |   |   |   |   | LAG OFFSET |   | GAPOUT CP5 |            | LAG FZ CP 5 |             |   |   |   |   |   |   |   | 5 |   |  |  |  |  |  |
| 6 |                |               |     |     |   |   |   |   |   |   | FORCE OFF  |   | GAPOUT CP6 |            | LAG FZ CP 6 |             |   |   |   |   |   |   |   | 6 |   |  |  |  |  |  |
| 7 | FZ7 GRN FCTR   | 0             | 0   | 0   |   |   |   |   |   |   | LONG GRN   |   | GAPOUT CP7 |            | LAG FZ CP 7 |             |   |   |   |   |   |   |   | 7 |   |  |  |  |  |  |
| 8 | FZ8 GRN FCTR   | 0             | 0   | 0   |   |   |   |   |   |   | NO GREEN   |   | GAPOUT CP8 |            | LAG FZ CP 8 |             |   |   |   |   |   |   |   | 8 |   |  |  |  |  |  |
| 9 | MULTI CYCLE    | 0             | 0   | 0   |   |   |   |   |   |   |            |   | GAPOUT CP9 |            | LAG FZ CP 9 |             |   |   |   |   |   |   |   | 9 |   |  |  |  |  |  |
| A | OFFSET A       | 92            | 56  | 102 |   |   |   |   |   |   | OFFSET     |   |            |            | LAG C COORD |             |   |   |   |   |   |   |   | A |   |  |  |  |  |  |
| B | OFFSET B       | 92            | 56  | 102 |   |   |   |   |   |   |            |   |            |            | LAG D COORD |             |   |   |   |   |   |   |   | B |   |  |  |  |  |  |
| C | OFFSET C       | 92            | 56  | 102 |   |   |   |   |   |   |            |   |            |            | COORD FAZES |             | 2 |   |   |   | 6 |   |   | C |   |  |  |  |  |  |
| D | FZ 3 EXT       |               |     |     |   |   |   |   |   |   |            |   |            |            |             |             |   |   |   |   |   |   |   | D |   |  |  |  |  |  |
| E | FZ 7 EXT       |               |     |     |   |   |   |   |   |   |            |   |            |            |             |             |   |   |   |   |   |   |   | E |   |  |  |  |  |  |
| F | OFFSEET INTRPT |               |     |     |   |   |   |   |   |   |            |   |            |            |             |             |   |   |   |   |   |   |   | F |   |  |  |  |  |  |
|   |                |               |     |     |   |   |   |   |   |   |            |   |            |            |             |             | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |   |  |  |  |  |  |

CO1 MANUAL CP

CO2 MASTER CP

CO3 CURRENT CP

CO4 LAST CP

CO7 TRNSMT CP

COD MANUAL OFFSET

CAO LOCAL CYCLE TIMER

CBO MASTER CYCLE TIMER

CAA LOCAL OFFSET

CBA MASTER OFFSET

FEATURE

|   | OFF | ON |
|---|-----|----|
| 1 |     |    |
| 2 |     |    |
| 3 |     |    |
| 4 |     |    |
| 5 |     |    |
| 6 |     |    |
| 7 |     |    |
| 8 |     |    |

LOCATION

|   | OFF | ON |
|---|-----|----|
| 1 |     | 1  |
| 2 |     |    |
| 3 |     |    |
| 4 |     |    |
| 5 |     |    |
| 6 |     |    |
| 7 |     |    |
| 8 |     |    |

COO = 1

CCB/CDB OFFSET TIMER

CCC/CDC LAG GREEN TIMER

CCD/CDD FORCE OFF TIMER

CCE/CDE LONG GREEN TIMER

CCF/CDF NO GREEN TIMER

D PAGE

E PAGE

|   | D    | FLAGS |   |   |   |   |   |   | E | FLAGS |   |   |   |   |   |   | F | FLAGS |       |   |   |   |   |   |   |   |   |
|---|------|-------|---|---|---|---|---|---|---|-------|---|---|---|---|---|---|---|-------|-------|---|---|---|---|---|---|---|---|
|   | MAX  | 1     | 2 | 3 | 4 | 5 | 6 | 7 | 8 | MIN   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8     | PED   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 0 | RCL  |       |   |   |   |   |   |   |   | RCL   |   |   |   |   |   |   |   |       | RCL   |   |   |   |   |   |   |   |   |
| 1 | CP 1 |       |   |   |   |   |   |   |   | CP 1  | 1 |   |   | 4 | 5 |   |   |       | CP 1  |   |   |   |   |   |   |   |   |
| 2 | CP 2 |       |   |   |   |   |   |   |   | CP 2  | 1 |   |   | 4 | 5 |   |   |       | CP 2  |   |   |   |   |   |   |   |   |
| 3 | CP 3 |       |   |   |   |   |   |   |   | CP 3  | 1 |   |   | 4 | 5 |   |   |       | CP 3  |   |   |   |   |   |   |   |   |
| 4 | CP 4 |       |   |   |   |   |   |   |   | CP 4  |   |   |   |   |   |   |   |       | CP 4  |   |   |   |   |   |   |   |   |
| 5 | CP 5 |       |   |   |   |   |   |   |   | CP 5  |   |   |   |   |   |   |   |       | CP 5  |   |   |   |   |   |   |   |   |
| 6 | CP 6 |       |   |   |   |   |   |   |   | CP 6  |   |   |   |   |   |   |   |       | CP 6  |   |   |   |   |   |   |   |   |
| 7 | CP 7 |       |   |   |   |   |   |   |   | CP 7  |   |   |   |   |   |   |   |       | CP 7  |   |   |   |   |   |   |   |   |
| 8 | CP 8 |       |   |   |   |   |   |   |   | CP 8  |   |   |   |   |   |   |   |       | CP 8  |   |   |   |   |   |   |   |   |
| 9 | CP 9 |       |   |   |   |   |   |   |   | CP 9  |   |   |   |   |   |   |   |       | CP 9  |   |   |   |   |   |   |   |   |
| A |      |       |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |       | RCL 1 |   |   |   |   |   |   |   |   |
| B |      |       |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |       | RCL 2 |   |   |   |   |   |   |   |   |
| C |      |       |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |       |       |   |   |   |   |   |   |   |   |
| D |      |       |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |       |       |   |   |   |   |   |   |   |   |
| E |      |       |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |       |       |   |   |   |   |   |   |   |   |
| F |      |       |   |   |   |   |   |   |   |       |   |   |   |   |   |   |   |       |       |   |   |   |   |   |   |   |   |
|   |      | 1     | 2 | 3 | 4 | 5 | 6 | 7 | 8 |       | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8     |       | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

|   | E        | FLAGS |   |   |   |   |   |   |   | F         | FLAGS |   |   |   |   |   |   |   |   |
|---|----------|-------|---|---|---|---|---|---|---|-----------|-------|---|---|---|---|---|---|---|---|
|   | FUNCTION | 1     | 2 | 3 | 4 | 5 | 6 | 7 | 8 | FUNCTION  | 1     | 2 | 3 | 4 | 5 | 6 | 7 | 8 |   |
| 0 |          |       |   |   |   |   |   |   |   | CODE 4    |       |   |   |   |   |   |   |   | 0 |
| 1 |          |       |   |   |   |   |   |   |   | CODE 5    |       |   |   |   |   |   |   |   | 1 |
| 2 |          |       |   |   |   |   |   |   |   | C-RECALL  |       |   |   |   |   |   |   |   | 2 |
| 3 |          |       |   |   |   |   |   |   |   | D-RECALL  |       |   |   |   |   |   |   |   | 3 |
| 4 |          |       |   |   |   |   |   |   |   | EXCLUSIVE |       |   |   |   |   |   |   |   | 4 |
| 5 |          |       |   |   |   |   |   |   |   | 2 PED     | 2     |   |   |   |   |   |   |   | 5 |
| 6 |          |       |   |   |   |   |   |   |   | 6 PED     |       |   |   |   |   | 6 |   |   | 6 |
| 7 |          |       |   |   |   |   |   |   |   | 4 PED     |       |   |   | 4 |   |   |   |   | 7 |
| 8 |          |       |   |   |   |   |   |   |   | 8 PED     |       |   |   |   |   |   |   | 8 | 8 |
| 9 |          |       |   |   |   |   |   |   |   |           |       |   |   |   |   |   |   |   | 9 |
| A | OLA NOT  |       |   |   |   |   |   |   |   | OLA ON    |       |   |   |   |   |   |   |   | A |
| B | OLE NOT  |       |   |   |   |   |   |   |   | OLE ON    |       |   |   |   |   |   |   |   | B |
| C | OLC NOT  |       |   |   |   |   |   |   |   | OLC ON    |       |   |   |   |   |   |   |   | C |
| D | OLD NOT  |       |   |   |   |   |   |   |   | OLD ON    |       |   |   |   |   |   |   |   | D |
| E |          |       |   |   |   |   |   |   |   |           |       |   |   |   |   |   |   |   | E |
| F |          |       |   |   |   |   |   |   |   |           |       |   |   |   |   |   |   |   | F |
|   |          | 1     | 2 | 3 | 4 | 5 | 6 | 7 | 8 |           | 1     | 2 | 3 | 4 | 5 | 6 | 7 | 8 |   |

## LAST POWER FAILURE REGISTER

HOUR = D-A-E  
 MINUTE = D-B-E  
 DAY = D-C-E

RCL 1 = TIME OF DAY MAX RECALL (1ST SELECT) PHASES  
 (CALL ACTIVE LIGHTS)  
 RCL 2 = TIME OF DAY MAX RECALL (2ND SELECT) PHASES  
 (CALL ACTIVE LIGHTS)

## LAST FLASH TIME REGISTER

HOUR = D-A-F  
 MINUTE = D-B-F  
 DAY = D-C-F

D-E-E = C8 VERSION NUMBER  
 D-E-F = LITHIUM BATTERY CONDITION  
 84 = BAD  
 85 = GOOD

| TIME OF DAY ACTIVITY TABLE            |    |     |     |            |   |   |   |   |   |   |   |
|---------------------------------------|----|-----|-----|------------|---|---|---|---|---|---|---|
| 7+EVENT+HR+MIN+ACT+"E"+ON/OFF+DOW LTS |    |     |     |            |   |   |   |   |   |   |   |
|                                       | HR | MIN | ACT | ON/<br>OFF | S | M | T | W | T | F | S |
|                                       |    |     |     |            | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 0                                     |    |     |     |            |   |   |   |   |   |   |   |
| 1                                     |    |     |     |            |   |   |   |   |   |   |   |
| 2                                     |    |     |     |            |   |   |   |   |   |   |   |
| 3                                     |    |     |     |            |   |   |   |   |   |   |   |
| 4                                     |    |     |     |            |   |   |   |   |   |   |   |
| 5                                     |    |     |     |            |   |   |   |   |   |   |   |
| 6                                     |    |     |     |            |   |   |   |   |   |   |   |
| 7                                     |    |     |     |            |   |   |   |   |   |   |   |
| 8                                     |    |     |     |            |   |   |   |   |   |   |   |
| 9                                     |    |     |     |            |   |   |   |   |   |   |   |
| A                                     |    |     |     |            |   |   |   |   |   |   |   |
| B                                     |    |     |     |            |   |   |   |   |   |   |   |
| C                                     | 06 | 00  | E   |            |   | 2 | 3 | 4 | 5 | 6 |   |
| D                                     | 08 | 00  | E   |            | 1 |   |   |   |   |   | 7 |
| E                                     | 19 | 00  | E   | ON         | 1 |   |   |   |   |   | 7 |
| F                                     | 20 | 00  | E   | ON         |   | 2 | 3 | 4 | 5 | 6 |   |

## ACTIVITY CODE

- ```

1 TYPE OF MAX TERMINATION
2 MAX 2
3 MAX 3
4 COND SERV (1ST SELECT)
5 COND SERV (2ND SELECT)
6 ENERGIZE AUX OUTPUT-RED
7 ENERGIZE AUX OUTPUT-GREEN

```

[illegible]

- ```

8 ENERGIZE AUX OUTPUT-YELLOW

9 TIME OF DAY MAX RECALL (1ST SELECT)
A TRAFFIC ACT. MAX 2 OPERATION
B TIME OF DAY MAX RECALL (2ND SELECT)
C YELLOW YIELD COORDINATION
D YELLOW YIELD COORDINATION
E TIME OF DAY FREE OPERATION
F FLASHING OPERATION

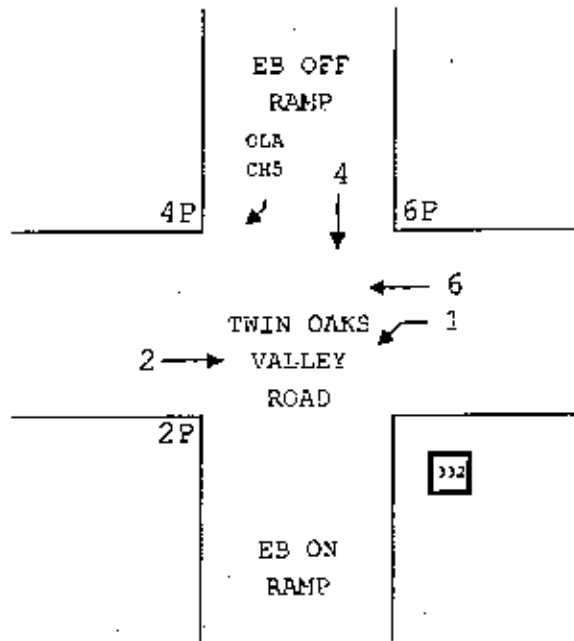
```

[illegible]

DATE: 4/24/06

LOCATION: RTE 78 EB @ TWIN OAKS VALLEY ROAD

# CONFLICT MONITOR PROGRAM



|            |     |     |            |
|------------|-----|-----|------------|
| 4 PED DW   | 116 | 128 | 2 - RED    |
|            | 117 | 129 | 2 - YELLOW |
| 4 PED WALK | 118 | 130 | 2 - GREEN  |
|            | 119 | 131 |            |
|            | 120 | 132 | RTYA"A"    |
|            | 121 | 133 | RTGA"A"    |
|            | 122 | 134 | 6 - RED    |
|            | 123 | 135 | 6 - YELLOW |
|            | 124 | 136 | 6 - GREEN  |

**INTERSECTION: Twin Oaks V & Discovery\Barham**

Page 1 (of 5)

Group Assignment: **NONE**N/S Street Name: **Twin Oaks Valley**Last Database Change: **9/25/2014 11:47**Field Master Assignment: **NONE**E/W Street Name: **Discovery\Barham**System Reference Number: **46**

| Change Record |    |      |        |    |      |
|---------------|----|------|--------|----|------|
| Change        | By | Date | Change | By | Date |
|               |    |      |        |    |      |
|               |    |      |        |    |      |
|               |    |      |        |    |      |
|               |    |      |        |    |      |
|               |    |      |        |    |      |
|               |    |      |        |    |      |

Notes:

|                 |               |           |
|-----------------|---------------|-----------|
| Drop Number     | <b>20</b>     | <C+0+0>   |
| Zone Number     |               | <C+0+1>   |
| Area Number     | <b>5</b>      | <C+0+2>   |
| Area Address    | <b>20</b>     | <C+0+3>   |
| QuicNet Channel | <b>COM26:</b> | (QuicNet) |

**Communication Addresses**

|               |  |         |
|---------------|--|---------|
| Manual Plan   |  | <C+A+1> |
| Manual Offset |  | <C+B+1> |

**Manual Selection**

|               |            |         |
|---------------|------------|---------|
| Max Initial   | <b>20</b>  | <F+0+E> |
| Red Revert    | <b>5.0</b> | <F+0+F> |
| All Red Start | <b>5.0</b> | <F+C+0> |

**Start / Revert Times**

| Column Numbers ----> |                   | Phase |     |     |     |     |     |     |     |
|----------------------|-------------------|-------|-----|-----|-----|-----|-----|-----|-----|
|                      |                   | 1     | 2   | 3   | 4   | 5   | 6   | 7   | 8   |
| Row                  | Phase Names ----> |       |     |     |     |     |     |     |     |
| 0                    | Ped Walk          | 0     | 5   | 0   | 5   | 0   | 5   | 0   | 5   |
| 1                    | Ped FDW           | 0     | 20  | 0   | 23  | 0   | 21  | 0   | 21  |
| 2                    | Min Green         | 4     | 8   | 4   | 8   | 4   | 8   | 4   | 8   |
| 3                    | Type 3 Limit      | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 4                    | Added Initial     | 0.0   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5                    | Veh Extension     | 2.0   | 3.0 | 2.0 | 4.5 | 2.0 | 4.0 | 2.0 | 4.5 |
| 6                    | Max Gap           | 2.0   | 3.0 | 2.0 | 4.5 | 2.0 | 4.0 | 2.0 | 4.5 |
| 7                    | Min Gap           | 2.0   | 3.0 | 2.0 | 4.5 | 2.0 | 4.0 | 2.0 | 4.5 |
| 8                    | Max Limit         | 20    | 35  | 20  | 50  | 20  | 40  | 20  | 50  |
| 9                    | Max Limit 2       | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| A                    | -----             | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| B                    | Call To Phase     | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| C                    | Reduce By         | 0.0   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| D                    | Reduce Every      | 0.0   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| E                    | Yellow Change     | 4.0   | 5.0 | 4.0 | 4.3 | 4.0 | 5.0 | 4.0 | 4.3 |
| F                    | Red Clear         | 1.0   | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |

**Phase Timing - Bank 1**

&lt;F Page&gt;

| E             |     |
|---------------|-----|
| RR-1 Delay    | 0   |
| RR-1 Clear    | 0   |
| EV-A Delay    | 1   |
| EV-A Clear    | 0   |
| EV-B Delay    | 1   |
| EV-B Clear    | 0   |
| EV-C Delay    | 1   |
| EV-C Clear    | 0   |
| EV-D Delay    | 1   |
| EV-D Clear    | 0   |
| RR-2 Delay    | 0   |
| RR-2 Clear    | 0   |
| View EV Delay | --- |
| View EV Clear | --- |
| View RR Delay | --- |
| View RR Clear | --- |

**Preempt Timing**

| F               |                 |
|-----------------|-----------------|
| Permit          | <b>12345678</b> |
| Red Lock        | <b>1_3_567_</b> |
| Yellow Lock     | <b>6_</b>       |
| Min Recall      | <b>4_8</b>      |
| Ped Recall      |                 |
| View Set Peds   | -----           |
| Rest In Walk    |                 |
| Red Rest        |                 |
| Dual Entry      |                 |
| Max Recall      |                 |
| Soft Recall     |                 |
| Max 2           |                 |
| Cond. Service   |                 |
| Man Cntrl Calls |                 |
| Yellow Start    | <b>2_6_</b>     |
| First Phases    | <b>4_8</b>      |

**Phase Functions**

&lt;F Page&gt;

| Row |
|-----|
| 0   |
| 1   |
| 2   |
| 3   |
| 4   |
| 5   |
| 6   |
| 7   |
| 8   |
| 9   |
| A   |
| B   |
| C   |
| D   |
| E   |
| F   |

Manual Plan  
0 = Automatic  
1-9 = Plan 1-9  
14 = Free  
15 = Flash

Manual Offset  
0 = Automatic  
1 = Offset A  
2 = Offset B  
3 = Offset C

| Column Numbers ----> |                    | Plan |   |   |   |   |   |   |   |   |
|----------------------|--------------------|------|---|---|---|---|---|---|---|---|
| Plan Name ---->      |                    | 1    | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0                    | Cycle Length       | 0    | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1                    | Phase 1 - ForceOff | 0    | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2                    | Phase 2 - ForceOff | 0    | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3                    | Phase 3 - ForceOff | 0    | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4                    | Phase 4 - ForceOff | 0    | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5                    | Phase 5 - ForceOff | 0    | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6                    | Phase 6 - ForceOff | 0    | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7                    | Phase 7 - ForceOff | 0    | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8                    | Phase 8 - ForceOff | 0    | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9                    | Ring Offset        | 0    | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| A                    | Offset 1           | 0    | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| B                    | Offset 2           | 0    | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C                    | Offset 3           | 0    | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| D                    | Permissive         | 0    | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E                    | Hold Release       | 0    | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| F                    | Zone Offset        | 0    | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Coordination

&lt;C Page&gt;

(\* = Coordination Recall)

| E             |     | Row |
|---------------|-----|-----|
| Plan 1 - Sync | 4 8 | 1   |
| Plan 2 - Sync | 4 8 | 2   |
| Plan 3 - Sync | 4 8 | 3   |
| Plan 4 - Sync | 4 8 | 4   |
| Plan 5 - Sync | 4 8 | 5   |
| Plan 6 - Sync | 4 8 | 6   |
| Plan 7 - Sync | 4 8 | 7   |
| Plan 8 - Sync | 2 6 | 8   |
| Plan 9 - Sync | 2 6 | 9   |
| Coord Ped *   |     | A   |
| NEMA Hold     |     | B   |
|               |     | C   |
|               |     | D   |
|               |     | E   |
|               |     | F   |

Sync Phases &lt;C Page&gt;

| Column Numbers ----> |                          | E   |
|----------------------|--------------------------|-----|
| 0                    | Exclusive Phases         |     |
| 1                    | RR-1 Clear Phases        |     |
| 2                    | RR-2 Clear Phases        |     |
| 3                    | RR-2 Limited Service     |     |
| 4                    | Prot / Perm Phases       |     |
| 5                    | Overlap A - Green Omit   |     |
| 6                    | Overlap B - Green Omit   |     |
| 7                    | Overlap C - Green Omit   |     |
| 8                    | Overlap D - Green Omit   |     |
| 9                    | Overlap Yellow Flash     |     |
| A                    | EV-A Phases              | 2 5 |
| B                    | EV-B Phases              | 1 6 |
| C                    | EV-C Phases              | 4 7 |
| D                    | EV-D Phases              | 3 8 |
| E                    | Extra 1 Config. Bits     | 1 3 |
| F                    | IC Select (Interconnect) | 2   |

Configuration

&lt;E Page&gt;

| F                     |   | Row |
|-----------------------|---|-----|
| RR Overlap A - Phases |   |     |
| RR Overlap B - Phases |   |     |
| RR Overlap C - Phases |   |     |
| RR Overlap D - Phases |   |     |
| Ped 2P                | 2 |     |
| Ped 6P                | 6 |     |
| Ped 4P                | 4 |     |
| Ped 8P                | 8 |     |
| Yellow Flash Phases   |   |     |
| Overlap A - Phases    |   |     |
| Overlap B - Phases    |   |     |
| Overlap C - Phases    |   |     |
| Overlap D - Phases    |   |     |
| Restricted Phases     |   |     |
| Assign 5 Outputs      |   |     |

Configuration

&lt;E Page&gt;

Extra 1 Flags  
 1 = TBC Type 1  
 2 = NEMA Ext. Coord  
 3 = Auto Daylight Savings  
 4 = EV Advance  
 5 =  
 6 = Special Event  
 7 = Pretimed Operation  
 8 = Split Ring Operation

Assign 5 Outputs  
 (Ped Loadswitch Yellows)  
 1 = Right Turn Overlap  
 2 = TOD Outputs  
 3 = EV Beacon - Steady  
 4 = EV Beacon - Flashing  
 5 = Special Event Outputs  
 6 = Phase 3 & 7 Ped  
 7 = Advanced Warning Sign  
 8 =

Force-Off Adjust 5  
**Coord Force-Off Adjust**  
**for Ped Service <C+D+F>**

Transition Type 0  
**TBC Transition <C+D+D>**

Transition Type  
 0 = Shortway  
 Non-zero = Lengthen

IC Select Flags  
 1 =  
 2 = Modem  
 3 = 7-Wire Slave  
 4 = Flash / Free  
 5 =  
 6 = Simplex Master  
 7 = 7-Wire Master  
 8 = Offset Interrupter

| F            |         | Row |
|--------------|---------|-----|
| Free Lag     | 2 4 6 8 | 0   |
| Plan 1 - Lag | 2 4 6 8 | 1   |
| Plan 2 - Lag | 2 4 6 8 | 2   |
| Plan 3 - Lag | 2 4 6 8 | 3   |
| Plan 4 - Lag | 2 4 6 8 | 4   |
| Plan 5 - Lag | 2 4 6 8 | 5   |
| Plan 6 - Lag | 2 4 6 8 | 6   |
| Plan 7 - Lag | 2 4 6 8 | 7   |
| Plan 8 - Lag | 2 4 6 8 | 8   |
| Plan 9 - Lag | 2 4 6 8 | 9   |
| Coord Max *  |         | A   |
| Coord Lag *  |         | B   |
|              |         | C   |
|              |         | D   |
|              |         | E   |
|              |         | F   |

Lag Phases &lt;C Page&gt;

| Row | Time  | Plan | Offset | Day of Week |
|-----|-------|------|--------|-------------|
| 0   | 00:00 | 0    | 0      |             |
| 1   | 00:00 | 0    | 0      |             |
| 2   | 00:00 | 0    | 0      |             |
| 3   | 00:00 | 0    | 0      |             |
| 4   | 00:00 | 0    | 0      |             |
| 5   | 00:00 | 0    | 0      |             |
| 6   | 00:00 | 0    | 0      |             |
| 7   | 00:00 | 0    | 0      |             |
| 8   | 00:00 | 0    | 0      |             |
| 9   | 00:00 | 0    | 0      |             |
| A   | 00:00 | 0    | 0      |             |
| B   | 00:00 | 0    | 0      |             |
| C   | 00:00 | 0    | 0      |             |
| D   | 00:00 | 0    | 0      |             |
| E   | 00:00 | 0    | 0      |             |
| F   | 00:00 | 0    | 0      |             |

**TOD Coordination**  
<9 Key with C+D+9=0>

| Time  | Funct. | Day of Week | Column F<br>Phases/Bits |
|-------|--------|-------------|-------------------------|
| 00:00 | 0      |             |                         |
| 00:00 | 0      |             |                         |
| 00:00 | 0      |             |                         |
| 00:00 | 0      |             |                         |
| 00:00 | 0      |             |                         |
| 00:00 | 0      |             |                         |
| 00:00 | 0      |             |                         |
| 00:00 | 0      |             |                         |
| 00:00 | 0      |             |                         |
| 00:00 | 0      |             |                         |
| 00:00 | 0      |             |                         |
| 00:00 | 0      |             |                         |
| 00:00 | 0      |             |                         |
| 00:00 | 0      |             |                         |
| 00:00 | 0      |             |                         |
| 00:00 | 0      |             |                         |

**TOD Function**  
<7 Key>

&lt;D Page&gt;

| Time  | Plan | Offset | Day of Week |
|-------|------|--------|-------------|
| 00:00 | 0    | 0      |             |
| 00:00 | 0    | 0      |             |
| 00:00 | 0    | 0      |             |
| 00:00 | 0    | 0      |             |
| 00:00 | 0    | 0      |             |
| 00:00 | 0    | 0      |             |
| 00:00 | 0    | 0      |             |
| 00:00 | 0    | 0      |             |
| 00:00 | 0    | 0      |             |
| 00:00 | 0    | 0      |             |
| 00:00 | 0    | 0      |             |
| 00:00 | 0    | 0      |             |
| 00:00 | 0    | 0      |             |
| 00:00 | 0    | 0      |             |
| 00:00 | 0    | 0      |             |
| 00:00 | 0    | 0      |             |

**Holiday # 1**  
**TOD Coordination**  
<9 Key with C+D+9=1>

| Time  | Plan | Offset | Day of Week |
|-------|------|--------|-------------|
| 00:00 | 0    | 0      |             |
| 00:00 | 0    | 0      |             |
| 00:00 | 0    | 0      |             |
| 00:00 | 0    | 0      |             |
| 00:00 | 0    | 0      |             |
| 00:00 | 0    | 0      |             |
| 00:00 | 0    | 0      |             |
| 00:00 | 0    | 0      |             |
| 00:00 | 0    | 0      |             |
| 00:00 | 0    | 0      |             |
| 00:00 | 0    | 0      |             |
| 00:00 | 0    | 0      |             |
| 00:00 | 0    | 0      |             |
| 00:00 | 0    | 0      |             |
| 00:00 | 0    | 0      |             |
| 00:00 | 0    | 0      |             |

**Holiday # 2**  
**TOD Coordination**  
<9 Key with C+D+9=2>

| Time  | Plan | Offset | Day of Week | Row |
|-------|------|--------|-------------|-----|
| 00:00 | 0    | 0      |             | 0   |
| 00:00 | 0    | 0      |             | 1   |
| 00:00 | 0    | 0      |             | 2   |
| 00:00 | 0    | 0      |             | 3   |
| 00:00 | 0    | 0      |             | 4   |
| 00:00 | 0    | 0      |             | 5   |
| 00:00 | 0    | 0      |             | 6   |
| 00:00 | 0    | 0      |             | 7   |
| 00:00 | 0    | 0      |             | 8   |
| 00:00 | 0    | 0      |             | 9   |
| 00:00 | 0    | 0      |             | A   |
| 00:00 | 0    | 0      |             | B   |
| 00:00 | 0    | 0      |             | C   |
| 00:00 | 0    | 0      |             | D   |
| 00:00 | 0    | 0      |             | E   |
| 00:00 | 0    | 0      |             | F   |

**Holiday # 3**  
**TOD Coordination**  
<9 Key with C+D+9=3>

Plan Select  
1 thru 9 = Coordination  
Plan 1 thru 9  
14 or E = Free  
15 or F = Flash

Offset Select  
A = Offset A  
B = Offset B  
C = Offset C

T.O.D. Functions  
0 = Permitted Phases  
1 = Red Lock  
2 = Yellow Lock  
3 = Veh Min Recall  
4 = Ped Recall  
5 =  
6 = Rest In Walk  
7 = Red Rest  
8 = Double Entry  
9 = Veh Max Recall  
A = Veh Soft Recall  
B = Maximum 2  
C = Conditional Service  
D = Free Lag Phases  
E = Bit 1 - Local Override  
Bit 2 - Phase Bank 2  
Bit 3 - Phase Bank 3  
Bit 4 - Disable Detector  
OFF Monitor  
Bit 7 - Detector Count Monitor  
Bit 8 - Real Time Split Monitor  
F = Output Bits 1 thru 4

Month Select  
1 = January  
2 = February  
3 = March  
4 = April  
5 = May  
6 = June  
7 = July  
8 = August  
9 = September  
A = October  
B = November  
C = December

| Row | Day | Year | Month | Day of Week |
|-----|-----|------|-------|-------------|
| A   |     |      |       |             |
| B   |     |      |       |             |
| C   |     |      |       |             |

|                  |   |   |   |
|------------------|---|---|---|
| Holiday # 1 Date | 0 | 0 | 0 |
| Holiday # 2 Date | 0 | 0 | 0 |
| Holiday # 3 Date | 0 | 0 | 0 |

**Holiday Dates**  
<8 Key>

|     | 1     | 3          |               |                |                 |
|-----|-------|------------|---------------|----------------|-----------------|
| Row | Delay | Carry-over | Detector Name | 332 Input File | Detector Number |
| 0   | 0.0   | 0.0        |               | I-1            | 14              |
| 1   | 0.0   | 0.0        |               | I-2U           | 1               |
| 2   | 0.0   | 0.0        |               | I-2L           | 5               |
| 3   | 0.0   | 0.0        |               | I-3U           | 21              |
| 4   | 0.0   | 0.0        |               | I-3L           | 25              |
| 5   | 0.0   | 0.0        |               | I-4            | 9               |
| 6   | 0.0   | 0.0        |               | I-5            | 16              |
| 7   | 0.0   | 0.0        |               | I-6U           | 3               |
| 8   | 0.0   | 0.0        |               | I-6L           | 7               |
| 9   | 0.0   | 0.0        |               | I-7U           | 23              |
| A   | 0.0   | 0.0        |               | I-7L           | 27              |
| B   | 0.0   | 0.0        |               | I-8            | 11              |
| C   | 0.0   | 0.0        |               | I-9U           | 18              |
| D   | 0.0   | 0.0        |               | I-9L           | 20              |
| E   | ---   | ---        | ---           | ---            | ---             |
| F   | ---   | ---        | ---           | ---            | ---             |

|     | 2     | 4          |               |                |                 |
|-----|-------|------------|---------------|----------------|-----------------|
| Row | Delay | Carry-over | Detector Name | 332 Input File | Detector Number |
| 0   | 0.0   | 0.0        |               | J-1            | 13              |
| 1   | 0.0   | 0.0        |               | J-2U           | 2               |
| 2   | 0.0   | 0.0        |               | J-2L           | 6               |
| 3   | 0.0   | 0.0        |               | J-3U           | 22              |
| 4   | 0.0   | 0.0        |               | J-3L           | 26              |
| 5   | 0.0   | 0.0        |               | J-4            | 10              |
| 6   | 0.0   | 0.0        |               | J-5            | 15              |
| 7   | 0.0   | 0.0        |               | J-6U           | 4               |
| 8   | 0.0   | 0.0        |               | J-6L           | 8               |
| 9   | 0.0   | 3.0        |               | J-7U           | 24              |
| A   | 0.0   | 0.0        |               | J-7L           | 28              |
| B   | 0.0   | 0.0        |               | J-8            | 12              |
| C   | 0.0   | 0.0        |               | J-9U           | 17              |
| D   | 0.0   | 0.0        |               | J-9L           | 19              |
| E   | ---   | ---        | ---           | ---            | ---             |
| F   | ---   | ---        | ---           | ---            | ---             |

Detector Delay &amp; Carryover &lt;D Page&gt;

| Row |           | 9           | C             | D         | 0             |
|-----|-----------|-------------|---------------|-----------|---------------|
|     |           | Green Clear | Yellow Change | Red Clear | Load-Switch # |
| A   | Overlap A | 0.0         | 0.0           | 0.0       | 0             |
| B   | Overlap B | 0.0         | 0.0           | 0.0       | 0             |
| C   | Overlap C | 0.0         | 0.0           | 0.0       | 0             |
| D   | Overlap D | 0.0         | 0.0           | 0.0       | 0             |

Overlap Timing

&lt;F Page&gt;

&lt;D Page&gt;

| Row | Detector Numbers        | E        |
|-----|-------------------------|----------|
| A   | 1 2 3 4 5 6 7 8         | 12345678 |
| B   | 9 10 11 12 -- -- -- --  | 1234     |
| C   | 13 14 15 16 17 18 19 20 | 12345678 |
| D   | -- -- -- -- 21 22 23 24 | 5678     |
| E   | -- -- -- -- -- -- -- -- | 1234     |
| F   | -- 25 26 27 28 -- -- -- | 2345     |

Active Detectors &lt;D Page&gt;

Note: Initialized data is for all detectors to be active (ie, all flag bits set). A Detector which is "not flagged", will not be active as a Phase Detector, and WILL NOT call or extend its associated phase. It will still function as a System Detector.

| Row |                 | 0               |
|-----|-----------------|-----------------|
|     |                 | Detector Number |
| 0   |                 |                 |
| 1   | System Det. # 1 | 0               |
| 2   | System Det. # 2 | 0               |
| 3   | System Det. # 3 | 0               |
| 4   | System Det. # 4 | 0               |
| 5   | System Det. # 5 | 0               |
| 6   | System Det. # 6 | 0               |
| 7   | System Det. # 7 | 0               |
| 8   | System Det. # 8 | 0               |

System Detectors &lt;D Page&gt;

|                   |    |         |
|-------------------|----|---------|
| Max ON (minutes)  | 5  | <D+A+E> |
| Max OFF (minutes) | 60 | <D+A+F> |

Detector Failure Monitor

|                    |     |         |
|--------------------|-----|---------|
| Phase Number       | 0   | <F+C+1> |
| Time Before Yellow | 0.0 | <F+C+3> |

Advance Warning Beacon - Sign 1

|                    |     |         |
|--------------------|-----|---------|
| Phase Number       | 0   | <F+D+1> |
| Time Before Yellow | 0.0 | <F+D+3> |

Advance Warning Beacon - Sign 2

|               |     |         |
|---------------|-----|---------|
| Long Failure  | 0.0 | <F+0+6> |
| Short Failure | 0.0 | <F+0+7> |

Power Cycle Correction (Default = 0.5)

|                |   |         |
|----------------|---|---------|
| Disable Parity | 0 | <D+B+0> |
|----------------|---|---------|

Dial-Up Telephone Communications

(If set to a non-zero value, parity will be disabled)

|                      |                   | Phase |     |     |     |     |     |     |     |
|----------------------|-------------------|-------|-----|-----|-----|-----|-----|-----|-----|
| Column Numbers ----> |                   | 1     | 2   | 3   | 4   | 5   | 6   | 7   | 8   |
| Row                  | Phase Names ----> |       |     |     |     |     |     |     |     |
| 0                    | Ped Walk          | 0     | 5   | 0   | 5   | 0   | 5   | 0   | 5   |
| 1                    | Ped FDW           | 0     | 20  | 0   | 23  | 0   | 21  | 0   | 21  |
| 2                    | Min Green         | 4     | 8   | 4   | 8   | 4   | 8   | 4   | 8   |
| 3                    | Type 3 Limit      | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 4                    | Added Initial     | 0.0   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5                    | Veh Extension     | 2.0   | 4.0 | 2.0 | 4.5 | 2.0 | 4.0 | 2.0 | 4.5 |
| 6                    | Max Gap           | 2.0   | 4.0 | 2.0 | 4.5 | 2.0 | 4.0 | 2.0 | 4.5 |
| 7                    | Min Gap           | 2.0   | 4.0 | 2.0 | 4.5 | 2.0 | 4.0 | 2.0 | 4.5 |
| 8                    | Max Limit         | 20    | 40  | 20  | 40  | 20  | 40  | 20  | 40  |
| 9                    | Max Limit 2       | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| A                    | -----             | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| B                    | Call To Phase     | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| C                    | Reduce By         | 0.0   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| D                    | Reduce Every      | 0.0   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| E                    | Yellow Change     | 4.0   | 5.0 | 4.0 | 4.3 | 4.0 | 5.0 | 4.0 | 4.3 |
| F                    | Red Clear         | 1.0   | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |

Phase Timing - Bank 2

&lt;F Page&gt;

|                      |                   | Phase |     |     |     |     |     |     |     |
|----------------------|-------------------|-------|-----|-----|-----|-----|-----|-----|-----|
| Column Numbers ----> |                   | 1     | 2   | 3   | 4   | 5   | 6   | 7   | 8   |
| Row                  | Phase Names ----> |       |     |     |     |     |     |     |     |
| 0                    | Ped Walk          | 0     | 5   | 0   | 5   | 0   | 5   | 0   | 5   |
| 1                    | Ped FDW           | 0     | 20  | 0   | 23  | 0   | 21  | 0   | 21  |
| 2                    | Min Green         | 4     | 8   | 4   | 8   | 4   | 8   | 4   | 8   |
| 3                    | Type 3 Limit      | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 4                    | Added Initial     | 0.0   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5                    | Veh Extension     | 2.0   | 4.0 | 2.0 | 4.5 | 2.0 | 4.0 | 2.0 | 4.5 |
| 6                    | Max Gap           | 2.0   | 4.0 | 2.0 | 4.5 | 2.0 | 4.0 | 2.0 | 4.5 |
| 7                    | Min Gap           | 2.0   | 4.0 | 2.0 | 4.5 | 2.0 | 4.0 | 2.0 | 4.5 |
| 8                    | Max Limit         | 20    | 40  | 20  | 40  | 20  | 40  | 20  | 40  |
| 9                    | Max Limit 2       | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| A                    | -----             | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| B                    | Call To Phase     | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| C                    | Reduce By         | 0.0   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| D                    | Reduce Every      | 0.0   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| E                    | Yellow Change     | 4.0   | 5.0 | 4.0 | 4.3 | 4.0 | 5.0 | 4.0 | 4.3 |
| F                    | Red Clear         | 1.0   | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |

Phase Timing - Bank 3

&lt;F Page&gt;

|     |                            | 7    | 8     | 9    | A       | B         | C            | D             | E        | F      | Row |
|-----|----------------------------|------|-------|------|---------|-----------|--------------|---------------|----------|--------|-----|
| Row | Delay Only ---->           | Time | Dwell | Hold | Advance | Force Off | Vehicle Call | Permit Phases | Ped Omit | Output |     |
| 0   |                            | 0    | ---   | ---  | ---     | ---       | ---          | ---           | ---      | ---    | 0   |
| 1   |                            | 0    | 0     | ---  | ---     | ---       | ---          | ---           | ---      | ---    | 1   |
| 2   |                            | 0    | 0     | ---  | ---     | ---       | ---          | ---           | ---      | ---    | 2   |
| 3   |                            | 0    | 0     | ---  | ---     | ---       | ---          | ---           | ---      | ---    | 3   |
| 4   |                            | 0    | 0     | ---  | ---     | ---       | ---          | ---           | ---      | ---    | 4   |
| 5   |                            | 0    | 0     | ---  | ---     | ---       | ---          | ---           | ---      | ---    | 5   |
| 6   |                            | 0    | 0     | ---  | ---     | ---       | ---          | ---           | ---      | ---    | 6   |
| 7   |                            | 0    | 0     | ---  | ---     | ---       | ---          | ---           | ---      | ---    | 7   |
| 8   |                            | 0    | 0     | ---  | ---     | ---       | ---          | ---           | ---      | ---    | 8   |
| 9   | Limited Service Int. ----> | 0    | 0     | ---  | ---     | ---       | ---          | ---           | ---      | ---    | 9   |
| A   |                            | ---  | 0     | ---  | ---     | ---       | ---          | ---           | ---      | ---    | A   |
| B   |                            | 0    | 0     | ---  | ---     | ---       | ---          | ---           | ---      | ---    | B   |
| C   |                            | 0    | 0     | ---  | ---     | ---       | ---          | ---           | ---      | ---    | C   |
| D   |                            | 0    | 0     | ---  | ---     | ---       | ---          | ---           | ---      | ---    | D   |
| E   |                            | 0    | 0     | ---  | ---     | ---       | ---          | ---           | ---      | ---    | E   |
| F   |                            | 0    | 0     | ---  | ---     | ---       | ---          | ---           | ---      | ---    | F   |

Special Event Schedule

&lt;C Page with F+9+F=22&gt;

<--- Limited Service Interval  
(Set Dwell = 255)



| Location (I.D.)          | Route | Dir | Period      | Cars per green | Sec./ Cycle | (per lane) Veh./hr | Total # lanes | HOV |
|--------------------------|-------|-----|-------------|----------------|-------------|--------------------|---------------|-----|
| Sycamore Ave (203)       | 78    | EB  | 1400 - 1900 | 2              | 7.2 - 13.7  | 996 - 526          | 3             | Lt  |
| Sycamore Ave (202)       | 78    | WB  | 0530 - 0930 | 2              | 8.1 - 17.2  | 888 - 418          | 3             | Lt  |
| San Marcos Blvd (180)    | 78    | EB  | 1400 - 1530 | 2              | 15.7        | 460                | 3             | Lt  |
|                          |       |     | 1530 - 1900 | 2              | 7.9 - 16.9  | 912 - 425          | 3             | Lt  |
| San Marcos Blvd SB (271) | 78    | WB  | 0530 - 0930 | 1              | 6.3 - 12.0  | 570 - 301          | 2             | Lt  |
| San Marcos Blvd NB (179) | 78    | WB  | 0530 - 0930 | 1              | 6.3 - 12.0  | 570 - 301          | 1             | No  |
| Twin Oaks Vly Rd (234)   | 78    | EB  | 1400 - 1530 | 1              | 11.8        | 305                | 3             | Lt  |
|                          |       |     | 1530 - 1900 | 1              | 6.3 - 12.7  | 570 - 284          | 3             | Lt  |
| Twin Oaks Vly NB (233)   | 78    | WB  | 0530 - 0930 | 1              | 6.3 - 10.5  | 570 - 343          | 2             | Lt  |
| Twin Oaks Vly SB (302)   | 78    | WB  | 0530 - 0930 | 1              | 6.3 - 13.9  | 570 - 259          | 2             | Lt  |
|                          |       |     |             |                |             |                    |               |     |
|                          |       |     |             |                |             |                    |               |     |

The meters normally operate in a traffic responsive mode.

There are 15 separate rates or steps between the slowest and the fastest discharge rate that depend on the mainlane volumes.



2015 Daily Truck Traffic

| RTE | DIST | CNTY | POST<br>MILE | L<br>E<br>G | DESCRIPTION                                         | VEHICLE       | TRUCK         | TRUCK        | TRUCK |       | AADT         | TOTAL | %     | TRUCK |              | AADT  | EAL             |             | YEAR |
|-----|------|------|--------------|-------------|-----------------------------------------------------|---------------|---------------|--------------|-------|-------|--------------|-------|-------|-------|--------------|-------|-----------------|-------------|------|
|     |      |      |              |             |                                                     | AADT<br>TOTAL | AADT<br>TOTAL | % TOT<br>VEH | 2     | 3     | By Axle<br>4 | 5+    | 2     | 3     | By Axle<br>4 | 5+    | 2-WAY<br>(1000) | VER/<br>EST |      |
| 15  | 11   | SD   | R3.367       | B           | JCT. RTE. 805                                       | 120,000       | 6,119         | 5.10         | 3,133 | 1,040 | 306          | 1,640 | 51.20 | 17.00 | 5.00         | 26.80 | 816             | 85E         |      |
| 15  | 11   | SD   | R3.367       | A           | JCT. RTE. 805                                       | 170,000       | 3,739         | 2.20         | 2,700 | 381   | 116          | 542   | 72.20 | 10.20 | 3.10         | 14.50 | 334             | 85V         |      |
| 15  | 11   | SD   | R6.132       | B           | JCT. RTE. 8                                         | 172,000       | 3,784         | 2.20         | 2,732 | 390   | 117          | 545   | 72.20 | 10.30 | 3.10         | 14.40 | 337             | 85E         |      |
| 15  | 11   | SD   | R6.132       | A           | JCT. RTE. 8                                         | 205,000       | 10,208        | 4.98         | 6,374 | 730   | 240          | 2,864 | 62.44 | 7.15  | 2.35         | 28.05 | 1,314           | 07V         |      |
| 15  | 11   | SD   | R9.995       | X           | CLAIREMONT MESA BLVD                                | 148,000       | 7,721         | 5.22         | 3,814 | 708   | 251          | 2,948 | 49.40 | 9.17  | 3.25         | 38.18 | 1,253           | 15E         |      |
| 15  | 11   | SD   | M12.124      | A           | JCT. RTE. 163                                       | 306,000       | 11,414        | 3.73         | 7,013 | 822   | 315          | 3,264 | 61.44 | 7.20  | 2.76         | 28.60 | 1,493           | 07E         |      |
| 15  | 11   | SD   | M14.285      | B           | SAN DIEGO, MIRAMAR/ POMERADO<br>RDS                 | 303,000       | 11,392        | 3.76         | 7,000 | 820   | 314          | 3,258 | 61.44 | 7.20  | 2.76         | 28.60 | 1,491           | 07E         |      |
| 15  | 11   | SD   | M14.285      | A           | SAN DIEGO, MIRAMAR/ POMERADO<br>RDS                 | 286,000       | 11,154        | 3.90         | 6,536 | 1,171 | 435          | 3,012 | 58.60 | 10.50 | 3.90         | 27.00 | 1,440           | 85V         |      |
| 15  | 11   | SD   | M18.176      | B           | SAN DIEGO, POWAY RD                                 | 244,000       | 17,324        | 7.10         | 8,454 | 1,958 | 970          | 5,942 | 48.80 | 11.30 | 5.60         | 34.30 | 2,669           | 96E         |      |
| 15  | 11   | SD   | M18.176      | A           | SAN DIEGO, POWAY RD                                 | 213,000       | 15,123        | 7.10         | 7,380 | 1,709 | 847          | 5,187 | 48.80 | 11.30 | 5.60         | 34.30 | 2,330           | 96E         |      |
| 15  | 11   | SD   | M27.65       | A           | ESCONDIDO, SOUTH JUNCTION OF<br>CENTRE CITY PARKWAY | 212,000       | 15,052        | 7.10         | 7,345 | 1,701 | 843          | 5,163 | 48.80 | 11.30 | 5.60         | 34.30 | 2,319           | 96E         |      |
| 15  | 11   | SD   | R30.627      | B           | VALLEY PARKWAY                                      | 221,000       | 15,691        | 7.10         | 7,657 | 1,773 | 879          | 5,382 | 48.80 | 11.30 | 5.60         | 34.30 | 2,417           | 96E         |      |
| 15  | 11   | SD   | R31.517      | X           | JCT. RTE. 78                                        | 122,000       | 9,424         | 7.72         | 5,192 | 578   | 304          | 3,350 | 55.09 | 6.13  | 3.23         | 35.55 | 1,434           | 15E         |      |
| 15  | 11   | SD   | R31.517      | B           | JCT. RTE. 78                                        | 238,000       | 16,897        | 7.10         | 8,246 | 1,909 | 946          | 5,796 | 48.80 | 11.30 | 5.60         | 34.30 | 2,603           | 96E         |      |
| 15  | 11   | SD   | R31.517      | A           | JCT. RTE. 78                                        | 135,000       | 13,636        | 10.10        | 6,027 | 1,173 | 709          | 5,727 | 44.20 | 8.60  | 5.20         | 42.00 | 2,399           | 80V         |      |
| 15  | 11   | SD   | R36.636      | A           | DEER SPRINGS RD                                     | 127,000       | 16,764        | 13.20        | 5,918 | 1,358 | 704          | 8,784 | 35.30 | 8.10  | 4.20         | 52.40 | 3,466           | 86V         |      |

2015 Daily Truck Traffic

| RTE | DIST | CNTY | POST<br>MILE | L<br>E<br>G | DESCRIPTION                     | VEHICLE       | TRUCK         | TRUCK        | TRUCK |       |         | AADT   | TOTAL | %     | TRUCK |       | AADT    | EAL |   | YEAR |
|-----|------|------|--------------|-------------|---------------------------------|---------------|---------------|--------------|-------|-------|---------|--------|-------|-------|-------|-------|---------|-----|---|------|
|     |      |      |              |             |                                 | AADT<br>TOTAL | AADT<br>TOTAL | % TOT<br>VEH | 2     | 3     | By Axle |        | 4     | 5+    | 2     | 3     | By Axle |     | 4 | 5+   |
| 15  | 11   | SD   | R46.491      | B           | JCT. RTE. 76                    | 121,000       | 12,378        | 10.23        | 3,939 | 984   | 422     | 7,033  | 31.82 | 7.95  | 3.41  | 56.82 | 2,717   | 00E |   |      |
| 15  | 11   | SD   | R46.491      | A           | JCT. RTE. 76                    | 132,000       | 10,978        | 8.32         | 4,687 | 867   | 564     | 4,860  | 42.69 | 7.90  | 5.14  | 44.27 | 2,004   | 15E |   |      |
| 15  | 8    | RIV  | R0           | A           | SAN DIEGO/RIVERSIDE COUNTY LINE | 140,000       | 9,450         | 6.75         | 3,529 | 673   | 286     | 4,962  | 37.34 | 7.12  | 3.03  | 52.51 | 1,939   | 04V |   |      |
| 15  | 8    | RIV  | 3.436        | B           | SOUTH JCT. RTE. 79              | 140,000       | 9,450         | 6.75         | 3,529 | 673   | 286     | 4,962  | 37.34 | 7.12  | 3.03  | 52.51 | 1,939   | 04E |   |      |
| 15  | 8    | RIV  | 3.436        | A           | SOUTH JCT. RTE. 79              | 159,000       | 11,210        | 7.05         | 4,186 | 798   | 340     | 5,886  | 37.34 | 7.12  | 3.03  | 52.51 | 2,301   | 04E |   |      |
| 15  | 8    | RIV  | 6.623        | B           | NORTH JCT RTE. 79               | 169,000       | 11,103        | 6.57         | 4,146 | 791   | 336     | 5,830  | 37.34 | 7.12  | 3.03  | 52.51 | 2,279   | 04E |   |      |
| 15  | 8    | RIV  | 8.737        | B           | JCT. RTE. 215 NORTH             | 190,000       | 10,546        | 5.55         | 3,938 | 751   | 320     | 5,537  | 37.34 | 7.12  | 3.03  | 52.51 | 2,164   | 04E |   |      |
| 15  | 8    | RIV  | 8.737        | A           | JCT. RTE. 215 NORTH             | 113,000       | 10,171        | 9.00         | 4,584 | 817   | 414     | 4,356  | 45.07 | 8.03  | 4.07  | 42.83 | 1,799   | 06E |   |      |
| 15  | 8    | RIV  | 15.071       | B           | BAXTER RD                       | 130,000       | 11,310        | 8.70         | 5,090 | 916   | 452     | 4,852  | 45.00 | 8.10  | 4.00  | 42.90 | 2,003   | 06E |   |      |
| 15  | 8    | RIV  | 20.948       | B           | MAIN ST                         | 128,000       | 11,776        | 9.20         | 5,299 | 954   | 471     | 5,052  | 45.00 | 8.10  | 4.00  | 42.90 | 2,085   | 06E |   |      |
| 15  | 8    | RIV  | 22.277       | B           | JCT. RTE. 74                    | 125,000       | 9,331         | 7.46         | 4,736 | 664   | 307     | 3,624  | 50.76 | 7.12  | 3.29  | 38.84 | 1,521   | 15V |   |      |
| 15  | 8    | RIV  | 22.277       | A           | JCT. RTE. 74                    | 117,000       | 12,285        | 10.50        | 5,528 | 995   | 500     | 5,262  | 45.00 | 8.10  | 4.07  | 42.83 | 2,174   | 06E |   |      |
| 15  | 8    | RIV  | 41.501       | B           | JCT. RTE. 91                    | 187,000       | 10,492        | 5.61         | 3,653 | 1,315 | 848     | 4,676  | 34.82 | 12.53 | 8.08  | 44.57 | 1,987   | 00E |   |      |
| 15  | 8    | RIV  | 44.66        | O           | FOURTH ST, NORCO                | 151,000       | 17,305        | 11.46        | 6,013 | 2,210 | 1350    | 7,732  | 34.75 | 12.77 | 7.80  | 44.68 | 3,280   | 00E |   |      |
| 15  | 8    | RIV  | 51.474       | A           | JCT. RTE. 60                    | 219,000       | 17,958        | 8.20         | 6,240 | 2,293 | 1401    | 8,024  | 34.75 | 12.77 | 7.80  | 44.68 | 3,404   | 00E |   |      |
| 15  | 8    | SBD  | 2.389        | A           | JCT. RTE. 10                    | 206,000       | 21,321        | 10.35        | 6,433 | 1,296 | 529     | 13,063 | 30.17 | 6.08  | 2.48  | 61.27 | 4,929   | 06E |   |      |

2015 Daily Truck Traffic

| RTE | DIST | CNTY | POST<br>MILE | L<br>E<br>G | DESCRIPTION                          | VEHICLE | TRUCK | TRUCK | TRUCK   |     |     | AADT    | TOTAL | %       | TRUCK |       | AADT   | EAL |  | YEAR |
|-----|------|------|--------------|-------------|--------------------------------------|---------|-------|-------|---------|-----|-----|---------|-------|---------|-------|-------|--------|-----|--|------|
|     |      |      |              |             |                                      | AADT    | AADT  | % TOT | By Axle |     |     | By Axle |       | By Axle |       | 2-WAY | VER/   |     |  |      |
|     |      |      |              |             |                                      | TOTAL   | TOTAL | VEH   | 2       | 3   | 4   | 5+      | 2     | 3       | 4     | 5+    | (1000) | EST |  |      |
| 78  | 11   | SD   | 5.944        | B           | VISTA, MELROSE DRIVE                 | 133,000 | 6,876 | 5.17  | 3,226   | 696 | 534 | 2,420   | 46.92 | 10.12   | 7.77  | 35.19 | 1,090  | 07E |  |      |
| 78  | 11   | SD   | 5.944        | A           | VISTA, MELROSE DRIVE                 | 128,000 | 6,106 | 4.77  | 2,865   | 618 | 474 | 2,149   | 46.92 | 10.12   | 7.77  | 35.19 | 968    | 07E |  |      |
| 78  | 11   | SD   | 10.606       | X           | SAN MARCOS,RANCHO SANTA FE           | 103,000 | 4,561 | 4.43  | 2,762   | 450 | 192 | 1,157   | 60.56 | 9.87    | 4.21  | 25.37 | 566    | 15E |  |      |
| 78  | 11   | SD   | R16.539      | B           | ESCONDIDO, JCT. RTE. 15              | 167,000 | 7,598 | 4.55  | 3,565   | 769 | 590 | 2,674   | 46.92 | 10.12   | 7.77  | 35.19 | 1,205  | 07V |  |      |
| 78  | 11   | SD   | R17.268      | B           | ESCONDIDO, CENTRE CITY PARKWAY       | 85,000  | 4,504 | 5.30  | 2,455   | 423 | 243 | 1,383   | 54.50 | 9.40    | 5.40  | 30.70 | 638    | 97E |  |      |
| 78  | 11   | SD   | N17.68       | B           | ESCONDIDO, BRDWAY/LINCOLN<br>PARKWAY | 57,000  | 570   | 1.00  | 304     | 136 | 87  | 43      | 53.40 | 23.80   | 15.30 | 7.50  | 51     | 86E |  |      |
| 78  | 11   | SD   | T19.094      | B           | ESCONDIDO ASH ST                     | 16,400  | 985   | 6.00  | 687     | 121 | 24  | 153     | 69.80 | 12.30   | 2.40  | 15.50 | 91     | 96E |  |      |
| 78  | 11   | SD   | T19.094      | A           | ESCONDIDO ASH ST                     | 20,400  | 1,224 | 6.00  | 854     | 151 | 28  | 191     | 69.80 | 12.30   | 2.30  | 15.60 | 114    | 96E |  |      |
| 78  | 11   | SD   | 18.94        | A           | ESCONDIDO, GRAND AVE                 | 17,900  | 1,091 | 6.10  | 762     | 134 | 26  | 169     | 69.80 | 12.30   | 2.40  | 15.50 | 101    | 96E |  |      |
| 78  | 11   | SD   | R27.315      | A           | BANDY CANYON RD                      | 9,200   | 865   | 9.40  | 433     | 138 | 53  | 241     | 50.10 | 15.90   | 6.10  | 27.90 | 119    | 81E |  |      |
| 78  | 11   | SD   | 35.519       | B           | JCT. RTE. 67 SOUTHWEST               | 10,200  | 223   | 2.20  | 89      | 50  | 9   | 75      | 39.80 | 22.30   | 4.20  | 33.70 | 35     | 87E |  |      |
| 78  | 11   | SD   | 35.519       | A           | JCT. RTE. 67 SOUTHWEST               | 21,900  | 1,205 | 5.50  | 833     | 137 | 53  | 182     | 69.10 | 11.40   | 4.40  | 15.10 | 112    | 87V |  |      |
| 78  | 11   | SD   | 51.108       | B           | WEST JCT. RTE. 79                    | 5,200   | 312   | 6.00  | 221     | 36  | 27  | 28      | 70.90 | 11.60   | 8.50  | 9.00  | 25     | 93V |  |      |
| 78  | 11   | SD   | 51.108       | A           | WEST JCT. RTE. 79                    | 4,100   | 295   | 7.20  | 230     | 36  | 16  | 13      | 78.00 | 12.20   | 5.40  | 4.40  | 18     | 88V |  |      |
| 78  | 11   | SD   | 58.133       | B           | EAST JCT. RTE. 79                    | 4,900   | 814   | 16.60 | 638     | 102 | 37  | 37      | 78.50 | 12.50   | 4.50  | 4.50  | 50     | 88E |  |      |
| 78  | 11   | SD   | 58.133       | A           | EAST JCT. RTE. 79                    | 3,900   | 948   | 24.30 | 766     | 114 | 33  | 35      | 80.80 | 12.00   | 3.50  | 3.70  | 54     | 88E |  |      |



## **APPENDIX B**

### **PEAK HOUR ANALYSIS WORKSHEETS – EXISTING**



HCM Signalized Intersection Capacity Analysis  
1: Champagne Boulevard & Gopher Canyon Road

Existing AM  
03/17/2017

| Movement               | EBL   | EBR  | NBL   | NBT  | SBT   | SBR  |
|------------------------|-------|------|-------|------|-------|------|
| Lane Configurations    | ↰     | ↱    | ↰     | ↱    | ↰     | ↱    |
| Traffic Volume (vph)   | 148   | 143  | 244   | 78   | 261   | 461  |
| Future Volume (vph)    | 148   | 143  | 244   | 78   | 261   | 461  |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.5   | 4.5  | 4.5   | 4.5  | 4.5   | 4.5  |
| Lane Util. Factor      | 1.00  | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 |
| Frpb, ped/bikes        | 1.00  | 1.00 | 1.00  | 1.00 | 0.99  | 0.99 |
| Flpb, ped/bikes        | 1.00  | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 |
| Frt                    | 1.00  | 0.85 | 1.00  | 1.00 | 0.91  | 0.91 |
| Flt Protected          | 0.95  | 1.00 | 0.95  | 1.00 | 1.00  | 1.00 |
| Satd. Flow (prot)      | 1770  | 1583 | 1770  | 1863 | 1688  | 1688 |
| Flt Permitted          | 0.95  | 1.00 | 0.95  | 1.00 | 1.00  | 1.00 |
| Satd. Flow (perm)      | 1770  | 1583 | 1770  | 1863 | 1688  | 1688 |
| Peak-hour factor, PHF  | 0.91  | 0.91 | 0.91  | 0.91 | 0.91  | 0.91 |
| Adj. Flow (vph)        | 163   | 157  | 268   | 86   | 287   | 507  |
| RTOR Reduction (vph)   | 0     | 134  | 0     | 0    | 56    | 0    |
| Lane Group Flow (vph)  | 163   | 23   | 268   | 86   | 738   | 0    |
| Confl. Bikes (#/hr)    |       |      |       |      |       | 2    |
| Turn Type              | Prot  | Perm | Prot  | NA   | NA    |      |
| Protected Phases       | 4     |      | 5     | 2    | 6     |      |
| Permitted Phases       |       | 4    |       |      |       |      |
| Actuated Green, G (s)  | 14.2  | 14.2 | 19.6  | 72.4 | 48.3  |      |
| Effective Green, g (s) | 14.2  | 14.2 | 19.6  | 72.4 | 48.3  |      |
| Actuated g/C Ratio     | 0.15  | 0.15 | 0.21  | 0.76 | 0.51  |      |
| 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   | 235  | 362   | 1410 | 852   |      |
| v/s Ratio Prot         | c0.09 |      | c0.15 | 0.05 | c0.44 |      |
| v/s Ratio Perm         |       | 0.01 |       |      |       |      |
| v/c Ratio              | 0.62  | 0.10 | 0.74  | 0.06 | 0.87  |      |
| Uniform Delay, d1      | 38.2  | 35.2 | 35.6  | 3.0  | 20.8  |      |
| Progression Factor     | 1.00  | 1.00 | 1.00  | 1.00 | 1.00  |      |
| Incremental Delay, d2  | 4.5   | 0.2  | 7.9   | 0.0  | 9.2   |      |
| Delay (s)              | 42.7  | 35.4 | 43.5  | 3.0  | 30.0  |      |
| Level of Service       | D     | D    | D     | A    | C     |      |
| Approach Delay (s)     | 39.1  |      |       | 33.7 | 30.0  |      |
| Approach LOS           | 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)         | 95.6  | Sum of lost time (s)      | 13.5 |
| Intersection Capacity Utilization | 75.0% | ICU Level of Service      | D    |
| Analysis Period (min)             | 15    |                           |      |
| c Critical Lane Group             |       |                           |      |

HCM Signalized Intersection Capacity Analysis  
2: Champagne Boulevard/Gopher Canyon Road & Old Castle Road

Existing AM  
03/17/2017

| Movement               | WBL   | WBR  | NBT  | NBR  | SBL   | SBT   |
|------------------------|-------|------|------|------|-------|-------|
| Lane Configurations    | ↰     | ↱    | ↰    | ↱    | ↰     | ↱     |
| Traffic Volume (vph)   | 105   | 252  | 63   | 27   | 164   | 245   |
| Future Volume (vph)    | 105   | 252  | 63   | 27   | 164   | 245   |
| 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  | 1.00 | 1.00 |      | 1.00  | 1.00  |
| Frpb, ped/bikes        | 1.00  | 1.00 | 0.99 |      | 1.00  | 1.00  |
| Flpb, ped/bikes        | 1.00  | 1.00 | 1.00 |      | 1.00  | 1.00  |
| Frt                    | 1.00  | 0.85 | 0.96 |      | 1.00  | 1.00  |
| Flt Protected          | 0.95  | 1.00 | 1.00 |      | 0.95  | 1.00  |
| Satd. Flow (prot)      | 1770  | 1583 | 1775 |      | 1770  | 1863  |
| Flt Permitted          | 0.95  | 1.00 | 1.00 |      | 0.95  | 1.00  |
| Satd. Flow (perm)      | 1770  | 1583 | 1775 |      | 1770  | 1863  |
| Peak-hour factor, PHF  | 0.87  | 0.87 | 0.87 | 0.87 | 0.87  | 0.87  |
| Adj. Flow (vph)        | 121   | 290  | 72   | 31   | 189   | 282   |
| RTOR Reduction (vph)   | 0     | 223  | 18   | 0    | 0     | 0     |
| Lane Group Flow (vph)  | 121   | 67   | 85   | 0    | 189   | 282   |
| Confl. Bikes (#/hr)    |       |      |      | 1    |       |       |
| Turn Type              | Prot  | Perm | NA   |      | Prot  | NA    |
| Protected Phases       | 8     |      | 2    |      | 1     | 6     |
| Permitted Phases       |       | 8    |      |      |       |       |
| Actuated Green, G (s)  | 9.6   | 9.6  | 10.0 |      | 8.2   | 22.7  |
| Effective Green, g (s) | 9.6   | 9.6  | 10.0 |      | 8.2   | 22.7  |
| Actuated g/C Ratio     | 0.23  | 0.23 | 0.24 |      | 0.20  | 0.55  |
| 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)     | 411   | 367  | 429  |      | 351   | 1023  |
| v/s Ratio Prot         | c0.07 |      | 0.05 |      | c0.11 | c0.15 |
| v/s Ratio Perm         |       | 0.04 |      |      |       |       |
| v/c Ratio              | 0.29  | 0.18 | 0.20 |      | 0.54  | 0.28  |
| Uniform Delay, d1      | 13.1  | 12.7 | 12.5 |      | 14.9  | 4.9   |
| Progression Factor     | 1.00  | 1.00 | 1.00 |      | 1.00  | 1.00  |
| Incremental Delay, d2  | 0.4   | 0.2  | 0.2  |      | 1.6   | 0.1   |
| Delay (s)              | 13.5  | 13.0 | 12.7 |      | 16.4  | 5.1   |
| Level of Service       | B     | B    | B    |      | B     | A     |
| Approach Delay (s)     | 13.1  |      | 12.7 |      |       | 9.6   |
| Approach LOS           | B     |      | B    |      |       | A     |

Intersection Summary

|                                   |       |                           |      |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay            | 11.4  | HCM 2000 Level of Service | B    |
| HCM 2000 Volume to Capacity ratio | 0.38  |                           |      |
| Actuated Cycle Length (s)         | 41.3  | Sum of lost time (s)      | 13.5 |
| Intersection Capacity Utilization | 29.1% | ICU Level of Service      | A    |
| Analysis Period (min)             | 15    |                           |      |
| c Critical Lane Group             |       |                           |      |

### HCM Unsignalized Intersection Capacity Analysis 3: Champagne Boulevard & Lawrence Welk Dr

Existing AM  
03/17/2017

|                                   |  |  |  |  |  |  |  |  |  |  |    |    |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h)            | 1                                                                                 | 0                                                                                 | 9                                                                                 | 15                                                                                | 0                                                                                 | 21                                                                                | 5                                                                                 | 105                                                                               | 63                                                                                | 53                                                                                | 259                                                                                 | 4                                                                                   |
| Future Volume (Veh/h)             | 1                                                                                 | 0                                                                                 | 9                                                                                 | 15                                                                                | 0                                                                                 | 21                                                                                | 5                                                                                 | 105                                                                               | 63                                                                                | 53                                                                                | 259                                                                                 | 4                                                                                   |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |                                                                                     |                                                                                     |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                     |                                                                                     |
| Peak Hour Factor                  | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                                | 0.84                                                                                |
| Hourly flow rate (vph)            | 1                                                                                 | 0                                                                                 | 11                                                                                | 18                                                                                | 0                                                                                 | 25                                                                                | 6                                                                                 | 125                                                                               | 75                                                                                | 63                                                                                | 308                                                                                 | 5                                                                                   |
| Pedestrians                       | 1                                                                                 |                                                                                   |                                                                                   | 2                                                                                 |                                                                                   |                                                                                   | 1                                                                                 |                                                                                   |                                                                                   | 1                                                                                 |                                                                                     |                                                                                     |
| Lane Width (ft)                   | 12.0                                                                              |                                                                                   |                                                                                   | 12.0                                                                              |                                                                                   |                                                                                   | 12.0                                                                              |                                                                                   |                                                                                   | 12.0                                                                              |                                                                                     |                                                                                     |
| Walking Speed (ft/s)              | 4.0                                                                               |                                                                                   |                                                                                   | 4.0                                                                               |                                                                                   |                                                                                   | 4.0                                                                               |                                                                                   |                                                                                   | 4.0                                                                               |                                                                                     |                                                                                     |
| Percent Blockage                  | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                     |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 7                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | None                                                                              |                                                                                   | None                                                                                |                                                                                     |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| Upstream signal (ft)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | 874                                                                                 |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| vC, conflicting volume            | 576                                                                               | 652                                                                               | 312                                                                               | 584                                                                               | 579                                                                               | 128                                                                               | 314                                                                               |                                                                                   |                                                                                   |                                                                                   | 202                                                                                 |                                                                                     |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 576                                                                               | 652                                                                               | 312                                                                               | 584                                                                               | 579                                                                               | 128                                                                               | 314                                                                               |                                                                                   |                                                                                   |                                                                                   | 202                                                                                 |                                                                                     |
| tC, single (s)                    | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   | 4.1                                                                                 |                                                                                     |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   | 2.2                                                                                 |                                                                                     |
| p0 queue free %                   | 100                                                                               | 100                                                                               | 98                                                                                | 95                                                                                | 100                                                                               | 97                                                                                | 100                                                                               |                                                                                   |                                                                                   |                                                                                   | 95                                                                                  |                                                                                     |
| cM capacity (veh/h)               | 399                                                                               | 367                                                                               | 728                                                                               | 399                                                                               | 404                                                                               | 920                                                                               | 1245                                                                              |                                                                                   |                                                                                   |                                                                                   | 1368                                                                                |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | SB 1                                                                              | SB 2                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| Volume Total                      | 12                                                                                | 43                                                                                | 6                                                                                 | 125                                                                               | 75                                                                                | 63                                                                                | 313                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| Volume Left                       | 1                                                                                 | 18                                                                                | 6                                                                                 | 0                                                                                 | 0                                                                                 | 63                                                                                | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| Volume Right                      | 11                                                                                | 25                                                                                | 0                                                                                 | 0                                                                                 | 75                                                                                | 0                                                                                 | 5                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| cSH                               | 681                                                                               | 954                                                                               | 1245                                                                              | 1700                                                                              | 1700                                                                              | 1368                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.02                                                                              | 0.05                                                                              | 0.00                                                                              | 0.07                                                                              | 0.04                                                                              | 0.05                                                                              | 0.18                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| Queue Length 95th (ft)            | 1                                                                                 | 4                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 4                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| Control Delay (s)                 | 10.4                                                                              | 11.3                                                                              | 7.9                                                                               | 0.0                                                                               | 0.0                                                                               | 7.8                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| Lane LOS                          | B                                                                                 | B                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| Approach Delay (s)                | 10.4                                                                              | 11.3                                                                              | 0.2                                                                               |                                                                                   |                                                                                   |                                                                                   | 1.3                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| Approach LOS                      | B                                                                                 | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| Average Delay                     | 1.8                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| Intersection Capacity Utilization | 25.8%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| Analysis Period (min)             | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |

### HCM Signalized Intersection Capacity Analysis 4: North Centre City Pkwy/Champagne Boulevard & Deer Springs Rd

Existing AM  
03/17/2017

| Movement                          | EBL                                                                                 | EBT                                                                                 | EBR   | WBL                                                                                 | WBT                                                                                 | WBR                       | NBL  | NBT                                                                                 | NBR  | SBL   | SBT                                                                                 | SBR  |
|-----------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------|------|-------------------------------------------------------------------------------------|------|-------|-------------------------------------------------------------------------------------|------|
| Lane Configurations               |  |  |       |  |  |                           |      |  |      |       |  |      |
| Traffic Volume (vph)              | 87                                                                                  | 93                                                                                  | 48    | 172                                                                                 | 295                                                                                 | 10                        | 68   | 53                                                                                  | 49   | 4     | 163                                                                                 | 215  |
| Future Volume (vph)               | 87                                                                                  | 93                                                                                  | 48    | 172                                                                                 | 295                                                                                 | 10                        | 68   | 53                                                                                  | 49   | 4     | 163                                                                                 | 215  |
| Ideal Flow (vphpl)                | 1900                                                                                | 1900                                                                                | 1900  | 1900                                                                                | 1900                                                                                | 1900                      | 1900 | 1900                                                                                | 1900 | 1900  | 1900                                                                                | 1900 |
| Total Lost time (s)               | 4.5                                                                                 | 4.5                                                                                 |       | 4.5                                                                                 | 4.5                                                                                 |                           |      | 4.5                                                                                 |      |       | 4.5                                                                                 |      |
| Lane Util. Factor                 | 1.00                                                                                | 0.95                                                                                |       | 1.00                                                                                | 0.95                                                                                |                           |      | 1.00                                                                                |      |       | 1.00                                                                                |      |
| Frpb, ped/bikes                   | 1.00                                                                                | 0.99                                                                                |       | 1.00                                                                                | 1.00                                                                                |                           |      | 1.00                                                                                |      |       | 0.99                                                                                |      |
| Flpb, ped/bikes                   | 1.00                                                                                | 1.00                                                                                |       | 1.00                                                                                | 1.00                                                                                |                           |      | 1.00                                                                                |      |       | 1.00                                                                                |      |
| Frt                               | 1.00                                                                                | 0.95                                                                                |       | 1.00                                                                                | 1.00                                                                                |                           |      | 0.96                                                                                |      |       | 0.92                                                                                |      |
| Flt Protected                     | 0.95                                                                                | 1.00                                                                                |       | 0.95                                                                                | 1.00                                                                                |                           |      | 0.98                                                                                |      |       | 1.00                                                                                |      |
| Satd. Flow (prot)                 | 1770                                                                                | 3324                                                                                |       | 1770                                                                                | 3519                                                                                |                           |      | 1748                                                                                |      |       | 1707                                                                                |      |
| Flt Permitted                     | 0.95                                                                                | 1.00                                                                                |       | 0.95                                                                                | 1.00                                                                                |                           |      | 0.73                                                                                |      |       | 1.00                                                                                |      |
| Satd. Flow (perm)                 | 1770                                                                                | 3324                                                                                |       | 1770                                                                                | 3519                                                                                |                           |      | 1304                                                                                |      |       | 1704                                                                                |      |
| 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)                   | 95                                                                                  | 101                                                                                 | 52    | 187                                                                                 | 321                                                                                 | 11                        | 74   | 58                                                                                  | 53   | 4     | 177                                                                                 | 234  |
| RTOR Reduction (vph)              | 0                                                                                   | 45                                                                                  | 0     | 0                                                                                   | 2                                                                                   | 0                         | 0    | 17                                                                                  | 0    | 0     | 55                                                                                  | 0    |
| Lane Group Flow (vph)             | 95                                                                                  | 108                                                                                 | 0     | 187                                                                                 | 330                                                                                 | 0                         | 0    | 168                                                                                 | 0    | 0     | 360                                                                                 | 0    |
| Confl. Peds. (#/hr)               | 1                                                                                   |                                                                                     |       |                                                                                     |                                                                                     |                           |      |                                                                                     |      |       |                                                                                     |      |
| Confl. Bikes (#/hr)               | 4                                                                                   |                                                                                     |       | 1                                                                                   |                                                                                     |                           | 6    |                                                                                     |      | 1     |                                                                                     |      |
| Turn Type                         | Prot                                                                                | NA                                                                                  |       | Prot                                                                                | NA                                                                                  |                           | Perm | NA                                                                                  |      | Perm  | NA                                                                                  |      |
| Protected Phases                  | 7                                                                                   | 4                                                                                   |       | 3                                                                                   | 8                                                                                   |                           |      | 2                                                                                   |      |       | 6                                                                                   |      |
| Permitted Phases                  |                                                                                     |                                                                                     |       |                                                                                     |                                                                                     |                           | 2    |                                                                                     |      | 6     |                                                                                     |      |
| Actuated Green, G (s)             | 6.8                                                                                 | 7.1                                                                                 |       | 11.9                                                                                | 12.2                                                                                |                           |      | 17.4                                                                                |      |       | 17.4                                                                                |      |
| Effective Green, g (s)            | 6.8                                                                                 | 7.1                                                                                 |       | 11.9                                                                                | 12.2                                                                                |                           |      | 17.4                                                                                |      |       | 17.4                                                                                |      |
| Actuated g/C Ratio                | 0.14                                                                                | 0.14                                                                                |       | 0.24                                                                                | 0.24                                                                                |                           |      | 0.35                                                                                |      |       | 0.35                                                                                |      |
| Clearance Time (s)                | 4.5                                                                                 | 4.5                                                                                 |       | 4.5                                                                                 | 4.5                                                                                 |                           |      | 4.5                                                                                 |      |       | 4.5                                                                                 |      |
| Vehicle Extension (s)             | 3.0                                                                                 | 3.0                                                                                 |       | 3.0                                                                                 | 3.0                                                                                 |                           |      | 3.0                                                                                 |      |       | 3.0                                                                                 |      |
| Lane Grp Cap (vph)                | 241                                                                                 | 472                                                                                 |       | 422                                                                                 | 860                                                                                 |                           |      | 454                                                                                 |      |       | 594                                                                                 |      |
| v/s Ratio Prot                    | 0.05                                                                                | 0.03                                                                                |       | c0.11                                                                               | c0.09                                                                               |                           |      |                                                                                     |      |       |                                                                                     |      |
| v/s Ratio Perm                    |                                                                                     |                                                                                     |       |                                                                                     |                                                                                     |                           | 0.13 |                                                                                     |      | c0.21 |                                                                                     |      |
| v/c Ratio                         | 0.39                                                                                | 0.23                                                                                |       | 0.44                                                                                | 0.38                                                                                |                           |      | 0.37                                                                                |      |       | 0.61                                                                                |      |
| Uniform Delay, d1                 | 19.7                                                                                | 19.0                                                                                |       | 16.2                                                                                | 15.7                                                                                |                           |      | 12.2                                                                                |      |       | 13.4                                                                                |      |
| Progression Factor                | 1.00                                                                                | 1.00                                                                                |       | 1.00                                                                                | 1.00                                                                                |                           |      | 1.00                                                                                |      |       | 1.00                                                                                |      |
| Incremental Delay, d2             | 1.1                                                                                 | 0.2                                                                                 |       | 0.7                                                                                 | 0.3                                                                                 |                           |      | 0.5                                                                                 |      |       | 1.8                                                                                 |      |
| Delay (s)                         | 20.7                                                                                | 19.2                                                                                |       | 16.9                                                                                | 16.0                                                                                |                           |      | 12.7                                                                                |      |       | 15.2                                                                                |      |
| Level of Service                  | C                                                                                   | B                                                                                   |       | B                                                                                   | B                                                                                   |                           |      | B                                                                                   |      |       | B                                                                                   |      |
| Approach Delay (s)                | 19.8                                                                                |                                                                                     |       | 16.3                                                                                |                                                                                     |                           | 12.7 |                                                                                     |      | 15.2  |                                                                                     |      |
| Approach LOS                      | B                                                                                   |                                                                                     |       | B                                                                                   |                                                                                     |                           | B    |                                                                                     |      | B     |                                                                                     |      |
| Intersection Summary              |                                                                                     |                                                                                     |       |                                                                                     |                                                                                     |                           |      |                                                                                     |      |       |                                                                                     |      |
| HCM 2000 Control Delay            |                                                                                     |                                                                                     | 16.1  |                                                                                     |                                                                                     | HCM 2000 Level of Service |      |                                                                                     | B    |       |                                                                                     |      |
| HCM 2000 Volume to Capacity ratio |                                                                                     |                                                                                     | 0.54  |                                                                                     |                                                                                     |                           |      |                                                                                     |      |       |                                                                                     |      |
| Actuated Cycle Length (s)         |                                                                                     |                                                                                     | 49.9  |                                                                                     |                                                                                     | Sum of lost time (s)      |      |                                                                                     | 13.5 |       |                                                                                     |      |
| Intersection Capacity Utilization |                                                                                     |                                                                                     | 60.2% |                                                                                     |                                                                                     | ICU Level of Service      |      |                                                                                     | B    |       |                                                                                     |      |
| Analysis Period (min)             |                                                                                     |                                                                                     | 15    |                                                                                     |                                                                                     |                           |      |                                                                                     |      |       |                                                                                     |      |
| c Critical Lane Group             |                                                                                     |                                                                                     |       |                                                                                     |                                                                                     |                           |      |                                                                                     |      |       |                                                                                     |      |

HCM Signalized Intersection Capacity Analysis  
5: I-15 NB Ramps & Deer Springs Rd

Existing AM  
03/17/2017

| Movement                          | EBL   | EBT   | EBR  | WBL  | WBT                       | WBR  | NBL   | NBT   | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|-------|-------|------|------|---------------------------|------|-------|-------|------|------|------|------|
| Lane Configurations               | ↰     | ↑     |      |      | ↑                         | ↱    |       | ↰     | ↱    |      |      |      |
| Traffic Volume (vph)              | 222   | 113   | 0    | 0    | 486                       | 48   | 127   | 4     | 152  | 0    | 0    | 0    |
| Future Volume (vph)               | 222   | 113   | 0    | 0    | 486                       | 48   | 127   | 4     | 152  | 0    | 0    | 0    |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900 | 1900 | 1900                      | 1900 | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               | 4.2   | 5.3   |      |      | 5.3                       | 5.3  |       |       | 4.6  |      |      |      |
| Lane Util. Factor                 | 1.00  | 1.00  |      |      | 1.00                      | 1.00 |       |       | 1.00 |      |      |      |
| Flt                               | 1.00  | 1.00  |      |      | 1.00                      | 0.85 |       |       | 1.00 | 0.85 |      |      |
| Flt Protected                     | 0.95  | 1.00  |      |      | 1.00                      | 1.00 |       |       | 0.95 | 1.00 |      |      |
| Satd. Flow (prot)                 | 1770  | 1863  |      |      | 1863                      | 1583 |       |       | 1776 | 1583 |      |      |
| Flt Permitted                     | 0.95  | 1.00  |      |      | 1.00                      | 1.00 |       |       | 0.95 | 1.00 |      |      |
| Satd. Flow (perm)                 | 1770  | 1863  |      |      | 1863                      | 1583 |       |       | 1776 | 1583 |      |      |
| Peak-hour factor, PHF             | 0.89  | 0.89  | 0.89 | 0.89 | 0.89                      | 0.89 | 0.89  | 0.89  | 0.89 | 0.89 | 0.89 | 0.89 |
| Adj. Flow (vph)                   | 249   | 127   | 0    | 0    | 546                       | 54   | 143   | 4     | 171  | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0     | 0     | 0    | 0    | 0                         | 25   | 0     | 0     | 150  | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 249   | 127   | 0    | 0    | 546                       | 29   | 0     | 147   | 21   | 0    | 0    | 0    |
| Turn Type                         | Prot  | NA    |      |      | NA                        | Perm | Split | NA    | Perm |      |      |      |
| Protected Phases                  | 5     | 2     |      |      | 6                         |      | 8     | 8     |      |      |      |      |
| Permitted Phases                  |       |       |      |      |                           | 6    |       |       | 8    |      |      |      |
| Actuated Green, G (s)             | 20.8  | 77.8  |      |      | 52.8                      | 52.8 |       | 12.3  | 12.3 |      |      |      |
| Effective Green, g (s)            | 20.8  | 77.8  |      |      | 52.8                      | 52.8 |       | 12.3  | 12.3 |      |      |      |
| Actuated g/C Ratio                | 0.21  | 0.78  |      |      | 0.53                      | 0.53 |       | 0.12  | 0.12 |      |      |      |
| Clearance Time (s)                | 4.2   | 5.3   |      |      | 5.3                       | 5.3  |       | 4.6   | 4.6  |      |      |      |
| Vehicle Extension (s)             | 6.0   | 2.0   |      |      | 2.0                       | 2.0  |       | 2.0   | 2.0  |      |      |      |
| Lane Grp Cap (vph)                | 368   | 1449  |      |      | 983                       | 835  |       | 218   | 194  |      |      |      |
| v/s Ratio Prot                    | c0.14 | 0.07  |      |      | c0.29                     |      |       | c0.08 |      |      |      |      |
| v/s Ratio Perm                    |       |       |      |      |                           | 0.02 |       |       | 0.01 |      |      |      |
| v/c Ratio                         | 0.68  | 0.09  |      |      | 0.56                      | 0.03 |       | 0.67  | 0.11 |      |      |      |
| Uniform Delay, d1                 | 36.5  | 2.6   |      |      | 15.8                      | 11.3 |       | 41.9  | 39.0 |      |      |      |
| Progression Factor                | 1.16  | 1.16  |      |      | 1.00                      | 1.00 |       | 1.00  | 1.00 |      |      |      |
| Incremental Delay, d2             | 7.2   | 0.1   |      |      | 2.3                       | 0.1  |       | 6.3   | 0.1  |      |      |      |
| Delay (s)                         | 49.6  | 3.2   |      |      | 18.0                      | 11.4 |       | 48.3  | 39.1 |      |      |      |
| Level of Service                  | D     | A     |      |      | B                         | B    |       | D     | D    |      |      |      |
| Approach Delay (s)                |       | 33.9  |      |      |                           | 17.4 |       | 43.3  |      |      | 0.0  |      |
| Approach LOS                      |       | C     |      |      |                           | B    |       | D     |      |      | A    |      |
| <b>Intersection Summary</b>       |       |       |      |      |                           |      |       |       |      |      |      |      |
| HCM 2000 Control Delay            |       | 28.6  |      |      | HCM 2000 Level of Service |      |       | C     |      |      |      |      |
| HCM 2000 Volume to Capacity ratio |       | 0.60  |      |      |                           |      |       |       |      |      |      |      |
| Actuated Cycle Length (s)         |       | 100.0 |      |      | Sum of lost time (s)      |      |       | 14.1  |      |      |      |      |
| Intersection Capacity Utilization |       | 56.9% |      |      | ICU Level of Service      |      |       | B     |      |      |      |      |
| Analysis Period (min)             |       | 15    |      |      |                           |      |       |       |      |      |      |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
6: Deer Springs Rd & I-15 SB Ramps

Existing AM  
03/17/2017

| Movement                          | EBL  | EBT   | EBR  | WBL   | WBT                       | WBR  | NBL  | NBT  | NBR  | SBL   | SBT   | SBR  |
|-----------------------------------|------|-------|------|-------|---------------------------|------|------|------|------|-------|-------|------|
| Lane Configurations               |      | ↑     | ↱    | ↰     | ↑                         |      |      |      |      |       | ↰     | ↱    |
| Traffic Volume (vph)              | 0    | 315   | 197  | 271   | 377                       | 0    | 0    | 0    | 0    | 23    | 25    | 767  |
| Future Volume (vph)               | 0    | 315   | 197  | 271   | 377                       | 0    | 0    | 0    | 0    | 23    | 25    | 767  |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900  | 1900                      | 1900 | 1900 | 1900 | 1900 | 1900  | 1900  | 1900 |
| Total Lost time (s)               |      | 5.3   | 5.3  | 4.2   | 5.3                       |      |      |      |      |       | 4.6   | 4.6  |
| Lane Util. Factor                 |      | 1.00  | 1.00 | 1.00  | 1.00                      |      |      |      |      |       | 1.00  | 0.88 |
| Flt                               |      | 1.00  | 0.85 | 1.00  | 1.00                      |      |      |      |      |       | 1.00  | 0.85 |
| Flt Protected                     |      | 1.00  | 1.00 | 0.95  | 1.00                      |      |      |      |      |       | 0.98  | 1.00 |
| Satd. Flow (prot)                 |      | 1863  | 1583 | 1770  | 1863                      |      |      |      |      |       | 1819  | 2787 |
| Flt Permitted                     |      | 1.00  | 1.00 | 0.95  | 1.00                      |      |      |      |      |       | 0.98  | 1.00 |
| Satd. Flow (perm)                 |      | 1863  | 1583 | 1770  | 1863                      |      |      |      |      |       | 1819  | 2787 |
| 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    | 342   | 214  | 295   | 410                       | 0    | 0    | 0    | 0    | 25    | 27    | 834  |
| RTOR Reduction (vph)              | 0    | 0     | 98   | 0     | 0                         | 0    | 0    | 0    | 0    | 0     | 0     | 746  |
| Lane Group Flow (vph)             | 0    | 342   | 116  | 295   | 410                       | 0    | 0    | 0    | 0    | 0     | 52    | 88   |
| Turn Type                         |      | NA    | Perm | Prot  | NA                        |      |      |      |      | Split | NA    | Perm |
| Protected Phases                  |      | 2     |      | 1     | 6                         |      |      |      |      | 4     | 4     |      |
| Permitted Phases                  |      |       | 2    |       |                           |      |      |      |      |       |       | 4    |
| Actuated Green, G (s)             |      | 54.3  | 54.3 | 21.0  | 79.5                      |      |      |      |      | 10.6  | 10.6  |      |
| Effective Green, g (s)            |      | 54.3  | 54.3 | 21.0  | 79.5                      |      |      |      |      | 10.6  | 10.6  |      |
| Actuated g/C Ratio                |      | 0.54  | 0.54 | 0.21  | 0.80                      |      |      |      |      | 0.11  | 0.11  |      |
| Clearance Time (s)                |      | 5.3   | 5.3  | 4.2   | 5.3                       |      |      |      |      | 4.6   | 4.6   |      |
| Vehicle Extension (s)             |      | 2.0   | 2.0  | 2.0   | 2.0                       |      |      |      |      | 2.0   | 2.0   |      |
| Lane Grp Cap (vph)                |      | 1011  | 859  | 371   | 1481                      |      |      |      |      | 192   | 295   |      |
| v/s Ratio Prot                    |      | c0.18 |      | c0.17 | 0.22                      |      |      |      |      | 0.03  |       |      |
| v/s Ratio Perm                    |      |       | 0.07 |       |                           |      |      |      |      |       | c0.03 |      |
| v/c Ratio                         |      | 0.34  | 0.14 | 0.80  | 0.28                      |      |      |      |      | 0.27  | 0.30  |      |
| Uniform Delay, d1                 |      | 12.8  | 11.3 | 37.5  | 2.7                       |      |      |      |      | 41.1  | 41.3  |      |
| Progression Factor                |      | 1.00  | 1.00 | 1.02  | 0.94                      |      |      |      |      | 1.00  | 1.00  |      |
| Incremental Delay, d2             |      | 0.9   | 0.3  | 9.1   | 0.4                       |      |      |      |      | 0.3   | 0.2   |      |
| Delay (s)                         |      | 13.7  | 11.6 | 47.5  | 2.9                       |      |      |      |      | 41.4  | 41.5  |      |
| Level of Service                  |      | B     | B    | D     | A                         |      |      |      |      | D     | D     |      |
| Approach Delay (s)                |      | 12.9  |      |       | 21.6                      |      |      | 0.0  |      | 41.5  |       |      |
| Approach LOS                      |      | B     |      |       | C                         |      |      | A    |      | D     |       |      |
| <b>Intersection Summary</b>       |      |       |      |       |                           |      |      |      |      |       |       |      |
| HCM 2000 Control Delay            |      | 27.5  |      |       | HCM 2000 Level of Service |      |      | C    |      |       |       |      |
| HCM 2000 Volume to Capacity ratio |      | 0.44  |      |       |                           |      |      |      |      |       |       |      |
| Actuated Cycle Length (s)         |      | 100.0 |      |       | Sum of lost time (s)      |      |      | 14.1 |      |       |       |      |
| Intersection Capacity Utilization |      | 56.9% |      |       | ICU Level of Service      |      |      | B    |      |       |       |      |
| Analysis Period (min)             |      | 15    |      |       |                           |      |      |      |      |       |       |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
7: Deer Springs Rd & Mesa Rock Road

Existing AM  
03/17/2017

| Movement               | EBL   | EBT  | EBR  | WBL   | WBT   | WBR  | NBL   | NBT   | NBR  | SBL   | SBT   | SBR  |
|------------------------|-------|------|------|-------|-------|------|-------|-------|------|-------|-------|------|
| Lane Configurations    | ↰     | ↰↱   |      | ↰     | ↰↱    |      |       | ↱     |      | ↰     | ↰↱    | ↱    |
| Traffic Volume (vph)   | 17    | 411  | 13   | 11    | 1032  | 101  | 12    | 2     | 13   | 88    | 9     | 27   |
| Future Volume (vph)    | 17    | 411  | 13   | 11    | 1032  | 101  | 12    | 2     | 13   | 88    | 9     | 27   |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 |
| Total Lost time (s)    | 4.5   | 4.5  |      | 4.5   | 4.5   |      |       | 4.5   |      |       | 4.5   | 4.5  |
| Lane Util. Factor      | 1.00  | 0.95 |      | 1.00  | 0.95  |      |       | 1.00  |      |       | 1.00  | 1.00 |
| Frpb, ped/bikes        | 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 |
| Frt                    | 1.00  | 1.00 |      | 1.00  | 0.99  |      |       | 0.93  |      |       | 1.00  | 0.85 |
| Flt Protected          | 0.95  | 1.00 |      | 0.95  | 1.00  |      |       | 0.98  |      |       | 0.96  | 1.00 |
| Satd. Flow (prot)      | 1770  | 3521 |      | 1770  | 3485  |      |       | 1703  |      |       | 1782  | 1583 |
| Flt Permitted          | 0.95  | 1.00 |      | 0.95  | 1.00  |      |       | 0.98  |      |       | 0.96  | 1.00 |
| Satd. Flow (perm)      | 1770  | 3521 |      | 1770  | 3485  |      |       | 1703  |      |       | 1782  | 1583 |
| Peak-hour factor, PHF  | 0.90  | 0.90 | 0.90 | 0.90  | 0.90  | 0.90 | 0.90  | 0.90  | 0.90 | 0.90  | 0.90  | 0.90 |
| Adj. Flow (vph)        | 19    | 457  | 14   | 12    | 1147  | 112  | 13    | 2     | 14   | 98    | 10    | 30   |
| RTOR Reduction (vph)   | 0     | 2    | 0    | 0     | 7     | 0    | 0     | 13    | 0    | 0     | 0     | 22   |
| Lane Group Flow (vph)  | 19    | 469  | 0    | 12    | 1252  | 0    | 0     | 16    | 0    | 0     | 108   | 8    |
| Confl. Bikes (#/hr)    |       |      | 9    |       |       | 2    |       |       |      |       |       |      |
| Turn Type              | Prot  | NA   |      | Prot  | NA    |      | Split | NA    |      | Split | NA    | Perm |
| Protected Phases       | 7     | 4    |      | 3     | 8     |      | 2     | 2     |      | 6     | 6     |      |
| Permitted Phases       |       |      |      |       |       |      |       |       |      |       |       | 6    |
| Actuated Green, G (s)  | 1.4   | 35.6 |      | 0.6   | 34.8  |      |       | 5.0   |      |       | 20.5  | 20.5 |
| Effective Green, g (s) | 1.4   | 35.6 |      | 0.6   | 34.8  |      |       | 5.0   |      |       | 20.5  | 20.5 |
| Actuated g/C Ratio     | 0.02  | 0.45 |      | 0.01  | 0.44  |      |       | 0.06  |      |       | 0.26  | 0.26 |
| Clearance Time (s)     | 4.5   | 4.5  |      | 4.5   | 4.5   |      |       | 4.5   |      |       | 4.5   | 4.5  |
| Vehicle Extension (s)  | 3.0   | 3.0  |      | 3.0   | 3.0   |      |       | 3.0   |      |       | 3.0   | 3.0  |
| Lane Grp Cap (vph)     | 31    | 1572 |      | 13    | 1521  |      |       | 106   |      |       | 458   | 407  |
| v/s Ratio Prot         | c0.01 | 0.13 |      | 0.01  | c0.36 |      |       | c0.01 |      |       | c0.06 |      |
| v/s Ratio Perm         |       |      |      |       |       |      |       |       |      |       |       | 0.00 |
| v/c Ratio              | 0.61  | 0.30 |      | 0.92  | 0.82  |      |       | 0.15  |      |       | 0.24  | 0.02 |
| Uniform Delay, d1      | 38.9  | 14.1 |      | 39.5  | 19.7  |      |       | 35.3  |      |       | 23.4  | 22.1 |
| Progression Factor     | 1.00  | 1.00 |      | 1.00  | 1.00  |      |       | 1.00  |      |       | 1.00  | 1.00 |
| Incremental Delay, d2  | 30.9  | 0.1  |      | 207.3 | 3.7   |      |       | 0.7   |      |       | 1.2   | 0.1  |
| Delay (s)              | 69.8  | 14.2 |      | 246.8 | 23.5  |      |       | 36.0  |      |       | 24.6  | 22.2 |
| Level of Service       | E     | B    |      | F     | C     |      |       | D     |      |       | C     | C    |
| Approach Delay (s)     |       | 16.3 |      |       | 25.6  |      |       | 36.0  |      |       | 24.1  |      |
| Approach LOS           |       | B    |      |       | C     |      |       | D     |      |       | C     |      |

Intersection Summary

|                                   |       |                           |      |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay            | 23.3  | HCM 2000 Level of Service | C    |
| HCM 2000 Volume to Capacity ratio | 0.57  |                           |      |
| Actuated Cycle Length (s)         | 79.7  | Sum of lost time (s)      | 18.0 |
| Intersection Capacity Utilization | 49.7% | ICU Level of Service      | A    |
| Analysis Period (min)             | 15    |                           |      |
| c Critical Lane Group             |       |                           |      |

HCM Unsignalized Intersection Capacity Analysis  
9: Deer Springs Rd & Sarver Lane

Existing AM  
03/17/2017

| Movement               | EBL  | EBT  | WBT  | WBR  | SBL  | SBR  |
|------------------------|------|------|------|------|------|------|
| Lane Configurations    | ↰    | ↰    | ↰    |      | ↰    | ↰    |
| Traffic Volume (veh/h) | 14   | 353  | 931  | 0    | 8    | 10   |
| Future Volume (Veh/h)  | 14   | 353  | 931  | 0    | 8    | 10   |
| Sign Control           | Free | Free |      |      | Stop |      |
| Grade                  | 0%   | 0%   |      |      | 0%   |      |
| Peak Hour Factor       | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 15   | 368  | 970  | 0    | 8    | 10   |
| Pedestrians            |      |      |      |      |      |      |
| Lane Width (ft)        |      |      |      |      |      |      |
| Walking Speed (ft/s)   |      |      |      |      |      |      |
| Percent Blockage       |      |      |      |      |      |      |
| Right turn flare (veh) |      |      |      |      |      |      |
| Median type            | None | None |      |      |      |      |
| Median storage (veh)   |      |      |      |      |      |      |
| Upstream signal (ft)   |      |      |      |      |      |      |
| pX, platoon unblocked  |      |      |      |      |      |      |
| vC, conflicting volume | 970  |      |      |      | 1368 | 970  |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |
| vCu, unblocked vol     | 970  |      |      |      | 1368 | 970  |
| tC, single (s)         | 4.1  |      |      |      | 6.4  | 6.2  |
| tC, 2 stage (s)        |      |      |      |      |      |      |
| tF (s)                 | 2.2  |      |      |      | 3.5  | 3.3  |
| p0 queue free %        | 98   |      |      |      | 95   | 97   |
| cM capacity (veh/h)    | 710  |      |      |      | 158  | 307  |
| Direction, Lane #      | EB 1 | EB 2 | WB 1 | SB 1 |      |      |
| Volume Total           | 15   | 368  | 970  | 18   |      |      |
| Volume Left            | 15   | 0    | 0    | 8    |      |      |
| Volume Right           | 0    | 0    | 0    | 10   |      |      |
| cSH                    | 710  | 1700 | 1700 | 217  |      |      |
| Volume to Capacity     | 0.02 | 0.22 | 0.57 | 0.08 |      |      |
| Queue Length 95th (ft) | 2    | 0    | 0    | 7    |      |      |
| Control Delay (s)      | 10.2 | 0.0  | 0.0  | 23.1 |      |      |
| Lane LOS               | B    |      |      | C    |      |      |
| Approach Delay (s)     | 0.4  |      | 0.0  | 23.1 |      |      |
| Approach LOS           |      |      |      | C    |      |      |

Intersection Summary

|                                   |       |                      |   |
|-----------------------------------|-------|----------------------|---|
| Average Delay                     | 0.4   |                      |   |
| Intersection Capacity Utilization | 59.0% | ICU Level of Service | B |
| Analysis Period (min)             | 15    |                      |   |

HCM Unsignalized Intersection Capacity Analysis  
10: Deer Springs Rd & Sycamore Road

Existing AM  
03/17/2017

| Movement                          | WBL  | WBR   | NBT  | NBR                  | SBL  | SBT  |
|-----------------------------------|------|-------|------|----------------------|------|------|
| Lane Configurations               | ↰    | ↱     | ↰    |                      | ↰    | ↱    |
| Traffic Volume (veh/h)            | 1    | 5     | 368  | 3                    | 14   | 1011 |
| Future Volume (Veh/h)             | 1    | 5     | 368  | 3                    | 14   | 1011 |
| Sign Control                      | Stop |       | Free |                      |      | Free |
| Grade                             | 0%   |       | 0%   |                      |      | 0%   |
| Peak Hour Factor                  | 0.89 | 0.89  | 0.89 | 0.89                 | 0.89 | 0.89 |
| Hourly flow rate (vph)            | 1    | 6     | 413  | 3                    | 16   | 1136 |
| Pedestrians                       |      |       |      |                      |      |      |
| Lane Width (ft)                   |      |       |      |                      |      |      |
| Walking Speed (ft/s)              |      |       |      |                      |      |      |
| Percent Blockage                  |      |       |      |                      |      |      |
| Right turn flare (veh)            |      | 4     |      |                      |      |      |
| Median type                       |      |       | None |                      | None |      |
| Median storage (veh)              |      |       |      |                      |      |      |
| Upstream signal (ft)              |      |       | 680  |                      |      |      |
| pX, platoon unblocked             | 0.97 | 0.97  |      |                      | 0.97 |      |
| vC, conflicting volume            | 1582 | 414   |      |                      | 416  |      |
| vC1, stage 1 conf vol             |      |       |      |                      |      |      |
| vC2, stage 2 conf vol             |      |       |      |                      |      |      |
| vCu, unblocked vol                | 1585 | 384   |      |                      | 386  |      |
| tC, single (s)                    | 6.4  | 6.2   |      |                      | 4.1  |      |
| tC, 2 stage (s)                   |      |       |      |                      |      |      |
| tF (s)                            | 3.5  | 3.3   |      |                      | 2.2  |      |
| p0 queue free %                   | 99   | 99    |      |                      | 99   |      |
| cM capacity (veh/h)               | 114  | 645   |      |                      | 1141 |      |
| Direction, Lane #                 | WB 1 | NB 1  | SB 1 |                      |      |      |
| Volume Total                      | 7    | 416   | 1152 |                      |      |      |
| Volume Left                       | 1    | 0     | 16   |                      |      |      |
| Volume Right                      | 6    | 3     | 0    |                      |      |      |
| cSH                               | 753  | 1700  | 1141 |                      |      |      |
| Volume to Capacity                | 0.01 | 0.24  | 0.01 |                      |      |      |
| Queue Length 95th (ft)            | 1    | 0     | 1    |                      |      |      |
| Control Delay (s)                 | 14.4 | 0.0   | 0.5  |                      |      |      |
| Lane LOS                          | B    |       | A    |                      |      |      |
| Approach Delay (s)                | 14.4 | 0.0   | 0.5  |                      |      |      |
| Approach LOS                      | B    |       |      |                      |      |      |
| <b>Intersection Summary</b>       |      |       |      |                      |      |      |
| Average Delay                     |      |       | 0.4  |                      |      |      |
| Intersection Capacity Utilization |      | 74.4% |      | ICU Level of Service | D    |      |
| Analysis Period (min)             |      | 15    |      |                      |      |      |

HCM Unsignalized Intersection Capacity Analysis  
11: Twin Oaks Valley Road & Camino Mayor

Existing AM  
03/17/2017

| Movement                          | WBL  | WBR   | NBT  | NBR                  | SBL  | SBT  |
|-----------------------------------|------|-------|------|----------------------|------|------|
| Lane Configurations               | ↰    | ↱     | ↰    |                      | ↰    | ↱    |
| Traffic Volume (veh/h)            | 1    | 1     | 15   | 1                    | 1    | 15   |
| Future Volume (Veh/h)             | 1    | 1     | 15   | 1                    | 1    | 15   |
| Sign Control                      | Stop |       | Free |                      |      | Free |
| Grade                             | 0%   |       | 0%   |                      |      | 0%   |
| Peak Hour Factor                  | 0.83 | 0.83  | 0.83 | 0.83                 | 0.83 | 0.83 |
| Hourly flow rate (vph)            | 1    | 1     | 18   | 1                    | 1    | 18   |
| Pedestrians                       |      |       |      |                      |      |      |
| Lane Width (ft)                   |      |       |      |                      |      |      |
| Walking Speed (ft/s)              |      |       |      |                      |      |      |
| Percent Blockage                  |      |       |      |                      |      |      |
| Right turn flare (veh)            |      |       |      |                      |      |      |
| Median type                       |      |       | None |                      | None |      |
| Median storage (veh)              |      |       |      |                      |      |      |
| Upstream signal (ft)              |      |       |      |                      |      |      |
| pX, platoon unblocked             |      |       |      |                      |      |      |
| vC, conflicting volume            | 38   | 18    |      |                      | 19   |      |
| vC1, stage 1 conf vol             |      |       |      |                      |      |      |
| vC2, stage 2 conf vol             |      |       |      |                      |      |      |
| vCu, unblocked vol                | 38   | 18    |      |                      | 19   |      |
| tC, single (s)                    | 6.4  | 6.2   |      |                      | 4.1  |      |
| tC, 2 stage (s)                   |      |       |      |                      |      |      |
| tF (s)                            | 3.5  | 3.3   |      |                      | 2.2  |      |
| p0 queue free %                   | 100  | 100   |      |                      | 100  |      |
| cM capacity (veh/h)               | 973  | 1060  |      |                      | 1597 |      |
| Direction, Lane #                 | WB 1 | NB 1  | SB 1 |                      |      |      |
| Volume Total                      | 2    | 19    | 19   |                      |      |      |
| Volume Left                       | 1    | 0     | 1    |                      |      |      |
| Volume Right                      | 1    | 1     | 0    |                      |      |      |
| cSH                               | 1015 | 1700  | 1597 |                      |      |      |
| Volume to Capacity                | 0.00 | 0.01  | 0.00 |                      |      |      |
| Queue Length 95th (ft)            | 0    | 0     | 0    |                      |      |      |
| Control Delay (s)                 | 8.6  | 0.0   | 0.4  |                      |      |      |
| Lane LOS                          | A    |       | A    |                      |      |      |
| Approach Delay (s)                | 8.6  | 0.0   | 0.4  |                      |      |      |
| Approach LOS                      | A    |       |      |                      |      |      |
| <b>Intersection Summary</b>       |      |       |      |                      |      |      |
| Average Delay                     |      |       | 0.6  |                      |      |      |
| Intersection Capacity Utilization |      | 13.3% |      | ICU Level of Service | A    |      |
| Analysis Period (min)             |      | 15    |      |                      |      |      |

HCM Signalized Intersection Capacity Analysis  
12: Twin Oaks Valley Rd #1/Deer Springs Rd & Twin Oaks Valley Rd

Existing AM  
03/17/2017

| Movement                          | EBL   | EBR   | NBL   | NBT                       | SBT   | SBR   |
|-----------------------------------|-------|-------|-------|---------------------------|-------|-------|
| Lane Configurations               | ↰     | ↱     | ↰     | ↱                         | ↱     | ↱     |
| Traffic Volume (vph)              | 33    | 88    | 86    | 359                       | 1020  | 28    |
| Future Volume (vph)               | 33    | 88    | 86    | 359                       | 1020  | 28    |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900  | 1900                      | 1900  | 1900  |
| Total Lost time (s)               | 4.9   | 4.9   | 4.0   | 5.3                       | 5.3   | 5.3   |
| Lane Util. Factor                 | 1.00  | 1.00  | 1.00  | 1.00                      | 1.00  | 1.00  |
| Flt Protected                     | 0.95  | 1.00  | 0.95  | 1.00                      | 1.00  | 1.00  |
| Satd. Flow (prot)                 | 1770  | 1583  | 1770  | 1863                      | 1863  | 1583  |
| Flt Permitted                     | 0.95  | 1.00  | 0.95  | 1.00                      | 1.00  | 1.00  |
| Satd. Flow (perm)                 | 1770  | 1583  | 1770  | 1863                      | 1863  | 1583  |
| Peak-hour factor, PHF             | 0.91  | 0.91  | 0.91  | 0.91                      | 0.91  | 0.91  |
| Growth Factor (vph)               | 100%  | 100%  | 100%  | 130%                      | 130%  | 100%  |
| Adj. Flow (vph)                   | 36    | 97    | 95    | 513                       | 1457  | 31    |
| RTOR Reduction (vph)              | 0     | 88    | 0     | 0                         | 0     | 3     |
| Lane Group Flow (vph)             | 36    | 9     | 95    | 513                       | 1457  | 28    |
| Turn Type                         | Prot  | Perm  | Prot  | NA                        | NA    | Perm  |
| Protected Phases                  | 4     |       | 5     | 2                         | 6     |       |
| Permitted Phases                  |       | 4     |       |                           |       | 6     |
| Actuated Green, G (s)             | 12.6  | 12.6  | 7.0   | 118.1                     | 107.1 | 107.1 |
| Effective Green, g (s)            | 12.6  | 12.6  | 7.0   | 118.1                     | 107.1 | 107.1 |
| Actuated g/C Ratio                | 0.09  | 0.09  | 0.05  | 0.84                      | 0.76  | 0.76  |
| Clearance Time (s)                | 4.9   | 4.9   | 4.0   | 5.3                       | 5.3   | 5.3   |
| Vehicle Extension (s)             | 3.0   | 3.0   | 3.0   | 3.0                       | 3.0   | 3.0   |
| Lane Grp Cap (vph)                | 158   | 141   | 87    | 1561                      | 1416  | 1203  |
| v/s Ratio Prot                    | c0.02 |       | c0.05 | 0.28                      | c0.78 |       |
| v/s Ratio Perm                    |       | 0.01  |       |                           |       | 0.02  |
| v/c Ratio                         | 0.23  | 0.06  | 1.09  | 0.33                      | 1.03  | 0.02  |
| Uniform Delay, d1                 | 59.6  | 58.7  | 67.0  | 2.5                       | 16.9  | 4.1   |
| Progression Factor                | 1.00  | 1.00  | 1.00  | 1.00                      | 1.00  | 1.00  |
| Incremental Delay, d2             | 0.7   | 0.2   | 123.6 | 0.1                       | 31.6  | 0.0   |
| Delay (s)                         | 60.4  | 58.9  | 190.6 | 2.7                       | 48.5  | 4.1   |
| Level of Service                  | E     | E     | F     | A                         | D     | A     |
| Approach Delay (s)                | 59.3  |       |       | 32.0                      | 47.6  |       |
| Approach LOS                      | E     |       |       | C                         | D     |       |
| <b>Intersection Summary</b>       |       |       |       |                           |       |       |
| HCM 2000 Control Delay            |       | 44.1  |       | HCM 2000 Level of Service | D     |       |
| HCM 2000 Volume to Capacity ratio |       | 0.95  |       |                           |       |       |
| Actuated Cycle Length (s)         |       | 140.9 |       | Sum of lost time (s)      | 14.2  |       |
| Intersection Capacity Utilization |       | 83.7% |       | ICU Level of Service      | E     |       |
| Analysis Period (min)             |       | 15    |       |                           |       |       |
| c Critical Lane Group             |       |       |       |                           |       |       |

HCM Signalized Intersection Capacity Analysis  
13: Twin Oaks Valley Rd #1 & Buena Creek Rd

Existing AM  
03/17/2017

| Movement                          | EBL  | EBT   | EBR  | WBL                       | WBT  | WBR  | NBL   | NBT  | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|------|-------|------|---------------------------|------|------|-------|------|------|------|-------|------|
| Lane Configurations               |      | ↰     | ↱    |                           | ↰    | ↱    | ↰     | ↱    |      | ↰    | ↱     | ↱    |
| Traffic Volume (vph)              | 211  | 0     | 172  | 0                         | 0    | 0    | 113   | 233  | 0    | 0    | 792   | 314  |
| Future Volume (vph)               | 211  | 0     | 172  | 0                         | 0    | 0    | 113   | 233  | 0    | 0    | 792   | 314  |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900                      | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               |      | 4.0   | 4.0  |                           |      |      | 5.0   | 5.5  |      |      | 5.5   | 5.5  |
| Lane Util. Factor                 |      | 1.00  | 1.00 |                           |      |      | 1.00  | 1.00 |      |      | 1.00  | 1.00 |
| Flt Protected                     |      | 0.95  | 1.00 |                           |      |      | 0.95  | 1.00 |      |      | 0.95  | 1.00 |
| Satd. Flow (prot)                 |      | 1770  | 1545 |                           |      |      | 1770  | 1863 |      |      | 1863  | 1547 |
| Flt Permitted                     |      | 0.76  | 1.00 |                           |      |      | 0.95  | 1.00 |      |      | 1.00  | 1.00 |
| Satd. Flow (perm)                 |      | 1410  | 1545 |                           |      |      | 1770  | 1863 |      |      | 1863  | 1547 |
| Peak-hour factor, PHF             | 0.96 | 0.96  | 0.96 | 0.96                      | 0.96 | 0.96 | 0.96  | 0.96 | 0.96 | 0.96 | 0.96  | 0.96 |
| Adj. Flow (vph)                   | 220  | 0     | 179  | 0                         | 0    | 0    | 118   | 243  | 0    | 0    | 825   | 327  |
| RTOR Reduction (vph)              | 0    | 0     | 139  | 0                         | 0    | 0    | 0     | 0    | 0    | 0    | 0     | 66   |
| Lane Group Flow (vph)             | 0    | 220   | 40   | 0                         | 0    | 0    | 118   | 243  | 0    | 0    | 825   | 261  |
| Confl. Peds. (#/hr)               |      |       | 2    |                           |      |      |       |      |      |      |       | 1    |
| Confl. Bikes (#/hr)               |      |       |      |                           |      |      |       |      |      |      |       | 3    |
| Turn Type                         |      | Perm  | NA   | Perm                      |      |      | Prot  | NA   |      | Prot | NA    | Perm |
| Protected Phases                  |      | 4     |      |                           | 8    |      | 5     | 2    |      | 1    | 6     |      |
| Permitted Phases                  |      | 4     |      | 8                         |      |      |       |      |      |      |       | 6    |
| Actuated Green, G (s)             |      | 17.7  | 17.7 |                           |      |      | 7.1   | 51.6 |      |      | 39.5  | 39.5 |
| Effective Green, g (s)            |      | 17.7  | 17.7 |                           |      |      | 7.1   | 51.6 |      |      | 39.5  | 39.5 |
| Actuated g/C Ratio                |      | 0.22  | 0.22 |                           |      |      | 0.09  | 0.65 |      |      | 0.50  | 0.50 |
| Clearance Time (s)                |      | 4.0   | 4.0  |                           |      |      | 5.0   | 5.5  |      |      | 5.5   | 5.5  |
| Vehicle Extension (s)             |      | 3.0   | 3.0  |                           |      |      | 3.0   | 3.0  |      |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)                |      | 316   | 347  |                           |      |      | 159   | 1219 |      |      | 933   | 775  |
| v/s Ratio Prot                    |      |       |      |                           |      |      | c0.07 | 0.13 |      |      | c0.44 |      |
| v/s Ratio Perm                    |      | c0.16 | 0.03 |                           |      |      |       |      |      |      |       | 0.17 |
| v/c Ratio                         |      | 0.70  | 0.12 |                           |      |      | 0.74  | 0.20 |      |      | 0.88  | 0.34 |
| Uniform Delay, d1                 |      | 28.1  | 24.3 |                           |      |      | 35.0  | 5.4  |      |      | 17.6  | 11.8 |
| Progression Factor                |      | 1.00  | 1.00 |                           |      |      | 1.00  | 1.00 |      |      | 1.00  | 1.00 |
| Incremental Delay, d2             |      | 6.5   | 0.1  |                           |      |      | 16.9  | 0.1  |      |      | 10.0  | 0.3  |
| Delay (s)                         |      | 34.6  | 24.5 |                           |      |      | 51.9  | 5.5  |      |      | 27.6  | 12.1 |
| Level of Service                  |      | C     | C    |                           |      |      | D     | A    |      |      | C     | B    |
| Approach Delay (s)                |      | 30.1  |      |                           | 0.0  |      |       | 20.7 |      |      |       | 23.2 |
| Approach LOS                      |      | C     |      |                           | A    |      |       | C    |      |      |       | C    |
| <b>Intersection Summary</b>       |      |       |      |                           |      |      |       |      |      |      |       |      |
| HCM 2000 Control Delay            |      | 24.1  |      | HCM 2000 Level of Service | C    |      |       |      |      |      |       |      |
| HCM 2000 Volume to Capacity ratio |      | 0.82  |      |                           |      |      |       |      |      |      |       |      |
| Actuated Cycle Length (s)         |      | 78.8  |      | Sum of lost time (s)      | 14.5 |      |       |      |      |      |       |      |
| Intersection Capacity Utilization |      | 71.7% |      | ICU Level of Service      | C    |      |       |      |      |      |       |      |
| Analysis Period (min)             |      | 15    |      |                           |      |      |       |      |      |      |       |      |
| c Critical Lane Group             |      |       |      |                           |      |      |       |      |      |      |       |      |

HCM Signalized Intersection Capacity Analysis  
14: Twin Oaks Valley Rd #1 & Cassou Rd

Existing AM  
03/17/2017

| Movement               | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL  | NBT  | NBR  | SBL   | SBT   | SBR  |
|------------------------|-------|-------|------|-------|-------|------|------|------|------|-------|-------|------|
| Lane Configurations    |       | ↔     |      |       | ↔     |      | ↖    | ↗    | ↖    | ↗     | ↖     | ↗    |
| Traffic Volume (vph)   | 11    | 7     | 39   | 197   | 12    | 30   | 25   | 336  | 195  | 49    | 806   | 10   |
| Future Volume (vph)    | 11    | 7     | 39   | 197   | 12    | 30   | 25   | 336  | 195  | 49    | 806   | 10   |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900  | 1900 |
| Total Lost time (s)    |       | 5.0   |      |       | 5.0   |      | 5.0  | 5.0  | 5.0  | 5.0   | 5.0   |      |
| Lane Util. Factor      |       | 1.00  |      |       | 1.00  |      | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |      |
| Frpb, ped/bikes        |       | 0.99  |      |       | 1.00  |      | 1.00 | 1.00 | 0.98 | 1.00  | 1.00  |      |
| Flpb, ped/bikes        |       | 1.00  |      |       | 1.00  |      | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |      |
| Frt                    |       | 0.91  |      |       | 0.98  |      | 1.00 | 1.00 | 0.85 | 1.00  | 1.00  |      |
| Flt Protected          |       | 0.99  |      |       | 0.96  |      | 0.95 | 1.00 | 1.00 | 0.95  | 1.00  |      |
| Satd. Flow (prot)      |       | 1649  |      |       | 1759  |      | 1770 | 1863 | 1547 | 1770  | 1859  |      |
| Flt Permitted          |       | 0.99  |      |       | 0.96  |      | 0.95 | 1.00 | 1.00 | 0.95  | 1.00  |      |
| Satd. Flow (perm)      |       | 1649  |      |       | 1759  |      | 1770 | 1863 | 1547 | 1770  | 1859  |      |
| Peak-hour factor, PHF  | 0.96  | 0.96  | 0.96 | 0.96  | 0.96  | 0.96 | 0.96 | 0.96 | 0.96 | 0.96  | 0.96  | 0.96 |
| Adj. Flow (vph)        | 11    | 7     | 41   | 205   | 12    | 31   | 26   | 350  | 203  | 51    | 840   | 10   |
| RTOR Reduction (vph)   | 0     | 38    | 0    | 0     | 4     | 0    | 0    | 0    | 99   | 0     | 0     | 0    |
| Lane Group Flow (vph)  | 0     | 21    | 0    | 0     | 245   | 0    | 26   | 350  | 104  | 51    | 850   | 0    |
| Confl. Peds. (#/hr)    |       |       | 6    |       |       |      |      |      | 1    |       |       |      |
| Turn Type              | Split | NA    |      | Split | NA    |      | Prot | NA   | Perm | Prot  | NA    |      |
| Protected Phases       | 4     | 4     |      | 8     | 8     |      | 5    | 2    |      | 1     | 6     |      |
| Permitted Phases       |       |       |      |       |       |      |      |      | 2    |       |       |      |
| Actuated Green, G (s)  |       | 8.0   |      |       | 19.7  |      | 2.7  | 57.1 | 57.1 | 6.4   | 60.8  |      |
| Effective Green, g (s) |       | 8.0   |      |       | 19.7  |      | 2.7  | 57.1 | 57.1 | 6.4   | 60.8  |      |
| Actuated g/C Ratio     |       | 0.07  |      |       | 0.18  |      | 0.02 | 0.51 | 0.51 | 0.06  | 0.55  |      |
| Clearance Time (s)     |       | 5.0   |      |       | 5.0   |      | 5.0  | 5.0  | 5.0  | 5.0   | 5.0   |      |
| Vehicle Extension (s)  |       | 3.0   |      |       | 3.0   |      | 3.0  | 3.0  | 3.0  | 3.0   | 3.0   |      |
| Lane Grp Cap (vph)     |       | 118   |      |       | 311   |      | 42   | 956  | 794  | 101   | 1016  |      |
| v/s Ratio Prot         |       | c0.01 |      |       | c0.14 |      | 0.01 | 0.19 |      | c0.03 | c0.46 |      |
| v/s Ratio Perm         |       |       |      |       |       |      |      | 0.07 |      |       |       |      |
| v/c Ratio              |       | 0.18  |      |       | 0.79  |      | 0.62 | 0.37 | 0.13 | 0.50  | 0.84  |      |
| Uniform Delay, d1      |       | 48.5  |      |       | 43.7  |      | 53.7 | 16.2 | 14.1 | 50.9  | 21.0  |      |
| Progression Factor     |       | 1.00  |      |       | 1.00  |      | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |      |
| Incremental Delay, d2  |       | 0.7   |      |       | 12.4  |      | 24.2 | 0.2  | 0.1  | 3.9   | 6.1   |      |
| Delay (s)              |       | 49.2  |      |       | 56.1  |      | 77.9 | 16.4 | 14.2 | 54.8  | 27.1  |      |
| Level of Service       |       | D     |      |       | E     |      | E    | B    | B    | D     | C     |      |
| Approach Delay (s)     |       | 49.2  |      |       | 56.1  |      |      | 18.4 |      |       | 28.7  |      |
| Approach LOS           |       | D     |      |       | E     |      |      | B    |      |       | C     |      |

Intersection Summary

|                                   |       |                           |      |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay            | 29.9  | HCM 2000 Level of Service | C    |
| HCM 2000 Volume to Capacity ratio | 0.77  |                           |      |
| Actuated Cycle Length (s)         | 111.2 | Sum of lost time (s)      | 20.0 |
| Intersection Capacity Utilization | 71.4% | ICU Level of Service      | C    |
| Analysis Period (min)             | 15    |                           |      |
| c Critical Lane Group             |       |                           |      |

HCM Signalized Intersection Capacity Analysis  
15: Twin Oaks Valley Rd #1 & La Cienega

Existing AM  
03/17/2017

| Movement               | WBL  | WBR   | NBT  | NBR  | SBL  | SBT   |
|------------------------|------|-------|------|------|------|-------|
| Lane Configurations    | ↖    | ↗     | ↕    | ↖    | ↗    | ↕     |
| Traffic Volume (vph)   | 170  | 193   | 512  | 57   | 53   | 919   |
| Future Volume (vph)    | 170  | 193   | 512  | 57   | 53   | 919   |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900  |
| Total Lost time (s)    |      | 6.0   | 6.5  |      | 6.0  | 6.5   |
| Lane Util. Factor      | 1.00 | 1.00  | 0.95 |      | 1.00 | 0.95  |
| Frpb, ped/bikes        | 1.00 | 0.99  | 1.00 |      | 1.00 | 1.00  |
| Flpb, ped/bikes        | 1.00 | 1.00  | 1.00 |      | 1.00 | 1.00  |
| Frt                    | 1.00 | 0.85  | 0.98 |      | 1.00 | 1.00  |
| Flt Protected          | 0.95 | 1.00  | 1.00 |      | 0.95 | 1.00  |
| Satd. Flow (prot)      | 1770 | 1563  | 3471 |      | 1770 | 3539  |
| Flt Permitted          | 0.95 | 1.00  | 1.00 |      | 0.95 | 1.00  |
| Satd. Flow (perm)      | 1770 | 1563  | 3471 |      | 1770 | 3539  |
| Peak-hour factor, PHF  | 0.91 | 0.91  | 0.91 | 0.91 | 0.91 | 0.91  |
| Adj. Flow (vph)        | 187  | 212   | 563  | 63   | 58   | 1010  |
| RTOR Reduction (vph)   | 0    | 0     | 9    | 0    | 0    | 0     |
| Lane Group Flow (vph)  | 187  | 212   | 617  | 0    | 58   | 1010  |
| Confl. Peds. (#/hr)    |      | 1     |      | 13   |      |       |
| Confl. Bikes (#/hr)    |      |       |      | 1    |      |       |
| Turn Type              | Prot | Perm  | NA   |      | Prot | NA    |
| Protected Phases       | 8    |       | 2    |      | 1    | 6     |
| Permitted Phases       |      | 8     |      |      |      |       |
| Actuated Green, G (s)  | 13.8 | 13.8  | 19.6 |      | 4.5  | 30.1  |
| Effective Green, g (s) | 13.8 | 13.8  | 19.6 |      | 4.5  | 30.1  |
| Actuated g/C Ratio     | 0.24 | 0.24  | 0.35 |      | 0.08 | 0.53  |
| Clearance Time (s)     | 6.0  | 6.0   | 6.5  |      | 6.0  | 6.5   |
| Vehicle Extension (s)  | 3.0  | 3.0   | 3.0  |      | 3.0  | 3.0   |
| Lane Grp Cap (vph)     | 433  | 382   | 1206 |      | 141  | 1888  |
| v/s Ratio Prot         | 0.11 |       | 0.18 |      | 0.03 | c0.29 |
| v/s Ratio Perm         |      | c0.14 |      |      |      |       |
| v/c Ratio              | 0.43 | 0.55  | 0.51 |      | 0.41 | 0.53  |
| Uniform Delay, d1      | 18.0 | 18.6  | 14.6 |      | 24.7 | 8.6   |
| Progression Factor     | 1.00 | 1.00  | 1.00 |      | 1.00 | 1.00  |
| Incremental Delay, d2  | 0.7  | 1.7   | 0.4  |      | 1.9  | 0.3   |
| Delay (s)              | 18.7 | 20.4  | 15.0 |      | 26.6 | 8.9   |
| Level of Service       | B    | C     | B    |      | C    | A     |
| Approach Delay (s)     | 19.6 |       | 15.0 |      |      | 9.8   |
| Approach LOS           | B    |       | B    |      |      | A     |

Intersection Summary

|                                   |       |                           |      |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay            | 13.2  | HCM 2000 Level of Service | B    |
| HCM 2000 Volume to Capacity ratio | 0.63  |                           |      |
| Actuated Cycle Length (s)         | 56.4  | Sum of lost time (s)      | 18.5 |
| Intersection Capacity Utilization | 45.5% | ICU Level of Service      | A    |
| Analysis Period (min)             | 15    |                           |      |
| c Critical Lane Group             |       |                           |      |

HCM Signalized Intersection Capacity Analysis  
16: Twin Oaks Valley Rd #1 & Del Roy Dr

Existing AM  
03/17/2017

| Movement               | EBL   | EBT   | EBR  | WBL  | WBT  | WBR  | NBL   | NBT  | NBR  | SBL   | SBT   | SBR  |
|------------------------|-------|-------|------|------|------|------|-------|------|------|-------|-------|------|
| Lane Configurations    | ↰     | ↱     |      | ↰    | ↱    |      | ↰     | ↱    |      | ↰     | ↱     |      |
| Traffic Volume (vph)   | 11    | 0     | 41   | 3    | 0    | 1    | 23    | 557  | 20   | 8     | 1137  | 11   |
| Future Volume (vph)    | 11    | 0     | 41   | 3    | 0    | 1    | 23    | 557  | 20   | 8     | 1137  | 11   |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900  | 1900 |
| Total Lost time (s)    | 4.5   | 5.0   |      | 4.5  | 5.0  |      | 5.0   | 5.0  |      | 5.0   | 5.0   |      |
| Lane Util. Factor      | 1.00  | 1.00  |      | 1.00 | 1.00 |      | 1.00  | 0.95 |      | 1.00  | 0.95  |      |
| Frpb, ped/bikes        | 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  |      |
| Frt                    | 1.00  | 0.85  |      | 1.00 | 0.85 |      | 1.00  | 0.99 |      | 1.00  | 1.00  |      |
| Flt Protected          | 0.95  | 1.00  |      | 0.95 | 1.00 |      | 0.95  | 1.00 |      | 0.95  | 1.00  |      |
| Satd. Flow (prot)      | 1770  | 1583  |      | 1770 | 1583 |      | 1770  | 3518 |      | 1770  | 3534  |      |
| Flt Permitted          | 0.95  | 1.00  |      | 0.95 | 1.00 |      | 0.95  | 1.00 |      | 0.95  | 1.00  |      |
| Satd. Flow (perm)      | 1770  | 1583  |      | 1770 | 1583 |      | 1770  | 3518 |      | 1770  | 3534  |      |
| Peak-hour factor, PHF  | 0.89  | 0.89  | 0.89 | 0.89 | 0.89 | 0.89 | 0.89  | 0.89 | 0.89 | 0.89  | 0.89  | 0.89 |
| Adj. Flow (vph)        | 12    | 0     | 46   | 3    | 0    | 1    | 26    | 626  | 22   | 9     | 1278  | 12   |
| RTOR Reduction (vph)   | 0     | 42    | 0    | 0    | 1    | 0    | 0     | 2    | 0    | 0     | 0     | 0    |
| Lane Group Flow (vph)  | 12    | 4     | 0    | 3    | 0    | 0    | 26    | 646  | 0    | 9     | 1290  | 0    |
| Confl. Peds. (#/hr)    |       |       |      |      |      |      |       | 2    |      |       |       |      |
| Turn Type              | Prot  | NA    |      | Prot | NA   |      | Prot  | NA   |      | Prot  | NA    |      |
| Protected Phases       | 7     | 4     |      | 3    | 8    |      | 5     | 2    |      | 1     | 6     |      |
| Permitted Phases       |       |       |      |      |      |      |       |      |      |       |       |      |
| Actuated Green, G (s)  | 0.4   | 5.1   |      | 0.4  | 5.1  |      | 1.2   | 37.5 |      | 0.4   | 36.7  |      |
| Effective Green, g (s) | 0.4   | 5.1   |      | 0.4  | 5.1  |      | 1.2   | 37.5 |      | 0.4   | 36.7  |      |
| Actuated g/C Ratio     | 0.01  | 0.08  |      | 0.01 | 0.08 |      | 0.02  | 0.60 |      | 0.01  | 0.58  |      |
| Clearance Time (s)     | 4.5   | 5.0   |      | 4.5  | 5.0  |      | 5.0   | 5.0  |      | 5.0   | 5.0   |      |
| Vehicle Extension (s)  | 3.0   | 3.0   |      | 3.0  | 3.0  |      | 3.0   | 3.0  |      | 3.0   | 3.0   |      |
| Lane Grp Cap (vph)     | 11    | 128   |      | 11   | 128  |      | 33    | 2097 |      | 11    | 2061  |      |
| v/s Ratio Prot         | c0.01 | c0.00 |      | 0.00 | 0.00 |      | c0.01 | 0.18 |      | 0.01  | c0.36 |      |
| v/s Ratio Perm         |       |       |      |      |      |      |       |      |      |       |       |      |
| v/c Ratio              | 1.09  | 0.03  |      | 0.27 | 0.00 |      | 0.79  | 0.31 |      | 0.82  | 0.63  |      |
| Uniform Delay, d1      | 31.2  | 26.6  |      | 31.1 | 26.6 |      | 30.7  | 6.3  |      | 31.2  | 8.6   |      |
| Progression Factor     | 1.00  | 1.00  |      | 1.00 | 1.00 |      | 1.00  | 1.00 |      | 1.00  | 1.00  |      |
| Incremental Delay, d2  | 304.6 | 0.1   |      | 13.0 | 0.0  |      | 74.3  | 0.1  |      | 167.9 | 0.6   |      |
| Delay (s)              | 335.9 | 26.7  |      | 44.1 | 26.6 |      | 105.0 | 6.4  |      | 199.1 | 9.2   |      |
| Level of Service       | F     | C     |      | D    | C    |      | F     | A    |      | F     | A     |      |
| Approach Delay (s)     |       | 90.7  |      |      | 39.7 |      |       | 10.2 |      |       | 10.5  |      |
| Approach LOS           |       | F     |      |      | D    |      |       | B    |      |       | B     |      |

Intersection Summary

|                                   |       |                           |      |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay            | 12.7  | HCM 2000 Level of Service | B    |
| HCM 2000 Volume to Capacity ratio | 0.56  |                           |      |
| Actuated Cycle Length (s)         | 62.9  | Sum of lost time (s)      | 19.5 |
| Intersection Capacity Utilization | 47.4% | ICU Level of Service      | A    |
| Analysis Period (min)             | 15    |                           |      |
| c Critical Lane Group             |       |                           |      |

HCM Signalized Intersection Capacity Analysis  
17: Twin Oaks Valley Rd #1 & Windy Wy

Existing AM  
03/17/2017

| Movement               | EBL   | EBT  | EBR  | WBL  | WBT  | WBR  | NBL   | NBT  | NBR  | SBL  | SBT   | SBR  |
|------------------------|-------|------|------|------|------|------|-------|------|------|------|-------|------|
| Lane Configurations    | ↰     | ↱    |      | ↰    | ↱    |      | ↰     | ↱    |      | ↰    | ↱     |      |
| Traffic Volume (vph)   | 10    | 1    | 43   | 0    | 0    | 0    | 49    | 582  | 2    | 0    | 1136  | 61   |
| Future Volume (vph)    | 10    | 1    | 43   | 0    | 0    | 0    | 49    | 582  | 2    | 0    | 1136  | 61   |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      |      |      |      | 6.0   | 6.0  |      |      | 4.0   |      |
| Lane Util. Factor      | 1.00  | 1.00 |      |      |      |      | 1.00  | 0.95 |      |      | 0.95  |      |
| Frpb, ped/bikes        | 1.00  | 0.98 |      |      |      |      | 1.00  | 1.00 |      |      | 1.00  |      |
| Flpb, ped/bikes        | 1.00  | 1.00 |      |      |      |      | 1.00  | 1.00 |      |      | 1.00  |      |
| Frt                    | 1.00  | 0.85 |      |      |      |      | 1.00  | 1.00 |      |      | 0.99  |      |
| Flt Protected          | 0.95  | 1.00 |      |      |      |      | 0.95  | 1.00 |      |      | 1.00  |      |
| Satd. Flow (prot)      | 1770  | 1564 |      |      |      |      | 1770  | 3537 |      |      | 3507  |      |
| Flt Permitted          | 0.95  | 1.00 |      |      |      |      | 0.95  | 1.00 |      |      | 1.00  |      |
| Satd. Flow (perm)      | 1770  | 1564 |      |      |      |      | 1770  | 3537 |      |      | 3507  |      |
| Peak-hour factor, PHF  | 0.89  | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89  | 0.89 | 0.89 | 0.89 | 0.89  | 0.89 |
| Adj. Flow (vph)        | 11    | 1    | 48   | 0    | 0    | 0    | 55    | 654  | 2    | 0    | 1276  | 69   |
| RTOR Reduction (vph)   | 0     | 44   | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0    | 3     | 0    |
| Lane Group Flow (vph)  | 11    | 5    | 0    | 0    | 0    | 0    | 55    | 656  | 0    | 0    | 1342  | 0    |
| Confl. Peds. (#/hr)    |       |      | 5    |      |      | 4    |       |      | 5    |      |       | 4    |
| Confl. Bikes (#/hr)    |       |      |      |      |      |      |       |      | 5    |      |       |      |
| Turn Type              | Split | NA   |      |      |      |      | Prot  | NA   |      | Prot | NA    |      |
| Protected Phases       | 4     | 4    |      |      |      |      | 5     | 2    |      | 1    | 6     |      |
| Permitted Phases       |       |      |      |      |      |      |       |      |      |      |       |      |
| Actuated Green, G (s)  | 5.2   | 5.2  |      |      |      |      | 3.5   | 45.2 |      |      | 37.7  |      |
| Effective Green, g (s) | 5.2   | 5.2  |      |      |      |      | 3.5   | 45.2 |      |      | 37.7  |      |
| Actuated g/C Ratio     | 0.09  | 0.09 |      |      |      |      | 0.06  | 0.75 |      |      | 0.62  |      |
| Clearance Time (s)     | 4.0   | 4.0  |      |      |      |      | 6.0   | 6.0  |      |      | 4.0   |      |
| Vehicle Extension (s)  | 3.0   | 3.0  |      |      |      |      | 3.0   | 3.0  |      |      | 3.0   |      |
| Lane Grp Cap (vph)     | 152   | 134  |      |      |      |      | 102   | 2646 |      |      | 2188  |      |
| v/s Ratio Prot         | c0.01 | 0.00 |      |      |      |      | c0.03 | 0.19 |      |      | c0.38 |      |
| v/s Ratio Perm         |       |      |      |      |      |      |       |      |      |      |       |      |
| v/c Ratio              | 0.07  | 0.04 |      |      |      |      | 0.54  | 0.25 |      |      | 0.61  |      |
| Uniform Delay, d1      | 25.4  | 25.3 |      |      |      |      | 27.7  | 2.3  |      |      | 6.9   |      |
| Progression Factor     | 1.00  | 1.00 |      |      |      |      | 1.00  | 1.00 |      |      | 1.00  |      |
| Incremental Delay, d2  | 0.2   | 0.1  |      |      |      |      | 5.4   | 0.0  |      |      | 0.5   |      |
| Delay (s)              | 25.6  | 25.4 |      |      |      |      | 33.1  | 2.4  |      |      | 7.4   |      |
| Level of Service       | C     | C    |      |      |      |      | C     | A    |      |      | A     |      |
| Approach Delay (s)     |       | 25.5 |      |      | 0.0  |      |       | 4.8  |      |      | 7.4   |      |
| Approach LOS           |       | C    |      |      | A    |      |       | A    |      |      | A     |      |

Intersection Summary

|                                   |       |                           |      |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay            | 7.0   | HCM 2000 Level of Service | A    |
| HCM 2000 Volume to Capacity ratio | 0.55  |                           |      |
| Actuated Cycle Length (s)         | 60.4  | Sum of lost time (s)      | 14.0 |
| Intersection Capacity Utilization | 54.1% | ICU Level of Service      | A    |
| Analysis Period (min)             | 15    |                           |      |
| c Critical Lane Group             |       |                           |      |

HCM Signalized Intersection Capacity Analysis  
18: Twin Oaks Valley Rd #1 & Borden Rd

Existing AM  
03/17/2017

| Movement                          | EBL  | EBT   | EBR  | WBL   | WBT                       | WBR  | NBL   | NBT  | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|------|-------|------|-------|---------------------------|------|-------|------|------|------|-------|------|
| Lane Configurations               | ↰    | ↱     |      | ↰     | ↱                         |      | ↰     | ↱    |      | ↰    | ↱     |      |
| Traffic Volume (vph)              | 49   | 39    | 210  | 182   | 84                        | 24   | 79    | 331  | 34   | 11   | 731   | 103  |
| Future Volume (vph)               | 49   | 39    | 210  | 182   | 84                        | 24   | 79    | 331  | 34   | 11   | 731   | 103  |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900  | 1900                      | 1900 | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               | 4.2  | 5.3   |      | 4.2   | 5.3                       |      | 4.2   | 4.9  | 4.9  | 4.2  | 4.9   | 4.9  |
| Lane Util. Factor                 | 1.00 | 0.95  |      | 1.00  | 0.95                      |      | 1.00  | 0.95 | 1.00 | 1.00 | 0.95  | 1.00 |
| Frpb, ped/bikes                   | 1.00 | 0.98  |      | 1.00  | 1.00                      |      | 1.00  | 1.00 | 0.98 | 1.00 | 1.00  | 0.98 |
| Flpb, ped/bikes                   | 1.00 | 1.00  |      | 1.00  | 1.00                      |      | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Frt                               | 1.00 | 0.87  |      | 1.00  | 0.97                      |      | 1.00  | 1.00 | 0.85 | 1.00 | 1.00  | 0.85 |
| Flt Protected                     | 0.95 | 1.00  |      | 0.95  | 1.00                      |      | 0.95  | 1.00 | 1.00 | 0.95 | 1.00  | 1.00 |
| Satd. Flow (prot)                 | 1770 | 3042  |      | 1770  | 3411                      |      | 1770  | 3539 | 1558 | 1770 | 3539  | 1554 |
| Flt Permitted                     | 0.95 | 1.00  |      | 0.95  | 1.00                      |      | 0.95  | 1.00 | 1.00 | 0.95 | 1.00  | 1.00 |
| Satd. Flow (perm)                 | 1770 | 3042  |      | 1770  | 3411                      |      | 1770  | 3539 | 1558 | 1770 | 3539  | 1554 |
| Peak-hour factor, PHF             | 0.95 | 0.95  | 0.95 | 0.95  | 0.95                      | 0.95 | 0.95  | 0.95 | 0.95 | 0.95 | 0.95  | 0.95 |
| Adj. Flow (vph)                   | 52   | 41    | 221  | 192   | 88                        | 25   | 83    | 348  | 36   | 12   | 769   | 108  |
| RTOR Reduction (vph)              | 0    | 188   | 0    | 0     | 15                        | 0    | 0     | 0    | 21   | 0    | 0     | 70   |
| Lane Group Flow (vph)             | 52   | 74    | 0    | 192   | 98                        | 0    | 83    | 348  | 15   | 12   | 769   | 38   |
| Confl. Peds. (#/hr)               |      |       | 6    |       |                           | 2    |       |      | 3    |      |       | 6    |
| Confl. Bikes (#/hr)               |      |       | 1    |       |                           | 1    |       |      | 3    |      |       | 3    |
| Turn Type                         | Prot | NA    |      | Prot  | NA                        |      | Prot  | NA   | Perm | Prot | NA    | Perm |
| Protected Phases                  | 7    | 4     |      | 3     | 8                         |      | 5     | 2    |      | 1    | 6     |      |
| Permitted Phases                  |      |       |      |       |                           |      |       |      | 2    |      |       | 6    |
| Actuated Green, G (s)             | 7.1  | 13.2  |      | 17.3  | 23.4                      |      | 8.6   | 37.8 | 37.8 | 2.2  | 31.4  | 31.4 |
| Effective Green, g (s)            | 7.1  | 13.2  |      | 17.3  | 23.4                      |      | 8.6   | 37.8 | 37.8 | 2.2  | 31.4  | 31.4 |
| Actuated g/C Ratio                | 0.08 | 0.15  |      | 0.19  | 0.26                      |      | 0.10  | 0.42 | 0.42 | 0.02 | 0.35  | 0.35 |
| Clearance Time (s)                | 4.2  | 5.3   |      | 4.2   | 5.3                       |      | 4.2   | 4.9  | 4.9  | 4.2  | 4.9   | 4.9  |
| Vehicle Extension (s)             | 3.0  | 3.0   |      | 3.0   | 3.0                       |      | 3.0   | 3.0  | 3.0  | 3.0  | 3.0   | 3.0  |
| Lane Grp Cap (vph)                | 141  | 450   |      | 343   | 895                       |      | 170   | 1501 | 660  | 43   | 1247  | 547  |
| v/s Ratio Prot                    | 0.03 | c0.02 |      | c0.11 | 0.03                      |      | c0.05 | 0.10 |      | 0.01 | c0.22 |      |
| v/s Ratio Perm                    |      |       |      |       |                           |      |       |      | 0.01 |      |       | 0.02 |
| v/c Ratio                         | 0.37 | 0.16  |      | 0.56  | 0.11                      |      | 0.49  | 0.23 | 0.02 | 0.28 | 0.62  | 0.07 |
| Uniform Delay, d1                 | 38.9 | 33.1  |      | 32.5  | 24.9                      |      | 38.2  | 16.4 | 14.9 | 42.7 | 23.9  | 19.2 |
| Progression Factor                | 1.00 | 1.00  |      | 1.00  | 1.00                      |      | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Incremental Delay, d2             | 1.6  | 0.2   |      | 2.0   | 0.1                       |      | 2.2   | 0.1  | 0.0  | 3.5  | 0.9   | 0.1  |
| Delay (s)                         | 40.5 | 33.3  |      | 34.4  | 25.0                      |      | 40.4  | 16.5 | 14.9 | 46.2 | 24.8  | 19.2 |
| Level of Service                  | D    | C     |      | C     | C                         |      | D     | B    | B    | D    | C     | B    |
| Approach Delay (s)                |      | 34.5  |      |       | 30.9                      |      |       | 20.6 |      |      | 24.4  |      |
| Approach LOS                      |      | C     |      |       | C                         |      |       | C    |      |      | C     |      |
| <b>Intersection Summary</b>       |      |       |      |       |                           |      |       |      |      |      |       |      |
| HCM 2000 Control Delay            |      | 26.1  |      |       | HCM 2000 Level of Service |      |       | C    |      |      |       |      |
| HCM 2000 Volume to Capacity ratio |      | 0.50  |      |       |                           |      |       |      |      |      |       |      |
| Actuated Cycle Length (s)         |      | 89.1  |      |       | Sum of lost time (s)      |      |       | 18.6 |      |      |       |      |
| Intersection Capacity Utilization |      | 62.8% |      |       | ICU Level of Service      |      |       | B    |      |      |       |      |
| Analysis Period (min)             |      | 15    |      |       |                           |      |       |      |      |      |       |      |
| c Critical Lane Group             |      |       |      |       |                           |      |       |      |      |      |       |      |

HCM Signalized Intersection Capacity Analysis  
19: Twin Oaks Valley Rd #1 & Richmar Ave

Existing AM  
03/17/2017

| Movement                          | EBL   | EBT   | EBR  | WBL   | WBT                       | WBR  | NBL   | NBT   | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|-------|-------|------|-------|---------------------------|------|-------|-------|------|------|-------|------|
| Lane Configurations               | ↰     | ↱     |      | ↰     | ↱                         |      | ↰     | ↱     |      | ↰    | ↱     |      |
| Traffic Volume (vph)              | 173   | 9     | 98   | 17    | 7                         | 1    | 47    | 645   | 18   | 21   | 1279  | 245  |
| Future Volume (vph)               | 173   | 9     | 98   | 17    | 7                         | 1    | 47    | 645   | 18   | 21   | 1279  | 245  |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900 | 1900  | 1900                      | 1900 | 1900  | 1900  | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               | 4.9   | 4.9   |      | 4.0   | 4.0                       |      | 4.0   | 5.7   |      | 4.0  | 5.7   |      |
| Lane Util. Factor                 | 1.00  | 1.00  |      | 1.00  | 1.00                      |      | 1.00  | 0.95  |      | 1.00 | 0.95  |      |
| Frpb, ped/bikes                   | 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  |      |
| Frt                               | 1.00  | 0.86  |      | 1.00  | 0.98                      |      | 1.00  | 1.00  |      | 1.00 | 0.98  |      |
| Flt Protected                     | 0.95  | 1.00  |      | 0.95  | 1.00                      |      | 0.95  | 1.00  |      | 0.95 | 1.00  |      |
| Satd. Flow (prot)                 | 1770  | 1587  |      | 1770  | 1823                      |      | 1770  | 3522  |      | 1770 | 3438  |      |
| Flt Permitted                     | 0.95  | 1.00  |      | 0.95  | 1.00                      |      | 0.95  | 1.00  |      | 0.95 | 1.00  |      |
| Satd. Flow (perm)                 | 1770  | 1587  |      | 1770  | 1823                      |      | 1770  | 3522  |      | 1770 | 3438  |      |
| Peak-hour factor, PHF             | 0.99  | 0.99  | 0.99 | 0.99  | 0.99                      | 0.99 | 0.99  | 0.99  | 0.99 | 0.99 | 0.99  | 0.99 |
| Adj. Flow (vph)                   | 175   | 9     | 99   | 17    | 7                         | 1    | 47    | 652   | 18   | 21   | 1292  | 247  |
| RTOR Reduction (vph)              | 0     | 84    | 0    | 0     | 1                         | 0    | 0     | 1     | 0    | 0    | 10    | 0    |
| Lane Group Flow (vph)             | 175   | 24    | 0    | 17    | 7                         | 0    | 47    | 669   | 0    | 21   | 1529  | 0    |
| Confl. Peds. (#/hr)               |       |       |      |       |                           | 8    |       |       | 4    |      |       | 2    |
| Confl. Bikes (#/hr)               |       |       |      |       |                           |      |       |       | 1    |      |       | 3    |
| Turn Type                         | Split | NA    |      | Split | NA                        |      | Prot  | NA    |      | Prot | NA    |      |
| Protected Phases                  | 4     | 4     |      | 8     | 8                         |      | 5     | 2     |      | 1    | 6     |      |
| Permitted Phases                  |       |       |      |       |                           |      |       |       |      |      |       |      |
| Actuated Green, G (s)             | 16.2  | 16.2  |      | 6.5   | 6.5                       |      | 5.1   | 60.4  |      | 1.9  | 57.2  |      |
| Effective Green, g (s)            | 16.2  | 16.2  |      | 6.5   | 6.5                       |      | 5.1   | 60.4  |      | 1.9  | 57.2  |      |
| Actuated g/C Ratio                | 0.16  | 0.16  |      | 0.06  | 0.06                      |      | 0.05  | 0.58  |      | 0.02 | 0.55  |      |
| Clearance Time (s)                | 4.9   | 4.9   |      | 4.0   | 4.0                       |      | 4.0   | 5.7   |      | 4.0  | 5.7   |      |
| Vehicle Extension (s)             | 3.0   | 3.0   |      | 3.0   | 3.0                       |      | 3.0   | 3.0   |      | 3.0  | 3.0   |      |
| Lane Grp Cap (vph)                | 276   | 248   |      | 111   | 114                       |      | 87    | 2053  |      | 32   | 1898  |      |
| v/s Ratio Prot                    | c0.10 | 0.02  |      | c0.01 | 0.00                      |      | c0.03 | c0.19 |      | 0.01 | c0.44 |      |
| v/s Ratio Perm                    |       |       |      |       |                           |      |       |       |      |      |       |      |
| v/c Ratio                         | 0.63  | 0.10  |      | 0.15  | 0.06                      |      | 0.54  | 0.33  |      | 0.66 | 0.81  |      |
| Uniform Delay, d1                 | 40.9  | 37.4  |      | 45.9  | 45.7                      |      | 48.1  | 11.1  |      | 50.5 | 18.7  |      |
| Progression Factor                | 1.00  | 1.00  |      | 1.00  | 1.00                      |      | 1.00  | 1.00  |      | 1.00 | 1.00  |      |
| Incremental Delay, d2             | 4.7   | 0.2   |      | 0.6   | 0.2                       |      | 6.7   | 0.1   |      | 39.4 | 2.6   |      |
| Delay (s)                         | 45.6  | 37.6  |      | 46.6  | 45.9                      |      | 54.8  | 11.2  |      | 89.9 | 21.3  |      |
| Level of Service                  | D     | D     |      | D     | D                         |      | D     | B     |      | F    | C     |      |
| Approach Delay (s)                |       | 42.6  |      |       | 46.4                      |      |       | 14.1  |      |      | 22.2  |      |
| Approach LOS                      |       | D     |      |       | D                         |      |       | B     |      |      | C     |      |
| <b>Intersection Summary</b>       |       |       |      |       |                           |      |       |       |      |      |       |      |
| HCM 2000 Control Delay            |       | 22.4  |      |       | HCM 2000 Level of Service |      |       | C     |      |      |       |      |
| HCM 2000 Volume to Capacity ratio |       | 0.70  |      |       |                           |      |       |       |      |      |       |      |
| Actuated Cycle Length (s)         |       | 103.6 |      |       | Sum of lost time (s)      |      |       | 18.6  |      |      |       |      |
| Intersection Capacity Utilization |       | 68.3% |      |       | ICU Level of Service      |      |       | C     |      |      |       |      |
| Analysis Period (min)             |       | 15    |      |       |                           |      |       |       |      |      |       |      |
| c Critical Lane Group             |       |       |      |       |                           |      |       |       |      |      |       |      |

HCM Signalized Intersection Capacity Analysis  
20: Twin Oaks Valley Rd/Twin Oaks Valley Rd #1 & San Marcos Blvd

Existing AM  
03/17/2017

| Movement                          | EBL  | EBT  | EBR   | WBL   | WBT                       | WBR  | NBL   | NBT  | NBR   | SBL  | SBT   | SBR  |
|-----------------------------------|------|------|-------|-------|---------------------------|------|-------|------|-------|------|-------|------|
| Lane Configurations               | ↔    | ↔    | ↔     | ↔     | ↔                         |      | ↔     | ↔    | ↔     | ↔    | ↔     | ↔    |
| Traffic Volume (vph)              | 150  | 269  | 225   | 364   | 444                       | 32   | 236   | 528  | 407   | 95   | 1052  | 247  |
| Future Volume (vph)               | 150  | 269  | 225   | 364   | 444                       | 32   | 236   | 528  | 407   | 95   | 1052  | 247  |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900  | 1900                      | 1900 | 1900  | 1900 | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)               | 4.2  | 5.3  | 5.3   | 4.2   | 5.0                       |      | 4.2   | 5.3  | 4.2   | 4.2  | 5.3   |      |
| Lane Util. Factor                 | 0.97 | 0.95 | 1.00  | 0.97  | 0.95                      |      | 0.97  | 0.95 | 1.00  | 0.97 | 0.95  |      |
| Frpb, ped/bikes                   | 1.00 | 1.00 | 0.97  | 1.00  | 1.00                      |      | 1.00  | 1.00 | 0.99  | 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  |      |
| Fr                                | 1.00 | 1.00 | 0.85  | 1.00  | 0.99                      |      | 1.00  | 1.00 | 0.85  | 1.00 | 0.97  |      |
| Flt Protected                     | 0.95 | 1.00 | 1.00  | 0.95  | 1.00                      |      | 0.95  | 1.00 | 1.00  | 0.95 | 1.00  |      |
| Satd. Flow (prot)                 | 3433 | 3539 | 1537  | 3433  | 3498                      |      | 3433  | 3539 | 1566  | 3433 | 3430  |      |
| Flt Permitted                     | 0.95 | 1.00 | 1.00  | 0.95  | 1.00                      |      | 0.95  | 1.00 | 1.00  | 0.95 | 1.00  |      |
| Satd. Flow (perm)                 | 3433 | 3539 | 1537  | 3433  | 3498                      |      | 3433  | 3539 | 1566  | 3433 | 3430  |      |
| Peak-hour factor, PHF             | 0.98 | 0.98 | 0.98  | 0.98  | 0.98                      | 0.98 | 0.98  | 0.98 | 0.98  | 0.98 | 0.98  | 0.98 |
| Adj. Flow (vph)                   | 153  | 274  | 230   | 371   | 453                       | 33   | 241   | 539  | 415   | 97   | 1073  | 252  |
| RTOR Reduction (vph)              | 0    | 0    | 123   | 0     | 5                         | 0    | 0     | 0    | 81    | 0    | 16    | 0    |
| Lane Group Flow (vph)             | 153  | 274  | 107   | 371   | 481                       | 0    | 241   | 539  | 334   | 97   | 1309  | 0    |
| Confl. Peds. (#/hr)               |      |      | 5     |       |                           | 4    |       |      | 1     |      |       | 1    |
| Confl. Bikes (#/hr)               |      |      | 8     |       |                           | 3    |       |      | 3     |      |       | 3    |
| Turn Type                         | Prot | NA   | Perm  | Prot  | NA                        |      | Prot  | NA   | pm+ov | Prot | NA    |      |
| Protected Phases                  | 7    | 4    |       | 3     | 8                         |      | 5     | 2    | 3     | 1    | 6     |      |
| Permitted Phases                  |      |      | 4     |       |                           |      |       |      | 2     |      |       |      |
| Actuated Green, G (s)             | 9.3  | 15.8 | 15.8  | 14.6  | 21.4                      |      | 9.9   | 48.5 | 63.1  | 7.1  | 45.7  |      |
| Effective Green, g (s)            | 9.3  | 15.8 | 15.8  | 14.6  | 21.4                      |      | 9.9   | 48.5 | 63.1  | 7.1  | 45.7  |      |
| Actuated g/C Ratio                | 0.09 | 0.15 | 0.15  | 0.14  | 0.20                      |      | 0.09  | 0.46 | 0.60  | 0.07 | 0.44  |      |
| Clearance Time (s)                | 4.2  | 5.3  | 5.3   | 4.2   | 5.0                       |      | 4.2   | 5.3  | 4.2   | 4.2  | 5.3   |      |
| Vehicle Extension (s)             | 3.0  | 3.0  | 3.0   | 3.0   | 3.0                       |      | 3.0   | 3.0  | 3.0   | 3.0  | 3.0   |      |
| Lane Grp Cap (vph)                | 304  | 532  | 231   | 477   | 712                       |      | 323   | 1634 | 941   | 232  | 1492  |      |
| v/s Ratio Prot                    | 0.04 | 0.08 |       | c0.11 | c0.14                     |      | c0.07 | 0.15 | c0.05 | 0.03 | c0.38 |      |
| v/s Ratio Perm                    |      |      | 0.07  |       |                           |      |       |      | 0.16  |      |       |      |
| v/c Ratio                         | 0.50 | 0.52 | 0.46  | 0.78  | 0.68                      |      | 0.75  | 0.33 | 0.35  | 0.42 | 0.88  |      |
| Uniform Delay, d1                 | 45.6 | 41.1 | 40.7  | 43.6  | 38.6                      |      | 46.3  | 17.9 | 10.6  | 47.0 | 27.1  |      |
| Progression Factor                | 1.00 | 1.00 | 1.00  | 1.00  | 1.00                      |      | 1.00  | 1.00 | 1.00  | 1.00 | 1.00  |      |
| Incremental Delay, d2             | 1.3  | 0.8  | 1.5   | 7.8   | 2.5                       |      | 9.0   | 0.1  | 0.2   | 1.2  | 6.2   |      |
| Delay (s)                         | 47.0 | 41.9 | 42.2  | 51.4  | 41.1                      |      | 55.4  | 18.1 | 10.9  | 48.2 | 33.2  |      |
| Level of Service                  | D    | D    | D     | D     | D                         |      | E     | B    | B     | D    | C     |      |
| Approach Delay (s)                |      | 43.2 |       |       | 45.6                      |      |       | 23.1 |       |      | 34.3  |      |
| Approach LOS                      |      | D    |       |       | D                         |      |       | C    |       |      | C     |      |
| <b>Intersection Summary</b>       |      |      |       |       |                           |      |       |      |       |      |       |      |
| HCM 2000 Control Delay            |      |      | 34.8  |       | HCM 2000 Level of Service |      |       |      |       | C    |       |      |
| HCM 2000 Volume to Capacity ratio |      |      | 0.82  |       |                           |      |       |      |       |      |       |      |
| Actuated Cycle Length (s)         |      |      | 105.0 |       | Sum of lost time (s)      |      |       |      |       | 19.0 |       |      |
| Intersection Capacity Utilization |      |      | 79.8% |       | ICU Level of Service      |      |       |      |       | D    |       |      |
| Analysis Period (min)             |      |      | 15    |       |                           |      |       |      |       |      |       |      |
| c Critical Lane Group             |      |      |       |       |                           |      |       |      |       |      |       |      |

HCM Signalized Intersection Capacity Analysis  
21: Twin Oaks Valley Rd & SR 78 WB Ramps

Existing AM  
03/17/2017

| Movement                          | EBL  | EBT  | EBR  | WBL   | WBT  | WBR  | NBL  | NBT                       | NBR   | SBL  | SBT   | SBR  |
|-----------------------------------|------|------|------|-------|------|------|------|---------------------------|-------|------|-------|------|
| Lane Configurations               |      |      |      | ↔     |      | ↔    |      | ↔                         |       | ↔    | ↔     | ↔    |
| Traffic Volume (vph)              | 0    | 0    | 0    | 406   | 0    | 244  | 0    | 927                       | 454   | 0    | 1251  | 390  |
| Future Volume (vph)               | 0    | 0    | 0    | 406   | 0    | 244  | 0    | 927                       | 454   | 0    | 1251  | 390  |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900                      | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)               |      |      |      | 4.6   |      | 4.6  |      | 5.3                       | 4.6   |      | 5.3   | 5.3  |
| Lane Util. Factor                 |      |      |      | 0.97  |      | 0.88 |      | 0.91                      | 1.00  |      | 0.91  | 1.00 |
| Frpb, ped/bikes                   |      |      |      | 1.00  |      | 1.00 |      | 1.00                      | 0.97  |      | 1.00  | 0.98 |
| Flpb, ped/bikes                   |      |      |      | 1.00  |      | 1.00 |      | 1.00                      | 1.00  |      | 1.00  | 1.00 |
| Fr                                |      |      |      | 1.00  |      | 0.85 |      | 1.00                      | 0.85  |      | 1.00  | 0.85 |
| Flt Protected                     |      |      |      | 0.95  |      | 1.00 |      | 1.00                      | 1.00  |      | 1.00  | 1.00 |
| Satd. Flow (prot)                 |      |      |      | 3433  |      | 2787 |      | 5085                      | 1532  |      | 5085  | 1544 |
| Flt Permitted                     |      |      |      | 0.95  |      | 1.00 |      | 1.00                      | 1.00  |      | 1.00  | 1.00 |
| Satd. Flow (perm)                 |      |      |      | 3433  |      | 2787 |      | 5085                      | 1532  |      | 5085  | 1544 |
| Peak-hour factor, PHF             | 0.98 | 0.98 | 0.98 | 0.98  | 0.98 | 0.98 | 0.98 | 0.98                      | 0.98  | 0.98 | 0.98  | 0.98 |
| Adj. Flow (vph)                   | 0    | 0    | 0    | 414   | 0    | 249  | 0    | 946                       | 463   | 0    | 1277  | 398  |
| RTOR Reduction (vph)              | 0    | 0    | 0    | 0     | 0    | 168  | 0    | 0                         | 0     | 0    | 0     | 98   |
| Lane Group Flow (vph)             | 0    | 0    | 0    | 414   | 0    | 81   | 0    | 946                       | 463   | 0    | 1277  | 300  |
| Confl. Peds. (#/hr)               |      |      |      |       |      |      |      |                           | 8     |      |       | 5    |
| Confl. Bikes (#/hr)               |      |      |      |       |      |      |      |                           | 1     |      |       | 3    |
| Turn Type                         |      |      |      | Prot  |      | Perm |      | NA                        | pm+ov |      | NA    | Perm |
| Protected Phases                  |      |      |      | 8     |      |      |      | 2                         | 8     |      | 6     |      |
| Permitted Phases                  |      |      |      |       |      | 8    |      |                           | 2     |      |       | 6    |
| Actuated Green, G (s)             |      |      |      | 19.7  |      | 19.7 |      | 90.4                      | 110.1 |      | 90.4  | 90.4 |
| Effective Green, g (s)            |      |      |      | 19.7  |      | 19.7 |      | 90.4                      | 110.1 |      | 90.4  | 90.4 |
| Actuated g/C Ratio                |      |      |      | 0.16  |      | 0.16 |      | 0.75                      | 0.92  |      | 0.75  | 0.75 |
| Clearance Time (s)                |      |      |      | 4.6   |      | 4.6  |      | 5.3                       | 4.6   |      | 5.3   | 5.3  |
| Vehicle Extension (s)             |      |      |      | 2.0   |      | 2.0  |      | 2.0                       | 2.0   |      | 2.0   | 2.0  |
| Lane Grp Cap (vph)                |      |      |      | 563   |      | 457  |      | 3830                      | 1464  |      | 3830  | 1163 |
| v/s Ratio Prot                    |      |      |      | c0.12 |      |      |      | 0.19                      | 0.05  |      | c0.25 |      |
| v/s Ratio Perm                    |      |      |      |       |      | 0.03 |      |                           | 0.25  |      |       | 0.19 |
| v/c Ratio                         |      |      |      | 0.74  |      | 0.18 |      | 0.25                      | 0.32  |      | 0.33  | 0.26 |
| Uniform Delay, d1                 |      |      |      | 47.7  |      | 43.2 |      | 4.5                       | 0.6   |      | 4.9   | 4.5  |
| Progression Factor                |      |      |      | 1.00  |      | 1.00 |      | 0.66                      | 7.88  |      | 1.00  | 1.00 |
| Incremental Delay, d2             |      |      |      | 4.3   |      | 0.1  |      | 0.1                       | 0.0   |      | 0.2   | 0.5  |
| Delay (s)                         |      |      |      | 52.0  |      | 43.2 |      | 3.1                       | 4.6   |      | 5.1   | 5.1  |
| Level of Service                  |      |      |      | D     |      | D    |      | A                         | A     |      | A     | A    |
| Approach Delay (s)                |      | 0.0  |      |       | 48.7 |      |      | 3.6                       |       |      | 5.1   |      |
| Approach LOS                      |      | A    |      |       | D    |      |      | A                         |       |      | A     |      |
| <b>Intersection Summary</b>       |      |      |      |       |      |      |      |                           |       |      |       |      |
| HCM 2000 Control Delay            |      |      |      | 12.2  |      |      |      | HCM 2000 Level of Service |       |      | B     |      |
| HCM 2000 Volume to Capacity ratio |      |      |      | 0.41  |      |      |      |                           |       |      |       |      |
| Actuated Cycle Length (s)         |      |      |      | 120.0 |      |      |      | Sum of lost time (s)      |       |      | 9.9   |      |
| Intersection Capacity Utilization |      |      |      | 50.2% |      |      |      | ICU Level of Service      |       |      | A     |      |
| Analysis Period (min)             |      |      |      | 15    |      |      |      |                           |       |      |       |      |
| c Critical Lane Group             |      |      |      |       |      |      |      |                           |       |      |       |      |

HCM Signalized Intersection Capacity Analysis  
22: Twin Oaks Valley Rd & SR 78 EB Ramps

Existing AM  
03/17/2017

| Movement                          | EBL   | EBT   | EBR  | WBL                       | WBT  | WBR  | NBL  | NBT  | NBR  | SBL   | SBT   | SBR  |
|-----------------------------------|-------|-------|------|---------------------------|------|------|------|------|------|-------|-------|------|
| Lane Configurations               | ↰     | ↱     | ↲    |                           |      |      |      | ↰    | ↱    | ↲     | ↰     | ↱    |
| Traffic Volume (vph)              | 528   | 7     | 536  | 0                         | 0    | 0    | 0    | 853  | 464  | 312   | 1345  | 0    |
| Future Volume (vph)               | 528   | 7     | 536  | 0                         | 0    | 0    | 0    | 853  | 464  | 312   | 1345  | 0    |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900 | 1900                      | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900  | 1900 |
| Total Lost time (s)               | 4.6   | 4.6   | 4.6  |                           |      |      |      | 5.3  | 5.3  | 4.2   | 5.3   |      |
| Lane Util. Factor                 | 0.95  | 0.91  | 0.95 |                           |      |      |      | 0.91 | 1.00 | 0.97  | 0.91  |      |
| Frpb, ped/bikes                   | 1.00  | 0.99  | 0.99 |                           |      |      |      | 1.00 | 0.98 | 1.00  | 1.00  |      |
| Flpb, ped/bikes                   | 1.00  | 1.00  | 1.00 |                           |      |      |      | 1.00 | 1.00 | 1.00  | 1.00  |      |
| Frt                               | 1.00  | 0.92  | 0.85 |                           |      |      |      | 1.00 | 0.85 | 1.00  | 1.00  |      |
| Flt Protected                     | 0.95  | 0.98  | 1.00 |                           |      |      |      | 1.00 | 1.00 | 0.95  | 1.00  |      |
| Satd. Flow (prot)                 | 1681  | 1511  | 1485 |                           |      |      |      | 5085 | 1553 | 3433  | 5085  |      |
| Flt Permitted                     | 0.95  | 0.98  | 1.00 |                           |      |      |      | 1.00 | 1.00 | 0.95  | 1.00  |      |
| Satd. Flow (perm)                 | 1681  | 1511  | 1485 |                           |      |      |      | 5085 | 1553 | 3433  | 5085  |      |
| Peak-hour factor, PHF             | 0.97  | 0.97  | 0.97 | 0.97                      | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97  | 0.97  | 0.97 |
| Adj. Flow (vph)                   | 544   | 7     | 553  | 0                         | 0    | 0    | 0    | 879  | 478  | 322   | 1387  | 0    |
| RTOR Reduction (vph)              | 0     | 22    | 41   | 0                         | 0    | 0    | 0    | 0    | 267  | 0     | 0     | 0    |
| Lane Group Flow (vph)             | 386   | 348   | 307  | 0                         | 0    | 0    | 0    | 879  | 211  | 322   | 1387  | 0    |
| Confl. Peds. (#/hr)               |       |       | 1    |                           |      |      |      |      | 4    |       |       |      |
| Confl. Bikes (#/hr)               |       |       |      |                           |      |      |      |      |      |       |       | 1    |
| Turn Type                         | Split | NA    | Perm |                           |      |      |      | NA   | Perm | Prot  | NA    |      |
| Protected Phases                  | 4     | 4     |      |                           |      |      |      | 2    |      | 1     | 6     |      |
| Permitted Phases                  |       |       | 4    |                           |      |      |      | 2    |      |       |       |      |
| Actuated Green, G (s)             | 36.9  | 36.9  | 36.9 |                           |      |      |      | 52.9 | 52.9 | 16.1  | 73.2  |      |
| Effective Green, g (s)            | 36.9  | 36.9  | 36.9 |                           |      |      |      | 52.9 | 52.9 | 16.1  | 73.2  |      |
| Actuated g/C Ratio                | 0.31  | 0.31  | 0.31 |                           |      |      |      | 0.44 | 0.44 | 0.13  | 0.61  |      |
| Clearance Time (s)                | 4.6   | 4.6   | 4.6  |                           |      |      |      | 5.3  | 5.3  | 4.2   | 5.3   |      |
| Vehicle Extension (s)             | 3.0   | 3.0   | 3.0  |                           |      |      |      | 3.0  | 3.0  | 3.0   | 3.0   |      |
| Lane Grp Cap (vph)                | 516   | 464   | 456  |                           |      |      |      | 2241 | 684  | 460   | 3101  |      |
| v/s Ratio Prot                    | 0.23  | c0.23 |      |                           |      |      |      | 0.17 |      | c0.09 | c0.27 |      |
| v/s Ratio Perm                    |       |       | 0.21 |                           |      |      |      | 0.14 |      |       |       |      |
| v/c Ratio                         | 0.75  | 0.75  | 0.67 |                           |      |      |      | 0.39 | 0.31 | 0.70  | 0.45  |      |
| Uniform Delay, d1                 | 37.4  | 37.4  | 36.3 |                           |      |      |      | 22.7 | 21.7 | 49.6  | 12.6  |      |
| Progression Factor                | 1.00  | 1.00  | 1.00 |                           |      |      |      | 1.00 | 1.00 | 1.16  | 0.69  |      |
| Incremental Delay, d2             | 5.9   | 6.5   | 3.9  |                           |      |      |      | 0.5  | 1.2  | 4.4   | 0.4   |      |
| Delay (s)                         | 43.2  | 43.9  | 40.2 |                           |      |      |      | 23.2 | 22.9 | 61.8  | 9.1   |      |
| Level of Service                  | D     | D     | D    |                           |      |      |      | C    | C    | E     | A     |      |
| Approach Delay (s)                |       | 42.5  |      |                           | 0.0  |      |      | 23.1 |      |       | 19.0  |      |
| Approach LOS                      |       | D     |      |                           | A    |      |      | C    |      |       | B     |      |
| <b>Intersection Summary</b>       |       |       |      |                           |      |      |      |      |      |       |       |      |
| HCM 2000 Control Delay            |       | 26.6  |      | HCM 2000 Level of Service |      |      |      |      | C    |       |       |      |
| HCM 2000 Volume to Capacity ratio |       | 0.60  |      |                           |      |      |      |      |      |       |       |      |
| Actuated Cycle Length (s)         |       | 120.0 |      | Sum of lost time (s)      |      |      |      |      | 14.1 |       |       |      |
| Intersection Capacity Utilization |       | 70.4% |      | ICU Level of Service      |      |      |      |      | C    |       |       |      |
| Analysis Period (min)             |       | 15    |      |                           |      |      |      |      |      |       |       |      |
| c Critical Lane Group             |       |       |      |                           |      |      |      |      |      |       |       |      |

HCM Signalized Intersection Capacity Analysis  
23: Robelini Dr & S. Santa Fe Ave

Existing AM  
03/17/2017

|                                   |  |  |  |  |  |  |
|-----------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBT                                                                                 | EBR                                                                                 | WBL                                                                                 | WBT                                                                                 | NBL                                                                                 | NBR                                                                                 |
| Lane Configurations               |  |  |  |  |  |  |
| Traffic Volume (vph)              | 329                                                                                 | 440                                                                                 | 517                                                                                 | 211                                                                                 | 126                                                                                 | 170                                                                                 |
| Future Volume (vph)               | 329                                                                                 | 440                                                                                 | 517                                                                                 | 211                                                                                 | 126                                                                                 | 170                                                                                 |
| Ideal Flow (vphpl)                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 5.3                                                                                 | 4.6                                                                                 | 4.4                                                                                 | 5.3                                                                                 | 4.6                                                                                 | 4.4                                                                                 |
| Lane Util. Factor                 | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Frpb, ped/bikes                   | 1.00                                                                                | 0.99                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Flpb, ped/bikes                   | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 1863                                                                                | 1570                                                                                | 1770                                                                                | 1863                                                                                | 1770                                                                                | 1583                                                                                |
| Flt Permitted                     | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 1863                                                                                | 1570                                                                                | 1770                                                                                | 1863                                                                                | 1770                                                                                | 1583                                                                                |
| Peak-hour factor, PHF             | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Adj. Flow (vph)                   | 358                                                                                 | 478                                                                                 | 562                                                                                 | 229                                                                                 | 137                                                                                 | 185                                                                                 |
| RTOR Reduction (vph)              | 0                                                                                   | 24                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 40                                                                                  |
| Lane Group Flow (vph)             | 358                                                                                 | 454                                                                                 | 562                                                                                 | 229                                                                                 | 137                                                                                 | 145                                                                                 |
| Confl. Bikes (#/hr)               | 6                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Turn Type                         | NA                                                                                  | pm+ov                                                                               | Prot                                                                                | NA                                                                                  | Prot                                                                                | pm+ov                                                                               |
| Protected Phases                  | 2                                                                                   | 8                                                                                   | 1                                                                                   | 6                                                                                   | 8                                                                                   | 1                                                                                   |
| Permitted Phases                  | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             | 25.7                                                                                | 74.1                                                                                | 31.6                                                                                | 40.6                                                                                | 48.4                                                                                | 80.0                                                                                |
| Effective Green, g (s)            | 25.7                                                                                | 74.1                                                                                | 31.6                                                                                | 40.6                                                                                | 48.4                                                                                | 80.0                                                                                |
| Actuated g/C Ratio                | 0.21                                                                                | 0.62                                                                                | 0.26                                                                                | 0.34                                                                                | 0.40                                                                                | 0.67                                                                                |
| Clearance Time (s)                | 5.3                                                                                 | 4.6                                                                                 | 4.4                                                                                 | 5.3                                                                                 | 4.6                                                                                 | 4.4                                                                                 |
| Vehicle Extension (s)             | 3.0                                                                                 | 3.0                                                                                 | 3.0                                                                                 | 3.0                                                                                 | 3.0                                                                                 | 3.0                                                                                 |
| Lane Grp Cap (vph)                | 398                                                                                 | 969                                                                                 | 466                                                                                 | 630                                                                                 | 713                                                                                 | 1055                                                                                |
| v/s Ratio Prot                    | c0.19                                                                               | c0.19                                                                               | c0.32                                                                               | 0.12                                                                                | 0.08                                                                                | 0.04                                                                                |
| v/s Ratio Perm                    | 0.10                                                                                |                                                                                     | 0.06                                                                                |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         | 0.90                                                                                | 0.47                                                                                | 1.21                                                                                | 0.36                                                                                | 0.19                                                                                | 0.14                                                                                |
| Uniform Delay, d1                 | 45.9                                                                                | 12.4                                                                                | 44.2                                                                                | 30.0                                                                                | 23.2                                                                                | 7.3                                                                                 |
| Progression Factor                | 1.00                                                                                | 1.00                                                                                | 1.11                                                                                | 1.03                                                                                | 1.00                                                                                | 1.00                                                                                |
| Incremental Delay, d2             | 22.3                                                                                | 0.4                                                                                 | 102.3                                                                               | 0.2                                                                                 | 0.1                                                                                 | 0.1                                                                                 |
| Delay (s)                         | 68.2                                                                                | 12.7                                                                                | 151.3                                                                               | 31.0                                                                                | 23.3                                                                                | 7.4                                                                                 |
| Level of Service                  | E                                                                                   | B                                                                                   | F                                                                                   | C                                                                                   | C                                                                                   | A                                                                                   |
| Approach Delay (s)                | 36.5                                                                                |                                                                                     |                                                                                     | 116.5                                                                               | 14.2                                                                                |                                                                                     |
| Approach LOS                      | D                                                                                   |                                                                                     |                                                                                     | F                                                                                   | B                                                                                   |                                                                                     |
| Intersection Summary              |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            | 65.3                                                                                |                                                                                     | HCM 2000 Level of Service                                                           |                                                                                     | E                                                                                   |                                                                                     |
| HCM 2000 Volume to Capacity ratio | 0.79                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         | 120.0                                                                               |                                                                                     | Sum of lost time (s)                                                                |                                                                                     | 14.3                                                                                |                                                                                     |
| Intersection Capacity Utilization | 64.9%                                                                               |                                                                                     | ICU Level of Service                                                                |                                                                                     | C                                                                                   |                                                                                     |
| Analysis Period (min)             | 15                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

HCM Signalized Intersection Capacity Analysis  
24: Sycamore Avenue & SR 78 WB Ramps

Existing AM  
03/17/2017

| Movement                          | EBL   | EBT  | EBR  | WBL   | WBT   | WBR  | NBL   | NBT  | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|-------|------|------|-------|-------|------|-------|------|------|------|-------|------|
| Lane Configurations               |       |      |      |       |       |      |       |      |      |      |       |      |
| Traffic Volume (vph)              | 0     | 0    | 0    | 1104  | 2     | 89   | 368   | 425  | 0    | 0    | 829   | 297  |
| Future Volume (vph)               | 0     | 0    | 0    | 1104  | 2     | 89   | 368   | 425  | 0    | 0    | 829   | 297  |
| Ideal Flow (vphpl)                | 1900  | 1900 | 1900 | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               |       |      |      | 4.6   | 4.6   | 4.6  | 4.2   | 5.0  |      |      | 5.0   | 5.0  |
| Lane Util. Factor                 |       |      |      | 0.95  | 0.95  | 0.88 | 0.97  | 0.91 |      |      | 0.91  | 1.00 |
| Frpb, ped/bikes                   |       |      |      | 1.00  | 1.00  | 0.99 | 1.00  | 1.00 |      |      | 1.00  | 0.97 |
| Flpb, ped/bikes                   |       |      |      | 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 |      |      | 1.00  | 0.85 |
| Flt Protected                     |       |      |      | 0.95  | 0.95  | 1.00 | 0.95  | 1.00 |      |      | 1.00  | 1.00 |
| Satd. Flow (prot)                 |       |      |      | 1681  | 1686  | 2751 | 3433  | 5085 |      |      | 5085  | 1532 |
| Flt Permitted                     |       |      |      | 0.95  | 0.95  | 1.00 | 0.95  | 1.00 |      |      | 1.00  | 1.00 |
| Satd. Flow (perm)                 |       |      |      | 1681  | 1686  | 2751 | 3433  | 5085 |      |      | 5085  | 1532 |
| Peak-hour factor, PHF             | 0.90  | 0.90 | 0.90 | 0.90  | 0.90  | 0.90 | 0.90  | 0.90 | 0.90 | 0.90 | 0.90  | 0.90 |
| Adj. Flow (vph)                   | 0     | 0    | 0    | 1227  | 2     | 99   | 409   | 472  | 0    | 0    | 921   | 330  |
| RTOR Reduction (vph)              | 0     | 0    | 0    | 0     | 0     | 56   | 0     | 0    | 0    | 0    | 0     | 235  |
| Lane Group Flow (vph)             | 0     | 0    | 0    | 613   | 616   | 43   | 409   | 472  | 0    | 0    | 921   | 95   |
| Confl. Peds. (#/hr)               |       |      | 1    |       |       | 1    |       |      | 1    |      |       | 12   |
| Turn Type                         |       |      |      | Split | NA    | Perm | Prot  | NA   |      | NA   | Perm  |      |
| Protected Phases                  |       |      |      | 8     | 8     |      | 5     | 2    |      |      | 6     |      |
| Permitted Phases                  |       |      |      |       |       | 8    |       |      |      |      |       | 6    |
| Actuated Green, G (s)             |       |      |      | 47.8  | 47.8  | 47.8 | 16.7  | 52.6 |      |      | 31.7  | 31.7 |
| Effective Green, g (s)            |       |      |      | 47.8  | 47.8  | 47.8 | 16.7  | 52.6 |      |      | 31.7  | 31.7 |
| Actuated g/C Ratio                |       |      |      | 0.43  | 0.43  | 0.43 | 0.15  | 0.48 |      |      | 0.29  | 0.29 |
| Clearance Time (s)                |       |      |      | 4.6   | 4.6   | 4.6  | 4.2   | 5.0  |      |      | 5.0   | 5.0  |
| Vehicle Extension (s)             |       |      |      | 3.0   | 3.0   | 3.0  | 3.0   | 3.0  |      |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)                |       |      |      | 730   | 732   | 1195 | 521   | 2431 |      |      | 1465  | 441  |
| v/s Ratio Prot                    |       |      |      | 0.36  | c0.37 |      | c0.12 | 0.09 |      |      | c0.18 |      |
| v/s Ratio Perm                    |       |      |      |       |       | 0.02 |       |      |      |      |       | 0.06 |
| v/c Ratio                         |       |      |      | 0.84  | 0.84  | 0.04 | 0.79  | 0.19 |      |      | 0.63  | 0.22 |
| Uniform Delay, d1                 |       |      |      | 27.7  | 27.7  | 17.9 | 44.9  | 16.5 |      |      | 34.0  | 29.7 |
| Progression Factor                |       |      |      | 1.00  | 1.00  | 1.00 | 1.56  | 0.89 |      |      | 1.00  | 1.00 |
| Incremental Delay, d2             |       |      |      | 8.4   | 8.7   | 0.0  | 7.5   | 0.2  |      |      | 2.1   | 1.1  |
| Delay (s)                         |       |      |      | 36.1  | 36.4  | 17.9 | 77.4  | 14.9 |      |      | 36.1  | 30.8 |
| Level of Service                  |       |      |      | D     | D     | B    | E     | B    |      |      | D     | C    |
| Approach Delay (s)                | 0.0   |      |      |       | 34.9  |      |       | 43.9 |      |      | 34.7  |      |
| Approach LOS                      | A     |      |      |       | C     |      |       | D    |      |      | C     |      |
| <b>Intersection Summary</b>       |       |      |      |       |       |      |       |      |      |      |       |      |
| HCM 2000 Control Delay            | 37.1  |      |      |       |       |      |       |      |      |      |       |      |
| HCM 2000 Volume to Capacity ratio | 0.76  |      |      |       |       |      |       |      |      |      |       |      |
| Actuated Cycle Length (s)         | 110.0 |      |      |       |       |      |       |      |      |      |       |      |
| Intersection Capacity Utilization | 77.7% |      |      |       |       |      |       |      |      |      |       |      |
| Analysis Period (min)             | 15    |      |      |       |       |      |       |      |      |      |       |      |
| c Critical Lane Group             |       |      |      |       |       |      |       |      |      |      |       |      |

HCM Signalized Intersection Capacity Analysis  
25: Sycamore Avenue & SR 78 EB Ramps

Existing AM  
03/17/2017

| Movement                          | EBL   | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|-------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations               |       |       |      |      |      |      |      |      |      |      |       |      |
| Traffic Volume (vph)              | 208   | 1     | 881  | 0    | 0    | 0    | 0    | 585  | 636  | 208  | 1725  | 0    |
| Future Volume (vph)               | 208   | 1     | 881  | 0    | 0    | 0    | 0    | 585  | 636  | 208  | 1725  | 0    |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               |       |       |      | 4.6  | 4.6  | 4.6  |      |      |      |      |       |      |
| Lane Util. Factor                 | 0.95  | 0.91  | 0.95 |      |      |      |      | 0.91 | 1.00 | 0.97 | 0.91  |      |
| Frpb, ped/bikes                   | 1.00  | 1.00  | 1.00 |      |      |      |      | 1.00 | 0.98 | 1.00 | 1.00  |      |
| Flpb, ped/bikes                   | 1.00  | 1.00  | 1.00 |      |      |      |      | 1.00 | 1.00 | 1.00 | 1.00  |      |
| Frt                               | 1.00  | 0.86  | 0.85 |      |      |      |      | 1.00 | 0.85 | 1.00 | 1.00  |      |
| Flt Protected                     | 0.95  | 1.00  | 1.00 |      |      |      |      | 1.00 | 1.00 | 0.95 | 1.00  |      |
| Satd. Flow (prot)                 | 1681  | 1450  | 1504 |      |      |      |      | 5085 | 1554 | 3433 | 5085  |      |
| Flt Permitted                     | 0.95  | 1.00  | 1.00 |      |      |      |      | 1.00 | 1.00 | 0.95 | 1.00  |      |
| Satd. Flow (perm)                 | 1681  | 1450  | 1504 |      |      |      |      | 5085 | 1554 | 3433 | 5085  |      |
| Peak-hour factor, PHF             | 0.95  | 0.95  | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95  | 0.95 |
| Adj. Flow (vph)                   | 219   | 1     | 927  | 0    | 0    | 0    | 0    | 616  | 669  | 219  | 1816  | 0    |
| RTOR Reduction (vph)              | 0     | 4     | 38   | 0    | 0    | 0    | 0    | 0    | 404  | 0    | 0     | 0    |
| Lane Group Flow (vph)             | 197   | 473   | 435  | 0    | 0    | 0    | 0    | 616  | 265  | 219  | 1816  | 0    |
| Confl. Peds. (#/hr)               |       |       |      |      |      |      |      |      | 4    |      |       |      |
| Confl. Bikes (#/hr)               |       |       |      |      |      |      |      |      | 1    |      |       |      |
| Turn Type                         | Split | NA    | Perm |      |      |      |      | NA   | Perm | Prot | NA    |      |
| Protected Phases                  | 4     | 4     |      |      |      |      |      | 2    |      | 1    | 6     |      |
| Permitted Phases                  |       |       | 4    |      |      |      |      |      | 2    |      |       |      |
| Actuated Green, G (s)             | 41.9  | 41.9  | 41.9 |      |      |      |      | 43.6 | 43.6 | 10.7 | 58.5  |      |
| Effective Green, g (s)            | 41.9  | 41.9  | 41.9 |      |      |      |      | 43.6 | 43.6 | 10.7 | 58.5  |      |
| Actuated g/C Ratio                | 0.38  | 0.38  | 0.38 |      |      |      |      | 0.40 | 0.40 | 0.10 | 0.53  |      |
| Clearance Time (s)                | 4.6   | 4.6   | 4.6  |      |      |      |      | 5.0  | 5.0  | 4.2  | 5.0   |      |
| Vehicle Extension (s)             | 3.0   | 3.0   | 3.0  |      |      |      |      | 3.0  | 3.0  | 3.0  | 3.0   |      |
| Lane Grp Cap (vph)                | 640   | 552   | 572  |      |      |      |      | 2015 | 615  | 333  | 2704  |      |
| v/s Ratio Prot                    | 0.12  | c0.33 |      |      |      |      |      | 0.12 |      | 0.06 | c0.36 |      |
| v/s Ratio Perm                    |       |       | 0.29 |      |      |      |      |      | 0.17 |      |       |      |
| v/c Ratio                         | 0.31  | 0.86  | 0.76 |      |      |      |      | 0.31 | 0.43 | 0.66 | 0.67  |      |
| Uniform Delay, d1                 | 23.9  | 31.3  | 29.7 |      |      |      |      | 22.8 | 24.2 | 47.9 | 18.8  |      |
| Progression Factor                | 1.00  | 1.00  | 1.00 |      |      |      |      | 1.00 | 1.00 | 1.53 | 1.36  |      |
| Incremental Delay, d2             | 0.3   | 12.4  | 5.9  |      |      |      |      | 0.4  | 2.2  | 3.6  | 0.9   |      |
| Delay (s)                         | 24.2  | 43.7  | 35.6 |      |      |      |      | 23.2 | 26.4 | 77.0 | 26.5  |      |
| Level of Service                  | C     | D     | D    |      |      |      |      | C    | C    | E    | C     |      |
| Approach Delay (s)                | 37.0  |       |      |      |      | 0.0  |      | 24.8 |      |      | 31.9  |      |
| Approach LOS                      | D     |       |      |      |      | A    |      | C    |      |      | C     |      |
| <b>Intersection Summary</b>       |       |       |      |      |      |      |      |      |      |      |       |      |
| HCM 2000 Control Delay            | 31.2  |       |      |      |      |      |      |      |      |      |       |      |
| HCM 2000 Volume to Capacity ratio | 0.78  |       |      |      |      |      |      |      |      |      |       |      |
| Actuated Cycle Length (s)         | 110.0 |       |      |      |      |      |      |      |      |      |       |      |
| Intersection Capacity Utilization | 77.7% |       |      |      |      |      |      |      |      |      |       |      |
| Analysis Period (min)             | 15    |       |      |      |      |      |      |      |      |      |       |      |
| c Critical Lane Group             |       |       |      |      |      |      |      |      |      |      |       |      |

HCM Signalized Intersection Capacity Analysis  
26: S. Santa Fe Ave & Buena Creek Rd

Existing AM  
03/17/2017

| Movement                          | EBL   | EBT   | WBT   | WBR  | SBL                       | SBR  |
|-----------------------------------|-------|-------|-------|------|---------------------------|------|
| Lane Configurations               | ↰     | ↑     | ↰     | ↰    | ↰                         | ↰    |
| Traffic Volume (vph)              | 134   | 383   | 269   | 83   | 170                       | 439  |
| Future Volume (vph)               | 134   | 383   | 269   | 83   | 170                       | 439  |
| Ideal Flow (vphpl)                | 1520  | 1900  | 1900  | 1520 | 1520                      | 1520 |
| Total Lost time (s)               | 4.4   | 5.3   | 5.3   | 5.3  | 4.0                       |      |
| Lane Util. Factor                 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00                      |      |
| Frpb, ped/bikes                   | 1.00  | 1.00  | 1.00  | 0.94 | 0.98                      |      |
| Flpb, ped/bikes                   | 1.00  | 1.00  | 1.00  | 1.00 | 1.00                      |      |
| Frt                               | 1.00  | 1.00  | 1.00  | 0.85 | 0.90                      |      |
| Flt Protected                     | 0.95  | 1.00  | 1.00  | 1.00 | 0.99                      |      |
| Satd. Flow (prot)                 | 1416  | 1863  | 1863  | 1195 | 1296                      |      |
| Flt Permitted                     | 0.95  | 1.00  | 1.00  | 1.00 | 0.99                      |      |
| Satd. Flow (perm)                 | 1416  | 1863  | 1863  | 1195 | 1296                      |      |
| Peak-hour factor, PHF             | 0.95  | 0.95  | 0.95  | 0.95 | 0.95                      | 0.95 |
| Adj. Flow (vph)                   | 141   | 403   | 283   | 87   | 179                       | 462  |
| RTOR Reduction (vph)              | 0     | 0     | 0     | 33   | 0                         | 0    |
| Lane Group Flow (vph)             | 141   | 403   | 283   | 54   | 641                       | 0    |
| Confl. Peds. (#/hr)               |       |       |       | 12   |                           | 4    |
| Confl. Bikes (#/hr)               |       |       |       | 3    |                           |      |
| Turn Type                         | Prot  | NA    | NA    | Perm | Prot                      |      |
| Protected Phases                  | 5     | 2     | 6     |      | 4                         |      |
| Permitted Phases                  |       |       |       | 6    |                           |      |
| Actuated Green, G (s)             | 16.7  | 25.7  | 40.6  | 40.6 | 49.0                      |      |
| Effective Green, g (s)            | 16.7  | 25.7  | 40.6  | 40.6 | 49.0                      |      |
| Actuated g/C Ratio                | 0.14  | 0.21  | 0.34  | 0.34 | 0.41                      |      |
| Clearance Time (s)                | 4.4   | 5.3   | 5.3   | 5.3  | 4.0                       |      |
| Vehicle Extension (s)             | 3.0   | 3.0   | 3.0   | 3.0  | 3.0                       |      |
| Lane Grp Cap (vph)                | 197   | 398   | 630   | 404  | 529                       |      |
| v/s Ratio Prot                    | c0.10 | c0.22 | c0.15 |      | c0.49                     |      |
| v/s Ratio Perm                    |       |       |       | 0.05 |                           |      |
| v/c Ratio                         | 0.72  | 1.01  | 0.45  | 0.13 | 1.21                      |      |
| Uniform Delay, d1                 | 49.4  | 47.1  | 31.0  | 27.5 | 35.5                      |      |
| Progression Factor                | 1.30  | 0.63  | 1.00  | 1.00 | 1.00                      |      |
| Incremental Delay, d2             | 9.0   | 42.5  | 0.5   | 0.2  | 111.9                     |      |
| Delay (s)                         | 73.4  | 72.0  | 31.5  | 27.7 | 147.4                     |      |
| Level of Service                  | E     | E     | C     | C    | F                         |      |
| Approach Delay (s)                |       | 72.4  | 30.6  |      | 147.4                     |      |
| Approach LOS                      |       | E     | C     |      | F                         |      |
| <b>Intersection Summary</b>       |       |       |       |      |                           |      |
| HCM 2000 Control Delay            |       |       | 93.3  |      | HCM 2000 Level of Service | F    |
| HCM 2000 Volume to Capacity ratio |       |       | 0.97  |      |                           |      |
| Actuated Cycle Length (s)         |       |       | 120.0 |      | Sum of lost time (s)      | 14.3 |
| Intersection Capacity Utilization |       |       | 81.8% |      | ICU Level of Service      | D    |
| Analysis Period (min)             |       |       | 15    |      |                           |      |
| c Critical Lane Group             |       |       |       |      |                           |      |

HCM Unsignalized Intersection Capacity Analysis  
27: Buena Creek Rd & Monte Vista Dr

Existing AM  
03/17/2017

| Movement                          | EBL  | EBT   | WBT   | WBR  | SBL                  | SBR  |
|-----------------------------------|------|-------|-------|------|----------------------|------|
| Lane Configurations               |      | ↑     | ↑     |      | ↰                    | ↰    |
| Sign Control                      |      | Stop  | Stop  |      | Stop                 |      |
| Traffic Volume (vph)              | 88   | 132   | 350   | 192  | 305                  | 148  |
| Future Volume (vph)               | 88   | 132   | 350   | 192  | 305                  | 148  |
| Peak Hour Factor                  | 0.95 | 0.95  | 0.95  | 0.95 | 0.95                 | 0.95 |
| Hourly flow rate (vph)            | 93   | 139   | 368   | 202  | 321                  | 156  |
| Direction, Lane #                 | EB 1 | WB 1  | SB 1  |      |                      |      |
| Volume Total (vph)                | 232  | 570   | 477   |      |                      |      |
| Volume Left (vph)                 | 93   | 0     | 321   |      |                      |      |
| Volume Right (vph)                | 0    | 202   | 156   |      |                      |      |
| Hadj (s)                          | 0.11 | -0.18 | -0.03 |      |                      |      |
| Departure Headway (s)             | 6.7  | 5.8   | 6.2   |      |                      |      |
| Degree Utilization, x             | 0.43 | 0.92  | 0.82  |      |                      |      |
| Capacity (veh/h)                  | 514  | 600   | 564   |      |                      |      |
| Control Delay (s)                 | 14.8 | 44.0  | 31.8  |      |                      |      |
| Approach Delay (s)                | 14.8 | 44.0  | 31.8  |      |                      |      |
| Approach LOS                      | B    | E     | D     |      |                      |      |
| <b>Intersection Summary</b>       |      |       |       |      |                      |      |
| Delay                             |      |       | 34.2  |      |                      |      |
| Level of Service                  |      |       | D     |      |                      |      |
| Intersection Capacity Utilization |      |       | 78.0% |      | ICU Level of Service | D    |
| Analysis Period (min)             |      |       | 15    |      |                      |      |

HCM Signalized Intersection Capacity Analysis  
28: San Marcos Blvd & Knoll Rd/SR 78 WB Ramps

Existing AM  
03/17/2017

| Movement                          | EBL  | EBT  | EBR   | WBL   | WBT                       | WBR  | NBL   | NBT  | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|------|------|-------|-------|---------------------------|------|-------|------|------|------|-------|------|
| Lane Configurations               | ↰    | →    | ↱     | ↰     | ↱                         | →    | ↰     | ↱    | ↱    | ↰    | ↱     | ↱    |
| Traffic Volume (vph)              | 121  | 0    | 391   | 946   | 374                       | 14   | 333   | 378  | 65   | 0    | 843   | 127  |
| Future Volume (vph)               | 121  | 0    | 391   | 946   | 374                       | 14   | 333   | 378  | 65   | 0    | 843   | 127  |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900  | 1900                      | 1900 | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               | 5.6  |      | 5.2   | 5.6   | 5.6                       |      | 5.2   | 6.3  | 6.3  |      | 6.3   | 6.3  |
| Lane Util. Factor                 | 1.00 |      | 0.88  | 0.97  | 0.95                      |      | 0.97  | 0.95 | 1.00 |      | 0.91  | 1.00 |
| Frpb, ped/bikes                   | 1.00 |      | 1.00  | 1.00  | 1.00                      |      | 1.00  | 1.00 | 1.00 |      | 1.00  | 0.98 |
| Flpb, ped/bikes                   | 1.00 |      | 1.00  | 1.00  | 1.00                      |      | 1.00  | 1.00 | 1.00 |      | 1.00  | 1.00 |
| Frt                               | 1.00 |      | 0.85  | 1.00  | 0.99                      |      | 1.00  | 1.00 | 0.85 |      | 1.00  | 0.85 |
| Flt Protected                     | 0.95 |      | 1.00  | 0.95  | 1.00                      |      | 0.95  | 1.00 | 1.00 |      | 1.00  | 1.00 |
| Satd. Flow (prot)                 | 1770 |      | 2787  | 3433  | 3519                      |      | 3433  | 3539 | 1583 |      | 5085  | 1546 |
| Flt Permitted                     | 0.95 |      | 1.00  | 0.95  | 1.00                      |      | 0.95  | 1.00 | 1.00 |      | 1.00  | 1.00 |
| Satd. Flow (perm)                 | 1770 |      | 2787  | 3433  | 3519                      |      | 3433  | 3539 | 1583 |      | 5085  | 1546 |
| Peak-hour factor, PHF             | 0.97 | 0.97 | 0.97  | 0.97  | 0.97                      | 0.97 | 0.97  | 0.97 | 0.97 | 0.97 | 0.97  | 0.97 |
| Adj. Flow (vph)                   | 125  | 0    | 403   | 975   | 386                       | 14   | 343   | 390  | 67   | 0    | 869   | 131  |
| RTOR Reduction (vph)              | 0    | 0    | 61    | 0     | 2                         | 0    | 0     | 0    | 30   | 0    | 0     | 78   |
| Lane Group Flow (vph)             | 125  | 0    | 342   | 975   | 398                       | 0    | 343   | 390  | 37   | 0    | 869   | 53   |
| Confl. Peds. (#/hr)               |      |      |       |       |                           | 1    |       |      |      |      |       | 8    |
| Confl. Bikes (#/hr)               |      |      |       |       |                           |      |       |      |      |      |       | 2    |
| Turn Type                         | Prot |      | pm+ov | Prot  | NA                        |      | Prot  | NA   | Perm |      | NA    | Perm |
| Protected Phases                  | 7    |      | 5     | 3     | 8                         |      | 5     | 2    |      |      | 6     |      |
| Permitted Phases                  |      |      | 7     |       |                           |      |       |      | 2    |      |       | 6    |
| Actuated Green, G (s)             | 13.4 |      | 30.1  | 42.5  | 23.5                      |      | 16.7  | 65.6 | 65.6 |      | 43.7  | 43.7 |
| Effective Green, g (s)            | 13.4 |      | 30.1  | 42.5  | 23.5                      |      | 16.7  | 65.6 | 65.6 |      | 43.7  | 43.7 |
| Actuated g/C Ratio                | 0.11 |      | 0.25  | 0.35  | 0.20                      |      | 0.14  | 0.55 | 0.55 |      | 0.36  | 0.36 |
| Clearance Time (s)                | 5.6  |      | 5.2   | 5.6   | 5.6                       |      | 5.2   | 6.3  | 6.3  |      | 6.3   | 6.3  |
| 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)                | 197  |      | 699   | 1215  | 689                       |      | 477   | 1934 | 865  |      | 1851  | 563  |
| v/s Ratio Prot                    | 0.07 |      | 0.07  | c0.28 | 0.11                      |      | c0.10 | 0.11 |      |      | c0.17 |      |
| v/s Ratio Perm                    |      |      | 0.05  |       |                           |      |       |      | 0.02 |      |       | 0.03 |
| v/c Ratio                         | 0.63 |      | 0.49  | 0.80  | 0.58                      |      | 0.72  | 0.20 | 0.04 |      | 0.47  | 0.09 |
| Uniform Delay, d1                 | 51.0 |      | 38.4  | 35.0  | 43.7                      |      | 49.4  | 13.9 | 12.6 |      | 29.3  | 25.1 |
| Progression Factor                | 1.00 |      | 1.00  | 1.00  | 1.00                      |      | 1.03  | 0.81 | 0.48 |      | 1.00  | 1.00 |
| Incremental Delay, d2             | 6.5  |      | 0.5   | 3.9   | 1.2                       |      | 5.1   | 0.2  | 0.1  |      | 0.9   | 0.3  |
| Delay (s)                         | 57.5 |      | 38.9  | 38.9  | 44.9                      |      | 55.9  | 11.5 | 6.1  |      | 30.1  | 25.5 |
| Level of Service                  | E    |      | D     | D     | D                         |      | E     | B    | A    |      | C     | C    |
| Approach Delay (s)                |      | 43.3 |       |       | 40.6                      |      |       | 30.1 |      |      | 29.5  |      |
| Approach LOS                      |      | D    |       |       | D                         |      |       | C    |      |      | C     |      |
| <b>Intersection Summary</b>       |      |      |       |       |                           |      |       |      |      |      |       |      |
| HCM 2000 Control Delay            |      |      | 35.7  |       | HCM 2000 Level of Service |      |       |      | D    |      |       |      |
| HCM 2000 Volume to Capacity ratio |      |      | 0.68  |       |                           |      |       |      |      |      |       |      |
| Actuated Cycle Length (s)         |      |      | 120.0 |       | Sum of lost time (s)      |      |       |      | 22.7 |      |       |      |
| Intersection Capacity Utilization |      |      | 78.2% |       | ICU Level of Service      |      |       |      | D    |      |       |      |
| Analysis Period (min)             |      |      | 15    |       |                           |      |       |      |      |      |       |      |
| c Critical Lane Group             |      |      |       |       |                           |      |       |      |      |      |       |      |

HCM Signalized Intersection Capacity Analysis  
29: San Marcos Blvd & SR 78 EB Ramps

Existing AM  
03/17/2017

| Movement                          | EBL   | EBT  | EBR   | WBL  | WBT  | WBR  | NBL  | NBT                       | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|-------|------|-------|------|------|------|------|---------------------------|------|------|-------|------|
| Lane Configurations               | ↰     | →    | ↱     | ↰    | ↱    | →    | ↰    | ↱                         | ↱    | ↰    | ↱     | ↱    |
| Traffic Volume (vph)              | 159   | 0    | 123   | 0    | 0    | 0    | 0    | 627                       | 727  | 172  | 1932  | 0    |
| Future Volume (vph)               | 159   | 0    | 123   | 0    | 0    | 0    | 0    | 627                       | 727  | 172  | 1932  | 0    |
| Ideal Flow (vphpl)                | 1900  | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900                      | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               | 5.6   |      | 5.6   |      |      |      |      | 6.3                       | 6.3  | 5.2  | 6.3   |      |
| Lane Util. Factor                 | 0.97  |      | 1.00  |      |      |      |      | 0.91                      | 0.88 | 0.97 | 0.91  |      |
| Frpb, ped/bikes                   | 1.00  |      | 1.00  |      |      |      |      | 1.00                      | 0.98 | 1.00 | 1.00  |      |
| Flpb, ped/bikes                   | 1.00  |      | 1.00  |      |      |      |      | 1.00                      | 1.00 | 1.00 | 1.00  |      |
| Frt                               | 1.00  |      | 0.85  |      |      |      |      | 1.00                      | 0.85 | 1.00 | 1.00  |      |
| Flt Protected                     | 0.95  |      | 1.00  |      |      |      |      | 1.00                      | 1.00 | 0.95 | 1.00  |      |
| Satd. Flow (prot)                 | 3433  |      | 1583  |      |      |      |      | 5085                      | 2726 | 3433 | 5085  |      |
| Flt Permitted                     | 0.95  |      | 1.00  |      |      |      |      | 1.00                      | 1.00 | 0.95 | 1.00  |      |
| Satd. Flow (perm)                 | 3433  |      | 1583  |      |      |      |      | 5085                      | 2726 | 3433 | 5085  |      |
| Peak-hour factor, PHF             | 0.96  | 0.96 | 0.96  | 0.96 | 0.96 | 0.96 | 0.96 | 0.96                      | 0.96 | 0.96 | 0.96  | 0.96 |
| Adj. Flow (vph)                   | 166   | 0    | 128   | 0    | 0    | 0    | 0    | 653                       | 757  | 179  | 2012  | 0    |
| RTOR Reduction (vph)              | 0     | 0    | 70    | 0    | 0    | 0    | 0    | 0                         | 253  | 0    | 0     | 0    |
| Lane Group Flow (vph)             | 166   | 0    | 58    | 0    | 0    | 0    | 0    | 653                       | 504  | 179  | 2013  | 0    |
| Confl. Peds. (#/hr)               |       |      |       |      |      |      |      |                           |      |      |       | 6    |
| Confl. Bikes (#/hr)               |       |      |       |      |      |      |      |                           |      |      |       | 4    |
| Turn Type                         | Prot  |      | Perm  |      |      |      |      | NA                        | Perm | Prot | NA    |      |
| Protected Phases                  | 4     |      |       |      |      |      |      | 2                         |      | 1    | 6     |      |
| Permitted Phases                  |       |      | 4     |      |      |      |      | 2                         |      |      |       |      |
| Actuated Green, G (s)             | 11.4  |      | 11.4  |      |      |      |      | 79.9                      | 79.9 | 11.6 | 96.7  |      |
| Effective Green, g (s)            | 11.4  |      | 11.4  |      |      |      |      | 79.9                      | 79.9 | 11.6 | 96.7  |      |
| Actuated g/C Ratio                | 0.10  |      | 0.10  |      |      |      |      | 0.67                      | 0.67 | 0.10 | 0.81  |      |
| Clearance Time (s)                | 5.6   |      | 5.6   |      |      |      |      | 6.3                       | 6.3  | 5.2  | 6.3   |      |
| Vehicle Extension (s)             | 3.0   |      | 3.0   |      |      |      |      | 3.0                       | 3.0  | 3.0  | 3.0   |      |
| Lane Grp Cap (vph)                | 326   |      | 150   |      |      |      |      | 3385                      | 1815 | 331  | 4097  |      |
| v/s Ratio Prot                    | c0.05 |      |       |      |      |      |      | 0.13                      |      | 0.05 | c0.40 |      |
| v/s Ratio Perm                    |       |      | 0.04  |      |      |      |      |                           | 0.18 |      |       |      |
| v/c Ratio                         | 0.51  |      | 0.39  |      |      |      |      | 0.19                      | 0.28 | 0.54 | 0.49  |      |
| Uniform Delay, d1                 | 51.6  |      | 51.0  |      |      |      |      | 7.7                       | 8.2  | 51.7 | 3.7   |      |
| Progression Factor                | 1.00  |      | 1.00  |      |      |      |      | 1.00                      | 1.00 | 1.12 | 0.49  |      |
| Incremental Delay, d2             | 1.3   |      | 1.7   |      |      |      |      | 0.1                       | 0.4  | 1.6  | 0.4   |      |
| Delay (s)                         | 52.9  |      | 52.7  |      |      |      |      | 7.8                       | 8.6  | 59.7 | 2.2   |      |
| Level of Service                  | D     |      | D     |      |      |      |      | A                         | A    | E    | A     |      |
| Approach Delay (s)                |       | 52.8 |       |      | 0.0  |      |      | 8.2                       |      |      | 6.9   |      |
| Approach LOS                      |       | D    |       |      | A    |      |      | A                         |      |      | A     |      |
| <b>Intersection Summary</b>       |       |      |       |      |      |      |      |                           |      |      |       |      |
| HCM 2000 Control Delay            |       |      | 10.8  |      |      |      |      | HCM 2000 Level of Service |      | B    |       |      |
| HCM 2000 Volume to Capacity ratio |       |      | 0.52  |      |      |      |      |                           |      |      |       |      |
| Actuated Cycle Length (s)         |       |      | 120.0 |      |      |      |      | Sum of lost time (s)      |      | 17.1 |       |      |
| Intersection Capacity Utilization |       |      | 54.9% |      |      |      |      | ICU Level of Service      |      | A    |       |      |
| Analysis Period (min)             |       |      | 15    |      |      |      |      |                           |      |      |       |      |
| c Critical Lane Group             |       |      |       |      |      |      |      |                           |      |      |       |      |

HCM Signalized Intersection Capacity Analysis  
30: San Marcos Blvd & E. Mission Road

Existing AM  
03/17/2017

| Movement                          | EBL  | EBT   | EBR  | WBL   | WBT   | WBR  | NBL   | NBT  | NBR  | SBL   | SBT   | SBR  |
|-----------------------------------|------|-------|------|-------|-------|------|-------|------|------|-------|-------|------|
| Lane Configurations               | ↰    | ↱     | ↱    | ↰     | ↱     | ↱    | ↰     | ↱    | ↱    | ↰     | ↱     | ↱    |
| Traffic Volume (vph)              | 25   | 358   | 20   | 588   | 722   | 79   | 8     | 34   | 253  | 96    | 323   | 49   |
| Future Volume (vph)               | 25   | 358   | 20   | 588   | 722   | 79   | 8     | 34   | 253  | 96    | 323   | 49   |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 | 1900  | 1900  | 1900 |
| Total Lost time (s)               | 4.0  | 5.3   | 5.3  | 4.0   | 5.3   | 5.3  | 4.0   | 5.3  | 5.3  | 4.0   | 5.3   |      |
| Lane Util. Factor                 | 1.00 | 0.95  | 1.00 | 0.97  | 0.95  | 1.00 | 1.00  | 0.95 | 1.00 | 1.00  | 0.95  |      |
| Flpb, ped/bikes                   | 1.00 | 1.00  | 0.99 | 1.00  | 1.00  | 0.97 | 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  | 0.98  |      |
| 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)                 | 1770 | 3539  | 1561 | 3433  | 3539  | 1531 | 1770  | 3539 | 1583 | 1770  | 3469  |      |
| 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)                 | 1770 | 3539  | 1561 | 3433  | 3539  | 1531 | 1770  | 3539 | 1583 | 1770  | 3469  |      |
| Peak-hour factor, PHF             | 0.86 | 0.86  | 0.86 | 0.86  | 0.86  | 0.86 | 0.86  | 0.86 | 0.86 | 0.86  | 0.86  |      |
| Adj. Flow (vph)                   | 29   | 416   | 23   | 684   | 840   | 92   | 9     | 40   | 294  | 112   | 376   | 57   |
| RTOR Reduction (vph)              | 0    | 0     | 18   | 0     | 0     | 48   | 0     | 0    | 248  | 0     | 7     | 0    |
| Lane Group Flow (vph)             | 29   | 416   | 5    | 684   | 840   | 44   | 9     | 40   | 46   | 112   | 426   | 0    |
| Conf. Peds. (#/hr)                |      |       | 2    |       |       | 12   |       |      |      |       |       |      |
| Turn Type                         | Prot | NA    | Perm | Prot  | NA    | Perm | Prot  | NA   | Prot | Prot  | NA    |      |
| Protected Phases                  | 7    | 4     |      | 3     | 8     |      | 5     | 2    | 2    | 1     | 6     |      |
| Permitted Phases                  |      |       | 4    |       |       | 8    |       |      |      |       |       |      |
| Actuated Green, G (s)             | 4.3  | 20.0  | 20.0 | 25.3  | 41.0  | 41.0 | 0.7   | 14.0 | 14.0 | 12.5  | 25.8  |      |
| Effective Green, g (s)            | 4.3  | 20.0  | 20.0 | 25.3  | 41.0  | 41.0 | 0.7   | 14.0 | 14.0 | 12.5  | 25.8  |      |
| Actuated g/C Ratio                | 0.05 | 0.22  | 0.22 | 0.28  | 0.45  | 0.45 | 0.01  | 0.15 | 0.15 | 0.14  | 0.29  |      |
| Clearance Time (s)                | 4.0  | 5.3   | 5.3  | 4.0   | 5.3   | 5.3  | 4.0   | 5.3  | 5.3  | 4.0   | 5.3   |      |
| Vehicle Extension (s)             | 3.0  | 3.0   | 3.0  | 3.0   | 3.0   | 3.0  | 3.0   | 3.0  | 3.0  | 3.0   | 3.0   |      |
| Lane Grp Cap (vph)                | 84   | 782   | 345  | 960   | 1605  | 694  | 13    | 548  | 245  | 244   | 990   |      |
| v/s Ratio Prot                    | 0.02 | 0.12  |      | c0.20 | c0.24 |      | 0.01  | 0.01 | 0.03 | c0.06 | c0.12 |      |
| v/s Ratio Perm                    |      |       | 0.00 |       |       | 0.03 |       |      |      |       |       |      |
| v/c Ratio                         | 0.35 | 0.53  | 0.01 | 0.71  | 0.52  | 0.06 | 0.69  | 0.07 | 0.19 | 0.46  | 0.43  |      |
| Uniform Delay, d1                 | 41.7 | 31.1  | 27.5 | 29.3  | 17.7  | 13.9 | 44.7  | 32.7 | 33.2 | 35.8  | 26.3  |      |
| 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             | 2.5  | 0.7   | 0.0  | 2.5   | 0.3   | 0.0  | 96.3  | 0.1  | 0.4  | 1.4   | 0.3   |      |
| Delay (s)                         | 44.2 | 31.8  | 27.5 | 31.8  | 18.0  | 13.9 | 141.0 | 32.7 | 33.6 | 37.2  | 26.6  |      |
| Level of Service                  | D    | C     | C    | C     | B     | B    | F     | C    | C    | D     | C     |      |
| Approach Delay (s)                |      | 32.3  |      |       | 23.6  |      |       | 36.3 |      |       | 28.8  |      |
| Approach LOS                      |      | C     |      |       | C     |      |       | D    |      |       | C     |      |
| <b>Intersection Summary</b>       |      |       |      |       |       |      |       |      |      |       |       |      |
| HCM 2000 Control Delay            |      | 27.4  |      |       |       |      |       |      |      |       |       |      |
| HCM 2000 Volume to Capacity ratio |      | 0.59  |      |       |       |      |       |      |      |       |       |      |
| Actuated Cycle Length (s)         |      | 90.4  |      |       |       |      |       | 18.6 |      |       |       |      |
| Intersection Capacity Utilization |      | 51.5% |      |       |       |      |       |      |      |       |       |      |
| Analysis Period (min)             |      | 15    |      |       |       |      |       |      |      |       |       |      |
| c Critical Lane Group             |      |       |      |       |       |      |       |      |      |       |       |      |

HCM Unsignalized Intersection Capacity Analysis  
31: North Centre City Pkwy & Mesa Rock Rd

Existing AM  
03/17/2017

| Movement                          | EBL  | EBR   | NBL  | NBT                  | SBT  | SBR  |
|-----------------------------------|------|-------|------|----------------------|------|------|
| Lane Configurations               | ↰    | ↱     | ↰    | ↱                    | ↱    |      |
| Traffic Volume (veh/h)            | 0    | 30    | 13   | 86                   | 322  | 0    |
| Future Volume (Veh/h)             | 0    | 30    | 13   | 86                   | 322  | 0    |
| Sign Control                      | Stop |       |      | Free                 | Free |      |
| Grade                             | 0%   |       |      | 0%                   | 0%   |      |
| Peak Hour Factor                  | 0.88 | 0.88  | 0.88 | 0.88                 | 0.88 | 0.88 |
| Hourly flow rate (vph)            | 0    | 34    | 15   | 98                   | 366  | 0    |
| Pedestrians                       |      |       |      |                      |      |      |
| Lane Width (ft)                   |      |       |      |                      |      |      |
| Walking Speed (ft/s)              |      |       |      |                      |      |      |
| Percent Blockage                  |      |       |      |                      |      |      |
| Right turn flare (veh)            |      |       |      |                      |      |      |
| Median type                       |      |       |      | None                 | None |      |
| Median storage (veh)              |      |       |      |                      |      |      |
| Upstream signal (ft)              |      |       |      |                      |      |      |
| pX, platoon unblocked             |      |       |      |                      |      |      |
| vC, conflicting volume            | 494  | 366   | 366  |                      |      |      |
| vC1, stage 1 conf vol             |      |       |      |                      |      |      |
| vC2, stage 2 conf vol             |      |       |      |                      |      |      |
| vCu, unblocked vol                | 494  | 366   | 366  |                      |      |      |
| tC, single (s)                    | 6.4  | 6.2   | 4.1  |                      |      |      |
| tC, 2 stage (s)                   |      |       |      |                      |      |      |
| tF (s)                            | 3.5  | 3.3   | 2.2  |                      |      |      |
| p0 queue free %                   | 100  | 95    | 99   |                      |      |      |
| cM capacity (veh/h)               | 528  | 679   | 1193 |                      |      |      |
| Direction, Lane #                 | EB 1 | NB 1  | NB 2 | SB 1                 |      |      |
| Volume Total                      | 34   | 15    | 98   | 366                  |      |      |
| Volume Left                       | 0    | 15    | 0    | 0                    |      |      |
| Volume Right                      | 34   | 0     | 0    | 0                    |      |      |
| cSH                               | 679  | 1193  | 1700 | 1700                 |      |      |
| Volume to Capacity                | 0.05 | 0.01  | 0.06 | 0.22                 |      |      |
| Queue Length 95th (ft)            | 4    | 1     | 0    | 0                    |      |      |
| Control Delay (s)                 | 10.6 | 8.1   | 0.0  | 0.0                  |      |      |
| Lane LOS                          | B    | A     |      |                      |      |      |
| Approach Delay (s)                | 10.6 | 1.1   |      | 0.0                  |      |      |
| Approach LOS                      | B    |       |      |                      |      |      |
| <b>Intersection Summary</b>       |      |       |      |                      |      |      |
| Average Delay                     |      | 0.9   |      |                      |      |      |
| Intersection Capacity Utilization |      | 26.9% |      | ICU Level of Service |      | A    |
| Analysis Period (min)             |      | 15    |      |                      |      |      |

HCM Signalized Intersection Capacity Analysis  
32: North Centre City Pkwy & Country Club Ln

Existing AM  
03/17/2017

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph)              | 56                                                                                | 331                                                                               | 105                                                                               | 270                                                                               | 374                                                                               | 79                                                                                | 36                                                                                | 231                                                                               | 50                                                                                | 134                                                                               | 393                                                                               | 55                                                                                |
| Future Volume (vph)               | 56                                                                                | 331                                                                               | 105                                                                               | 270                                                                               | 374                                                                               | 79                                                                                | 36                                                                                | 231                                                                               | 50                                                                                | 134                                                                               | 393                                                                               | 55                                                                                |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Total Lost time (s)               | 4.5                                                                               | 4.5                                                                               | 4.5                                                                               | 4.5                                                                               | 4.5                                                                               | 4.5                                                                               | 4.5                                                                               | 4.5                                                                               | 4.5                                                                               | 4.5                                                                               | 4.5                                                                               | 4.5                                                                               |
| Lane Util. Factor                 | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              |
| Flrb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              | 0.98                                                                              | 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                                                                              | 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                                                                              | 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                                                                              | 1.00                                                                              |
| Satd. Flow (prot)                 | 1770                                                                              | 3539                                                                              | 1556                                                                              | 1770                                                                              | 3539                                                                              | 1583                                                                              | 1770                                                                              | 3539                                                                              | 1583                                                                              | 1770                                                                              | 3539                                                                              | 1583                                                                              |
| 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)                 | 1770                                                                              | 3539                                                                              | 1556                                                                              | 1770                                                                              | 3539                                                                              | 1583                                                                              | 1770                                                                              | 3539                                                                              | 1583                                                                              | 1770                                                                              | 3539                                                                              | 1583                                                                              |
| 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)                   | 61                                                                                | 360                                                                               | 114                                                                               | 293                                                                               | 407                                                                               | 86                                                                                | 39                                                                                | 251                                                                               | 54                                                                                | 146                                                                               | 427                                                                               | 60                                                                                |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 90                                                                                | 0                                                                                 | 0                                                                                 | 52                                                                                | 0                                                                                 | 0                                                                                 | 45                                                                                | 0                                                                                 | 0                                                                                 | 45                                                                                |
| Lane Group Flow (vph)             | 61                                                                                | 360                                                                               | 24                                                                                | 293                                                                               | 407                                                                               | 34                                                                                | 39                                                                                | 251                                                                               | 9                                                                                 | 146                                                                               | 427                                                                               | 15                                                                                |
| Confl. Peds. (#/hr)               | 4                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Turn Type                         | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              |
| Protected Phases                  | 7                                                                                 | 4                                                                                 |                                                                                   | 3                                                                                 | 8                                                                                 |                                                                                   | 5                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                 |                                                                                   |
| Permitted Phases                  |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                   |                                                                                   | 2                                                                                 |                                                                                   |                                                                                   | 6                                                                                 |
| Actuated Green, G (s)             | 4.3                                                                               | 15.2                                                                              | 15.2                                                                              | 17.1                                                                              | 28.0                                                                              | 28.0                                                                              | 3.2                                                                               | 12.2                                                                              | 12.2                                                                              | 8.9                                                                               | 17.9                                                                              | 17.9                                                                              |
| Effective Green, g (s)            | 4.3                                                                               | 15.2                                                                              | 15.2                                                                              | 17.1                                                                              | 28.0                                                                              | 28.0                                                                              | 3.2                                                                               | 12.2                                                                              | 12.2                                                                              | 8.9                                                                               | 17.9                                                                              | 17.9                                                                              |
| Actuated g/C Ratio                | 0.06                                                                              | 0.21                                                                              | 0.21                                                                              | 0.24                                                                              | 0.39                                                                              | 0.39                                                                              | 0.04                                                                              | 0.17                                                                              | 0.17                                                                              | 0.12                                                                              | 0.25                                                                              | 0.25                                                                              |
| Clearance Time (s)                | 4.5                                                                               | 4.5                                                                               | 4.5                                                                               | 4.5                                                                               | 4.5                                                                               | 4.5                                                                               | 4.5                                                                               | 4.5                                                                               | 4.5                                                                               | 4.5                                                                               | 4.5                                                                               | 4.5                                                                               |
| Vehicle Extension (s)             | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               |
| Lane Grp Cap (vph)                | 106                                                                               | 753                                                                               | 331                                                                               | 423                                                                               | 1387                                                                              | 620                                                                               | 79                                                                                | 604                                                                               | 270                                                                               | 220                                                                               | 887                                                                               | 396                                                                               |
| v/s Ratio Prot                    | 0.03                                                                              | c0.10                                                                             |                                                                                   | c0.17                                                                             | 0.11                                                                              |                                                                                   | 0.02                                                                              | 0.07                                                                              |                                                                                   | c0.08                                                                             | c0.12                                                                             |                                                                                   |
| v/s Ratio Perm                    |                                                                                   |                                                                                   | 0.02                                                                              |                                                                                   |                                                                                   | 0.02                                                                              |                                                                                   |                                                                                   | 0.01                                                                              |                                                                                   |                                                                                   | 0.01                                                                              |
| v/c Ratio                         | 0.58                                                                              | 0.48                                                                              | 0.07                                                                              | 0.69                                                                              | 0.29                                                                              | 0.05                                                                              | 0.49                                                                              | 0.42                                                                              | 0.03                                                                              | 0.66                                                                              | 0.48                                                                              | 0.04                                                                              |
| Uniform Delay, d1                 | 32.7                                                                              | 24.6                                                                              | 22.5                                                                              | 24.8                                                                              | 14.9                                                                              | 13.5                                                                              | 33.3                                                                              | 26.4                                                                              | 24.7                                                                              | 29.8                                                                              | 22.8                                                                              | 20.2                                                                              |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Incremental Delay, d2             | 7.4                                                                               | 0.5                                                                               | 0.1                                                                               | 4.9                                                                               | 0.1                                                                               | 0.0                                                                               | 4.8                                                                               | 0.5                                                                               | 0.1                                                                               | 7.3                                                                               | 0.4                                                                               | 0.0                                                                               |
| Delay (s)                         | 40.0                                                                              | 25.1                                                                              | 22.6                                                                              | 29.6                                                                              | 15.0                                                                              | 13.5                                                                              | 38.1                                                                              | 26.9                                                                              | 24.7                                                                              | 37.2                                                                              | 23.2                                                                              | 20.3                                                                              |
| Level of Service                  | D                                                                                 | C                                                                                 | C                                                                                 | C                                                                                 | B                                                                                 | B                                                                                 | D                                                                                 | C                                                                                 | C                                                                                 | D                                                                                 | C                                                                                 | C                                                                                 |
| Approach Delay (s)                | 26.3                                                                              |                                                                                   |                                                                                   | 20.3                                                                              |                                                                                   |                                                                                   | 27.8                                                                              |                                                                                   |                                                                                   | 26.1                                                                              |                                                                                   |                                                                                   |
| Approach LOS                      | C                                                                                 |                                                                                   |                                                                                   | C                                                                                 |                                                                                   |                                                                                   | C                                                                                 |                                                                                   |                                                                                   | C                                                                                 |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| HCM 2000 Control Delay            | 24.4                                                                              |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                         |                                                                                   |                                                                                   |                                                                                   |                                                                                   | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| HCM 2000 Volume to Capacity ratio | 0.60                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Actuated Cycle Length (s)         | 71.4                                                                              |                                                                                   |                                                                                   | Sum of lost time (s)                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 18.0                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization | 53.8%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Analysis Period (min)             | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

HCM Signalized Intersection Capacity Analysis  
33: Twin Oaks Valley Rd & Discovery Street/Barham Dr

Existing AM  
03/17/2017

| Movement                          | EBL   | EBT  | EBR  | WBL                       | WBT   | WBR  | NBL   | NBT   | NBR  | SBL   | SBT  | SBR  |
|-----------------------------------|-------|------|------|---------------------------|-------|------|-------|-------|------|-------|------|------|
| Lane Configurations               | ↰↱    | ↰↰↰  | ↱    | ↰                         | ↰     | ↱    | ↰     | ↰↰↰   |      | ↰↰    | ↰↰↰  | ↱    |
| Traffic Volume (vph)              | 253   | 68   | 5    | 298                       | 314   | 196  | 18    | 875   | 134  | 424   | 1112 | 455  |
| Future Volume (vph)               | 253   | 68   | 5    | 298                       | 314   | 196  | 18    | 875   | 134  | 424   | 1112 | 455  |
| Ideal Flow (vphpl)                | 1900  | 1900 | 1900 | 1900                      | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)               | 5.0   | 5.3  | 5.3  | 5.0                       | 5.3   | 5.3  | 5.0   | 6.0   |      | 5.0   | 6.0  | 6.0  |
| Lane Util. Factor                 | 0.97  | 0.91 | 1.00 | 1.00                      | 1.00  | 1.00 | 1.00  | 0.91  |      | 0.97  | 0.91 | 1.00 |
| Frt                               | 1.00  | 1.00 | 0.85 | 1.00                      | 1.00  | 0.85 | 1.00  | 0.98  |      | 1.00  | 1.00 | 0.85 |
| Flt Protected                     | 0.95  | 1.00 | 1.00 | 0.95                      | 1.00  | 1.00 | 0.95  | 1.00  |      | 0.95  | 1.00 | 1.00 |
| Satd. Flow (prot)                 | 3433  | 5085 | 1583 | 1770                      | 1863  | 1583 | 1770  | 4984  |      | 3433  | 5085 | 1583 |
| Flt Permitted                     | 0.95  | 1.00 | 1.00 | 0.95                      | 1.00  | 1.00 | 0.95  | 1.00  |      | 0.95  | 1.00 | 1.00 |
| Satd. Flow (perm)                 | 3433  | 5085 | 1583 | 1770                      | 1863  | 1583 | 1770  | 4984  |      | 3433  | 5085 | 1583 |
| 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)                   | 275   | 74   | 5    | 324                       | 341   | 213  | 20    | 951   | 146  | 461   | 1209 | 495  |
| RTOR Reduction (vph)              | 0     | 0    | 4    | 0                         | 0     | 159  | 0     | 16    | 0    | 0     | 0    | 285  |
| Lane Group Flow (vph)             | 275   | 74   | 1    | 324                       | 341   | 54   | 20    | 1081  | 0    | 461   | 1209 | 210  |
| Turn Type                         | Prot  | NA   | Perm | Prot                      | NA    | Perm | Prot  | NA    |      | Prot  | NA   | Perm |
| Protected Phases                  | 7     | 4    |      | 3                         | 8     |      | 5     | 2     |      | 1     | 6    |      |
| Permitted Phases                  |       |      | 4    |                           |       | 8    |       |       |      |       |      | 6    |
| Actuated Green, G (s)             | 12.4  | 14.9 | 14.9 | 25.9                      | 28.4  | 28.4 | 1.8   | 32.2  |      | 16.7  | 47.1 | 47.1 |
| Effective Green, g (s)            | 12.4  | 14.9 | 14.9 | 25.9                      | 28.4  | 28.4 | 1.8   | 32.2  |      | 16.7  | 47.1 | 47.1 |
| Actuated g/C Ratio                | 0.11  | 0.13 | 0.13 | 0.23                      | 0.26  | 0.26 | 0.02  | 0.29  |      | 0.15  | 0.42 | 0.42 |
| Clearance Time (s)                | 5.0   | 5.3  | 5.3  | 5.0                       | 5.3   | 5.3  | 5.0   | 6.0   |      | 5.0   | 6.0  | 6.0  |
| Vehicle Extension (s)             | 2.0   | 4.5  | 4.5  | 2.0                       | 4.5   | 4.5  | 2.0   | 3.0   |      | 2.0   | 4.0  | 4.0  |
| Lane Grp Cap (vph)                | 383   | 682  | 212  | 413                       | 476   | 405  | 28    | 1445  |      | 516   | 2157 | 671  |
| v/s Ratio Prot                    | 0.08  | 0.01 |      | c0.18                     | c0.18 |      | 0.01  | c0.22 |      | c0.13 | 0.24 |      |
| v/s Ratio Perm                    |       |      | 0.00 |                           |       | 0.03 |       |       |      |       |      | 0.13 |
| v/c Ratio                         | 0.72  | 0.11 | 0.00 | 0.78                      | 0.72  | 0.13 | 0.71  | 0.75  |      | 0.89  | 0.56 | 0.31 |
| Uniform Delay, d1                 | 47.6  | 42.2 | 41.6 | 39.9                      | 37.6  | 31.8 | 54.3  | 35.7  |      | 46.3  | 24.1 | 21.2 |
| 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             | 5.3   | 0.1  | 0.0  | 8.7                       | 5.8   | 0.3  | 52.5  | 3.6   |      | 17.2  | 1.1  | 1.2  |
| Delay (s)                         | 52.9  | 42.3 | 41.6 | 48.7                      | 43.4  | 32.1 | 106.8 | 39.3  |      | 63.5  | 25.2 | 22.4 |
| Level of Service                  | D     | D    | D    | D                         | D     | C    | F     | D     |      | E     | C    | C    |
| Approach Delay (s)                | 50.5  |      |      | 42.6                      |       |      | 40.5  |       |      | 32.7  |      |      |
| Approach LOS                      | D     |      |      | D                         |       |      | D     |       |      | C     |      |      |
| Intersection Summary              |       |      |      |                           |       |      |       |       |      |       |      |      |
| HCM 2000 Control Delay            | 38.0  |      |      | HCM 2000 Level of Service |       |      |       |       | D    |       |      |      |
| HCM 2000 Volume to Capacity ratio | 0.80  |      |      |                           |       |      |       |       |      |       |      |      |
| Actuated Cycle Length (s)         | 111.0 |      |      | Sum of lost time (s)      |       |      |       |       | 21.3 |       |      |      |
| Intersection Capacity Utilization | 73.5% |      |      | ICU Level of Service      |       |      |       |       | D    |       |      |      |
| Analysis Period (min)             | 15    |      |      |                           |       |      |       |       |      |       |      |      |
| c Critical Lane Group             |       |      |      |                           |       |      |       |       |      |       |      |      |

HCM Signalized Intersection Capacity Analysis  
1: Champagne Boulevard & Gopher Canyon Road

Existing PM  
03/17/2017

| Movement               | EBL   | EBR  | NBL   | NBT  | SBT   | SBR  |
|------------------------|-------|------|-------|------|-------|------|
| Lane Configurations    |       |      |       |      |       |      |
| Traffic Volume (vph)   | 437   | 240  | 225   | 314  | 198   | 339  |
| Future Volume (vph)    | 437   | 240  | 225   | 314  | 198   | 339  |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.5   | 4.5  | 4.5   | 4.5  | 4.5   | 4.5  |
| Lane Util. Factor      | 1.00  | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 |
| Frpb, ped/bikes        | 1.00  | 1.00 | 1.00  | 1.00 | 0.99  |      |
| Flpb, ped/bikes        | 1.00  | 1.00 | 1.00  | 1.00 | 1.00  |      |
| Frt                    | 1.00  | 0.85 | 1.00  | 1.00 | 0.91  |      |
| Flt Protected          | 0.95  | 1.00 | 0.95  | 1.00 | 1.00  |      |
| Satd. Flow (prot)      | 1770  | 1583 | 1770  | 1863 | 1685  |      |
| Flt Permitted          | 0.95  | 1.00 | 0.95  | 1.00 | 1.00  |      |
| Satd. Flow (perm)      | 1770  | 1583 | 1770  | 1863 | 1685  |      |
| Peak-hour factor, PHF  | 0.94  | 0.94 | 0.94  | 0.94 | 0.94  | 0.94 |
| Adj. Flow (vph)        | 465   | 255  | 239   | 334  | 211   | 361  |
| RTOR Reduction (vph)   | 0     | 175  | 0     | 0    | 53    | 0    |
| Lane Group Flow (vph)  | 465   | 80   | 239   | 334  | 519   | 0    |
| Confl. Bikes (#/hr)    |       |      |       |      | 10    |      |
| Turn Type              | Prot  | Perm | Prot  | NA   | NA    |      |
| Protected Phases       | 4     |      | 5     | 2    | 6     |      |
| Permitted Phases       |       | 4    |       |      |       |      |
| Actuated Green, G (s)  | 31.3  | 31.3 | 18.2  | 59.2 | 36.5  |      |
| Effective Green, g (s) | 31.3  | 31.3 | 18.2  | 59.2 | 36.5  |      |
| Actuated g/C Ratio     | 0.31  | 0.31 | 0.18  | 0.59 | 0.37  |      |
| 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)     | 556   | 497  | 323   | 1108 | 618   |      |
| v/s Ratio Prot         | c0.26 |      | c0.14 | 0.18 | c0.31 |      |
| v/s Ratio Perm         |       | 0.05 |       |      |       |      |
| v/c Ratio              | 0.84  | 0.16 | 0.74  | 0.30 | 0.84  |      |
| Uniform Delay, d1      | 31.7  | 24.6 | 38.4  | 9.9  | 28.8  |      |
| Progression Factor     | 1.00  | 1.00 | 1.00  | 1.00 | 1.00  |      |
| Incremental Delay, d2  | 10.5  | 0.2  | 8.6   | 0.2  | 9.8   |      |
| Delay (s)              | 42.3  | 24.8 | 47.0  | 10.1 | 38.6  |      |
| Level of Service       | D     | C    | D     | B    | D     |      |
| Approach Delay (s)     | 36.1  |      |       | 25.5 | 38.6  |      |
| Approach LOS           | D     |      |       | C    | D     |      |

Intersection Summary

|                                   |       |                           |      |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay            | 33.6  | HCM 2000 Level of Service | C    |
| HCM 2000 Volume to Capacity ratio | 0.82  |                           |      |
| Actuated Cycle Length (s)         | 99.5  | Sum of lost time (s)      | 13.5 |
| Intersection Capacity Utilization | 79.1% | ICU Level of Service      | D    |
| Analysis Period (min)             | 15    |                           |      |
| c Critical Lane Group             |       |                           |      |

HCM Signalized Intersection Capacity Analysis  
2: Champagne Boulevard & Old Castle Road

Existing PM  
03/17/2017

| Movement               | WBL   | WBR  | NBT   | NBR  | SBL   | SBT  |
|------------------------|-------|------|-------|------|-------|------|
| Lane Configurations    |       |      |       |      |       |      |
| Traffic Volume (vph)   | 45    | 200  | 344   | 95   | 334   | 116  |
| Future Volume (vph)    | 45    | 200  | 344   | 95   | 334   | 116  |
| 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  | 1.00 | 1.00  |      | 1.00  | 1.00 |
| Frpb, ped/bikes        | 1.00  | 0.97 | 1.00  |      | 1.00  | 1.00 |
| Flpb, ped/bikes        | 1.00  | 1.00 | 1.00  |      | 1.00  | 1.00 |
| Frt                    | 1.00  | 0.85 | 0.97  |      | 1.00  | 1.00 |
| Flt Protected          | 0.95  | 1.00 | 1.00  |      | 0.95  | 1.00 |
| Satd. Flow (prot)      | 1770  | 1543 | 1800  |      | 1770  | 1863 |
| Flt Permitted          | 0.95  | 1.00 | 1.00  |      | 0.95  | 1.00 |
| Satd. Flow (perm)      | 1770  | 1543 | 1800  |      | 1770  | 1863 |
| Peak-hour factor, PHF  | 0.84  | 0.84 | 0.84  | 0.84 | 0.84  | 0.84 |
| Adj. Flow (vph)        | 54    | 238  | 410   | 113  | 398   | 138  |
| RTOR Reduction (vph)   | 0     | 207  | 11    | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 54    | 31   | 512   | 0    | 398   | 138  |
| Confl. Bikes (#/hr)    |       | 2    |       | 1    |       |      |
| Turn Type              | Prot  | Perm | NA    |      | Prot  | NA   |
| Protected Phases       | 8     |      | 2     |      | 1     | 6    |
| Permitted Phases       |       | 8    |       |      |       |      |
| Actuated Green, G (s)  | 9.0   | 9.0  | 25.2  |      | 20.6  | 50.3 |
| Effective Green, g (s) | 9.0   | 9.0  | 25.2  |      | 20.6  | 50.3 |
| Actuated g/C Ratio     | 0.13  | 0.13 | 0.37  |      | 0.30  | 0.74 |
| 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)     | 233   | 203  | 664   |      | 533   | 1372 |
| v/s Ratio Prot         | c0.03 |      | c0.28 |      | c0.22 | 0.07 |
| v/s Ratio Perm         |       | 0.02 |       |      |       |      |
| v/c Ratio              | 0.23  | 0.15 | 0.77  |      | 0.75  | 0.10 |
| Uniform Delay, d1      | 26.6  | 26.3 | 19.0  |      | 21.5  | 2.6  |
| Progression Factor     | 1.00  | 1.00 | 1.00  |      | 1.00  | 1.00 |
| Incremental Delay, d2  | 0.5   | 0.4  | 5.5   |      | 5.7   | 0.0  |
| Delay (s)              | 27.1  | 26.6 | 24.6  |      | 27.2  | 2.6  |
| Level of Service       | C     | C    | C     |      | C     | A    |
| Approach Delay (s)     | 26.7  |      | 24.6  |      |       | 20.8 |
| Approach LOS           | C     |      | C     |      |       | C    |

Intersection Summary

|                                   |       |                           |      |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay            | 23.5  | HCM 2000 Level of Service | C    |
| HCM 2000 Volume to Capacity ratio | 0.67  |                           |      |
| Actuated Cycle Length (s)         | 68.3  | Sum of lost time (s)      | 13.5 |
| Intersection Capacity Utilization | 57.0% | ICU Level of Service      | B    |
| Analysis Period (min)             | 15    |                           |      |
| c Critical Lane Group             |       |                           |      |

HCM Unsignalized Intersection Capacity Analysis  
3: Champagne Boulevard & Lawrence Welk Dr

Existing PM  
03/17/2017

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--|--|--|--|--|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               | SBR                                                                               |  |  |  |  |  |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |  |  |  |  |  |  |                                                                                   |  |  |  |  |  |
| Traffic Volume (veh/h)            | 2                                                                                 | 0                                                                                 | 2                                                                                 | 75                                                                                | 0                                                                                 | 45                                                                                | 6                                                                                 | 372                                                                               | 61                                                                                | 37                                                                                | 147                                                                               | 1                                                                                 |  |  |  |  |  |
| Future Volume (Veh/h)             | 2                                                                                 | 0                                                                                 | 2                                                                                 | 75                                                                                | 0                                                                                 | 45                                                                                | 6                                                                                 | 372                                                                               | 61                                                                                | 37                                                                                | 147                                                                               | 1                                                                                 |  |  |  |  |  |
| Sign Control                      |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |                                                                                   |  |  |  |  |  |
| Grade                             |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |  |  |  |  |  |
| Peak Hour Factor                  | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              | 0.84                                                                              |  |  |  |  |  |
| Hourly flow rate (vph)            | 2                                                                                 | 0                                                                                 | 2                                                                                 | 89                                                                                | 0                                                                                 | 54                                                                                | 7                                                                                 | 443                                                                               | 73                                                                                | 44                                                                                | 175                                                                               | 1                                                                                 |  |  |  |  |  |
| Pedestrians                       | 1                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |  |  |
| Lane Width (ft)                   | 12.0                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |  |  |
| Walking Speed (ft/s)              | 4.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |  |  |
| Percent Blockage                  | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |  |  |
| Right turn flare (veh)            | 7                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |  |  |
| Median type                       | None                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |  |  |
| Median storage (veh)              | None                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |  |  |
| Upstream signal (ft)              | 874                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |  |  |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |  |  |
| vC, conflicting volume            | 720                                                                               | 794                                                                               | 176                                                                               | 723                                                                               | 722                                                                               | 444                                                                               | 176                                                                               |                                                                                   |                                                                                   |                                                                                   | 517                                                                               |                                                                                   |  |  |  |  |  |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |  |  |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |  |  |
| vCu, unblocked vol                | 720                                                                               | 794                                                                               | 176                                                                               | 723                                                                               | 722                                                                               | 444                                                                               | 176                                                                               |                                                                                   |                                                                                   |                                                                                   | 517                                                                               |                                                                                   |  |  |  |  |  |
| tC, single (s)                    | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |  |  |  |  |  |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |  |  |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   | 2.2                                                                               |                                                                                   |  |  |  |  |  |
| p0 queue free %                   | 99                                                                                | 100                                                                               | 100                                                                               | 73                                                                                | 100                                                                               | 91                                                                                | 100                                                                               |                                                                                   |                                                                                   |                                                                                   | 96                                                                                |                                                                                   |  |  |  |  |  |
| cM capacity (veh/h)               | 301                                                                               | 305                                                                               | 868                                                                               | 328                                                                               | 336                                                                               | 613                                                                               | 1400                                                                              |                                                                                   |                                                                                   |                                                                                   | 1048                                                                              |                                                                                   |  |  |  |  |  |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | NB 2                                                                              | NB 3                                                                              | SB 1                                                                              | SB 2                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |  |  |
| Volume Total                      | 4                                                                                 | 143                                                                               | 7                                                                                 | 443                                                                               | 73                                                                                | 44                                                                                | 176                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |  |  |
| Volume Left                       | 2                                                                                 | 89                                                                                | 7                                                                                 | 0                                                                                 | 0                                                                                 | 44                                                                                | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |  |  |
| Volume Right                      | 2                                                                                 | 54                                                                                | 0                                                                                 | 0                                                                                 | 73                                                                                | 0                                                                                 | 1                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |  |  |
| cSH                               | 447                                                                               | 527                                                                               | 1400                                                                              | 1700                                                                              | 1700                                                                              | 1048                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |  |  |
| Volume to Capacity                | 0.01                                                                              | 0.27                                                                              | 0.00                                                                              | 0.26                                                                              | 0.04                                                                              | 0.04                                                                              | 0.10                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |  |  |
| Queue Length 95th (ft)            | 1                                                                                 | 27                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 3                                                                                 | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |  |  |
| Control Delay (s)                 | 13.1                                                                              | 16.8                                                                              | 7.6                                                                               | 0.0                                                                               | 0.0                                                                               | 8.6                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |  |  |
| Lane LOS                          | B                                                                                 | C                                                                                 | A                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |  |  |
| Approach Delay (s)                | 13.1                                                                              | 16.8                                                                              | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                   | 1.7                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |  |  |
| Approach LOS                      | B                                                                                 | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |  |  |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |  |  |
| Average Delay                     |                                                                                   |                                                                                   |                                                                                   | 3.2                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |  |  |
| Intersection Capacity Utilization |                                                                                   |                                                                                   |                                                                                   | 40.2%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |  |  |  |  |  |
| Analysis Period (min)             |                                                                                   |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |  |  |

HCM Signalized Intersection Capacity Analysis  
4: North Centre City Pkwy/Champagne Boulevard & Deer Springs Rd

Existing PM  
03/17/2017

| Movement                          | EBL                                                                                 | EBT                                                                                 | EBR  | WBL                                                                                 | WBT                                                                                 | WBR  | NBL                       | NBT                                                                                 | NBR  | SBL  | SBT                                                                                 | SBR  |
|-----------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------|---------------------------|-------------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Lane Configurations               |  |  |      |  |  |      |                           |  |      |      |  |      |
| Traffic Volume (vph)              | 332                                                                                 | 303                                                                                 | 82   | 61                                                                                  | 139                                                                                 | 13   | 66                        | 179                                                                                 | 100  | 26   | 114                                                                                 | 145  |
| Future Volume (vph)               | 332                                                                                 | 303                                                                                 | 82   | 61                                                                                  | 139                                                                                 | 13   | 66                        | 179                                                                                 | 100  | 26   | 114                                                                                 | 145  |
| Ideal Flow (vphpl)                | 1900                                                                                | 1900                                                                                | 1900 | 1900                                                                                | 1900                                                                                | 1900 | 1900                      | 1900                                                                                | 1900 | 1900 | 1900                                                                                | 1900 |
| Total Lost time (s)               | 4.5                                                                                 | 4.5                                                                                 |      | 4.5                                                                                 | 4.5                                                                                 |      |                           | 4.5                                                                                 |      |      | 4.5                                                                                 |      |
| Lane Util. Factor                 | 1.00                                                                                | 0.95                                                                                |      | 1.00                                                                                | 0.95                                                                                |      |                           | 1.00                                                                                |      |      | 1.00                                                                                |      |
| Frpb, ped/bikes                   | 1.00                                                                                | 1.00                                                                                |      | 1.00                                                                                | 1.00                                                                                |      |                           | 1.00                                                                                |      |      | 0.99                                                                                |      |
| Flpb, ped/bikes                   | 1.00                                                                                | 1.00                                                                                |      | 1.00                                                                                | 1.00                                                                                |      |                           | 1.00                                                                                |      |      | 1.00                                                                                |      |
| Frt                               | 1.00                                                                                | 0.97                                                                                |      | 1.00                                                                                | 0.99                                                                                |      |                           | 0.96                                                                                |      |      | 0.93                                                                                |      |
| Flt Protected                     | 0.95                                                                                | 1.00                                                                                |      | 0.95                                                                                | 1.00                                                                                |      |                           | 0.99                                                                                |      |      | 1.00                                                                                |      |
| Satd. Flow (prot)                 | 1770                                                                                | 3427                                                                                |      | 1770                                                                                | 3479                                                                                |      |                           | 1766                                                                                |      |      | 1714                                                                                |      |
| Flt Permitted                     | 0.95                                                                                | 1.00                                                                                |      | 0.95                                                                                | 1.00                                                                                |      |                           | 0.87                                                                                |      |      | 0.95                                                                                |      |
| Satd. Flow (perm)                 | 1770                                                                                | 3427                                                                                |      | 1770                                                                                | 3479                                                                                |      |                           | 1559                                                                                |      |      | 1644                                                                                |      |
| Peak-hour factor, PHF             | 0.96                                                                                | 0.96                                                                                | 0.96 | 0.96                                                                                | 0.96                                                                                | 0.96 | 0.96                      | 0.96                                                                                | 0.96 | 0.96 | 0.96                                                                                | 0.96 |
| Adj. Flow (vph)                   | 346                                                                                 | 316                                                                                 | 85   | 64                                                                                  | 145                                                                                 | 14   | 69                        | 186                                                                                 | 104  | 27   | 119                                                                                 | 151  |
| RTOR Reduction (vph)              | 0                                                                                   | 24                                                                                  | 0    | 0                                                                                   | 7                                                                                   | 0    | 0                         | 16                                                                                  | 0    | 0    | 40                                                                                  | 0    |
| Lane Group Flow (vph)             | 346                                                                                 | 377                                                                                 | 0    | 64                                                                                  | 152                                                                                 | 0    | 0                         | 343                                                                                 | 0    | 0    | 257                                                                                 | 0    |
| Confl. Bikes (#/hr)               |                                                                                     |                                                                                     |      | 12                                                                                  |                                                                                     |      | 2                         |                                                                                     |      | 4    |                                                                                     |      |
| Turn Type                         | Prot                                                                                | NA                                                                                  |      | Prot                                                                                | NA                                                                                  |      | Perm                      | NA                                                                                  |      | Perm | NA                                                                                  |      |
| Protected Phases                  | 5                                                                                   | 2                                                                                   |      | 1                                                                                   | 6                                                                                   |      |                           | 8                                                                                   |      |      | 4                                                                                   |      |
| Permitted Phases                  |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |      | 8                         |                                                                                     |      | 4    |                                                                                     |      |
| Actuated Green, G (s)             | 18.6                                                                                | 26.2                                                                                |      | 4.6                                                                                 | 12.2                                                                                |      |                           | 20.4                                                                                |      |      | 20.4                                                                                |      |
| Effective Green, g (s)            | 18.6                                                                                | 26.2                                                                                |      | 4.6                                                                                 | 12.2                                                                                |      |                           | 20.4                                                                                |      |      | 20.4                                                                                |      |
| Actuated g/C Ratio                | 0.29                                                                                | 0.40                                                                                |      | 0.07                                                                                | 0.19                                                                                |      |                           | 0.32                                                                                |      |      | 0.32                                                                                |      |
| Clearance Time (s)                | 4.5                                                                                 | 4.5                                                                                 |      | 4.5                                                                                 | 4.5                                                                                 |      |                           | 4.5                                                                                 |      |      | 4.5                                                                                 |      |
| Vehicle Extension (s)             | 3.0                                                                                 | 3.0                                                                                 |      | 3.0                                                                                 | 3.0                                                                                 |      |                           | 3.0                                                                                 |      |      | 3.0                                                                                 |      |
| Lane Grp Cap (vph)                | 508                                                                                 | 1387                                                                                |      | 125                                                                                 | 656                                                                                 |      |                           | 491                                                                                 |      |      | 518                                                                                 |      |
| v/s Ratio Prot                    | c0.20                                                                               | c0.11                                                                               |      | 0.04                                                                                | 0.04                                                                                |      |                           |                                                                                     |      |      |                                                                                     |      |
| v/s Ratio Perm                    |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |      | c0.22                     |                                                                                     |      | 0.16 |                                                                                     |      |
| v/c Ratio                         | 0.68                                                                                | 0.27                                                                                |      | 0.51                                                                                | 0.23                                                                                |      |                           | 0.70                                                                                |      |      | 0.50                                                                                |      |
| Uniform Delay, d1                 | 20.4                                                                                | 12.9                                                                                |      | 29.0                                                                                | 22.3                                                                                |      |                           | 19.5                                                                                |      |      | 18.0                                                                                |      |
| Progression Factor                | 1.00                                                                                | 1.00                                                                                |      | 1.00                                                                                | 1.00                                                                                |      |                           | 1.00                                                                                |      |      | 1.00                                                                                |      |
| Incremental Delay, d2             | 3.7                                                                                 | 0.1                                                                                 |      | 3.5                                                                                 | 0.2                                                                                 |      |                           | 4.3                                                                                 |      |      | 0.7                                                                                 |      |
| Delay (s)                         | 24.2                                                                                | 13.0                                                                                |      | 32.5                                                                                | 22.5                                                                                |      |                           | 23.8                                                                                |      |      | 18.7                                                                                |      |
| Level of Service                  | C                                                                                   | B                                                                                   |      | C                                                                                   | C                                                                                   |      |                           | C                                                                                   |      |      | B                                                                                   |      |
| Approach Delay (s)                | 18.2                                                                                |                                                                                     |      | 25.3                                                                                |                                                                                     |      | 23.8                      |                                                                                     |      | 18.7 |                                                                                     |      |
| Approach LOS                      | B                                                                                   |                                                                                     |      | C                                                                                   |                                                                                     |      | C                         |                                                                                     |      | B    |                                                                                     |      |
| Intersection Summary              |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |      |                           |                                                                                     |      |      |                                                                                     |      |
| HCM 2000 Control Delay            |                                                                                     |                                                                                     |      | 20.5                                                                                |                                                                                     |      | HCM 2000 Level of Service |                                                                                     |      | C    |                                                                                     |      |
| HCM 2000 Volume to Capacity ratio |                                                                                     |                                                                                     |      | 0.60                                                                                |                                                                                     |      |                           |                                                                                     |      |      |                                                                                     |      |
| Actuated Cycle Length (s)         |                                                                                     |                                                                                     |      | 64.7                                                                                |                                                                                     |      | Sum of lost time (s)      |                                                                                     |      | 13.5 |                                                                                     |      |
| Intersection Capacity Utilization |                                                                                     |                                                                                     |      | 67.4%                                                                               |                                                                                     |      | ICU Level of Service      |                                                                                     |      | C    |                                                                                     |      |
| Analysis Period (min)             | 15                                                                                  |                                                                                     |      |                                                                                     |                                                                                     |      |                           |                                                                                     |      |      |                                                                                     |      |
| c Critical Lane Group             |                                                                                     |                                                                                     |      |                                                                                     |                                                                                     |      |                           |                                                                                     |      |      |                                                                                     |      |

HCM Signalized Intersection Capacity Analysis  
5: I-15 NB Ramps & Deer Springs Rd

Existing PM  
03/17/2017

| Movement                          | EBL   | EBT   | EBR  | WBL  | WBT                       | WBR  | NBL   | NBT   | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|-------|-------|------|------|---------------------------|------|-------|-------|------|------|------|------|
| Lane Configurations               | ↰     | ↑     |      |      | ↑                         | ↱    |       | ↰     | ↱    |      |      |      |
| Traffic Volume (vph)              | 735   | 251   | 0    | 0    | 310                       | 26   | 254   | 5     | 450  | 0    | 0    | 0    |
| Future Volume (vph)               | 735   | 251   | 0    | 0    | 310                       | 26   | 254   | 5     | 450  | 0    | 0    | 0    |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900 | 1900 | 1900                      | 1900 | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               | 4.2   | 5.3   |      |      | 5.3                       | 5.3  |       |       | 4.6  |      |      |      |
| Lane Util. Factor                 | 1.00  | 1.00  |      |      | 1.00                      | 1.00 |       |       | 1.00 |      |      |      |
| Frpb, ped/bikes                   | 1.00  | 1.00  |      |      | 1.00                      | 0.98 |       |       | 1.00 | 0.99 |      |      |
| Flpb, ped/bikes                   | 1.00  | 1.00  |      |      | 1.00                      | 1.00 |       |       | 1.00 | 1.00 |      |      |
| Frt                               | 1.00  | 1.00  |      |      | 1.00                      | 0.85 |       |       | 1.00 | 0.85 |      |      |
| Flt Protected                     | 0.95  | 1.00  |      |      | 1.00                      | 1.00 |       |       | 0.95 | 1.00 |      |      |
| Satd. Flow (prot)                 | 1770  | 1863  |      |      | 1863                      | 1545 |       |       | 1776 | 1562 |      |      |
| Flt Permitted                     | 0.95  | 1.00  |      |      | 1.00                      | 1.00 |       |       | 0.95 | 1.00 |      |      |
| Satd. Flow (perm)                 | 1770  | 1863  |      |      | 1863                      | 1545 |       |       | 1776 | 1562 |      |      |
| Peak-hour factor, PHF             | 0.96  | 0.96  | 0.96 | 0.96 | 0.96                      | 0.96 | 0.96  | 0.96  | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph)                   | 766   | 261   | 0    | 0    | 323                       | 27   | 265   | 5     | 469  | 0    | 0    | 0    |
| RTOR Reduction (vph)              | 0     | 0     | 0    | 0    | 0                         | 21   | 0     | 0     | 389  | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 766   | 261   | 0    | 0    | 323                       | 6    | 0     | 270   | 80   | 0    | 0    | 0    |
| Confl. Peds. (#/hr)               |       |       |      |      | 1                         |      |       |       | 1    |      |      |      |
| Confl. Bikes (#/hr)               |       |       | 4    |      | 1                         |      |       |       | 1    |      |      |      |
| Turn Type                         | Prot  | NA    |      |      | NA                        | Perm | Split | NA    | Perm |      |      |      |
| Protected Phases                  | 5     | 2     |      |      | 6                         |      | 8     | 8     |      |      |      |      |
| Permitted Phases                  |       |       |      |      |                           | 6    |       |       | 8    |      |      |      |
| Actuated Green, G (s)             | 45.5  | 73.1  |      |      | 23.4                      | 23.4 |       | 17.0  | 17.0 |      |      |      |
| Effective Green, g (s)            | 45.5  | 73.1  |      |      | 23.4                      | 23.4 |       | 17.0  | 17.0 |      |      |      |
| Actuated g/C Ratio                | 0.46  | 0.73  |      |      | 0.23                      | 0.23 |       | 0.17  | 0.17 |      |      |      |
| Clearance Time (s)                | 4.2   | 5.3   |      |      | 5.3                       | 5.3  |       | 4.6   | 4.6  |      |      |      |
| Vehicle Extension (s)             | 3.0   | 3.0   |      |      | 3.0                       | 3.0  |       | 3.0   | 3.0  |      |      |      |
| Lane Grp Cap (vph)                | 805   | 1361  |      |      | 435                       | 361  |       | 301   | 265  |      |      |      |
| v/s Ratio Prot                    | c0.43 | 0.14  |      |      | c0.17                     |      |       | c0.15 |      |      |      |      |
| v/s Ratio Perm                    |       |       |      |      |                           | 0.00 |       |       | 0.05 |      |      |      |
| v/c Ratio                         | 0.95  | 0.19  |      |      | 0.74                      | 0.02 |       | 0.90  | 0.30 |      |      |      |
| Uniform Delay, d1                 | 26.2  | 4.2   |      |      | 35.5                      | 29.5 |       | 40.6  | 36.3 |      |      |      |
| Progression Factor                | 0.92  | 1.89  |      |      | 1.00                      | 1.00 |       | 1.00  | 1.00 |      |      |      |
| Incremental Delay, d2             | 3.2   | 0.0   |      |      | 10.9                      | 0.1  |       | 27.1  | 0.6  |      |      |      |
| Delay (s)                         | 27.2  | 8.0   |      |      | 46.4                      | 29.5 |       | 67.7  | 36.9 |      |      |      |
| Level of Service                  | C     | A     |      |      | D                         | C    |       | E     | D    |      |      |      |
| Approach Delay (s)                |       | 22.3  |      |      | 45.1                      |      |       | 48.2  |      | 0.0  |      |      |
| Approach LOS                      |       | C     |      |      | D                         |      |       | D     |      | A    |      |      |
| <b>Intersection Summary</b>       |       |       |      |      |                           |      |       |       |      |      |      |      |
| HCM 2000 Control Delay            |       | 35.1  |      |      | HCM 2000 Level of Service |      |       | D     |      |      |      |      |
| HCM 2000 Volume to Capacity ratio |       | 0.88  |      |      |                           |      |       |       |      |      |      |      |
| Actuated Cycle Length (s)         |       | 100.0 |      |      | Sum of lost time (s)      |      |       | 14.1  |      |      |      |      |
| Intersection Capacity Utilization |       | 83.1% |      |      | ICU Level of Service      |      |       | E     |      |      |      |      |
| Analysis Period (min)             |       | 15    |      |      |                           |      |       |       |      |      |      |      |
| c Critical Lane Group             |       |       |      |      |                           |      |       |       |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
6: Deer Springs Rd & I-15 SB Ramps

Existing PM  
03/17/2017

| Movement                          | EBL  | EBT   | EBR  | WBL   | WBT                       | WBR  | NBL  | NBT  | NBR  | SBL   | SBT  | SBR  |
|-----------------------------------|------|-------|------|-------|---------------------------|------|------|------|------|-------|------|------|
| Lane Configurations               |      | ↑     | ↱    | ↰     | ↑                         |      |      |      |      |       | ↰    | ↱    |
| Traffic Volume (vph)              | 0    | 983   | 181  | 174   | 353                       | 0    | 0    | 0    | 0    | 39    | 2    | 340  |
| Future Volume (vph)               | 0    | 983   | 181  | 174   | 353                       | 0    | 0    | 0    | 0    | 39    | 2    | 340  |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900  | 1900                      | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)               |      | 5.3   | 5.3  | 4.2   | 5.3                       |      |      |      |      |       | 4.6  | 4.6  |
| Lane Util. Factor                 |      | 1.00  | 1.00 | 1.00  | 1.00                      |      |      |      |      |       | 1.00 | 0.88 |
| Frt                               |      | 1.00  | 0.85 | 1.00  | 1.00                      |      |      |      |      |       | 1.00 | 0.85 |
| Flt Protected                     |      | 1.00  | 1.00 | 0.95  | 1.00                      |      |      |      |      |       | 0.95 | 1.00 |
| Satd. Flow (prot)                 |      | 1863  | 1583 | 1770  | 1863                      |      |      |      |      |       | 1778 | 2787 |
| Flt Permitted                     |      | 1.00  | 1.00 | 0.95  | 1.00                      |      |      |      |      |       | 0.95 | 1.00 |
| Satd. Flow (perm)                 |      | 1863  | 1583 | 1770  | 1863                      |      |      |      |      |       | 1778 | 2787 |
| Peak-hour factor, PHF             | 0.75 | 0.75  | 0.75 | 0.92  | 0.92                      | 0.92 | 0.92 | 0.92 | 0.92 | 0.92  | 0.92 | 0.92 |
| Adj. Flow (vph)                   | 0    | 1311  | 241  | 189   | 384                       | 0    | 0    | 0    | 0    | 42    | 2    | 370  |
| RTOR Reduction (vph)              | 0    | 0     | 67   | 0     | 0                         | 0    | 0    | 0    | 0    | 0     | 0    | 339  |
| Lane Group Flow (vph)             | 0    | 1311  | 174  | 189   | 384                       | 0    | 0    | 0    | 0    | 0     | 44   | 31   |
| Turn Type                         | NA   | Perm  | Prot | NA    |                           |      |      |      |      | Split | NA   | Perm |
| Protected Phases                  |      | 2     |      | 1     | 6                         |      |      |      |      | 4     | 4    |      |
| Permitted Phases                  |      |       | 2    |       |                           |      |      |      |      |       |      | 4    |
| Actuated Green, G (s)             |      | 61.5  | 61.5 | 15.9  | 81.6                      |      |      |      |      | 8.5   | 8.5  |      |
| Effective Green, g (s)            |      | 61.5  | 61.5 | 15.9  | 81.6                      |      |      |      |      | 8.5   | 8.5  |      |
| Actuated g/C Ratio                |      | 0.62  | 0.62 | 0.16  | 0.82                      |      |      |      |      | 0.08  | 0.08 |      |
| Clearance Time (s)                |      | 5.3   | 5.3  | 4.2   | 5.3                       |      |      |      |      | 4.6   | 4.6  |      |
| Vehicle Extension (s)             |      | 3.0   | 3.0  | 3.0   | 3.0                       |      |      |      |      | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)                |      | 1145  | 973  | 281   | 1520                      |      |      |      |      | 151   | 236  |      |
| v/s Ratio Prot                    |      | c0.70 |      | c0.11 | 0.21                      |      |      |      |      | c0.02 |      |      |
| v/s Ratio Perm                    |      |       | 0.11 |       |                           |      |      |      |      |       | 0.01 |      |
| v/c Ratio                         |      | 1.14  | 0.18 | 0.67  | 0.25                      |      |      |      |      | 0.29  | 0.13 |      |
| Uniform Delay, d1                 |      | 19.2  | 8.3  | 39.6  | 2.1                       |      |      |      |      | 42.9  | 42.3 |      |
| Progression Factor                |      | 1.00  | 1.00 | 1.12  | 0.68                      |      |      |      |      | 1.00  | 1.00 |      |
| Incremental Delay, d2             |      | 75.9  | 0.4  | 3.6   | 0.2                       |      |      |      |      | 1.1   | 0.3  |      |
| Delay (s)                         |      | 95.2  | 8.7  | 48.0  | 1.7                       |      |      |      |      | 44.0  | 42.6 |      |
| Level of Service                  |      | F     | A    | D     | A                         |      |      |      |      | D     | D    |      |
| Approach Delay (s)                |      | 81.7  |      |       | 17.0                      |      |      | 0.0  |      | 42.7  |      |      |
| Approach LOS                      |      | F     |      |       | B                         |      |      | A    |      | D     |      |      |
| <b>Intersection Summary</b>       |      |       |      |       |                           |      |      |      |      |       |      |      |
| HCM 2000 Control Delay            |      | 60.8  |      |       | HCM 2000 Level of Service |      |      | E    |      |       |      |      |
| HCM 2000 Volume to Capacity ratio |      | 0.97  |      |       |                           |      |      |      |      |       |      |      |
| Actuated Cycle Length (s)         |      | 100.0 |      |       | Sum of lost time (s)      |      |      | 14.1 |      |       |      |      |
| Intersection Capacity Utilization |      | 83.1% |      |       | ICU Level of Service      |      |      | E    |      |       |      |      |
| Analysis Period (min)             |      | 15    |      |       |                           |      |      |      |      |       |      |      |

HCM Signalized Intersection Capacity Analysis  
7: Deer Springs Rd & Mesa Rock Road

Existing PM  
03/17/2017

| Movement               | EBL   | EBT   | EBR  | WBL  | WBT  | WBR  | NBL   | NBT   | NBR  | SBL   | SBT   | SBR  |
|------------------------|-------|-------|------|------|------|------|-------|-------|------|-------|-------|------|
| Lane Configurations    | ↰     | ↰     | ↰    | ↰    | ↰    | ↰    | ↰     | ↰     | ↰    | ↰     | ↰     | ↰    |
| Traffic Volume (vph)   | 34    | 990   | 14   | 19   | 540  | 134  | 19    | 4     | 23   | 151   | 3     | 21   |
| Future Volume (vph)    | 34    | 990   | 14   | 19   | 540  | 134  | 19    | 4     | 23   | 151   | 3     | 21   |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 |
| Total Lost time (s)    | 4.5   | 4.5   |      | 4.5  | 4.5  |      |       | 4.5   |      |       | 4.5   | 4.5  |
| Lane Util. Factor      | 1.00  | 0.95  |      | 1.00 | 0.95 |      |       | 1.00  |      |       | 1.00  | 1.00 |
| Frpb, ped/bikes        | 1.00  | 1.00  |      | 1.00 | 0.99 |      |       | 0.99  |      |       | 1.00  | 0.99 |
| Flpb, ped/bikes        | 1.00  | 1.00  |      | 1.00 | 1.00 |      |       | 1.00  |      |       | 1.00  | 1.00 |
| Frt                    | 1.00  | 1.00  |      | 1.00 | 0.97 |      |       | 0.93  |      |       | 1.00  | 0.85 |
| Flt Protected          | 0.95  | 1.00  |      | 0.95 | 1.00 |      |       | 0.98  |      |       | 0.95  | 1.00 |
| Satd. Flow (prot)      | 1770  | 3530  |      | 1770 | 3413 |      |       | 1683  |      |       | 1776  | 1563 |
| Flt Permitted          | 0.95  | 1.00  |      | 0.95 | 1.00 |      |       | 0.98  |      |       | 0.95  | 1.00 |
| Satd. Flow (perm)      | 1770  | 3530  |      | 1770 | 3413 |      |       | 1683  |      |       | 1776  | 1563 |
| Peak-hour factor, PHF  | 0.97  | 0.97  | 0.97 | 0.97 | 0.97 | 0.97 | 0.97  | 0.97  | 0.97 | 0.97  | 0.97  | 0.97 |
| Adj. Flow (vph)        | 35    | 1021  | 14   | 20   | 557  | 138  | 20    | 4     | 24   | 156   | 3     | 22   |
| RTOR Reduction (vph)   | 0     | 1     | 0    | 0    | 22   | 0    | 0     | 22    | 0    | 0     | 0     | 16   |
| Lane Group Flow (vph)  | 35    | 1034  | 0    | 20   | 673  | 0    | 0     | 26    | 0    | 0     | 159   | 6    |
| Confl. Bikes (#/hr)    |       |       | 16   |      |      | 11   |       |       | 3    |       |       | 1    |
| Turn Type              | Prot  | NA    |      | Prot | NA   |      | Split | NA    |      | Split | NA    | Perm |
| Protected Phases       | 7     | 4     |      | 3    | 8    |      | 2     | 2     |      | 6     | 6     |      |
| Permitted Phases       |       |       |      |      |      |      |       |       |      |       |       | 6    |
| Actuated Green, G (s)  | 3.3   | 29.0  |      | 1.7  | 27.4 |      |       | 5.1   |      |       | 21.8  | 21.8 |
| Effective Green, g (s) | 3.3   | 29.0  |      | 1.7  | 27.4 |      |       | 5.1   |      |       | 21.8  | 21.8 |
| Actuated g/C Ratio     | 0.04  | 0.38  |      | 0.02 | 0.36 |      |       | 0.07  |      |       | 0.29  | 0.29 |
| Clearance Time (s)     | 4.5   | 4.5   |      | 4.5  | 4.5  |      |       | 4.5   |      |       | 4.5   | 4.5  |
| Vehicle Extension (s)  | 3.0   | 3.0   |      | 3.0  | 3.0  |      |       | 3.0   |      |       | 3.0   | 3.0  |
| Lane Grp Cap (vph)     | 77    | 1354  |      | 39   | 1236 |      |       | 113   |      |       | 512   | 450  |
| v/s Ratio Prot         | c0.02 | c0.29 |      | 0.01 | 0.20 |      |       | c0.02 |      |       | c0.09 |      |
| v/s Ratio Perm         |       |       |      |      |      |      |       |       |      |       |       | 0.00 |
| v/c Ratio              | 0.45  | 0.76  |      | 0.51 | 0.54 |      |       | 0.23  |      |       | 0.31  | 0.01 |
| Uniform Delay, d1      | 35.3  | 20.3  |      | 36.5 | 19.1 |      |       | 33.4  |      |       | 21.0  | 19.2 |
| Progression Factor     | 1.00  | 1.00  |      | 1.00 | 1.00 |      |       | 1.00  |      |       | 1.00  | 1.00 |
| Incremental Delay, d2  | 4.2   | 2.6   |      | 10.9 | 0.5  |      |       | 1.0   |      |       | 1.6   | 0.1  |
| Delay (s)              | 39.5  | 22.9  |      | 47.5 | 19.6 |      |       | 34.4  |      |       | 22.6  | 19.3 |
| Level of Service       | D     | C     |      | D    | B    |      |       | C     |      |       | C     | B    |
| Approach Delay (s)     |       | 23.5  |      |      | 20.4 |      |       | 34.4  |      |       | 22.2  |      |
| Approach LOS           |       | C     |      |      | C    |      |       | C     |      |       | C     |      |

Intersection Summary

|                                   |       |                           |      |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay            | 22.5  | HCM 2000 Level of Service | C    |
| HCM 2000 Volume to Capacity ratio | 0.55  |                           |      |
| Actuated Cycle Length (s)         | 75.6  | Sum of lost time (s)      | 18.0 |
| Intersection Capacity Utilization | 50.9% | ICU Level of Service      | A    |
| Analysis Period (min)             | 15    |                           |      |
| c Critical Lane Group             |       |                           |      |

HCM Unsignalized Intersection Capacity Analysis  
9: Deer Springs Rd & Sarver Lane

Existing PM  
03/17/2017

| Movement               | EBL  | EBT  | WBT  | WBR  | SBL  | SBR  |
|------------------------|------|------|------|------|------|------|
| Lane Configurations    | ↰    | ↰    | ↰    | ↰    | ↰    | ↰    |
| Traffic Volume (veh/h) | 13   | 1099 | 564  | 1    | 4    | 4    |
| Future Volume (Veh/h)  | 13   | 1099 | 564  | 1    | 4    | 4    |
| Sign Control           | Free | Free |      |      | Stop |      |
| Grade                  | 0%   | 0%   |      |      | 0%   |      |
| Peak Hour Factor       | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 14   | 1157 | 594  | 1    | 4    | 4    |
| Pedestrians            |      |      |      |      |      |      |
| Lane Width (ft)        |      |      |      |      |      |      |
| Walking Speed (ft/s)   |      |      |      |      |      |      |
| Percent Blockage       |      |      |      |      |      |      |
| Right turn flare (veh) |      |      |      |      |      |      |
| Median type            | None | None |      |      |      |      |
| Median storage (veh)   |      |      |      |      |      |      |
| Upstream signal (ft)   |      |      |      |      |      |      |
| pX, platoon unblocked  |      |      |      |      |      |      |
| vC, conflicting volume | 595  |      |      |      | 1780 | 594  |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |
| vCu, unblocked vol     | 595  |      |      |      | 1780 | 594  |
| tC, single (s)         | 4.1  |      |      |      | 6.4  | 6.2  |
| tC, 2 stage (s)        |      |      |      |      |      |      |
| tF (s)                 | 2.2  |      |      |      | 3.5  | 3.3  |
| p0 queue free %        | 99   |      |      |      | 96   | 99   |
| cM capacity (veh/h)    | 981  |      |      |      | 89   | 505  |

| Direction, Lane #      | EB 1 | EB 2 | WB 1 | SB 1 |
|------------------------|------|------|------|------|
| Volume Total           | 14   | 1157 | 595  | 8    |
| Volume Left            | 14   | 0    | 0    | 4    |
| Volume Right           | 0    | 0    | 1    | 4    |
| cSH                    | 981  | 1700 | 1700 | 151  |
| Volume to Capacity     | 0.01 | 0.68 | 0.35 | 0.05 |
| Queue Length 95th (ft) | 1    | 0    | 0    | 4    |
| Control Delay (s)      | 8.7  | 0.0  | 0.0  | 30.1 |
| Lane LOS               | A    |      |      | D    |
| Approach Delay (s)     | 0.1  |      | 0.0  | 30.1 |
| Approach LOS           |      |      |      | D    |

Intersection Summary

|                                   |       |                      |   |
|-----------------------------------|-------|----------------------|---|
| Average Delay                     | 0.2   |                      |   |
| Intersection Capacity Utilization | 67.8% | ICU Level of Service | C |
| Analysis Period (min)             | 15    |                      |   |

HCM Unsignalized Intersection Capacity Analysis  
10: Deer Springs Rd & Sycamore Road

Existing PM  
03/17/2017

| Movement                          | WBL  | WBR   | NBT  | NBR                  | SBL  | SBT  |
|-----------------------------------|------|-------|------|----------------------|------|------|
| Lane Configurations               | ↰    | ↱     | ↰    |                      | ↰    | ↱    |
| Traffic Volume (veh/h)            | 2    | 11    | 852  | 3                    | 5    | 588  |
| Future Volume (Veh/h)             | 2    | 11    | 852  | 3                    | 5    | 588  |
| Sign Control                      | Stop |       | Free |                      |      | Free |
| Grade                             | 0%   |       | 0%   |                      |      | 0%   |
| Peak Hour Factor                  | 0.94 | 0.94  | 0.94 | 0.94                 | 0.94 | 0.94 |
| Hourly flow rate (vph)            | 2    | 12    | 906  | 3                    | 5    | 626  |
| Pedestrians                       |      |       |      |                      |      |      |
| Lane Width (ft)                   |      |       |      |                      |      |      |
| Walking Speed (ft/s)              |      |       |      |                      |      |      |
| Percent Blockage                  |      |       |      |                      |      |      |
| Right turn flare (veh)            |      | 4     |      |                      |      |      |
| Median type                       |      |       | None |                      | None |      |
| Median storage (veh)              |      |       |      |                      |      |      |
| Upstream signal (ft)              |      |       | 680  |                      |      |      |
| pX, platoon unblocked             | 0.52 | 0.52  |      |                      | 0.52 |      |
| vC, conflicting volume            | 1544 | 908   |      |                      | 909  |      |
| vC1, stage 1 conf vol             |      |       |      |                      |      |      |
| vC2, stage 2 conf vol             |      |       |      |                      |      |      |
| vCu, unblocked vol                | 1584 | 363   |      |                      | 365  |      |
| tC, single (s)                    | 6.4  | 6.2   |      |                      | 4.1  |      |
| tC, 2 stage (s)                   |      |       |      |                      |      |      |
| tF (s)                            | 3.5  | 3.3   |      |                      | 2.2  |      |
| p0 queue free %                   | 97   | 97    |      |                      | 99   |      |
| cM capacity (veh/h)               | 62   | 355   |      |                      | 622  |      |
| Direction, Lane #                 | WB 1 | NB 1  | SB 1 |                      |      |      |
| Volume Total                      | 14   | 909   | 631  |                      |      |      |
| Volume Left                       | 2    | 0     | 5    |                      |      |      |
| Volume Right                      | 12   | 3     | 0    |                      |      |      |
| cSH                               | 415  | 1700  | 622  |                      |      |      |
| Volume to Capacity                | 0.03 | 0.53  | 0.01 |                      |      |      |
| Queue Length 95th (ft)            | 3    | 0     | 1    |                      |      |      |
| Control Delay (s)                 | 22.6 | 0.0   | 0.2  |                      |      |      |
| Lane LOS                          | C    |       | A    |                      |      |      |
| Approach Delay (s)                | 22.6 | 0.0   | 0.2  |                      |      |      |
| Approach LOS                      | C    |       |      |                      |      |      |
| <b>Intersection Summary</b>       |      |       |      |                      |      |      |
| Average Delay                     |      |       | 0.3  |                      |      |      |
| Intersection Capacity Utilization |      | 55.0% |      | ICU Level of Service | B    |      |
| Analysis Period (min)             |      | 15    |      |                      |      |      |

HCM Unsignalized Intersection Capacity Analysis  
11: Twin Oaks Valley Road & Camino Mayor

Existing PM  
03/17/2017

| Movement                          | WBL  | WBR   | NBT  | NBR                  | SBL  | SBT  |
|-----------------------------------|------|-------|------|----------------------|------|------|
| Lane Configurations               | ↰    | ↱     | ↰    |                      | ↰    | ↱    |
| Traffic Volume (veh/h)            | 1    | 1     | 7    | 1                    | 1    | 8    |
| Future Volume (Veh/h)             | 1    | 1     | 7    | 1                    | 1    | 8    |
| Sign Control                      | Stop |       | Free |                      |      | Free |
| Grade                             | 0%   |       | 0%   |                      |      | 0%   |
| Peak Hour Factor                  | 0.75 | 0.75  | 0.75 | 0.75                 | 0.75 | 0.75 |
| Hourly flow rate (vph)            | 1    | 1     | 9    | 1                    | 1    | 11   |
| Pedestrians                       |      |       |      |                      |      |      |
| Lane Width (ft)                   |      |       |      |                      |      |      |
| Walking Speed (ft/s)              |      |       |      |                      |      |      |
| Percent Blockage                  |      |       |      |                      |      |      |
| Right turn flare (veh)            |      |       |      |                      |      |      |
| Median type                       |      |       | None |                      | None |      |
| Median storage (veh)              |      |       |      |                      |      |      |
| Upstream signal (ft)              |      |       |      |                      |      |      |
| pX, platoon unblocked             |      |       |      |                      |      |      |
| vC, conflicting volume            | 22   | 10    |      |                      | 10   |      |
| vC1, stage 1 conf vol             |      |       |      |                      |      |      |
| vC2, stage 2 conf vol             |      |       |      |                      |      |      |
| vCu, unblocked vol                | 22   | 10    |      |                      | 10   |      |
| tC, single (s)                    | 6.4  | 6.2   |      |                      | 4.1  |      |
| tC, 2 stage (s)                   |      |       |      |                      |      |      |
| tF (s)                            | 3.5  | 3.3   |      |                      | 2.2  |      |
| p0 queue free %                   | 100  | 100   |      |                      | 100  |      |
| cM capacity (veh/h)               | 993  | 1072  |      |                      | 1610 |      |
| Direction, Lane #                 | WB 1 | NB 1  | SB 1 |                      |      |      |
| Volume Total                      | 2    | 10    | 12   |                      |      |      |
| Volume Left                       | 1    | 0     | 1    |                      |      |      |
| Volume Right                      | 1    | 1     | 0    |                      |      |      |
| cSH                               | 1031 | 1700  | 1610 |                      |      |      |
| Volume to Capacity                | 0.00 | 0.01  | 0.00 |                      |      |      |
| Queue Length 95th (ft)            | 0    | 0     | 0    |                      |      |      |
| Control Delay (s)                 | 8.5  | 0.0   | 0.6  |                      |      |      |
| Lane LOS                          | A    |       | A    |                      |      |      |
| Approach Delay (s)                | 8.5  | 0.0   | 0.6  |                      |      |      |
| Approach LOS                      | A    |       |      |                      |      |      |
| <b>Intersection Summary</b>       |      |       |      |                      |      |      |
| Average Delay                     |      |       | 1.0  |                      |      |      |
| Intersection Capacity Utilization |      | 13.3% |      | ICU Level of Service | A    |      |
| Analysis Period (min)             |      | 15    |      |                      |      |      |

HCM Signalized Intersection Capacity Analysis  
12: Twin Oaks Valley Rd #1/Deer Springs Rd & Twin Oaks Valley Rd

Existing PM  
03/17/2017

| Movement                          | EBL  | EBR   | NBL   | NBT   | SBT                       | SBR  |
|-----------------------------------|------|-------|-------|-------|---------------------------|------|
| Lane Configurations               | ↰    | ↱     | ↰     | ↱     | ↱                         | ↱    |
| Traffic Volume (vph)              | 37   | 236   | 94    | 854   | 625                       | 35   |
| Future Volume (vph)               | 37   | 236   | 94    | 854   | 625                       | 35   |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900  | 1900  | 1900                      | 1900 |
| Total Lost time (s)               | 4.9  | 4.9   | 4.0   | 5.3   | 5.3                       | 5.3  |
| Lane Util. Factor                 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00                      | 1.00 |
| Frpb, ped/bikes                   | 1.00 | 1.00  | 1.00  | 1.00  | 1.00                      | 0.98 |
| Flpb, ped/bikes                   | 1.00 | 1.00  | 1.00  | 1.00  | 1.00                      | 1.00 |
| Frt                               | 1.00 | 0.85  | 1.00  | 1.00  | 1.00                      | 0.85 |
| Flt Protected                     | 0.95 | 1.00  | 0.95  | 1.00  | 1.00                      | 1.00 |
| Satd. Flow (prot)                 | 1770 | 1583  | 1770  | 1863  | 1863                      | 1547 |
| Flt Permitted                     | 0.95 | 1.00  | 0.95  | 1.00  | 1.00                      | 1.00 |
| Satd. Flow (perm)                 | 1770 | 1583  | 1770  | 1863  | 1863                      | 1547 |
| Peak-hour factor, PHF             | 0.88 | 0.88  | 0.88  | 0.88  | 0.88                      | 0.88 |
| Growth Factor (vph)               | 100% | 100%  | 100%  | 130%  | 130%                      | 100% |
| Adj. Flow (vph)                   | 42   | 268   | 107   | 1262  | 923                       | 40   |
| RTOR Reduction (vph)              | 0    | 206   | 0     | 0     | 0                         | 9    |
| Lane Group Flow (vph)             | 42   | 62    | 107   | 1262  | 923                       | 31   |
| Confl. Peds. (#/hr)               |      |       |       |       |                           | 1    |
| Confl. Bikes (#/hr)               |      |       |       |       |                           | 2    |
| Turn Type                         | Prot | Perm  | Prot  | NA    | NA                        | Perm |
| Protected Phases                  | 4    |       | 5     | 2     | 6                         |      |
| Permitted Phases                  |      | 4     |       |       |                           | 6    |
| Actuated Green, G (s)             | 10.1 | 10.1  | 7.1   | 66.4  | 55.3                      | 55.3 |
| Effective Green, g (s)            | 10.1 | 10.1  | 7.1   | 66.4  | 55.3                      | 55.3 |
| Actuated g/C Ratio                | 0.12 | 0.12  | 0.08  | 0.77  | 0.64                      | 0.64 |
| Clearance Time (s)                | 4.9  | 4.9   | 4.0   | 5.3   | 5.3                       | 5.3  |
| Vehicle Extension (s)             | 3.0  | 3.0   | 3.0   | 3.0   | 3.0                       | 3.0  |
| Lane Grp Cap (vph)                | 206  | 184   | 144   | 1426  | 1188                      | 986  |
| v/s Ratio Prot                    | 0.02 |       | 0.06  | c0.68 | 0.50                      |      |
| v/s Ratio Perm                    |      | c0.04 |       |       |                           | 0.02 |
| v/c Ratio                         | 0.20 | 0.34  | 0.74  | 0.88  | 0.78                      | 0.03 |
| Uniform Delay, d1                 | 34.7 | 35.2  | 38.9  | 7.4   | 11.3                      | 5.8  |
| Progression Factor                | 1.00 | 1.00  | 1.00  | 1.00  | 1.00                      | 1.00 |
| Incremental Delay, d2             | 0.5  | 1.1   | 18.6  | 6.9   | 3.3                       | 0.0  |
| Delay (s)                         | 35.2 | 36.3  | 57.5  | 14.3  | 14.5                      | 5.8  |
| Level of Service                  | D    | D     | E     | B     | B                         | A    |
| Approach Delay (s)                | 36.2 |       |       | 17.7  | 14.2                      |      |
| Approach LOS                      | D    |       |       | B     | B                         |      |
| <b>Intersection Summary</b>       |      |       |       |       |                           |      |
| HCM 2000 Control Delay            |      |       | 18.6  |       | HCM 2000 Level of Service | B    |
| HCM 2000 Volume to Capacity ratio |      |       | 0.86  |       |                           |      |
| Actuated Cycle Length (s)         |      |       | 86.7  |       | Sum of lost time (s)      | 14.2 |
| Intersection Capacity Utilization |      |       | 70.3% |       | ICU Level of Service      | C    |
| Analysis Period (min)             |      |       | 15    |       |                           |      |
| c Critical Lane Group             |      |       |       |       |                           |      |

HCM Signalized Intersection Capacity Analysis  
13: Twin Oaks Valley Rd #1 & Buena Creek Rd

Existing PM  
03/17/2017

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                                 | EBT                                                                                 | EBR                                                                                 | WBL                                                                                 | WBT                                                                                 | WBR                                                                                 | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                     |  |  |                                                                                     |  |                                                                                     |  |  |                                                                                     |  |  |  |
| Traffic Volume (vph)              | 336                                                                                 | 0                                                                                   | 210                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 167                                                                                 | 600                                                                                 | 0                                                                                   | 0                                                                                   | 562                                                                                 | 291                                                                                 |
| Future Volume (vph)               | 336                                                                                 | 0                                                                                   | 210                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 167                                                                                 | 600                                                                                 | 0                                                                                   | 0                                                                                   | 562                                                                                 | 291                                                                                 |
| Ideal Flow (vphpl)                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               |                                                                                     | 4.0                                                                                 | 4.0                                                                                 |                                                                                     |                                                                                     |                                                                                     | 5.0                                                                                 | 5.5                                                                                 |                                                                                     |                                                                                     | 5.5                                                                                 | 5.5                                                                                 |
| Lane Util. Factor                 |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Frpb, ped/bikes                   |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                | 0.97                                                                                |
| Flpb, ped/bikes                   |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Frt                               |                                                                                     | 1.00                                                                                | 0.85                                                                                |                                                                                     |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     |                                                                                     | 0.95                                                                                | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     | 0.95                                                                                | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 |                                                                                     | 1770                                                                                | 1583                                                                                |                                                                                     |                                                                                     |                                                                                     | 1770                                                                                | 1863                                                                                |                                                                                     |                                                                                     | 1863                                                                                | 1542                                                                                |
| Flt Permitted                     |                                                                                     | 0.76                                                                                | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     | 0.95                                                                                | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 |                                                                                     | 1410                                                                                | 1583                                                                                |                                                                                     |                                                                                     |                                                                                     | 1770                                                                                | 1863                                                                                |                                                                                     |                                                                                     | 1863                                                                                | 1542                                                                                |
| Peak-hour factor, PHF             | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                |
| Adj. Flow (vph)                   | 361                                                                                 | 0                                                                                   | 226                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 180                                                                                 | 645                                                                                 | 0                                                                                   | 0                                                                                   | 604                                                                                 | 313                                                                                 |
| RTOR Reduction (vph)              | 0                                                                                   | 0                                                                                   | 148                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 93                                                                                  |
| Lane Group Flow (vph)             | 0                                                                                   | 361                                                                                 | 78                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 180                                                                                 | 645                                                                                 | 0                                                                                   | 0                                                                                   | 604                                                                                 | 220                                                                                 |
| Confl. Peds. (#/hr)               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 1                                                                                   |
| Confl. Bikes (#/hr)               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 5                                                                                   |
| Turn Type                         | Perm                                                                                | NA                                                                                  | Perm                                                                                |                                                                                     |                                                                                     |                                                                                     | Prot                                                                                | NA                                                                                  |                                                                                     | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases                  |                                                                                     | 4                                                                                   |                                                                                     |                                                                                     | 8                                                                                   |                                                                                     | 5                                                                                   | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases                  | 4                                                                                   |                                                                                     | 4                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 6                                                                                   |
| Actuated Green, G (s)             |                                                                                     | 24.7                                                                                | 24.7                                                                                |                                                                                     |                                                                                     |                                                                                     | 11.4                                                                                | 47.3                                                                                |                                                                                     |                                                                                     | 30.9                                                                                | 30.9                                                                                |
| Effective Green, g (s)            |                                                                                     | 24.7                                                                                | 24.7                                                                                |                                                                                     |                                                                                     |                                                                                     | 11.4                                                                                | 47.3                                                                                |                                                                                     |                                                                                     | 30.9                                                                                | 30.9                                                                                |
| Actuated g/C Ratio                |                                                                                     | 0.30                                                                                | 0.30                                                                                |                                                                                     |                                                                                     |                                                                                     | 0.14                                                                                | 0.58                                                                                |                                                                                     |                                                                                     | 0.38                                                                                | 0.38                                                                                |
| Clearance Time (s)                |                                                                                     | 4.0                                                                                 | 4.0                                                                                 |                                                                                     |                                                                                     |                                                                                     | 5.0                                                                                 | 5.5                                                                                 |                                                                                     |                                                                                     | 5.5                                                                                 | 5.5                                                                                 |
| Vehicle Extension (s)             |                                                                                     | 3.0                                                                                 | 3.0                                                                                 |                                                                                     |                                                                                     |                                                                                     | 3.0                                                                                 | 3.0                                                                                 |                                                                                     |                                                                                     | 3.0                                                                                 | 3.0                                                                                 |
| Lane Grp Cap (vph)                |                                                                                     | 427                                                                                 | 479                                                                                 |                                                                                     |                                                                                     |                                                                                     | 247                                                                                 | 1081                                                                                |                                                                                     |                                                                                     | 706                                                                                 | 584                                                                                 |
| v/s Ratio Prot                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 0.10                                                                                | c0.35                                                                               |                                                                                     |                                                                                     | c0.32                                                                               |                                                                                     |
| v/s Ratio Perm                    |                                                                                     | c0.26                                                                               | 0.05                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 0.14                                                                                |
| v/c Ratio                         |                                                                                     | 0.85                                                                                | 0.16                                                                                |                                                                                     |                                                                                     |                                                                                     | 0.73                                                                                | 0.60                                                                                |                                                                                     |                                                                                     | 0.86                                                                                | 0.38                                                                                |
| Uniform Delay, d1                 |                                                                                     | 26.6                                                                                | 20.8                                                                                |                                                                                     |                                                                                     |                                                                                     | 33.6                                                                                | 11.0                                                                                |                                                                                     |                                                                                     | 23.2                                                                                | 18.3                                                                                |
| Progression Factor                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                |
| Incremental Delay, d2             |                                                                                     | 14.2                                                                                | 0.2                                                                                 |                                                                                     |                                                                                     |                                                                                     | 10.3                                                                                | 0.9                                                                                 |                                                                                     |                                                                                     | 10.0                                                                                | 0.4                                                                                 |
| Delay (s)                         |                                                                                     | 40.9                                                                                | 21.0                                                                                |                                                                                     |                                                                                     |                                                                                     | 43.8                                                                                | 11.9                                                                                |                                                                                     |                                                                                     | 33.2                                                                                | 18.7                                                                                |
| Level of Service                  |                                                                                     | D                                                                                   | C                                                                                   |                                                                                     |                                                                                     |                                                                                     | D                                                                                   | B                                                                                   |                                                                                     |                                                                                     | C                                                                                   | B                                                                                   |
| Approach Delay (s)                |                                                                                     | 33.2                                                                                |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     | 18.8                                                                                |                                                                                     |                                                                                     | 28.3                                                                                |                                                                                     |
| Approach LOS                      |                                                                                     | C                                                                                   |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |
| Intersection Summary              |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                     |                                                                                     | 26.2                                                                                |                                                                                     | HCM 2000 Level of Service                                                           |                                                                                     |                                                                                     |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                     |                                                                                     | 0.83                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                     |                                                                                     | 81.5                                                                                |                                                                                     | Sum of lost time (s)                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 14.5                                                                                |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                     |                                                                                     | 69.5%                                                                               |                                                                                     | ICU Level of Service                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                     |                                                                                     | 15                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

HCM Signalized Intersection Capacity Analysis  
14: Twin Oaks Valley Rd #1 & Cassou Rd

Existing PM  
03/17/2017

| Movement               | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL   | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|-------|-------|------|-------|-------|------|-------|-------|------|------|------|------|
| Lane Configurations    |       | ↔     |      |       | ↔     |      | ↔     | ↔     | ↔    | ↔    | ↔    | ↔    |
| Traffic Volume (vph)   | 12    | 0     | 51   | 14    | 0     | 5    | 50    | 774   | 19   | 2    | 670  | 18   |
| Future Volume (vph)    | 12    | 0     | 51   | 14    | 0     | 5    | 50    | 774   | 19   | 2    | 670  | 18   |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |       | 5.0   |      |       | 5.0   |      | 5.0   | 5.0   | 5.0  | 5.0  | 5.0  |      |
| Lane Util. Factor      |       | 1.00  |      |       | 1.00  |      | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 |      |
| Frpb, ped/bikes        |       | 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 |      |
| Frt                    |       | 0.89  |      |       | 0.97  |      | 1.00  | 1.00  | 0.85 | 1.00 | 1.00 |      |
| Flt Protected          |       | 0.99  |      |       | 0.96  |      | 0.95  | 1.00  | 1.00 | 0.95 | 1.00 |      |
| Satd. Flow (prot)      |       | 1626  |      |       | 1735  |      | 1770  | 1863  | 1583 | 1770 | 1856 |      |
| Flt Permitted          |       | 0.99  |      |       | 0.96  |      | 0.95  | 1.00  | 1.00 | 0.95 | 1.00 |      |
| Satd. Flow (perm)      |       | 1626  |      |       | 1735  |      | 1770  | 1863  | 1583 | 1770 | 1856 |      |
| Peak-hour factor, PHF  | 0.93  | 0.93  | 0.93 | 0.93  | 0.93  | 0.93 | 0.93  | 0.93  | 0.93 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph)        | 13    | 0     | 55   | 15    | 0     | 5    | 54    | 832   | 20   | 2    | 720  | 19   |
| RTOR Reduction (vph)   | 0     | 63    | 0    | 0     | 19    | 0    | 0     | 0     | 7    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0     | 5     | 0    | 0     | 1     | 0    | 54    | 832   | 13   | 2    | 739  | 0    |
| Confl. Peds. (#/hr)    |       |       | 1    |       |       |      |       |       |      |      |      |      |
| Turn Type              | Split | NA    |      | Split | NA    |      | Prot  | NA    | Perm | Prot | NA   |      |
| Protected Phases       | 4     | 4     |      | 8     | 8     |      | 5     | 2     |      | 1    | 6    |      |
| Permitted Phases       |       |       |      |       |       |      |       | 2     |      |      |      |      |
| Actuated Green, G (s)  |       | 7.0   |      |       | 4.6   |      | 4.0   | 58.8  | 58.8 | 0.7  | 55.5 |      |
| Effective Green, g (s) |       | 7.0   |      |       | 4.6   |      | 4.0   | 58.8  | 58.8 | 0.7  | 55.5 |      |
| Actuated g/C Ratio     |       | 0.08  |      |       | 0.05  |      | 0.04  | 0.65  | 0.65 | 0.01 | 0.61 |      |
| Clearance Time (s)     |       | 5.0   |      |       | 5.0   |      | 5.0   | 5.0   | 5.0  | 5.0  | 5.0  |      |
| Vehicle Extension (s)  |       | 3.0   |      |       | 3.0   |      | 3.0   | 3.0   | 3.0  | 3.0  | 3.0  |      |
| Lane Grp Cap (vph)     |       | 124   |      |       | 87    |      | 77    | 1202  | 1021 | 13   | 1130 |      |
| v/s Ratio Prot         |       | c0.00 |      |       | c0.00 |      | c0.03 | c0.45 |      | 0.00 | 0.40 |      |
| v/s Ratio Perm         |       |       |      |       |       |      |       | 0.01  |      |      |      |      |
| v/c Ratio              |       | 0.04  |      |       | 0.01  |      | 0.70  | 0.69  | 0.01 | 0.15 | 0.65 |      |
| Uniform Delay, d1      |       | 38.9  |      |       | 41.1  |      | 43.0  | 10.4  | 5.8  | 44.9 | 11.6 |      |
| Progression Factor     |       | 1.00  |      |       | 1.00  |      | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 |      |
| Incremental Delay, d2  |       | 0.1   |      |       | 0.1   |      | 25.0  | 1.7   | 0.0  | 5.5  | 1.4  |      |
| Delay (s)              |       | 39.1  |      |       | 41.1  |      | 68.0  | 12.1  | 5.8  | 50.4 | 12.9 |      |
| Level of Service       |       | D     |      |       | D     |      | E     | B     | A    | D    | B    |      |
| Approach Delay (s)     |       | 39.1  |      |       | 41.1  |      | 15.3  |       |      | 13.0 |      |      |
| Approach LOS           |       | D     |      |       | D     |      | B     |       |      | B    |      |      |

Intersection Summary

|                                   |       |                           |      |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay            | 15.6  | HCM 2000 Level of Service | B    |
| HCM 2000 Volume to Capacity ratio | 0.61  |                           |      |
| Actuated Cycle Length (s)         | 91.1  | Sum of lost time (s)      | 20.0 |
| Intersection Capacity Utilization | 54.6% | ICU Level of Service      | A    |
| Analysis Period (min)             | 15    |                           |      |
| c Critical Lane Group             |       |                           |      |

HCM Signalized Intersection Capacity Analysis  
15: Twin Oaks Valley Rd #1 & La Cienega

Existing PM  
03/17/2017

| Movement               | WBL   | WBR  | NBT   | NBR  | SBL   | SBT  |
|------------------------|-------|------|-------|------|-------|------|
| Lane Configurations    | ↔     | ↔    | ↔     | ↔    | ↔     | ↔    |
| Traffic Volume (vph)   | 88    | 45   | 841   | 105  | 91    | 628  |
| Future Volume (vph)    | 88    | 45   | 841   | 105  | 91    | 628  |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)    |       | 6.0  | 6.5   |      | 6.0   | 6.5  |
| Lane Util. Factor      | 1.00  | 1.00 | 0.95  |      | 1.00  | 0.95 |
| Frpb, ped/bikes        | 1.00  | 1.00 | 0.99  |      | 1.00  | 1.00 |
| Flpb, ped/bikes        | 1.00  | 1.00 | 1.00  |      | 1.00  | 1.00 |
| Frt                    | 1.00  | 0.85 | 0.98  |      | 1.00  | 1.00 |
| Flt Protected          | 0.95  | 1.00 | 1.00  |      | 0.95  | 1.00 |
| Satd. Flow (prot)      | 1770  | 1583 | 3463  |      | 1770  | 3539 |
| Flt Permitted          | 0.95  | 1.00 | 1.00  |      | 0.95  | 1.00 |
| Satd. Flow (perm)      | 1770  | 1583 | 3463  |      | 1770  | 3539 |
| Peak-hour factor, PHF  | 0.98  | 0.98 | 0.98  | 0.98 | 0.98  | 0.98 |
| Adj. Flow (vph)        | 90    | 46   | 858   | 107  | 93    | 641  |
| RTOR Reduction (vph)   | 0     | 0    | 9     | 0    | 0     | 0    |
| Lane Group Flow (vph)  | 90    | 46   | 956   | 0    | 93    | 641  |
| Confl. Peds. (#/hr)    |       |      |       | 13   |       |      |
| Confl. Bikes (#/hr)    |       |      |       | 3    |       |      |
| Turn Type              | Prot  | Perm | NA    |      | Prot  | NA   |
| Protected Phases       | 8     |      | 2     |      | 1     | 6    |
| Permitted Phases       |       | 8    |       |      |       |      |
| Actuated Green, G (s)  | 8.2   | 8.2  | 29.1  |      | 7.1   | 42.2 |
| Effective Green, g (s) | 8.2   | 8.2  | 29.1  |      | 7.1   | 42.2 |
| Actuated g/C Ratio     | 0.13  | 0.13 | 0.46  |      | 0.11  | 0.67 |
| Clearance Time (s)     | 6.0   | 6.0  | 6.5   |      | 6.0   | 6.5  |
| Vehicle Extension (s)  | 3.0   | 3.0  | 3.0   |      | 3.0   | 3.0  |
| Lane Grp Cap (vph)     | 230   | 206  | 1602  |      | 199   | 2374 |
| v/s Ratio Prot         | c0.05 |      | c0.28 |      | c0.05 | 0.18 |
| v/s Ratio Perm         |       | 0.03 |       |      |       |      |
| v/c Ratio              | 0.39  | 0.22 | 0.60  |      | 0.47  | 0.27 |
| Uniform Delay, d1      | 25.1  | 24.5 | 12.5  |      | 26.1  | 4.2  |
| Progression Factor     | 1.00  | 1.00 | 1.00  |      | 1.00  | 1.00 |
| Incremental Delay, d2  | 1.1   | 0.6  | 0.6   |      | 1.7   | 0.1  |
| Delay (s)              | 26.2  | 25.0 | 13.1  |      | 27.9  | 4.2  |
| Level of Service       | C     | C    | B     |      | C     | A    |
| Approach Delay (s)     | 25.8  |      | 13.1  |      | 7.2   |      |
| Approach LOS           | C     |      | B     |      | A     |      |

Intersection Summary

|                                   |       |                           |      |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay            | 11.7  | HCM 2000 Level of Service | B    |
| HCM 2000 Volume to Capacity ratio | 0.54  |                           |      |
| Actuated Cycle Length (s)         | 62.9  | Sum of lost time (s)      | 18.5 |
| Intersection Capacity Utilization | 52.1% | ICU Level of Service      | A    |
| Analysis Period (min)             | 15    |                           |      |
| c Critical Lane Group             |       |                           |      |

HCM Signalized Intersection Capacity Analysis  
16: Twin Oaks Valley Rd #1 & Del Roy Dr

Existing PM  
03/17/2017

| Movement                          | EBL  | EBT   | EBR  | WBL   | WBT                       | WBR  | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|-------|------|-------|---------------------------|------|------|-------|------|------|------|------|
| Lane Configurations               | ↰    | ↱     |      | ↰     | ↱                         |      | ↰    | ↱     |      | ↰    | ↱    |      |
| Traffic Volume (vph)              | 5    | 0     | 29   | 25    | 0                         | 10   | 56   | 855   | 23   | 0    | 657  | 7    |
| Future Volume (vph)               | 5    | 0     | 29   | 25    | 0                         | 10   | 56   | 855   | 23   | 0    | 657  | 7    |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900  | 1900                      | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               | 5.0  | 5.0   |      | 5.0   | 5.0                       |      | 5.0  | 5.0   |      | 5.0  | 5.0  |      |
| Lane Util. Factor                 | 1.00 | 1.00  |      | 1.00  | 1.00                      |      | 1.00 | 0.95  |      | 1.00 | 0.95 |      |
| Frpb, ped/bikes                   | 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 |      |
| Frt                               | 1.00 | 0.85  |      | 1.00  | 0.85                      |      | 1.00 | 1.00  |      | 1.00 | 1.00 |      |
| Flt Protected                     | 0.95 | 1.00  |      | 0.95  | 1.00                      |      | 0.95 | 1.00  |      | 0.95 | 1.00 |      |
| Satd. Flow (prot)                 | 1770 | 1560  |      | 1770  | 1583                      |      | 1770 | 3521  |      | 1770 | 3533 |      |
| Flt Permitted                     | 0.95 | 1.00  |      | 0.95  | 1.00                      |      | 0.95 | 1.00  |      | 0.95 | 1.00 |      |
| Satd. Flow (perm)                 | 1770 | 1560  |      | 1770  | 1583                      |      | 1770 | 3521  |      | 1770 | 3533 |      |
| Peak-hour factor, PHF             | 0.90 | 0.90  | 0.90 | 0.90  | 0.90                      | 0.90 | 0.90 | 0.90  | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph)                   | 6    | 0     | 32   | 28    | 0                         | 11   | 62   | 950   | 26   | 0    | 730  | 8    |
| RTOR Reduction (vph)              | 0    | 30    | 0    | 0     | 10                        | 0    | 0    | 1     | 0    | 0    | 1    | 0    |
| Lane Group Flow (vph)             | 6    | 2     | 0    | 28    | 1                         | 0    | 62   | 975   | 0    | 0    | 737  | 0    |
| Confl. Peds. (#/hr)               |      |       |      |       |                           |      |      | 14    |      |      |      | 1    |
| Confl. Bikes (#/hr)               |      |       | 1    |       |                           |      |      | 4     |      |      |      | 4    |
| Turn Type                         | Prot | NA    |      | Prot  | NA                        |      | Prot | NA    |      | Prot | NA   |      |
| Protected Phases                  | 7    | 4     |      | 3     | 8                         |      | 5    | 2     |      | 1    | 6    |      |
| Permitted Phases                  |      |       |      |       |                           |      |      |       |      |      |      |      |
| Actuated Green, G (s)             | 0.4  | 4.4   |      | 1.6   | 5.6                       |      | 4.4  | 37.3  |      |      | 27.9 |      |
| Effective Green, g (s)            | 0.4  | 4.4   |      | 1.6   | 5.6                       |      | 4.4  | 37.3  |      |      | 27.9 |      |
| Actuated g/C Ratio                | 0.01 | 0.08  |      | 0.03  | 0.10                      |      | 0.08 | 0.64  |      |      | 0.48 |      |
| Clearance Time (s)                | 5.0  | 5.0   |      | 5.0   | 5.0                       |      | 5.0  | 5.0   |      |      | 5.0  |      |
| Vehicle Extension (s)             | 3.0  | 3.0   |      | 3.0   | 3.0                       |      | 3.0  | 3.0   |      |      | 3.0  |      |
| Lane Grp Cap (vph)                | 12   | 117   |      | 48    | 152                       |      | 133  | 2252  |      |      | 1690 |      |
| v/s Ratio Prot                    | 0.00 | c0.00 |      | c0.02 | 0.00                      |      | 0.04 | c0.28 |      |      | 0.21 |      |
| v/s Ratio Perm                    |      |       |      |       |                           |      |      |       |      |      |      |      |
| v/c Ratio                         | 0.50 | 0.02  |      | 0.58  | 0.01                      |      | 0.47 | 0.43  |      |      | 0.44 |      |
| Uniform Delay, d1                 | 28.9 | 25.0  |      | 28.0  | 23.8                      |      | 25.8 | 5.2   |      |      | 10.0 |      |
| Progression Factor                | 1.00 | 1.00  |      | 1.00  | 1.00                      |      | 1.00 | 1.00  |      |      | 1.00 |      |
| Incremental Delay, d2             | 29.2 | 0.1   |      | 16.8  | 0.0                       |      | 2.6  | 0.1   |      |      | 0.2  |      |
| Delay (s)                         | 58.1 | 25.0  |      | 44.8  | 23.9                      |      | 28.4 | 5.4   |      |      | 10.2 |      |
| Level of Service                  | E    | C     |      | D     | C                         |      | C    | A     |      |      | B    |      |
| Approach Delay (s)                |      | 30.2  |      |       | 38.9                      |      |      | 6.7   |      |      | 10.2 |      |
| Approach LOS                      |      | C     |      |       | D                         |      |      | A     |      |      | B    |      |
| <b>Intersection Summary</b>       |      |       |      |       |                           |      |      |       |      |      |      |      |
| HCM 2000 Control Delay            |      | 9.3   |      |       | HCM 2000 Level of Service |      |      | A     |      |      |      |      |
| HCM 2000 Volume to Capacity ratio |      | 0.45  |      |       |                           |      |      |       |      |      |      |      |
| Actuated Cycle Length (s)         |      | 58.3  |      |       | Sum of lost time (s)      |      |      | 20.0  |      |      |      |      |
| Intersection Capacity Utilization |      | 48.3% |      |       | ICU Level of Service      |      |      | A     |      |      |      |      |
| Analysis Period (min)             |      | 15    |      |       |                           |      |      |       |      |      |      |      |
| c Critical Lane Group             |      |       |      |       |                           |      |      |       |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
17: Twin Oaks Valley Rd #1 & Windy Wy

Existing PM  
03/17/2017

| Movement                          | EBL   | EBT   | EBR  | WBL  | WBT  | WBR  | NBL   | NBT                       | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|-------|-------|------|------|------|------|-------|---------------------------|------|------|------|------|
| Lane Configurations               | ↰     |       | ↱    |      |      |      | ↰     | ↱                         |      | ↰    | ↱    |      |
| Traffic Volume (vph)              | 17    | 0     | 51   | 0    | 0    | 0    | 43    | 840                       | 2    | 2    | 693  | 5    |
| Future Volume (vph)               | 17    | 0     | 51   | 0    | 0    | 0    | 43    | 840                       | 2    | 2    | 693  | 5    |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900                      | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               | 4.0   |       | 4.0  |      |      |      | 4.0   | 6.0                       |      |      | 4.0  | 6.0  |
| Lane Util. Factor                 | 1.00  |       | 1.00 |      |      |      | 1.00  | 0.95                      |      |      | 1.00 | 0.95 |
| Frpb, ped/bikes                   | 1.00  |       | 0.99 |      |      |      | 1.00  | 1.00                      |      |      | 1.00 | 1.00 |
| Flpb, ped/bikes                   | 1.00  |       | 1.00 |      |      |      | 1.00  | 1.00                      |      |      | 1.00 | 1.00 |
| Frt                               | 1.00  |       | 0.85 |      |      |      | 1.00  | 1.00                      |      |      | 1.00 | 1.00 |
| Flt Protected                     | 0.95  |       | 1.00 |      |      |      | 0.95  | 1.00                      |      |      | 0.95 | 1.00 |
| Satd. Flow (prot)                 | 1770  |       | 1563 |      |      |      | 1770  | 3538                      |      |      | 1770 | 3535 |
| Flt Permitted                     | 0.95  |       | 1.00 |      |      |      | 0.95  | 1.00                      |      |      | 0.95 | 1.00 |
| Satd. Flow (perm)                 | 1770  |       | 1563 |      |      |      | 1770  | 3538                      |      |      | 1770 | 3535 |
| Peak-hour factor, PHF             | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00                      | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)                   | 17    | 0     | 51   | 0    | 0    | 0    | 43    | 840                       | 2    | 2    | 693  | 5    |
| RTOR Reduction (vph)              | 0     | 0     | 46   | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)             | 17    | 0     | 5    | 0    | 0    | 0    | 43    | 842                       | 0    | 2    | 698  | 0    |
| Confl. Peds. (#/hr)               |       |       | 1    |      |      | 2    |       |                           | 1    |      |      | 4    |
| Confl. Bikes (#/hr)               |       |       |      |      |      | 2    |       |                           | 2    |      |      | 5    |
| Turn Type                         | Prot  |       | Perm |      |      |      | Prot  | NA                        |      | Prot | NA   |      |
| Protected Phases                  | 4     |       |      |      |      |      | 5     | 2                         |      | 1    | 6    |      |
| Permitted Phases                  |       |       | 4    |      |      |      |       |                           |      |      |      |      |
| Actuated Green, G (s)             | 5.2   |       | 5.2  |      |      |      | 2.4   | 28.4                      |      | 0.7  | 26.7 |      |
| Effective Green, g (s)            | 5.2   |       | 5.2  |      |      |      | 2.4   | 28.4                      |      | 0.7  | 26.7 |      |
| Actuated g/C Ratio                | 0.11  |       | 0.11 |      |      |      | 0.05  | 0.59                      |      | 0.01 | 0.55 |      |
| Clearance Time (s)                | 4.0   |       | 4.0  |      |      |      | 4.0   | 6.0                       |      | 4.0  | 6.0  |      |
| Vehicle Extension (s)             | 3.0   |       | 3.0  |      |      |      | 3.0   | 3.0                       |      | 3.0  | 3.0  |      |
| Lane Grp Cap (vph)                | 190   |       | 168  |      |      |      | 87    | 2080                      |      | 25   | 1954 |      |
| v/s Ratio Prot                    | c0.01 |       |      |      |      |      | c0.02 | c0.24                     |      | 0.00 | 0.20 |      |
| v/s Ratio Perm                    |       |       | 0.00 |      |      |      |       |                           |      |      |      |      |
| v/c Ratio                         | 0.09  |       | 0.03 |      |      |      | 0.49  | 0.40                      |      | 0.08 | 0.36 |      |
| Uniform Delay, d1                 | 19.4  |       | 19.3 |      |      |      | 22.4  | 5.4                       |      | 23.5 | 6.0  |      |
| Progression Factor                | 1.00  |       | 1.00 |      |      |      | 1.00  | 1.00                      |      | 1.00 | 1.00 |      |
| Incremental Delay, d2             | 0.2   |       | 0.1  |      |      |      | 4.4   | 0.1                       |      | 1.4  | 0.1  |      |
| Delay (s)                         | 19.6  |       | 19.4 |      |      |      | 26.7  | 5.5                       |      | 24.9 | 6.1  |      |
| Level of Service                  | B     |       | B    |      |      |      | C     | A                         |      | C    | A    |      |
| Approach Delay (s)                |       | 19.4  |      |      | 0.0  |      |       | 6.5                       |      |      | 6.2  |      |
| Approach LOS                      |       | B     |      |      | A    |      |       | A                         |      |      | A    |      |
| <b>Intersection Summary</b>       |       |       |      |      |      |      |       |                           |      |      |      |      |
| HCM 2000 Control Delay            |       | 6.9   |      |      |      |      |       | HCM 2000 Level of Service |      |      | A    |      |
| HCM 2000 Volume to Capacity ratio |       | 0.38  |      |      |      |      |       |                           |      |      |      |      |
| Actuated Cycle Length (s)         |       | 48.3  |      |      |      |      |       | Sum of lost time (s)      |      |      | 14.0 |      |
| Intersection Capacity Utilization |       | 41.6% |      |      |      |      |       | ICU Level of Service      |      |      | A    |      |
| Analysis Period (min)             |       | 15    |      |      |      |      |       |                           |      |      |      |      |
| c Critical Lane Group             |       |       |      |      |      |      |       |                           |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
18: Twin Oaks Valley Rd #1 & Borden Rd

Existing PM  
03/17/2017

| Movement                          | EBL   | EBT   | EBR  | WBL  | WBT                       | WBR  | NBL   | NBT  | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|-------|-------|------|------|---------------------------|------|-------|------|------|------|-------|------|
| Lane Configurations               | ↔     | ↔     |      | ↔    | ↔                         |      | ↔     | ↔    | ↔    | ↔    | ↔     | ↔    |
| Traffic Volume (vph)              | 154   | 193   | 192  | 112  | 168                       | 32   | 194   | 669  | 182  | 60   | 571   | 97   |
| Future Volume (vph)               | 154   | 193   | 192  | 112  | 168                       | 32   | 194   | 669  | 182  | 60   | 571   | 97   |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900 | 1900 | 1900                      | 1900 | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               | 4.2   | 5.3   |      | 4.2  | 5.3                       |      | 4.2   | 4.9  | 4.9  | 4.2  | 4.9   | 4.9  |
| Lane Util. Factor                 | 1.00  | 0.95  |      | 1.00 | 0.95                      |      | 1.00  | 0.95 | 1.00 | 1.00 | 0.95  | 1.00 |
| Frpb, ped/bikes                   | 1.00  | 0.99  |      | 1.00 | 1.00                      |      | 1.00  | 1.00 | 0.99 | 1.00 | 1.00  | 0.98 |
| Flpb, ped/bikes                   | 1.00  | 1.00  |      | 1.00 | 1.00                      |      | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Frt                               | 1.00  | 0.93  |      | 1.00 | 0.98                      |      | 1.00  | 1.00 | 0.85 | 1.00 | 1.00  | 0.85 |
| Flt Protected                     | 0.95  | 1.00  |      | 0.95 | 1.00                      |      | 0.95  | 1.00 | 1.00 | 0.95 | 1.00  | 1.00 |
| Satd. Flow (prot)                 | 1770  | 3252  |      | 1770 | 3446                      |      | 1770  | 3539 | 1560 | 1770 | 3539  | 1555 |
| Flt Permitted                     | 0.95  | 1.00  |      | 0.95 | 1.00                      |      | 0.95  | 1.00 | 1.00 | 0.95 | 1.00  | 1.00 |
| Satd. Flow (perm)                 | 1770  | 3252  |      | 1770 | 3446                      |      | 1770  | 3539 | 1560 | 1770 | 3539  | 1555 |
| Peak-hour factor, PHF             | 0.96  | 0.96  | 0.96 | 0.96 | 0.96                      | 0.96 | 0.96  | 0.96 | 0.96 | 0.96 | 0.96  | 0.96 |
| Adj. Flow (vph)                   | 160   | 201   | 200  | 117  | 175                       | 33   | 202   | 697  | 190  | 62   | 595   | 101  |
| RTOR Reduction (vph)              | 0     | 104   | 0    | 0    | 9                         | 0    | 0     | 0    | 79   | 0    | 0     | 73   |
| Lane Group Flow (vph)             | 160   | 297   | 0    | 117  | 199                       | 0    | 202   | 697  | 111  | 63   | 595   | 28   |
| Confl. Peds. (#/hr)               |       |       | 2    |      |                           |      |       |      |      |      |       | 2    |
| Confl. Bikes (#/hr)               |       |       |      |      |                           | 3    |       |      | 5    |      |       | 5    |
| Turn Type                         | Prot  | NA    |      | Prot | NA                        |      | Prot  | NA   | Perm | Prot | NA    | Perm |
| Protected Phases                  | 7     | 4     |      | 3    | 8                         |      | 5     | 2    |      | 1    | 6     |      |
| Permitted Phases                  |       |       |      |      |                           |      |       |      | 2    |      |       | 6    |
| Actuated Green, G (s)             | 15.6  | 16.5  |      | 13.0 | 13.9                      |      | 18.0  | 35.8 | 35.8 | 7.9  | 25.7  | 25.7 |
| Effective Green, g (s)            | 15.6  | 16.5  |      | 13.0 | 13.9                      |      | 18.0  | 35.8 | 35.8 | 7.9  | 25.7  | 25.7 |
| Actuated g/C Ratio                | 0.17  | 0.18  |      | 0.14 | 0.15                      |      | 0.20  | 0.39 | 0.39 | 0.09 | 0.28  | 0.28 |
| Clearance Time (s)                | 4.2   | 5.3   |      | 4.2  | 5.3                       |      | 4.2   | 4.9  | 4.9  | 4.2  | 4.9   | 4.9  |
| Vehicle Extension (s)             | 3.0   | 3.0   |      | 3.0  | 3.0                       |      | 3.0   | 3.0  | 3.0  | 3.0  | 3.0   | 3.0  |
| Lane Grp Cap (vph)                | 300   | 584   |      | 250  | 521                       |      | 347   | 1380 | 608  | 152  | 990   | 435  |
| v/s Ratio Prot                    | c0.09 | c0.09 |      | 0.07 | 0.06                      |      | c0.11 | 0.20 |      | 0.04 | c0.17 |      |
| v/s Ratio Perm                    |       |       |      |      |                           |      |       | 0.07 |      |      | 0.02  |      |
| v/c Ratio                         | 0.53  | 0.51  |      | 0.47 | 0.38                      |      | 0.58  | 0.51 | 0.18 | 0.41 | 0.60  | 0.07 |
| Uniform Delay, d1                 | 34.8  | 34.0  |      | 36.2 | 35.1                      |      | 33.5  | 21.3 | 18.4 | 39.8 | 28.6  | 24.2 |
| Progression Factor                | 1.00  | 1.00  |      | 1.00 | 1.00                      |      | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Incremental Delay, d2             | 1.8   | 0.7   |      | 1.4  | 0.5                       |      | 2.5   | 0.3  | 0.1  | 1.8  | 1.0   | 0.1  |
| Delay (s)                         | 36.6  | 34.7  |      | 37.6 | 35.5                      |      | 36.0  | 21.6 | 18.5 | 41.6 | 29.6  | 24.3 |
| Level of Service                  | D     | C     |      | D    | D                         |      | D     | C    | B    | D    | C     | C    |
| Approach Delay (s)                |       | 35.2  |      |      | 36.3                      |      |       | 23.7 |      |      | 29.9  |      |
| Approach LOS                      |       | D     |      |      | D                         |      |       | C    |      |      | C     |      |
| <b>Intersection Summary</b>       |       |       |      |      |                           |      |       |      |      |      |       |      |
| HCM 2000 Control Delay            |       | 29.3  |      |      | HCM 2000 Level of Service |      |       | C    |      |      |       |      |
| HCM 2000 Volume to Capacity ratio |       | 0.58  |      |      |                           |      |       |      |      |      |       |      |
| Actuated Cycle Length (s)         |       | 91.8  |      |      | Sum of lost time (s)      |      |       | 18.6 |      |      |       |      |
| Intersection Capacity Utilization |       | 61.4% |      |      | ICU Level of Service      |      |       | B    |      |      |       |      |
| Analysis Period (min)             |       | 15    |      |      |                           |      |       |      |      |      |       |      |
| c Critical Lane Group             |       |       |      |      |                           |      |       |      |      |      |       |      |

HCM Signalized Intersection Capacity Analysis  
19: Twin Oaks Valley Rd #1 & Richmar Ave

Existing PM  
03/17/2017

| Movement                          | EBL   | EBT   | EBR  | WBL   | WBT                       | WBR  | NBL   | NBT  | NBR  | SBL  | SBT   | SBR  |
|-----------------------------------|-------|-------|------|-------|---------------------------|------|-------|------|------|------|-------|------|
| Lane Configurations               | ↔     | ↔     |      | ↔     | ↔                         |      | ↔     | ↔    | ↔    | ↔    | ↔     | ↔    |
| Traffic Volume (vph)              | 210   | 11    | 83   | 12    | 6                         | 3    | 121   | 1219 | 25   | 61   | 1219  | 174  |
| Future Volume (vph)               | 210   | 11    | 83   | 12    | 6                         | 3    | 121   | 1219 | 25   | 61   | 1219  | 174  |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900 | 1900  | 1900                      | 1900 | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               | 4.9   | 4.9   |      | 4.0   | 4.0                       |      | 4.0   | 5.7  |      | 4.0  | 5.7   |      |
| Lane Util. Factor                 | 1.00  | 1.00  |      | 1.00  | 1.00                      |      | 1.00  | 0.95 |      | 1.00 | 0.95  |      |
| Frpb, ped/bikes                   | 1.00  | 1.00  |      | 1.00  | 0.99                      |      | 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  |      |
| Frt                               | 1.00  | 0.87  |      | 1.00  | 0.95                      |      | 1.00  | 1.00 |      | 1.00 | 0.98  |      |
| Flt Protected                     | 0.95  | 1.00  |      | 0.95  | 1.00                      |      | 0.95  | 1.00 |      | 0.95 | 1.00  |      |
| Satd. Flow (prot)                 | 1770  | 1615  |      | 1770  | 1756                      |      | 1770  | 3525 |      | 1770 | 3463  |      |
| Flt Permitted                     | 0.95  | 1.00  |      | 0.95  | 1.00                      |      | 0.95  | 1.00 |      | 0.95 | 1.00  |      |
| Satd. Flow (perm)                 | 1770  | 1615  |      | 1770  | 1756                      |      | 1770  | 3525 |      | 1770 | 3463  |      |
| Peak-hour factor, PHF             | 0.96  | 0.96  | 0.96 | 0.96  | 0.96                      | 0.96 | 0.96  | 0.96 | 0.96 | 0.96 | 0.96  | 0.96 |
| Adj. Flow (vph)                   | 219   | 11    | 86   | 12    | 6                         | 3    | 126   | 1270 | 26   | 64   | 1270  | 181  |
| RTOR Reduction (vph)              | 0     | 72    | 0    | 0     | 3                         | 0    | 0     | 1    | 0    | 0    | 7     | 0    |
| Lane Group Flow (vph)             | 219   | 25    | 0    | 13    | 6                         | 0    | 126   | 1295 | 0    | 64   | 1444  | 0    |
| Confl. Peds. (#/hr)               |       |       |      |       |                           | 9    |       |      |      | 7    |       |      |
| Confl. Bikes (#/hr)               |       |       |      |       |                           |      |       | 8    |      |      |       | 3    |
| Turn Type                         | Split | NA    |      | Split | NA                        |      | Prot  | NA   |      | Prot | NA    |      |
| Protected Phases                  | 4     | 4     |      | 8     | 8                         |      | 5     | 2    |      | 1    | 6     |      |
| Permitted Phases                  |       |       |      |       |                           |      |       |      |      |      |       |      |
| Actuated Green, G (s)             | 18.6  | 18.6  |      | 6.8   | 6.8                       |      | 11.9  | 60.3 |      | 6.1  | 54.5  |      |
| Effective Green, g (s)            | 18.6  | 18.6  |      | 6.8   | 6.8                       |      | 11.9  | 60.3 |      | 6.1  | 54.5  |      |
| Actuated g/C Ratio                | 0.17  | 0.17  |      | 0.06  | 0.06                      |      | 0.11  | 0.55 |      | 0.06 | 0.49  |      |
| Clearance Time (s)                | 4.9   | 4.9   |      | 4.0   | 4.0                       |      | 4.0   | 5.7  |      | 4.0  | 5.7   |      |
| Vehicle Extension (s)             | 3.0   | 3.0   |      | 3.0   | 3.0                       |      | 3.0   | 3.0  |      | 3.0  | 3.0   |      |
| Lane Grp Cap (vph)                | 298   | 272   |      | 109   | 108                       |      | 190   | 1925 |      | 97   | 1709  |      |
| v/s Ratio Prot                    | c0.12 | 0.02  |      | c0.01 | 0.00                      |      | c0.07 | 0.37 |      | 0.04 | c0.42 |      |
| v/s Ratio Perm                    |       |       |      |       |                           |      |       |      |      |      |       |      |
| v/c Ratio                         | 0.73  | 0.09  |      | 0.12  | 0.06                      |      | 0.66  | 0.67 |      | 0.66 | 0.84  |      |
| Uniform Delay, d1                 | 43.6  | 38.8  |      | 49.0  | 48.8                      |      | 47.3  | 18.0 |      | 51.1 | 24.3  |      |
| Progression Factor                | 1.00  | 1.00  |      | 1.00  | 1.00                      |      | 1.00  | 1.00 |      | 1.00 | 1.00  |      |
| Incremental Delay, d2             | 9.1   | 0.2   |      | 0.5   | 0.2                       |      | 8.4   | 0.9  |      | 15.1 | 4.0   |      |
| Delay (s)                         | 52.6  | 38.9  |      | 49.5  | 49.0                      |      | 55.7  | 18.9 |      | 66.2 | 28.3  |      |
| Level of Service                  | D     | D     |      | D     | D                         |      | E     | B    |      | E    | C     |      |
| Approach Delay (s)                |       | 48.4  |      |       | 49.3                      |      |       | 22.2 |      |      | 29.9  |      |
| Approach LOS                      |       | D     |      |       | D                         |      |       | C    |      |      | C     |      |
| <b>Intersection Summary</b>       |       |       |      |       |                           |      |       |      |      |      |       |      |
| HCM 2000 Control Delay            |       | 28.5  |      |       | HCM 2000 Level of Service |      |       | C    |      |      |       |      |
| HCM 2000 Volume to Capacity ratio |       | 0.74  |      |       |                           |      |       |      |      |      |       |      |
| Actuated Cycle Length (s)         |       | 110.4 |      |       | Sum of lost time (s)      |      |       | 18.6 |      |      |       |      |
| Intersection Capacity Utilization |       | 76.4% |      |       | ICU Level of Service      |      |       | D    |      |      |       |      |
| Analysis Period (min)             |       | 15    |      |       |                           |      |       |      |      |      |       |      |
| c Critical Lane Group             |       |       |      |       |                           |      |       |      |      |      |       |      |

# HCM Signalized Intersection Capacity Analysis

20: Twin Oaks Valley Rd/Twin Oaks Valley Rd #1 & San Marcos Blvd

Existing PM

03/17/2017

|                        | EBL  | EBT   | EBR  | WBL   | WBT  | WBR  | NBL   | NBT  | NBR   | SBL  | SBT   | SBR  |
|------------------------|------|-------|------|-------|------|------|-------|------|-------|------|-------|------|
| Movement               | EBL  | EBT   | EBR  | WBL   | WBT  | WBR  | NBL   | NBT  | NBR   | SBL  | SBT   | SBR  |
| Lane Configurations    | ↔    | ↔     | ↔    | ↔     | ↔    | ↔    | ↔     | ↔    | ↔     | ↔    | ↔     | ↔    |
| Traffic Volume (vph)   | 312  | 637   | 202  | 390   | 417  | 88   | 378   | 928  | 259   | 133  | 908   | 218  |
| Future Volume (vph)    | 312  | 637   | 202  | 390   | 417  | 88   | 378   | 928  | 259   | 133  | 908   | 218  |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)    | 4.2  | 5.3   | 5.3  | 4.2   | 5.0  |      | 4.2   | 5.3  | 4.2   | 5.0  | 5.3   |      |
| Lane Util. Factor      | 0.97 | 0.95  | 1.00 | 0.97  | 0.95 |      | 0.97  | 0.95 | 1.00  | 0.97 | 0.95  |      |
| Frpb, ped/bikes        | 1.00 | 1.00  | 0.97 | 1.00  | 1.00 |      | 1.00  | 1.00 | 0.99  | 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  |      |
| Frt                    | 1.00 | 1.00  | 0.85 | 1.00  | 0.97 |      | 1.00  | 1.00 | 0.85  | 1.00 | 0.97  |      |
| Flt Protected          | 0.95 | 1.00  | 1.00 | 0.95  | 1.00 |      | 0.95  | 1.00 | 1.00  | 0.95 | 1.00  |      |
| Satd. Flow (prot)      | 3433 | 3539  | 1537 | 3433  | 3434 |      | 3433  | 3539 | 1560  | 3433 | 3426  |      |
| Flt Permitted          | 0.95 | 1.00  | 1.00 | 0.95  | 1.00 |      | 0.95  | 1.00 | 1.00  | 0.95 | 1.00  |      |
| Satd. Flow (perm)      | 3433 | 3539  | 1537 | 3433  | 3434 |      | 3433  | 3539 | 1560  | 3433 | 3426  |      |
| Peak-hour factor, PHF  | 0.93 | 0.93  | 0.93 | 0.93  | 0.93 | 0.93 | 0.93  | 0.93 | 0.93  | 0.93 | 0.93  | 0.93 |
| Adj. Flow (vph)        | 335  | 685   | 217  | 419   | 448  | 95   | 406   | 998  | 278   | 143  | 976   | 234  |
| RTOR Reduction (vph)   | 0    | 0     | 139  | 0     | 15   | 0    | 0     | 0    | 0     | 0    | 17    | 0    |
| Lane Group Flow (vph)  | 335  | 685   | 78   | 419   | 528  | 0    | 406   | 998  | 278   | 143  | 1193  | 0    |
| Confl. Peds. (#/hr)    |      |       | 9    |       |      | 2    |       |      | 4     |      |       | 1    |
| Confl. Bikes (#/hr)    |      |       | 6    |       |      | 7    |       |      | 6     |      |       | 4    |
| Turn Type              | Prot | NA    | Perm | Prot  | NA   |      | Prot  | NA   | pm+ov | Prot | NA    |      |
| Protected Phases       | 7    | 4     |      | 3     | 8    |      | 5     | 2    | 3     | 1    | 6     |      |
| Permitted Phases       |      |       | 4    |       |      |      |       |      | 2     |      |       |      |
| Actuated Green, G (s)  | 14.7 | 26.8  | 26.8 | 15.5  | 27.9 |      | 15.0  | 47.5 | 63.0  | 9.1  | 42.4  |      |
| Effective Green, g (s) | 14.7 | 26.8  | 26.8 | 15.5  | 27.9 |      | 15.0  | 47.5 | 63.0  | 9.1  | 42.4  |      |
| Actuated g/C Ratio     | 0.12 | 0.23  | 0.23 | 0.13  | 0.24 |      | 0.13  | 0.40 | 0.53  | 0.08 | 0.36  |      |
| Clearance Time (s)     | 4.2  | 5.3   | 5.3  | 4.2   | 5.0  |      | 4.2   | 5.3  | 4.2   | 5.0  | 5.3   |      |
| Vehicle Extension (s)  | 3.0  | 3.0   | 3.0  | 3.0   | 3.0  |      | 3.0   | 3.0  | 3.0   | 3.0  | 3.0   |      |
| Lane Grp Cap (vph)     | 425  | 799   | 347  | 448   | 807  |      | 433   | 1416 | 827   | 263  | 1223  |      |
| v/s Ratio Prot         | 0.10 | c0.19 |      | c0.12 | 0.15 |      | c0.12 | 0.28 | 0.04  | 0.04 | c0.35 |      |
| v/s Ratio Perm         |      |       | 0.05 |       |      |      |       |      | 0.13  |      |       |      |
| v/c Ratio              | 0.79 | 0.86  | 0.22 | 0.94  | 0.65 |      | 0.94  | 0.70 | 0.34  | 0.54 | 0.98  |      |
| Uniform Delay, d1      | 50.5 | 44.1  | 37.5 | 51.1  | 41.0 |      | 51.4  | 29.7 | 15.9  | 52.8 | 37.6  |      |
| Progression Factor     | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 |      | 1.00  | 1.00 | 1.00  | 1.00 | 1.00  |      |
| Incremental Delay, d2  | 9.4  | 9.0   | 0.3  | 26.8  | 1.9  |      | 27.9  | 1.6  | 0.2   | 2.3  | 19.8  |      |
| Delay (s)              | 59.8 | 53.1  | 37.8 | 77.9  | 43.0 |      | 79.2  | 31.4 | 16.1  | 55.1 | 57.5  |      |
| Level of Service       | E    | D     | D    | E     | D    |      | E     | C    | B     | E    | E     |      |
| Approach Delay (s)     |      | 52.3  |      |       | 58.2 |      |       | 40.4 |       |      | 57.2  |      |
| Approach LOS           |      | D     |      |       | E    |      |       | D    |       |      | E     |      |

## Intersection Summary

|                                   |       |                           |      |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay            | 50.8  | HCM 2000 Level of Service | D    |
| HCM 2000 Volume to Capacity ratio | 0.94  |                           |      |
| Actuated Cycle Length (s)         | 118.7 | Sum of lost time (s)      | 19.8 |
| Intersection Capacity Utilization | 88.9% | ICU Level of Service      | E    |
| Analysis Period (min)             | 15    |                           |      |
| c Critical Lane Group             |       |                           |      |

# HCM Signalized Intersection Capacity Analysis

21: Twin Oaks Valley Rd & SR 78 WB Ramps

Existing PM

03/17/2017

|                        | EBL  | EBT  | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR   | SBL  | SBT  | SBR  |
|------------------------|------|------|------|-------|------|------|------|------|-------|------|------|------|
| Movement               | EBL  | EBT  | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR   | SBL  | SBT  | SBR  |
| Lane Configurations    |      |      |      | ↔     |      | ↔    |      | ↔    | ↔     |      | ↔    | ↔    |
| Traffic Volume (vph)   | 0    | 0    | 0    | 488   | 0    | 326  | 0    | 1239 | 544   | 0    | 1173 | 327  |
| Future Volume (vph)    | 0    | 0    | 0    | 488   | 0    | 326  | 0    | 1239 | 544   | 0    | 1173 | 327  |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      |      | 4.6   |      | 4.6  |      | 5.3  | 4.6   |      | 5.3  | 5.3  |
| Lane Util. Factor      |      |      |      | 0.97  |      | 0.88 |      | 0.91 | 1.00  |      | 0.91 | 1.00 |
| Frpb, ped/bikes        |      |      |      | 1.00  |      | 1.00 |      | 1.00 | 0.95  |      | 1.00 | 0.98 |
| Flpb, ped/bikes        |      |      |      | 1.00  |      | 1.00 |      | 1.00 | 1.00  |      | 1.00 | 1.00 |
| Frt                    |      |      |      | 1.00  |      | 0.85 |      | 1.00 | 0.85  |      | 1.00 | 0.85 |
| Flt Protected          |      |      |      | 0.95  |      | 1.00 |      | 1.00 | 1.00  |      | 1.00 | 1.00 |
| Satd. Flow (prot)      |      |      |      | 3433  |      | 2787 |      | 5085 | 1501  |      | 5085 | 1548 |
| Flt Permitted          |      |      |      | 0.95  |      | 1.00 |      | 1.00 | 1.00  |      | 1.00 | 1.00 |
| Satd. Flow (perm)      |      |      |      | 3433  |      | 2787 |      | 5085 | 1501  |      | 5085 | 1548 |
| Peak-hour factor, PHF  | 0.96 | 0.96 | 0.96 | 0.96  | 0.96 | 0.96 | 0.96 | 0.96 | 0.96  | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph)        | 0    | 0    | 0    | 508   | 0    | 340  | 0    | 1291 | 567   | 0    | 1222 | 341  |
| RTOR Reduction (vph)   | 0    | 0    | 0    | 0     | 0    | 44   | 0    | 0    | 0     | 0    | 0    | 104  |
| Lane Group Flow (vph)  | 0    | 0    | 0    | 508   | 0    | 296  | 0    | 1291 | 567   | 0    | 1222 | 237  |
| Confl. Peds. (#/hr)    |      |      |      |       |      |      |      |      | 12    |      |      |      |
| Confl. Bikes (#/hr)    |      |      |      |       |      |      |      |      | 4     |      |      | 4    |
| Turn Type              |      |      |      | Prot  |      | Prot |      | NA   | pm+ov |      | NA   | Perm |
| Protected Phases       |      |      |      | 8     |      | 8    |      | 2    | 8     |      | 6    |      |
| Permitted Phases       |      |      |      |       |      |      |      | 2    |       |      |      | 6    |
| Actuated Green, G (s)  |      |      |      | 26.8  |      | 26.8 |      | 83.3 | 110.1 |      | 83.3 | 83.3 |
| Effective Green, g (s) |      |      |      | 26.8  |      | 26.8 |      | 83.3 | 110.1 |      | 83.3 | 83.3 |
| Actuated g/C Ratio     |      |      |      | 0.22  |      | 0.22 |      | 0.69 | 0.92  |      | 0.69 | 0.69 |
| Clearance Time (s)     |      |      |      | 4.6   |      | 4.6  |      | 5.3  | 4.6   |      | 5.3  | 5.3  |
| Vehicle Extension (s)  |      |      |      | 3.0   |      | 3.0  |      | 3.0  | 3.0   |      | 3.0  | 3.0  |
| Lane Grp Cap (vph)     |      |      |      | 766   |      | 622  |      | 3529 | 1434  |      | 3529 | 1074 |
| v/s Ratio Prot         |      |      |      | c0.15 |      | 0.11 |      | 0.25 | c0.09 |      | 0.24 |      |
| v/s Ratio Perm         |      |      |      |       |      |      |      |      | 0.29  |      |      | 0.15 |
| v/c Ratio              |      |      |      | 0.66  |      | 0.48 |      | 0.37 | 0.40  |      | 0.35 | 0.22 |
| Uniform Delay, d1      |      |      |      | 42.5  |      | 40.5 |      | 7.5  | 0.6   |      | 7.4  | 6.6  |
| Progression Factor     |      |      |      | 1.00  |      | 1.00 |      | 0.34 | 4.16  |      | 1.00 | 1.00 |
| Incremental Delay, d2  |      |      |      | 2.2   |      | 0.6  |      | 0.2  | 0.2   |      | 0.3  | 0.5  |
| Delay (s)              |      |      |      | 44.7  |      | 41.1 |      | 2.8  | 2.8   |      | 7.7  | 7.1  |
| Level of Service       |      |      |      | D     |      | D    |      | A    | A     |      | A    | A    |
| Approach Delay (s)     |      | 0.0  |      |       | 43.2 |      |      | 2.8  |       |      | 7.5  |      |
| Approach LOS           |      | A    |      |       | D    |      |      | A    |       |      | A    |      |

## Intersection Summary

|                                   |       |                           |     |
|-----------------------------------|-------|---------------------------|-----|
| HCM 2000 Control Delay            | 12.6  | HCM 2000 Level of Service | B   |
| HCM 2000 Volume to Capacity ratio | 0.47  |                           |     |
| Actuated Cycle Length (s)         | 120.0 | Sum of lost time (s)      | 9.9 |
| Intersection Capacity Utilization | 52.5% | ICU Level of Service      | A   |
| Analysis Period (min)             | 15    |                           |     |
| c Critical Lane Group             |       |                           |     |

HCM Signalized Intersection Capacity Analysis  
22: Twin Oaks Valley Rd & SR 78 EB Ramps

Existing PM  
03/17/2017

| Movement                          | EBL   | EBT   | EBR  | WBL                       | WBT  | WBR  | NBL  | NBT   | NBR  | SBL   | SBT  | SBR  |
|-----------------------------------|-------|-------|------|---------------------------|------|------|------|-------|------|-------|------|------|
| Lane Configurations               | ↰     | ↱     | ↲    |                           |      |      |      | ↰     | ↱    | ↲     | ↰    | ↱    |
| Traffic Volume (vph)              | 188   | 32    | 274  | 0                         | 0    | 0    | 0    | 1595  | 627  | 322   | 1339 | 0    |
| Future Volume (vph)               | 188   | 32    | 274  | 0                         | 0    | 0    | 0    | 1595  | 627  | 322   | 1339 | 0    |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900 | 1900                      | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)               | 4.6   | 4.6   | 4.6  |                           |      |      |      | 5.3   | 5.3  | 4.2   | 5.3  |      |
| Lane Util. Factor                 | 0.95  | 0.91  | 0.95 |                           |      |      |      | 0.91  | 1.00 | 0.97  | 0.91 |      |
| Frpb, ped/bikes                   | 1.00  | 0.99  | 0.99 |                           |      |      |      | 1.00  | 0.99 | 1.00  | 1.00 |      |
| Flpb, ped/bikes                   | 1.00  | 1.00  | 1.00 |                           |      |      |      | 1.00  | 1.00 | 1.00  | 1.00 |      |
| Frt                               | 1.00  | 0.90  | 0.85 |                           |      |      |      | 1.00  | 0.85 | 1.00  | 1.00 |      |
| Flt Protected                     | 0.95  | 0.99  | 1.00 |                           |      |      |      | 1.00  | 1.00 | 0.95  | 1.00 |      |
| Satd. Flow (prot)                 | 1681  | 1494  | 1482 |                           |      |      |      | 5085  | 1561 | 3433  | 5085 |      |
| Flt Permitted                     | 0.95  | 0.99  | 1.00 |                           |      |      |      | 1.00  | 1.00 | 0.95  | 1.00 |      |
| Satd. Flow (perm)                 | 1681  | 1494  | 1482 |                           |      |      |      | 5085  | 1561 | 3433  | 5085 |      |
| Peak-hour factor, PHF             | 0.96  | 0.96  | 0.96 | 0.96                      | 0.96 | 0.96 | 0.96 | 0.96  | 0.96 | 0.96  | 0.96 | 0.96 |
| Adj. Flow (vph)                   | 196   | 33    | 285  | 0                         | 0    | 0    | 0    | 1661  | 653  | 335   | 1395 | 0    |
| RTOR Reduction (vph)              | 0     | 41    | 49   | 0                         | 0    | 0    | 0    | 0     | 261  | 0     | 0    | 0    |
| Lane Group Flow (vph)             | 176   | 132   | 116  | 0                         | 0    | 0    | 0    | 1661  | 392  | 335   | 1395 | 0    |
| Confl. Peds. (#/hr)               |       |       | 3    |                           |      |      |      |       |      |       |      |      |
| Confl. Bikes (#/hr)               |       |       |      |                           |      |      |      | 5     |      |       |      | 2    |
| Turn Type                         | Split | NA    | Perm |                           |      |      |      | NA    | Perm | Prot  | NA   |      |
| Protected Phases                  | 4     | 4     |      |                           |      |      |      | 2     |      | 1     | 6    |      |
| Permitted Phases                  |       |       | 4    |                           |      |      |      | 2     |      |       |      |      |
| Actuated Green, G (s)             | 20.8  | 20.8  | 20.8 |                           |      |      |      | 68.7  | 68.7 | 16.4  | 89.3 |      |
| Effective Green, g (s)            | 20.8  | 20.8  | 20.8 |                           |      |      |      | 68.7  | 68.7 | 16.4  | 89.3 |      |
| Actuated g/C Ratio                | 0.17  | 0.17  | 0.17 |                           |      |      |      | 0.57  | 0.57 | 0.14  | 0.74 |      |
| Clearance Time (s)                | 4.6   | 4.6   | 4.6  |                           |      |      |      | 5.3   | 5.3  | 4.2   | 5.3  |      |
| Vehicle Extension (s)             | 3.0   | 3.0   | 3.0  |                           |      |      |      | 3.0   | 3.0  | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)                | 291   | 258   | 256  |                           |      |      |      | 2911  | 893  | 469   | 3784 |      |
| v/s Ratio Prot                    | c0.10 | 0.09  |      |                           |      |      |      | c0.33 |      | c0.10 | 0.27 |      |
| v/s Ratio Perm                    |       |       | 0.08 |                           |      |      |      | 0.25  |      |       |      |      |
| v/c Ratio                         | 0.60  | 0.51  | 0.45 |                           |      |      |      | 0.57  | 0.44 | 0.71  | 0.37 |      |
| Uniform Delay, d1                 | 45.8  | 45.0  | 44.5 |                           |      |      |      | 16.3  | 14.6 | 49.6  | 5.4  |      |
| Progression Factor                | 1.00  | 1.00  | 1.00 |                           |      |      |      | 1.00  | 1.00 | 1.08  | 0.72 |      |
| Incremental Delay, d2             | 3.5   | 1.7   | 1.3  |                           |      |      |      | 0.8   | 1.6  | 4.9   | 0.3  |      |
| Delay (s)                         | 49.3  | 46.7  | 45.8 |                           |      |      |      | 17.1  | 16.2 | 58.6  | 4.2  |      |
| Level of Service                  | D     | D     | D    |                           |      |      |      | B     | B    | E     | A    |      |
| Approach Delay (s)                |       | 47.3  |      |                           | 0.0  |      |      | 16.9  |      |       | 14.7 |      |
| Approach LOS                      |       | D     |      |                           | A    |      |      | B     |      |       | B    |      |
| <b>Intersection Summary</b>       |       |       |      |                           |      |      |      |       |      |       |      |      |
| HCM 2000 Control Delay            |       | 19.5  |      | HCM 2000 Level of Service |      |      |      |       | B    |       |      |      |
| HCM 2000 Volume to Capacity ratio |       | 0.60  |      |                           |      |      |      |       |      |       |      |      |
| Actuated Cycle Length (s)         |       | 120.0 |      | Sum of lost time (s)      |      |      |      |       | 14.1 |       |      |      |
| Intersection Capacity Utilization |       | 70.8% |      | ICU Level of Service      |      |      |      |       | C    |       |      |      |
| Analysis Period (min)             |       | 15    |      |                           |      |      |      |       |      |       |      |      |
| c Critical Lane Group             |       |       |      |                           |      |      |      |       |      |       |      |      |

HCM Signalized Intersection Capacity Analysis  
23: Robelini Dr & S. Santa Fe Ave

Existing PM  
03/17/2017

|                                   |  |  |  |  |  |  |
|-----------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBT                                                                                 | EBR                                                                                 | WBL                                                                                 | WBT                                                                                 | NBL                                                                                 | NBR                                                                                 |
| Lane Configurations               |  |  |  |  |  |  |
| Traffic Volume (vph)              | 485                                                                                 | 251                                                                                 | 210                                                                                 | 433                                                                                 | 358                                                                                 | 469                                                                                 |
| Future Volume (vph)               | 485                                                                                 | 251                                                                                 | 210                                                                                 | 433                                                                                 | 358                                                                                 | 469                                                                                 |
| Ideal Flow (vphpl)                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 5.3                                                                                 | 4.6                                                                                 | 4.4                                                                                 | 5.3                                                                                 | 4.6                                                                                 | 4.4                                                                                 |
| Lane Util. Factor                 | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Frpb, ped/bikes                   | 1.00                                                                                | 0.98                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Flpb, ped/bikes                   | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 1863                                                                                | 1560                                                                                | 1770                                                                                | 1863                                                                                | 1770                                                                                | 1583                                                                                |
| Flt Permitted                     | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 1863                                                                                | 1560                                                                                | 1770                                                                                | 1863                                                                                | 1770                                                                                | 1583                                                                                |
| Peak-hour factor, PHF             | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.92                                                                                |
| Adj. Flow (vph)                   | 505                                                                                 | 261                                                                                 | 219                                                                                 | 451                                                                                 | 373                                                                                 | 510                                                                                 |
| RTOR Reduction (vph)              | 0                                                                                   | 61                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 142                                                                                 |
| Lane Group Flow (vph)             | 505                                                                                 | 200                                                                                 | 219                                                                                 | 451                                                                                 | 373                                                                                 | 368                                                                                 |
| Confl. Bikes (#/hr)               | 6                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Turn Type                         | NA                                                                                  | pm+ov                                                                               | Prot                                                                                | NA                                                                                  | Prot                                                                                | pm+ov                                                                               |
| Protected Phases                  | 2                                                                                   | 8                                                                                   | 1                                                                                   | 6                                                                                   | 8                                                                                   | 1                                                                                   |
| Permitted Phases                  | 2                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             | 39.7                                                                                | 61.5                                                                                | 14.0                                                                                | 24.5                                                                                | 21.8                                                                                | 35.8                                                                                |
| Effective Green, g (s)            | 39.7                                                                                | 61.5                                                                                | 14.0                                                                                | 24.5                                                                                | 21.8                                                                                | 35.8                                                                                |
| Actuated g/C Ratio                | 0.44                                                                                | 0.68                                                                                | 0.16                                                                                | 0.27                                                                                | 0.24                                                                                | 0.40                                                                                |
| Clearance Time (s)                | 5.3                                                                                 | 4.6                                                                                 | 4.4                                                                                 | 5.3                                                                                 | 4.6                                                                                 | 4.4                                                                                 |
| Vehicle Extension (s)             | 3.0                                                                                 | 3.0                                                                                 | 3.0                                                                                 | 3.0                                                                                 | 3.0                                                                                 | 3.0                                                                                 |
| Lane Grp Cap (vph)                | 823                                                                                 | 1068                                                                                | 275                                                                                 | 508                                                                                 | 429                                                                                 | 631                                                                                 |
| v/s Ratio Prot                    | c0.27                                                                               | 0.05                                                                                | c0.12                                                                               | c0.24                                                                               | c0.21                                                                               | 0.09                                                                                |
| v/s Ratio Perm                    | 0.08                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         | 0.61                                                                                | 0.19                                                                                | 0.80                                                                                | 0.89                                                                                | 0.87                                                                                | 0.58                                                                                |
| Uniform Delay, d1                 | 19.2                                                                                | 5.1                                                                                 | 36.5                                                                                | 31.3                                                                                | 32.6                                                                                | 21.2                                                                                |
| Progression Factor                | 1.00                                                                                | 1.00                                                                                | 0.98                                                                                | 0.80                                                                                | 1.00                                                                                | 1.00                                                                                |
| Incremental Delay, d2             | 1.4                                                                                 | 0.1                                                                                 | 5.1                                                                                 | 6.4                                                                                 | 16.9                                                                                | 1.4                                                                                 |
| Delay (s)                         | 20.5                                                                                | 5.2                                                                                 | 41.0                                                                                | 31.6                                                                                | 49.5                                                                                | 22.5                                                                                |
| Level of Service                  | C                                                                                   | A                                                                                   | D                                                                                   | C                                                                                   | D                                                                                   | C                                                                                   |
| Approach Delay (s)                | 15.3                                                                                |                                                                                     |                                                                                     | 34.7                                                                                | 33.9                                                                                |                                                                                     |
| Approach LOS                      | B                                                                                   |                                                                                     |                                                                                     | C                                                                                   | C                                                                                   |                                                                                     |
| Intersection Summary              |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            | 28.0                                                                                |                                                                                     | HCM 2000 Level of Service                                                           |                                                                                     |                                                                                     | C                                                                                   |
| HCM 2000 Volume to Capacity ratio | 0.79                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         | 89.8                                                                                |                                                                                     |                                                                                     | Sum of lost time (s)                                                                |                                                                                     | 14.3                                                                                |
| Intersection Capacity Utilization | 68.9%                                                                               |                                                                                     | ICU Level of Service                                                                |                                                                                     |                                                                                     | C                                                                                   |
| Analysis Period (min)             | 15                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

HCM Signalized Intersection Capacity Analysis  
24: Sycamore Avenue/Robelini Dr & SR 78 WB Ramps

Existing PM  
03/17/2017

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                               | NBR                                                                               | SBL                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |                                                                                   |                                                                                   |                                                                                   |  |  |  |  |  |                                                                                   |                                                                                   |  |  |
| Traffic Volume (vph)              | 0                                                                                 | 0                                                                                 | 0                                                                                 | 618                                                                               | 6                                                                                 | 302                                                                               | 753                                                                               | 953                                                                               | 0                                                                                 | 0                                                                                 | 535                                                                               | 526                                                                               |
| Future Volume (vph)               | 0                                                                                 | 0                                                                                 | 0                                                                                 | 618                                                                               | 6                                                                                 | 302                                                                               | 753                                                                               | 953                                                                               | 0                                                                                 | 0                                                                                 | 535                                                                               | 526                                                                               |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Total Lost time (s)               |                                                                                   |                                                                                   |                                                                                   | 4.6                                                                               | 4.6                                                                               | 4.6                                                                               | 4.2                                                                               | 5.0                                                                               |                                                                                   |                                                                                   | 5.0                                                                               | 5.0                                                                               |
| Lane Util. Factor                 |                                                                                   |                                                                                   |                                                                                   | 0.95                                                                              | 0.95                                                                              | 0.88                                                                              | 0.97                                                                              | 0.91                                                                              |                                                                                   |                                                                                   | 0.91                                                                              | 1.00                                                                              |
| Frpb, ped/bikes                   |                                                                                   |                                                                                   |                                                                                   | 1.00                                                                              | 1.00                                                                              | 0.99                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              | 0.97                                                                              |
| Flpb, ped/bikes                   |                                                                                   |                                                                                   |                                                                                   | 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                                                                              |                                                                                   |                                                                                   | 1.00                                                                              | 0.85                                                                              |
| Flt Protected                     |                                                                                   |                                                                                   |                                                                                   | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              | 1.00                                                                              |
| Satd. Flow (prot)                 |                                                                                   |                                                                                   |                                                                                   | 1681                                                                              | 1687                                                                              | 2750                                                                              | 3433                                                                              | 5085                                                                              |                                                                                   |                                                                                   | 5085                                                                              | 1540                                                                              |
| Flt Permitted                     |                                                                                   |                                                                                   |                                                                                   | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              | 1.00                                                                              |
| Satd. Flow (perm)                 |                                                                                   |                                                                                   |                                                                                   | 1681                                                                              | 1687                                                                              | 2750                                                                              | 3433                                                                              | 5085                                                                              |                                                                                   |                                                                                   | 5085                                                                              | 1540                                                                              |
| Peak-hour factor, PHF             | 0.98                                                                              | 0.98                                                                              | 0.98                                                                              | 0.98                                                                              | 0.98                                                                              | 0.98                                                                              | 0.98                                                                              | 0.98                                                                              | 0.98                                                                              | 0.98                                                                              | 0.98                                                                              | 0.98                                                                              |
| Adj. Flow (vph)                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 631                                                                               | 6                                                                                 | 308                                                                               | 768                                                                               | 972                                                                               | 0                                                                                 | 0                                                                                 | 546                                                                               | 537                                                                               |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 181                                                                               | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 345                                                                               |
| Lane Group Flow (vph)             | 0                                                                                 | 0                                                                                 | 0                                                                                 | 315                                                                               | 322                                                                               | 127                                                                               | 768                                                                               | 972                                                                               | 0                                                                                 | 0                                                                                 | 546                                                                               | 192                                                                               |
| Confl. Peds. (#/hr)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 9                                                                                 |
| Confl. Bikes (#/hr)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Turn Type                         |                                                                                   |                                                                                   |                                                                                   | Split                                                                             | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                |                                                                                   |                                                                                   | NA                                                                                | Perm                                                                              |
| Protected Phases                  |                                                                                   |                                                                                   |                                                                                   | 8                                                                                 | 8                                                                                 |                                                                                   | 5                                                                                 | 2                                                                                 |                                                                                   |                                                                                   | 6                                                                                 |                                                                                   |
| Permitted Phases                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 8                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 6                                                                                 |
| Actuated Green, G (s)             |                                                                                   |                                                                                   |                                                                                   | 27.6                                                                              | 27.6                                                                              | 27.6                                                                              | 29.3                                                                              | 72.8                                                                              |                                                                                   |                                                                                   | 39.3                                                                              | 39.3                                                                              |
| Effective Green, g (s)            |                                                                                   |                                                                                   |                                                                                   | 27.6                                                                              | 27.6                                                                              | 27.6                                                                              | 29.3                                                                              | 72.8                                                                              |                                                                                   |                                                                                   | 39.3                                                                              | 39.3                                                                              |
| Actuated g/C Ratio                |                                                                                   |                                                                                   |                                                                                   | 0.25                                                                              | 0.25                                                                              | 0.25                                                                              | 0.27                                                                              | 0.66                                                                              |                                                                                   |                                                                                   | 0.36                                                                              | 0.36                                                                              |
| Clearance Time (s)                |                                                                                   |                                                                                   |                                                                                   | 4.6                                                                               | 4.6                                                                               | 4.6                                                                               | 4.2                                                                               | 5.0                                                                               |                                                                                   |                                                                                   | 5.0                                                                               | 5.0                                                                               |
| Vehicle Extension (s)             |                                                                                   |                                                                                   |                                                                                   | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               |                                                                                   |                                                                                   | 3.0                                                                               | 3.0                                                                               |
| Lane Grp Cap (vph)                |                                                                                   |                                                                                   |                                                                                   | 421                                                                               | 423                                                                               | 690                                                                               | 914                                                                               | 3365                                                                              |                                                                                   |                                                                                   | 1816                                                                              | 550                                                                               |
| v/s Ratio Prot                    |                                                                                   |                                                                                   |                                                                                   | 0.19                                                                              | c0.19                                                                             |                                                                                   | c0.22                                                                             | 0.19                                                                              |                                                                                   |                                                                                   | 0.11                                                                              |                                                                                   |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.05                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | c0.12                                                                             |
| v/c Ratio                         |                                                                                   |                                                                                   |                                                                                   | 0.75                                                                              | 0.76                                                                              | 0.18                                                                              | 0.84                                                                              | 0.29                                                                              |                                                                                   |                                                                                   | 0.30                                                                              | 0.35                                                                              |
| Uniform Delay, d1                 |                                                                                   |                                                                                   |                                                                                   | 38.0                                                                              | 38.1                                                                              | 32.4                                                                              | 38.1                                                                              | 7.8                                                                               |                                                                                   |                                                                                   | 25.5                                                                              | 26.0                                                                              |
| Progression Factor                |                                                                                   |                                                                                   |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.52                                                                              | 0.75                                                                              |                                                                                   |                                                                                   | 1.00                                                                              | 1.00                                                                              |
| Incremental Delay, d2             |                                                                                   |                                                                                   |                                                                                   | 7.1                                                                               | 7.9                                                                               | 0.1                                                                               | 6.2                                                                               | 0.2                                                                               |                                                                                   |                                                                                   | 0.4                                                                               | 1.7                                                                               |
| Delay (s)                         |                                                                                   |                                                                                   |                                                                                   | 45.1                                                                              | 46.0                                                                              | 32.5                                                                              | 64.2                                                                              | 6.0                                                                               |                                                                                   |                                                                                   | 25.9                                                                              | 27.7                                                                              |
| Level of Service                  |                                                                                   |                                                                                   |                                                                                   | D                                                                                 | D                                                                                 | C                                                                                 | E                                                                                 | A                                                                                 |                                                                                   |                                                                                   | C                                                                                 | C                                                                                 |
| Approach Delay (s)                |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 41.3                                                                              |                                                                                   |                                                                                   | 31.7                                                                              |                                                                                   |                                                                                   | 26.8                                                                              |                                                                                   |
| Approach LOS                      |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | C                                                                                 |                                                                                   |                                                                                   | C                                                                                 |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 32.7                                                                              | HCM 2000 Level of Service                                                         |                                                                                   |                                                                                   |                                                                                   |                                                                                   | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.62                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 110.0                                                                             | Sum of lost time (s)                                                              |                                                                                   |                                                                                   |                                                                                   | 13.8                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 83.8%                                                                             | ICU Level of Service                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

HCM Signalized Intersection Capacity Analysis  
25: Sycamore Avenue & SR 78 EB Ramps

Existing PM  
03/17/2017

| Movement                          | EBL                                                                                 | EBT                                                                                 | EBR                                                                                 | WBL                       | WBT  | WBR  | NBL  | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
|-----------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------|------|------|------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Configurations               |  |  |  |                           |      |      |      |  |  |  |  |  |
| Traffic Volume (vph)              | 425                                                                                 | 3                                                                                   | 407                                                                                 | 0                         | 0    | 0    | 0    | 1331                                                                                | 548                                                                                 | 148                                                                                 | 982                                                                                 | 0                                                                                   |
| Future Volume (vph)               | 425                                                                                 | 3                                                                                   | 407                                                                                 | 0                         | 0    | 0    | 0    | 1331                                                                                | 548                                                                                 | 148                                                                                 | 982                                                                                 | 0                                                                                   |
| Ideal Flow (vphpl)                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                      | 1900 | 1900 | 1900 | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 4.6                                                                                 | 4.6                                                                                 | 4.6                                                                                 |                           |      |      |      | 5.0                                                                                 | 5.0                                                                                 | 4.2                                                                                 | 5.0                                                                                 |                                                                                     |
| Lane Util. Factor                 | 0.95                                                                                | 0.91                                                                                | 0.95                                                                                |                           |      |      |      | 0.91                                                                                | 1.00                                                                                | 0.97                                                                                | 0.91                                                                                |                                                                                     |
| Frpb, ped/bikes                   | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                           |      |      |      | 1.00                                                                                | 0.98                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Flpb, ped/bikes                   | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                           |      |      |      | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Frt                               | 1.00                                                                                | 0.92                                                                                | 0.85                                                                                |                           |      |      |      | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Flt Protected                     | 0.95                                                                                | 0.98                                                                                | 1.00                                                                                |                           |      |      |      | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (prot)                 | 1681                                                                                | 1529                                                                                | 1504                                                                                |                           |      |      |      | 5085                                                                                | 1557                                                                                | 3433                                                                                | 5085                                                                                |                                                                                     |
| Flt Permitted                     | 0.95                                                                                | 0.98                                                                                | 1.00                                                                                |                           |      |      |      | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (perm)                 | 1681                                                                                | 1529                                                                                | 1504                                                                                |                           |      |      |      | 5085                                                                                | 1557                                                                                | 3433                                                                                | 5085                                                                                |                                                                                     |
| Peak-hour factor, PHF             | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                      | 0.97 | 0.97 | 0.97 | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                |
| Adj. Flow (vph)                   | 438                                                                                 | 3                                                                                   | 420                                                                                 | 0                         | 0    | 0    | 0    | 1372                                                                                | 565                                                                                 | 153                                                                                 | 1012                                                                                | 0                                                                                   |
| RTOR Reduction (vph)              | 0                                                                                   | 37                                                                                  | 85                                                                                  | 0                         | 0    | 0    | 0    | 0                                                                                   | 170                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Lane Group Flow (vph)             | 298                                                                                 | 253                                                                                 | 188                                                                                 | 0                         | 0    | 0    | 0    | 1372                                                                                | 395                                                                                 | 153                                                                                 | 1012                                                                                | 0                                                                                   |
| Confl. Peds. (#/hr)               |                                                                                     |                                                                                     |                                                                                     |                           |      |      |      |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     | 7                                                                                   |
| Confl. Bikes (#/hr)               |                                                                                     |                                                                                     |                                                                                     |                           |      |      |      |                                                                                     | 3                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |
| Turn Type                         | Split                                                                               | NA                                                                                  | Perm                                                                                |                           |      |      |      | NA                                                                                  | Perm                                                                                | Prot                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases                  | 4                                                                                   | 4                                                                                   |                                                                                     |                           |      |      |      | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                     |                                                                                     | 4                                                                                   |                           |      |      |      |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             | 26.8                                                                                | 26.8                                                                                | 26.8                                                                                |                           |      |      |      | 59.6                                                                                | 59.6                                                                                | 9.8                                                                                 | 73.6                                                                                |                                                                                     |
| Effective Green, g (s)            | 26.8                                                                                | 26.8                                                                                | 26.8                                                                                |                           |      |      |      | 59.6                                                                                | 59.6                                                                                | 9.8                                                                                 | 73.6                                                                                |                                                                                     |
| Actuated g/C Ratio                | 0.24                                                                                | 0.24                                                                                | 0.24                                                                                |                           |      |      |      | 0.54                                                                                | 0.54                                                                                | 0.09                                                                                | 0.67                                                                                |                                                                                     |
| Clearance Time (s)                | 4.6                                                                                 | 4.6                                                                                 | 4.6                                                                                 |                           |      |      |      | 5.0                                                                                 | 5.0                                                                                 | 4.2                                                                                 | 5.0                                                                                 |                                                                                     |
| Vehicle Extension (s)             | 3.0                                                                                 | 3.0                                                                                 | 3.0                                                                                 |                           |      |      |      | 3.0                                                                                 | 3.0                                                                                 | 3.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Lane Grp Cap (vph)                | 409                                                                                 | 372                                                                                 | 366                                                                                 |                           |      |      |      | 2755                                                                                | 843                                                                                 | 305                                                                                 | 3402                                                                                |                                                                                     |
| v/s Ratio Prot                    | c0.18                                                                               | 0.17                                                                                |                                                                                     |                           |      |      |      | c0.27                                                                               |                                                                                     | c0.04                                                                               | 0.20                                                                                |                                                                                     |
| v/s Ratio Perm                    |                                                                                     |                                                                                     | 0.12                                                                                |                           |      |      |      |                                                                                     | 0.25                                                                                |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         | 0.73                                                                                | 0.68                                                                                | 0.51                                                                                |                           |      |      |      | 0.50                                                                                | 0.47                                                                                | 0.50                                                                                | 0.30                                                                                |                                                                                     |
| Uniform Delay, d1                 | 38.3                                                                                | 37.7                                                                                | 36.0                                                                                |                           |      |      |      | 15.8                                                                                | 15.5                                                                                | 47.8                                                                                | 7.5                                                                                 |                                                                                     |
| Progression Factor                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                           |      |      |      | 1.00                                                                                | 1.00                                                                                | 1.57                                                                                | 1.62                                                                                |                                                                                     |
| Incremental Delay, d2             | 6.4                                                                                 | 4.9                                                                                 | 1.2                                                                                 |                           |      |      |      | 0.6                                                                                 | 1.9                                                                                 | 1.2                                                                                 | 0.2                                                                                 |                                                                                     |
| Delay (s)                         | 44.6                                                                                | 42.6                                                                                | 37.2                                                                                |                           |      |      |      | 16.5                                                                                | 17.4                                                                                | 76.4                                                                                | 12.4                                                                                |                                                                                     |
| Level of Service                  | D                                                                                   | D                                                                                   | D                                                                                   |                           |      |      |      | B                                                                                   | B                                                                                   | E                                                                                   | B                                                                                   |                                                                                     |
| Approach Delay (s)                |                                                                                     | 41.6                                                                                |                                                                                     |                           | 0.0  |      |      | 16.7                                                                                |                                                                                     |                                                                                     | 20.8                                                                                |                                                                                     |
| Approach LOS                      |                                                                                     | D                                                                                   |                                                                                     |                           | A    |      |      | B                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |
| Intersection Summary              |                                                                                     |                                                                                     |                                                                                     |                           |      |      |      |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            | 23.3                                                                                |                                                                                     |                                                                                     | HCM 2000 Level of Service |      |      |      |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio | 0.56                                                                                |                                                                                     |                                                                                     |                           |      |      |      |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         | 110.0                                                                               |                                                                                     |                                                                                     | Sum of lost time (s)      |      |      |      |                                                                                     | 13.8                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization | 83.8%                                                                               |                                                                                     |                                                                                     | ICU Level of Service      |      |      |      |                                                                                     | E                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             | 15                                                                                  |                                                                                     |                                                                                     |                           |      |      |      |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                     |                                                                                     |                                                                                     |                           |      |      |      |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

HCM Signalized Intersection Capacity Analysis  
26: S. Santa Fe Ave & Buena Creek Rd

Existing PM  
03/17/2017

| Movement                          | EBL   | EBT  | WBT   | WBR  | SBL                       | SBR  |
|-----------------------------------|-------|------|-------|------|---------------------------|------|
| Lane Configurations               | ↰     | ↑    | ↰     | ↰    | ↰                         | ↰    |
| Traffic Volume (vph)              | 533   | 421  | 467   | 209  | 123                       | 176  |
| Future Volume (vph)               | 533   | 421  | 467   | 209  | 123                       | 176  |
| Ideal Flow (vphpl)                | 1520  | 1900 | 1900  | 1520 | 1520                      | 1520 |
| Total Lost time (s)               | 4.4   | 5.3  | 5.3   | 5.3  | 4.0                       |      |
| Lane Util. Factor                 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00                      |      |
| Frpb, ped/bikes                   | 1.00  | 1.00 | 1.00  | 0.93 | 0.97                      |      |
| Flpb, ped/bikes                   | 1.00  | 1.00 | 1.00  | 1.00 | 1.00                      |      |
| Frt                               | 1.00  | 1.00 | 1.00  | 0.85 | 0.92                      |      |
| Flt Protected                     | 0.95  | 1.00 | 1.00  | 1.00 | 0.98                      |      |
| Satd. Flow (prot)                 | 1416  | 1863 | 1863  | 1184 | 1306                      |      |
| Flt Permitted                     | 0.95  | 1.00 | 1.00  | 1.00 | 0.98                      |      |
| Satd. Flow (perm)                 | 1416  | 1863 | 1863  | 1184 | 1306                      |      |
| Peak-hour factor, PHF             | 0.96  | 0.96 | 0.96  | 0.96 | 0.96                      | 0.96 |
| Adj. Flow (vph)                   | 555   | 439  | 486   | 218  | 128                       | 183  |
| RTOR Reduction (vph)              | 0     | 0    | 0     | 68   | 0                         | 0    |
| Lane Group Flow (vph)             | 555   | 439  | 486   | 150  | 311                       | 0    |
| Confl. Peds. (#/hr)               |       |      |       | 19   | 12                        |      |
| Confl. Bikes (#/hr)               |       |      |       | 4    |                           |      |
| Turn Type                         | Prot  | NA   | NA    | Perm | Prot                      |      |
| Protected Phases                  | 5     | 2    | 6     |      | 4                         |      |
| Permitted Phases                  |       |      |       | 6    |                           |      |
| Actuated Green, G (s)             | 29.2  | 39.7 | 24.5  | 24.5 | 22.4                      |      |
| Effective Green, g (s)            | 29.2  | 39.7 | 24.5  | 24.5 | 22.4                      |      |
| Actuated g/C Ratio                | 0.33  | 0.44 | 0.27  | 0.27 | 0.25                      |      |
| Clearance Time (s)                | 4.4   | 5.3  | 5.3   | 5.3  | 4.0                       |      |
| Vehicle Extension (s)             | 3.0   | 3.0  | 3.0   | 3.0  | 3.0                       |      |
| Lane Grp Cap (vph)                | 460   | 823  | 508   | 323  | 325                       |      |
| v/s Ratio Prot                    | c0.39 | 0.24 | c0.26 |      | c0.24                     |      |
| v/s Ratio Perm                    |       |      |       | 0.13 |                           |      |
| v/c Ratio                         | 1.21  | 0.53 | 0.96  | 0.46 | 0.96                      |      |
| Uniform Delay, d1                 | 30.3  | 18.3 | 32.1  | 27.2 | 33.2                      |      |
| Progression Factor                | 1.25  | 0.75 | 1.00  | 1.00 | 1.00                      |      |
| Incremental Delay, d2             | 108.6 | 0.5  | 29.0  | 1.1  | 38.1                      |      |
| Delay (s)                         | 146.4 | 14.3 | 61.1  | 28.2 | 71.4                      |      |
| Level of Service                  | F     | B    | E     | C    | E                         |      |
| Approach Delay (s)                |       | 88.1 | 50.9  |      | 71.4                      |      |
| Approach LOS                      |       | F    | D     |      | E                         |      |
| <b>Intersection Summary</b>       |       |      |       |      |                           |      |
| HCM 2000 Control Delay            |       |      | 72.5  |      | HCM 2000 Level of Service | E    |
| HCM 2000 Volume to Capacity ratio |       |      | 1.06  |      |                           |      |
| Actuated Cycle Length (s)         |       |      | 89.8  |      | Sum of lost time (s)      | 14.3 |
| Intersection Capacity Utilization |       |      | 95.7% |      | ICU Level of Service      | F    |
| Analysis Period (min)             |       |      | 15    |      |                           |      |
| c Critical Lane Group             |       |      |       |      |                           |      |

HCM Unsignalized Intersection Capacity Analysis  
27: Buena Creek Rd & Monte Vista Dr

Existing PM  
03/17/2017

| Movement                          | EBL   | EBT   | WBT   | WBR  | SBL                  | SBR  |
|-----------------------------------|-------|-------|-------|------|----------------------|------|
| Lane Configurations               |       | ↑     | ↑     |      | ↰                    | ↰    |
| Sign Control                      |       | Stop  | Stop  |      | Stop                 |      |
| Traffic Volume (vph)              | 205   | 340   | 154   | 375  | 309                  | 93   |
| Future Volume (vph)               | 205   | 340   | 154   | 375  | 309                  | 93   |
| Peak Hour Factor                  | 0.92  | 0.92  | 0.92  | 0.92 | 0.92                 | 0.92 |
| Hourly flow rate (vph)            | 223   | 370   | 167   | 408  | 336                  | 101  |
| Direction, Lane #                 | EB 1  | WB 1  | SB 1  |      |                      |      |
| Volume Total (vph)                | 593   | 575   | 437   |      |                      |      |
| Volume Left (vph)                 | 223   | 0     | 336   |      |                      |      |
| Volume Right (vph)                | 0     | 408   | 101   |      |                      |      |
| Hadj (s)                          | 0.11  | -0.39 | 0.05  |      |                      |      |
| Departure Headway (s)             | 6.8   | 6.3   | 7.0   |      |                      |      |
| Degree Utilization, x             | 1.12  | 1.00  | 0.85  |      |                      |      |
| Capacity (veh/h)                  | 528   | 575   | 507   |      |                      |      |
| Control Delay (s)                 | 100.3 | 63.2  | 38.7  |      |                      |      |
| Approach Delay (s)                | 100.3 | 63.2  | 38.7  |      |                      |      |
| Approach LOS                      | F     | F     | E     |      |                      |      |
| <b>Intersection Summary</b>       |       |       |       |      |                      |      |
| Delay                             |       |       | 70.2  |      |                      |      |
| Level of Service                  |       |       | F     |      |                      |      |
| Intersection Capacity Utilization |       |       | 93.2% |      | ICU Level of Service | F    |
| Analysis Period (min)             |       |       | 15    |      |                      |      |

HCM Signalized Intersection Capacity Analysis  
28: San Marcos Blvd & Knoll Rd/SR 76 WB Ramps

Existing PM  
03/17/2017

| Movement                          | EBL  | EBT   | EBR   | WBL   | WBT                       | WBR  | NBL   | NBT   | NBR  | SBL  | SBT  | SBR  |
|-----------------------------------|------|-------|-------|-------|---------------------------|------|-------|-------|------|------|------|------|
| Lane Configurations               | ↰    |       | ↱     | ↰     | ↱                         |      | ↰     | ↱     | ↱    |      | ↱    | ↱    |
| Traffic Volume (vph)              | 136  | 0     | 309   | 889   | 332                       | 34   | 350   | 1013  | 117  | 0    | 901  | 112  |
| Future Volume (vph)               | 136  | 0     | 309   | 889   | 332                       | 34   | 350   | 1013  | 117  | 0    | 901  | 112  |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900  | 1900  | 1900                      | 1900 | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)               | 5.6  |       | 5.2   | 5.6   | 5.6                       |      | 5.2   | 6.3   | 6.3  |      | 6.3  | 6.3  |
| Lane Util. Factor                 | 1.00 |       | 0.88  | 0.97  | 0.95                      |      | 0.97  | 0.95  | 1.00 |      | 0.91 | 1.00 |
| Frpb, ped/bikes                   | 1.00 |       | 1.00  | 1.00  | 1.00                      |      | 1.00  | 1.00  | 0.98 |      | 1.00 | 0.97 |
| Flpb, ped/bikes                   | 1.00 |       | 1.00  | 1.00  | 1.00                      |      | 1.00  | 1.00  | 1.00 |      | 1.00 | 1.00 |
| Frt                               | 1.00 |       | 0.85  | 1.00  | 0.99                      |      | 1.00  | 1.00  | 0.85 |      | 1.00 | 0.85 |
| Flt Protected                     | 0.95 |       | 1.00  | 0.95  | 1.00                      |      | 0.95  | 1.00  | 1.00 |      | 1.00 | 1.00 |
| Satd. Flow (prot)                 | 1770 |       | 2787  | 3433  | 3490                      |      | 3433  | 3539  | 1550 |      | 5085 | 1539 |
| Flt Permitted                     | 0.95 |       | 1.00  | 0.95  | 1.00                      |      | 0.95  | 1.00  | 1.00 |      | 1.00 | 1.00 |
| Satd. Flow (perm)                 | 1770 |       | 2787  | 3433  | 3490                      |      | 3433  | 3539  | 1550 |      | 5085 | 1539 |
| Peak-hour factor, PHF             | 0.95 | 0.95  | 0.95  | 0.95  | 0.95                      | 0.95 | 0.95  | 0.95  | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph)                   | 143  | 0     | 325   | 936   | 349                       | 36   | 368   | 1066  | 123  | 0    | 948  | 118  |
| RTOR Reduction (vph)              | 0    | 0     | 60    | 0     | 7                         | 0    | 0     | 0     | 54   | 0    | 0    | 74   |
| Lane Group Flow (vph)             | 143  | 0     | 265   | 936   | 378                       | 0    | 368   | 1066  | 69   | 0    | 948  | 44   |
| Confl. Peds. (#/hr)               |      |       |       |       |                           |      |       |       |      |      |      | 12   |
| Confl. Bikes (#/hr)               |      |       |       |       |                           |      |       |       |      |      |      | 1    |
| Turn Type                         | Prot |       | pm+ov | Prot  | NA                        |      | Prot  | NA    | Perm |      | NA   | Perm |
| Protected Phases                  | 7    |       | 5     | 3     | 8                         |      | 5     | 2     |      |      | 6    |      |
| Permitted Phases                  |      |       | 7     |       |                           |      |       | 2     |      |      |      | 6    |
| Actuated Green, G (s)             | 13.9 |       | 31.1  | 41.1  | 21.6                      |      | 17.2  | 67.0  | 67.0 |      | 44.6 | 44.6 |
| Effective Green, g (s)            | 13.9 |       | 31.1  | 41.1  | 21.6                      |      | 17.2  | 67.0  | 67.0 |      | 44.6 | 44.6 |
| Actuated g/C Ratio                | 0.12 |       | 0.26  | 0.34  | 0.18                      |      | 0.14  | 0.56  | 0.56 |      | 0.37 | 0.37 |
| Clearance Time (s)                | 5.6  |       | 5.2   | 5.6   | 5.6                       |      | 5.2   | 6.3   | 6.3  |      | 6.3  | 6.3  |
| 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)                | 205  |       | 722   | 1175  | 628                       |      | 492   | 1975  | 865  |      | 1889 | 571  |
| v/s Ratio Prot                    | 0.08 |       | 0.05  | c0.27 | 0.11                      |      | c0.11 | c0.30 |      |      | 0.19 |      |
| v/s Ratio Perm                    |      |       | 0.04  |       |                           |      |       | 0.04  |      |      | 0.03 |      |
| v/c Ratio                         | 0.70 |       | 0.37  | 0.80  | 0.60                      |      | 0.75  | 0.54  | 0.08 |      | 0.50 | 0.08 |
| Uniform Delay, d1                 | 51.0 |       | 36.4  | 35.7  | 45.2                      |      | 49.3  | 16.8  | 12.2 |      | 29.1 | 24.4 |
| Progression Factor                | 1.00 |       | 1.00  | 1.00  | 1.00                      |      | 1.00  | 1.00  | 1.00 |      | 1.00 | 1.00 |
| Incremental Delay, d2             | 9.9  |       | 0.3   | 3.8   | 1.6                       |      | 6.1   | 1.1   | 0.2  |      | 1.0  | 0.3  |
| Delay (s)                         | 60.9 |       | 36.7  | 39.5  | 46.9                      |      | 55.5  | 17.8  | 12.4 |      | 30.1 | 24.6 |
| Level of Service                  | E    |       | D     | D     | D                         |      | E     | B     | B    |      | C    | C    |
| Approach Delay (s)                |      | 44.1  |       |       | 41.7                      |      |       | 26.3  |      |      | 29.5 |      |
| Approach LOS                      |      | D     |       |       | D                         |      |       | C     |      |      | C    |      |
| <b>Intersection Summary</b>       |      |       |       |       |                           |      |       |       |      |      |      |      |
| HCM 2000 Control Delay            |      | 33.5  |       |       | HCM 2000 Level of Service |      |       | C     |      |      |      |      |
| HCM 2000 Volume to Capacity ratio |      | 0.73  |       |       |                           |      |       |       |      |      |      |      |
| Actuated Cycle Length (s)         |      | 120.0 |       |       | Sum of lost time (s)      |      |       | 22.7  |      |      |      |      |
| Intersection Capacity Utilization |      | 73.8% |       |       | ICU Level of Service      |      |       | D     |      |      |      |      |
| Analysis Period (min)             |      | 15    |       |       |                           |      |       |       |      |      |      |      |
| c Critical Lane Group             |      |       |       |       |                           |      |       |       |      |      |      |      |

HCM Signalized Intersection Capacity Analysis  
29: San Marcos Blvd & SR 78 EB Ramps

Existing PM  
03/17/2017

| Movement                          | EBL   | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT                       | NBR   | SBL  | SBT   | SBR  |
|-----------------------------------|-------|-------|------|------|------|------|------|---------------------------|-------|------|-------|------|
| Lane Configurations               | ↰     |       | ↱    |      |      |      |      | ↱                         | ↱     | ↱    | ↱     | ↱    |
| Traffic Volume (vph)              | 224   | 0     | 78   | 0    | 0    | 0    | 0    | 1303                      | 1083  | 131  | 1901  | 0    |
| Future Volume (vph)               | 224   | 0     | 78   | 0    | 0    | 0    | 0    | 1303                      | 1083  | 131  | 1901  | 0    |
| Ideal Flow (vphpl)                | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900                      | 1900  | 1900 | 1900  | 1900 |
| Total Lost time (s)               | 5.6   |       | 5.6  |      |      |      |      | 6.3                       | 6.3   | 5.2  | 6.3   |      |
| Lane Util. Factor                 | 0.97  |       | 1.00 |      |      |      |      | 0.91                      | 0.88  | 0.97 | 0.91  |      |
| Frpb, ped/bikes                   | 1.00  |       | 1.00 |      |      |      |      | 1.00                      | 0.98  | 1.00 | 1.00  |      |
| Flpb, ped/bikes                   | 1.00  |       | 1.00 |      |      |      |      | 1.00                      | 1.00  | 1.00 | 1.00  |      |
| Frt                               | 1.00  |       | 0.85 |      |      |      |      | 1.00                      | 0.85  | 1.00 | 1.00  |      |
| Flt Protected                     | 0.95  |       | 1.00 |      |      |      |      | 1.00                      | 1.00  | 0.95 | 1.00  |      |
| Satd. Flow (prot)                 | 3433  |       | 1583 |      |      |      |      | 5085                      | 2721  | 3433 | 5085  |      |
| Flt Permitted                     | 0.95  |       | 1.00 |      |      |      |      | 1.00                      | 1.00  | 0.95 | 1.00  |      |
| Satd. Flow (perm)                 | 3433  |       | 1583 |      |      |      |      | 5085                      | 2721  | 3433 | 5085  |      |
| Peak-hour factor, PHF             | 0.96  | 0.96  | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96                      | 0.96  | 0.96 | 0.96  | 0.96 |
| Adj. Flow (vph)                   | 233   | 0     | 81   | 0    | 0    | 0    | 0    | 1357                      | 1128  | 136  | 1980  | 0    |
| RTOR Reduction (vph)              | 0     | 0     | 68   | 0    | 0    | 0    | 0    | 0                         | 0     | 0    | 0     | 0    |
| Lane Group Flow (vph)             | 233   | 0     | 13   | 0    | 0    | 0    | 0    | 1357                      | 1128  | 136  | 1980  | 0    |
| Confl. Peds. (#/hr)               |       |       |      |      |      |      |      |                           | 1     |      |       | 22   |
| Confl. Bikes (#/hr)               |       |       |      |      |      |      |      |                           | 5     |      |       | 4    |
| Turn Type                         | Prot  |       | Perm |      |      |      |      | NA                        | Perm  | Prot | NA    |      |
| Protected Phases                  | 4     |       |      |      |      |      |      | 2                         |       | 1    | 6     |      |
| Permitted Phases                  |       |       | 4    |      |      |      |      | 2                         |       |      |       |      |
| Actuated Green, G (s)             | 13.3  |       | 13.3 |      |      |      |      | 79.5                      | 79.5  | 10.1 | 94.8  |      |
| Effective Green, g (s)            | 13.3  |       | 13.3 |      |      |      |      | 79.5                      | 79.5  | 10.1 | 94.8  |      |
| Actuated g/C Ratio                | 0.11  |       | 0.11 |      |      |      |      | 0.66                      | 0.66  | 0.08 | 0.79  |      |
| Clearance Time (s)                | 5.6   |       | 5.6  |      |      |      |      | 6.3                       | 6.3   | 5.2  | 6.3   |      |
| Vehicle Extension (s)             | 3.0   |       | 3.0  |      |      |      |      | 3.0                       | 3.0   | 3.0  | 3.0   |      |
| Lane Grp Cap (vph)                | 380   |       | 175  |      |      |      |      | 3368                      | 1802  | 288  | 4017  |      |
| v/s Ratio Prot                    | c0.07 |       |      |      |      |      |      | 0.27                      |       | 0.04 | c0.39 |      |
| v/s Ratio Perm                    |       |       | 0.01 |      |      |      |      |                           | c0.41 |      |       |      |
| v/c Ratio                         | 0.61  |       | 0.07 |      |      |      |      | 0.40                      | 0.63  | 0.47 | 0.49  |      |
| Uniform Delay, d1                 | 50.9  |       | 47.8 |      |      |      |      | 9.3                       | 11.7  | 52.4 | 4.3   |      |
| Progression Factor                | 1.00  |       | 1.00 |      |      |      |      | 1.00                      | 1.00  | 1.00 | 1.00  |      |
| Incremental Delay, d2             | 2.9   |       | 0.2  |      |      |      |      | 0.4                       | 1.7   | 1.2  | 0.4   |      |
| Delay (s)                         | 53.8  |       | 48.0 |      |      |      |      | 9.7                       | 13.3  | 53.6 | 4.8   |      |
| Level of Service                  | D     |       | D    |      |      |      |      | A                         | B     | D    | A     |      |
| Approach Delay (s)                |       | 52.3  |      |      | 0.0  |      |      | 11.3                      |       |      | 7.9   |      |
| Approach LOS                      |       | D     |      |      | A    |      |      | B                         |       |      | A     |      |
| <b>Intersection Summary</b>       |       |       |      |      |      |      |      |                           |       |      |       |      |
| HCM 2000 Control Delay            |       | 12.5  |      |      |      |      |      | HCM 2000 Level of Service |       | B    |       |      |
| HCM 2000 Volume to Capacity ratio |       | 0.62  |      |      |      |      |      |                           |       |      |       |      |
| Actuated Cycle Length (s)         |       | 120.0 |      |      |      |      |      | Sum of lost time (s)      |       | 17.1 |       |      |
| Intersection Capacity Utilization |       | 61.0% |      |      |      |      |      | ICU Level of Service      |       | B    |       |      |
| Analysis Period (min)             |       | 15    |      |      |      |      |      |                           |       |      |       |      |
| c Critical Lane Group             |       |       |      |      |      |      |      |                           |       |      |       |      |

HCM Signalized Intersection Capacity Analysis  
30: San Marcos Blvd & E. Mission Road

Existing PM  
03/17/2017

| Movement               | EBL  | EBT   | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR   | SBL   | SBT  | SBR  |
|------------------------|------|-------|------|-------|------|------|------|------|-------|-------|------|------|
| Lane Configurations    | ↰    | ↱     | ↱    | ↰     | ↱    | ↱    | ↰    | ↱    | ↱     | ↰     | ↱    | ↱    |
| Traffic Volume (vph)   | 95   | 794   | 60   | 305   | 632  | 95   | 47   | 244  | 548   | 38    | 176  | 39   |
| Future Volume (vph)    | 95   | 794   | 60   | 305   | 632  | 95   | 47   | 244  | 548   | 38    | 176  | 39   |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900  | 1900 | 1900 |
| Total Lost time (s)    | 4.0  | 5.3   | 5.3  | 4.0   | 5.3  | 5.3  | 4.0  | 5.3  | 5.3   | 4.0   | 5.3  |      |
| Lane Util. Factor      | 1.00 | 0.95  | 1.00 | 0.97  | 0.95 | 1.00 | 1.00 | 0.95 | 1.00  | 1.00  | 0.95 |      |
| Flpb, ped/bikes        | 1.00 | 1.00  | 0.98 | 1.00  | 1.00 | 0.97 | 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  | 0.97 |      |
| 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)      | 1770 | 3539  | 1558 | 3433  | 3539 | 1542 | 1770 | 3539 | 1583  | 1770  | 3434 |      |
| 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)      | 1770 | 3539  | 1558 | 3433  | 3539 | 1542 | 1770 | 3539 | 1583  | 1770  | 3434 |      |
| Peak-hour factor, PHF  | 0.91 | 0.91  | 0.91 | 0.91  | 0.91 | 0.91 | 0.91 | 0.91 | 0.91  | 0.91  | 0.91 | 0.91 |
| Adj. Flow (vph)        | 104  | 873   | 66   | 335   | 695  | 104  | 52   | 268  | 602   | 42    | 193  | 43   |
| RTOR Reduction (vph)   | 0    | 0     | 44   | 0     | 0    | 64   | 0    | 0    | 221   | 0     | 18   | 0    |
| Lane Group Flow (vph)  | 104  | 873   | 22   | 335   | 695  | 40   | 52   | 268  | 381   | 42    | 218  | 0    |
| Conf. Peds. (#/hr)     |      |       | 3    |       |      | 10   |      |      |       |       |      | 1    |
| Turn Type              | Prot | NA    | Perm | Prot  | NA   | Perm | Prot | NA   | Prot  | Prot  | NA   |      |
| Protected Phases       | 7    | 4     |      | 3     | 8    |      | 5    | 2    | 2     | 1     | 6    |      |
| Permitted Phases       |      |       | 4    |       |      | 8    |      |      |       |       |      |      |
| Actuated Green, G (s)  | 8.7  | 31.1  | 31.1 | 14.3  | 36.7 | 36.7 | 6.2  | 28.5 | 28.5  | 2.7   | 25.0 |      |
| Effective Green, g (s) | 8.7  | 31.1  | 31.1 | 14.3  | 36.7 | 36.7 | 6.2  | 28.5 | 28.5  | 2.7   | 25.0 |      |
| Actuated g/C Ratio     | 0.09 | 0.33  | 0.33 | 0.15  | 0.39 | 0.39 | 0.07 | 0.30 | 0.30  | 0.03  | 0.26 |      |
| Clearance Time (s)     | 4.0  | 5.3   | 5.3  | 4.0   | 5.3  | 5.3  | 4.0  | 5.3  | 5.3   | 4.0   | 5.3  |      |
| Vehicle Extension (s)  | 3.0  | 3.0   | 3.0  | 3.0   | 3.0  | 3.0  | 3.0  | 3.0  | 3.0   | 3.0   | 3.0  |      |
| Lane Grp Cap (vph)     | 161  | 1156  | 508  | 515   | 1364 | 594  | 115  | 1059 | 473   | 50    | 901  |      |
| v/s Ratio Prot         | 0.06 | c0.25 |      | c0.10 | 0.20 |      | 0.03 | 0.08 | c0.24 | c0.02 | 0.06 |      |
| v/s Ratio Perm         |      |       | 0.01 |       |      | 0.03 |      |      |       |       |      |      |
| v/c Ratio              | 0.65 | 0.76  | 0.04 | 0.65  | 0.51 | 0.07 | 0.45 | 0.25 | 0.80  | 0.84  | 0.24 |      |
| Uniform Delay, d1      | 41.8 | 28.6  | 21.9 | 38.1  | 22.4 | 18.5 | 42.9 | 25.3 | 30.8  | 46.0  | 27.6 |      |
| 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  | 8.6  | 2.9   | 0.0  | 2.9   | 0.3  | 0.0  | 2.8  | 0.1  | 9.6   | 69.8  | 0.1  |      |
| Delay (s)              | 50.4 | 31.5  | 21.9 | 41.0  | 22.7 | 18.5 | 45.7 | 25.4 | 40.4  | 115.9 | 27.8 |      |
| Level of Service       | D    | C     | C    | D     | C    | B    | D    | C    | D     | F     | C    |      |
| Approach Delay (s)     |      | 32.8  |      |       | 27.7 |      |      | 36.3 |       |       | 41.1 |      |
| Approach LOS           |      | C     |      |       | C    |      |      | D    |       |       | D    |      |

Intersection Summary

|                                   |       |                           |      |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay            | 32.7  | HCM 2000 Level of Service | C    |
| HCM 2000 Volume to Capacity ratio | 0.76  |                           |      |
| Actuated Cycle Length (s)         | 95.2  | Sum of lost time (s)      | 18.6 |
| Intersection Capacity Utilization | 71.4% | ICU Level of Service      | C    |
| Analysis Period (min)             | 15    |                           |      |
| c Critical Lane Group             |       |                           |      |

HCM Unsignalized Intersection Capacity Analysis  
31: North Centre City Pkwy & Mesa Rock Rd

Existing PM  
03/17/2017

| Movement               | EBL  | EBR  | NBL  | NBT  | SBT  | SBR  |
|------------------------|------|------|------|------|------|------|
| Lane Configurations    | ↰    | ↱    | ↰    | ↱    | ↱    | ↱    |
| Traffic Volume (veh/h) | 2    | 30   | 32   | 264  | 154  | 1    |
| Future Volume (Veh/h)  | 2    | 30   | 32   | 264  | 154  | 1    |
| Sign Control           | Stop |      |      | Free | Free |      |
| Grade                  | 0%   |      |      | 0%   | 0%   |      |
| Peak Hour Factor       | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 2    | 33   | 36   | 293  | 171  | 1    |
| Pedestrians            |      |      |      |      |      |      |
| Lane Width (ft)        |      |      |      |      |      |      |
| Walking Speed (ft/s)   |      |      |      |      |      |      |
| Percent Blockage       |      |      |      |      |      |      |
| Right turn flare (veh) |      |      |      |      |      |      |
| Median type            |      |      | None | None |      |      |
| Median storage (veh)   |      |      |      |      |      |      |
| Upstream signal (ft)   |      |      |      |      |      |      |
| pX, platoon unblocked  |      |      |      |      |      |      |
| vC, conflicting volume | 536  | 172  | 172  |      |      |      |
| vC1, stage 1 conf vol  |      |      |      |      |      |      |
| vC2, stage 2 conf vol  |      |      |      |      |      |      |
| vCu, unblocked vol     | 536  | 172  | 172  |      |      |      |
| tC, single (s)         | 6.4  | 6.2  | 4.1  |      |      |      |
| tC, 2 stage (s)        |      |      |      |      |      |      |
| tF (s)                 | 3.5  | 3.3  | 2.2  |      |      |      |
| p0 queue free %        | 100  | 96   | 97   |      |      |      |
| cM capacity (veh/h)    | 492  | 872  | 1405 |      |      |      |
| Direction, Lane #      | EB 1 | NB 1 | NB 2 | SB 1 |      |      |
| Volume Total           | 35   | 36   | 293  | 172  |      |      |
| Volume Left            | 2    | 36   | 0    | 0    |      |      |
| Volume Right           | 33   | 0    | 0    | 1    |      |      |
| cSH                    | 835  | 1405 | 1700 | 1700 |      |      |
| Volume to Capacity     | 0.04 | 0.03 | 0.17 | 0.10 |      |      |
| Queue Length 95th (ft) | 3    | 2    | 0    | 0    |      |      |
| Control Delay (s)      | 9.5  | 7.6  | 0.0  | 0.0  |      |      |
| Lane LOS               | A    | A    |      |      |      |      |
| Approach Delay (s)     | 9.5  | 0.8  |      | 0.0  |      |      |
| Approach LOS           | A    |      |      |      |      |      |

Intersection Summary

|                                   |       |                      |   |
|-----------------------------------|-------|----------------------|---|
| Average Delay                     | 1.1   |                      |   |
| Intersection Capacity Utilization | 24.8% | ICU Level of Service | A |
| Analysis Period (min)             | 15    |                      |   |

HCM Signalized Intersection Capacity Analysis  
32: North Centre City Pkwy & Country Club Ln

Existing PM  
03/17/2017

| Movement               | EBL   | EBT   | EBR  | WBL  | WBT  | WBR  | NBL   | NBT   | NBR  | SBL  | SBT  | SBR  |
|------------------------|-------|-------|------|------|------|------|-------|-------|------|------|------|------|
| Lane Configurations    | ↰     | ↰↰    | ↰    | ↰    | ↰↰   | ↰    | ↰     | ↰↰    | ↰    | ↰    | ↰↰   | ↰    |
| Traffic Volume (vph)   | 118   | 328   | 93   | 114  | 228  | 79   | 108   | 357   | 126  | 101  | 253  | 45   |
| Future Volume (vph)    | 118   | 328   | 93   | 114  | 228  | 79   | 108   | 357   | 126  | 101  | 253  | 45   |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    | 4.5   | 4.5   | 4.5  | 4.5  | 4.5  | 4.5  | 4.5   | 4.5   | 4.5  | 4.5  | 4.5  | 4.5  |
| Lane Util. Factor      | 1.00  | 0.95  | 1.00 | 1.00 | 0.95 | 1.00 | 1.00  | 0.95  | 1.00 | 1.00 | 0.95 | 1.00 |
| Frt                    | 1.00  | 1.00  | 0.85 | 1.00 | 1.00 | 0.85 | 1.00  | 1.00  | 0.85 | 1.00 | 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 | 1.00 |
| Satd. Flow (prot)      | 1770  | 3539  | 1583 | 1770 | 3539 | 1583 | 1770  | 3539  | 1583 | 1770 | 3539 | 1583 |
| 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)      | 1770  | 3539  | 1583 | 1770 | 3539 | 1583 | 1770  | 3539  | 1583 | 1770 | 3539 | 1583 |
| Peak-hour factor, PHF  | 0.95  | 0.95  | 0.95 | 0.95 | 0.95 | 0.95 | 0.95  | 0.95  | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph)        | 124   | 345   | 98   | 120  | 240  | 83   | 114   | 376   | 133  | 106  | 266  | 47   |
| RTOR Reduction (vph)   | 0     | 0     | 77   | 0    | 0    | 65   | 0     | 0     | 103  | 0    | 0    | 36   |
| Lane Group Flow (vph)  | 124   | 345   | 21   | 120  | 240  | 18   | 114   | 376   | 30   | 106  | 266  | 11   |
| Turn Type              | Prot  | NA    | Perm | Prot | NA   | Perm | Prot  | NA    | Perm | Prot | NA   | Perm |
| Protected Phases       | 7     | 4     |      | 3    | 8    |      | 5     | 2     |      | 1    | 6    |      |
| Permitted Phases       |       |       | 4    |      |      | 8    |       |       | 2    |      |      | 6    |
| Actuated Green, G (s)  | 7.6   | 12.5  | 12.5 | 7.6  | 12.5 | 12.5 | 7.4   | 13.4  | 13.4 | 7.1  | 13.1 | 13.1 |
| Effective Green, g (s) | 7.6   | 12.5  | 12.5 | 7.6  | 12.5 | 12.5 | 7.4   | 13.4  | 13.4 | 7.1  | 13.1 | 13.1 |
| Actuated g/C Ratio     | 0.13  | 0.21  | 0.21 | 0.13 | 0.21 | 0.21 | 0.13  | 0.23  | 0.23 | 0.12 | 0.22 | 0.22 |
| Clearance Time (s)     | 4.5   | 4.5   | 4.5  | 4.5  | 4.5  | 4.5  | 4.5   | 4.5   | 4.5  | 4.5  | 4.5  | 4.5  |
| Vehicle Extension (s)  | 3.0   | 3.0   | 3.0  | 3.0  | 3.0  | 3.0  | 3.0   | 3.0   | 3.0  | 3.0  | 3.0  | 3.0  |
| Lane Grp Cap (vph)     | 229   | 754   | 337  | 229  | 754  | 337  | 223   | 809   | 361  | 214  | 791  | 353  |
| v/s Ratio Prot         | c0.07 | c0.10 |      | 0.07 | 0.07 |      | c0.06 | c0.11 |      | 0.06 | 0.08 |      |
| v/s Ratio Perm         |       |       | 0.01 |      |      | 0.01 |       |       | 0.02 |      |      | 0.01 |
| v/c Ratio              | 0.54  | 0.46  | 0.06 | 0.52 | 0.32 | 0.05 | 0.51  | 0.46  | 0.08 | 0.50 | 0.34 | 0.03 |
| Uniform Delay, d1      | 23.9  | 20.1  | 18.4 | 23.8 | 19.5 | 18.3 | 23.9  | 19.5  | 17.8 | 24.1 | 19.1 | 17.8 |
| Progression Factor     | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2  | 2.6   | 0.4   | 0.1  | 2.2  | 0.2  | 0.1  | 2.0   | 0.4   | 0.1  | 1.8  | 0.3  | 0.0  |
| Delay (s)              | 26.5  | 20.5  | 18.5 | 26.0 | 19.7 | 18.4 | 25.9  | 19.9  | 17.9 | 25.9 | 19.4 | 17.8 |
| Level of Service       | C     | C     | B    | C    | B    | B    | C     | B     | B    | C    | B    | B    |
| Approach Delay (s)     | 21.5  |       |      | 21.2 |      |      | 20.6  |       |      | 20.8 |      |      |
| Approach LOS           | C     |       |      | C    |      |      | C     |       |      | C    |      |      |

Intersection Summary

|                                   |       |                           |      |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay            | 21.0  | HCM 2000 Level of Service | C    |
| HCM 2000 Volume to Capacity ratio | 0.49  |                           |      |
| Actuated Cycle Length (s)         | 58.6  | Sum of lost time (s)      | 18.0 |
| Intersection Capacity Utilization | 45.8% | ICU Level of Service      | A    |
| Analysis Period (min)             | 15    |                           |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
33: Twin Oaks Valley Rd & Discovery St/Barham Dr

Existing PM  
03/17/2017

| Movement               | EBL  | EBT  | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR  | SBL   | SBT  | SBR   |
|------------------------|------|------|-------|-------|-------|-------|-------|-------|------|-------|------|-------|
| Lane Configurations    | ↰    | ↰↰   | ↰     | ↰     | ↰↰    | ↰     | ↰     | ↰↰    | ↰    | ↰     | ↰↰   | ↰     |
| Traffic Volume (vph)   | 486  | 295  | 11    | 263   | 234   | 253   | 10    | 1373  | 289  | 424   | 624  | 352   |
| Future Volume (vph)    | 486  | 295  | 11    | 263   | 234   | 253   | 10    | 1373  | 289  | 424   | 624  | 352   |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900 | 1900  | 1900 | 1900  |
| Total Lost time (s)    | 5.0  | 5.3  | 4.0   | 5.0   | 5.3   | 4.0   | 5.0   | 6.0   |      | 5.0   | 6.0  | 4.0   |
| Lane Util. Factor      | 0.97 | 0.91 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 0.91  |      | 0.97  | 0.91 | 1.00  |
| Frt                    | 1.00 | 1.00 | 0.85  | 1.00  | 1.00  | 0.85  | 1.00  | 0.97  |      | 1.00  | 1.00 | 0.85  |
| Flt Protected          | 0.95 | 1.00 | 1.00  | 0.95  | 1.00  | 1.00  | 0.95  | 1.00  |      | 0.95  | 1.00 | 1.00  |
| Satd. Flow (prot)      | 3433 | 5085 | 1583  | 1770  | 1863  | 1583  | 1770  | 4953  |      | 3433  | 5085 | 1583  |
| Flt Permitted          | 0.95 | 1.00 | 1.00  | 0.95  | 1.00  | 1.00  | 0.95  | 1.00  |      | 0.95  | 1.00 | 1.00  |
| Satd. Flow (perm)      | 3433 | 5085 | 1583  | 1770  | 1863  | 1583  | 1770  | 4953  |      | 3433  | 5085 | 1583  |
| 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)        | 528  | 321  | 12    | 286   | 254   | 275   | 11    | 1492  | 314  | 461   | 678  | 383   |
| RTOR Reduction (vph)   | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 20    | 0    | 0     | 0    | 0     |
| Lane Group Flow (vph)  | 528  | 321  | 12    | 286   | 254   | 275   | 11    | 1786  | 0    | 461   | 678  | 383   |
| Turn Type              | Prot | NA   | Free  | Prot  | NA    | Free  | Prot  | NA    |      | Prot  | NA   | Free  |
| Protected Phases       | 7    | 4    |       | 3     | 8     |       | 5     | 2     |      | 1     | 6    |       |
| Permitted Phases       |      |      | Free  |       |       | Free  |       |       |      |       |      | Free  |
| Actuated Green, G (s)  | 26.3 | 21.3 | 146.4 | 24.8  | 19.8  | 146.4 | 1.5   | 58.2  |      | 20.8  | 77.5 | 146.4 |
| Effective Green, g (s) | 26.3 | 21.3 | 146.4 | 24.8  | 19.8  | 146.4 | 1.5   | 58.2  |      | 20.8  | 77.5 | 146.4 |
| Actuated g/C Ratio     | 0.18 | 0.15 | 1.00  | 0.17  | 0.14  | 1.00  | 0.01  | 0.40  |      | 0.14  | 0.53 | 1.00  |
| Clearance Time (s)     | 5.0  | 5.3  |       | 5.0   | 5.3   |       | 5.0   | 6.0   |      | 5.0   | 6.0  |       |
| Vehicle Extension (s)  | 2.0  | 4.5  |       | 2.0   | 4.5   |       | 2.0   | 3.0   |      | 2.0   | 4.0  |       |
| Lane Grp Cap (vph)     | 616  | 739  | 1583  | 299   | 251   | 1583  | 18    | 1969  |      | 487   | 2691 | 1583  |
| v/s Ratio Prot         | 0.15 | 0.06 |       | c0.16 | c0.14 |       | 0.01  | c0.36 |      | c0.13 | 0.13 |       |
| v/s Ratio Perm         |      |      | 0.01  |       |       | 0.17  |       |       |      |       |      | c0.24 |
| v/c Ratio              | 0.86 | 0.43 | 0.01  | 0.96  | 1.01  | 0.17  | 0.61  | 0.91  |      | 0.95  | 0.25 | 0.24  |
| Uniform Delay, d1      | 58.2 | 57.1 | 0.0   | 60.3  | 63.3  | 0.0   | 72.2  | 41.5  |      | 62.2  | 18.7 | 0.0   |
| 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  | 10.9 | 0.7  | 0.0   | 39.8  | 59.9  | 0.2   | 36.2  | 7.5   |      | 27.3  | 0.2  | 0.4   |
| Delay (s)              | 69.2 | 57.8 | 0.0   | 100.0 | 123.2 | 0.2   | 108.4 | 49.1  |      | 89.6  | 18.9 | 0.4   |
| Level of Service       | E    | E    | A     | F     | F     | A     | F     | D     |      | F     | B    | A     |
| Approach Delay (s)     | 64.0 |      |       | 73.6  |       |       | 49.4  |       |      | 35.7  |      |       |
| Approach LOS           | E    |      |       | E     |       |       | D     |       |      | D     |      |       |

Intersection Summary

|                                   |       |                           |      |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay            | 51.7  | HCM 2000 Level of Service | D    |
| HCM 2000 Volume to Capacity ratio | 0.93  |                           |      |
| Actuated Cycle Length (s)         | 146.4 | Sum of lost time (s)      | 21.3 |
| Intersection Capacity Utilization | 89.0% | ICU Level of Service      | E    |
| Analysis Period (min)             | 15    |                           |      |

c Critical Lane Group

## **APPENDIX C**

### **SANDAG TRIP GENERATION PASS-BY RATES AND SELECT ZONE ASSIGNMENT PLOTS**



## **APPENDIX C-1**

### **SANDAG TRIP GENERATION PASS-BY RATES**



(NOT SO)  
BRIEF GUIDE OF VEHICULAR TRAFFIC GENERATION RATES  
FOR THE SAN DIEGO REGION

APRIL 2002



401 B Street, Suite 800  
San Diego, California 92101  
(619) 699-1900 • Fax (619) 699-1950

NOTE: This listing only represents a **guide** of average, or estimated, traffic generation "driveway" rates and some very general trip data for land uses (emphasis on acreage and building square footage) in the San Diego region. These rates (both local and national) are subject to change as future documentation becomes available, or as regional sources are updated. For more specific information regarding traffic data and trip rates, please refer to the San Diego Traffic Generators manual. **Always check with local jurisdictions for their preferred or applicable rates.**

| LAND USE                                                                                                                                                                      | TRIP CATEGORIES<br>[PRIMARY:DIVERTED:PASS-BY] <sup>p</sup> | ESTIMATED WEEKDAY VEHICLE<br>TRIP GENERATION RATE (DRIVEWAY)                | HIGHEST PEAK HOUR % (plus IN:OUT ratio)<br>Between 6:00-9:30 A.M. Between 3:00-6:30 P.M. |       |     |       | TRIP LENGTH<br>(Miles) <sup>t</sup> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-------|-----|-------|-------------------------------------|
| AGRICULTURE (Open Space) .....                                                                                                                                                | [80:18:2]                                                  | 2/acre**                                                                    |                                                                                          |       |     |       | 10.8                                |
| AIRPORT .....                                                                                                                                                                 | [78:20:2]                                                  |                                                                             |                                                                                          |       |     |       | 12.5                                |
| Commercial                                                                                                                                                                    |                                                            | 60/acre, 100/flight, 70/1000 sq. ft. * **                                   | 5%                                                                                       | (6:4) | 8%  | (5:5) |                                     |
| General Aviation                                                                                                                                                              |                                                            | 6/acre, 2/flight, 6/based aircraft * **                                     | 9%                                                                                       | (7:3) | 15% | (5:5) |                                     |
| Heliports                                                                                                                                                                     |                                                            | 100/acre**                                                                  |                                                                                          |       |     |       |                                     |
| AUTOMOBILE <sup>s</sup>                                                                                                                                                       |                                                            |                                                                             |                                                                                          |       |     |       |                                     |
| Car Wash                                                                                                                                                                      |                                                            |                                                                             |                                                                                          |       |     |       |                                     |
| Automatic                                                                                                                                                                     |                                                            | 900/site, 600/acre**                                                        | 4%                                                                                       | (5:5) | 9%  | (5:5) |                                     |
| Self-serve                                                                                                                                                                    |                                                            | 100/wash stall**                                                            | 4%                                                                                       | (5:5) | 8%  | (5:5) |                                     |
| Gasoline .....                                                                                                                                                                | [21:51:28]                                                 |                                                                             |                                                                                          |       |     |       | 2.8                                 |
| with/Food Mart                                                                                                                                                                |                                                            | 160/vehicle fueling space**                                                 | 7%                                                                                       | (5:5) | 8%  | (5:5) |                                     |
| with/Food Mart & Car Wash                                                                                                                                                     |                                                            | 155/vehicle fueling space**                                                 | 8%                                                                                       | (5:5) | 9%  | (5:5) |                                     |
| Older Service Station Design                                                                                                                                                  |                                                            | 150/vehicle fueling space, 900/station**                                    | 7%                                                                                       | (5:5) | 9%  | (5:5) |                                     |
| Sales (Dealer & Repair)                                                                                                                                                       |                                                            | 50/1000 sq. ft., 300/acre, 60/service stall* **                             | 5%                                                                                       | (7:3) | 8%  | (4:6) |                                     |
| Auto Repair Center                                                                                                                                                            |                                                            | 20/1000 sq. ft., 400/acre, 20/service stall*                                | 8%                                                                                       | (7:3) | 11% | (4:6) |                                     |
| Auto Parts Sales                                                                                                                                                              |                                                            | 60/1000 sq. ft. **                                                          | 4%                                                                                       |       | 10% |       |                                     |
| Quick Lube                                                                                                                                                                    |                                                            | 40/service stall**                                                          | 7%                                                                                       | (6:4) | 10% | (5:5) |                                     |
| Tire Store                                                                                                                                                                    |                                                            | 25/1000 sq. ft., 30/service stall**                                         | 7%                                                                                       | (6:4) | 11% | (5:5) |                                     |
| CEMETERY                                                                                                                                                                      |                                                            | 5/acre*                                                                     |                                                                                          |       |     |       |                                     |
| CHURCH (or Synagogue) .....                                                                                                                                                   | [64:25:11]                                                 | 9/1000 sq. ft., 30/acre** (quadruple rates for Sunday, or days of assembly) | 5%                                                                                       | (6:4) | 8%  | (5:5) | 5.1                                 |
| COMMERCIAL/RETAIL <sup>s</sup>                                                                                                                                                |                                                            |                                                                             |                                                                                          |       |     |       |                                     |
| Super Regional Shopping Center<br>(More than 80 acres, more than<br>800,000 sq. ft., w/usually 3+<br>major stores)                                                            |                                                            | 35/1000 sq. ft., <sup>c</sup> 400/acre*                                     | 4%                                                                                       | (7:3) | 10% | (5:5) |                                     |
| Regional Shopping Center .....                                                                                                                                                | [54:35:11]                                                 | 50/1000 sq. ft., <sup>c</sup> 500/acre*                                     | 4%                                                                                       | (7:3) | 9%  | (5:5) | 5.2                                 |
| (40-80acres, 400,000-800,000<br>sq. ft., w/usually 2+ major stores)                                                                                                           |                                                            |                                                                             |                                                                                          |       |     |       |                                     |
| Community Shopping Center .....                                                                                                                                               | [47:31:22]                                                 | 80/1000 sq. ft., 700/acre* **                                               | 4%                                                                                       | (6:4) | 10% | (5:5) | 3.6                                 |
| (15-40 acres, 125,000-400,000 sq. ft.,<br>w/usually 1 major store, detached<br>restaurant(s), grocery and drugstore)                                                          |                                                            |                                                                             |                                                                                          |       |     |       |                                     |
| Neighborhood Shopping Center<br>(Less than 15 acres, less than<br>125,000 sq. ft., w/usually grocery<br>& drugstore, cleaners, beauty & barber shop,<br>& fast food services) |                                                            | 120/1000 sq. ft., 1200/acre* **                                             | 4%                                                                                       | (6:4) | 10% | (5:5) |                                     |
| Commercial Shops .....                                                                                                                                                        | [45:40:15]                                                 |                                                                             |                                                                                          |       |     |       |                                     |
| Specialty Retail/Strip Commercial                                                                                                                                             |                                                            | 40/1000 sq. ft., 400/acre*                                                  | 3%                                                                                       | (6:4) | 9%  | (5:5) | 4.3                                 |
| Electronics Superstore                                                                                                                                                        |                                                            | 50/1000 sq. ft**                                                            |                                                                                          |       | 10% | (5:5) |                                     |
| Factory Outlet                                                                                                                                                                |                                                            | 40/1000 sq. ft.**                                                           | 3%                                                                                       | (7:3) | 9%  | (5:5) |                                     |
| Supermarket                                                                                                                                                                   |                                                            | 150/1000 sq. ft., 2000/acre* **                                             | 4%                                                                                       | (7:3) | 10% | (5:5) |                                     |
| Drugstore                                                                                                                                                                     |                                                            | 90/1000 sq. ft.**                                                           | 4%                                                                                       | (6:4) | 10% | (5:5) |                                     |
| Convenience Market (15-16 hours)                                                                                                                                              |                                                            | 500/1000 sq. ft.**                                                          | 8%                                                                                       | (5:5) | 8%  | (5:5) |                                     |
| Convenience Market (24 hours)                                                                                                                                                 |                                                            | 700/1000 sq. ft.**                                                          | 9%                                                                                       | (5:5) | 7%  | (5:5) |                                     |
| Convenience Market (w/gasoline pumps)                                                                                                                                         |                                                            | 850/1000 sq. ft., 550/vehicle fueling space**                               | 6%                                                                                       | (5:5) | 7%  | (5:5) |                                     |
| Discount Club                                                                                                                                                                 |                                                            | 60/1000 sq. ft., 600/acre* **                                               | 1%                                                                                       | (7:3) | 9%  | (5:5) |                                     |
| Discount Store                                                                                                                                                                |                                                            | 60/1000 sq. ft., 600/acre**                                                 | 3%                                                                                       | (6:4) | 8%  | (5:5) |                                     |
| Furniture Store                                                                                                                                                               |                                                            | 6/1000 sq. ft., 100/acre**                                                  | 4%                                                                                       | (7:3) | 9%  | (5:5) |                                     |
| Lumber Store                                                                                                                                                                  |                                                            | 30/1000 sq. ft., 150/acre**                                                 | 7%                                                                                       | (6:4) | 9%  | (5:5) |                                     |
| Home Improvement Superstore                                                                                                                                                   |                                                            | 40/1000 sq. ft.**                                                           | 5%                                                                                       | (6:4) | 8%  | (5:5) |                                     |
| Hardware/Paint Store                                                                                                                                                          |                                                            | 60/1000 sq. ft., 600/acre**                                                 | 2%                                                                                       | (6:4) | 9%  | (5:5) |                                     |
| Garden Nursery                                                                                                                                                                |                                                            | 40/1000 sq. ft., 90/acre**                                                  | 3%                                                                                       | (6:4) | 10% | (5:5) |                                     |
| Mixed Use: Commercial (w/supermarket)/Residential                                                                                                                             |                                                            | 110/1000 sq. ft., 2000/acre* (commercial only)                              | 3%                                                                                       | (6:4) | 9%  | (5:5) |                                     |
|                                                                                                                                                                               |                                                            | 5/dwelling unit, 200/acre* (residential only)                               | 9%                                                                                       | (3:7) | 13% | (6:4) |                                     |
| EDUCATION                                                                                                                                                                     |                                                            |                                                                             |                                                                                          |       |     |       |                                     |
| University (4 years) .....                                                                                                                                                    | [91:9:0]                                                   | 2.4/student, 100 acre*                                                      | 10%                                                                                      | (8:2) | 9%  | (3:7) | 8.9                                 |
| Junior College (2 years) .....                                                                                                                                                | [92:7:1]                                                   | 1.2/student, 24/1000 sq. ft., 120/acre* **                                  | 12%                                                                                      | (8:2) | 9%  | (6:4) | 9.0                                 |
| High School .....                                                                                                                                                             | [75:19:6]                                                  | 1.3/student, 15/1000 sq. ft., 60/acre* **                                   | 20%                                                                                      | (7:3) | 10% | (4:6) | 4.8                                 |
| Middle/Junior High .....                                                                                                                                                      | [63:25:12]                                                 | 1.4/student, 12/1000 sq. ft. 50/acre**                                      | 30%                                                                                      | (6:4) | 9%  | (4:6) | 5.0                                 |
| Elementary .....                                                                                                                                                              | [57:25:10]                                                 | 1.6/student, 14/1000 sq. ft., 90/acre* **                                   | 32%                                                                                      | (6:4) | 9%  | (4:6) | 3.4                                 |
| Day Care .....                                                                                                                                                                | [28:58:14]                                                 | 5/child, 80/1000 sq. ft.**                                                  | 17%                                                                                      | (5:5) | 18% | (5:5) | 3.7                                 |
| FINANCIAL <sup>s</sup> .....                                                                                                                                                  | [35:42:23]                                                 |                                                                             |                                                                                          |       |     |       | 3.4                                 |
| Bank (Walk-In only)                                                                                                                                                           |                                                            | 150/1000 sq. ft., 1000/acre* **                                             | 4%                                                                                       | (7:3) | 8%  | (4:6) |                                     |
| with Drive-Through                                                                                                                                                            |                                                            | 200/1000 sq. ft., 1500/acre*                                                | 5%                                                                                       | (6:4) | 10% | (5:5) |                                     |
| Drive-Through only                                                                                                                                                            |                                                            | 250 (125 one-way)/lane*                                                     | 3%                                                                                       | (5:5) | 13% | (5:5) |                                     |
| Savings & Loan                                                                                                                                                                |                                                            | 60/1000 sq. ft., 600/acre**                                                 | 2%                                                                                       |       | 9%  |       |                                     |
| Drive-Through only                                                                                                                                                            |                                                            | 100 (50 one-way)/lane**                                                     | 4%                                                                                       |       | 15% |       |                                     |
| HOSPITAL .....                                                                                                                                                                | [73:25:2]                                                  |                                                                             |                                                                                          |       |     |       | 8.3                                 |
| General                                                                                                                                                                       |                                                            | 20/bed, 25/1000 sq. ft., 250/acre*                                          | 8%                                                                                       | (7:3) | 10% | (4:6) |                                     |
| Convalescent/Nursing                                                                                                                                                          |                                                            | 3/bed**                                                                     | 7%                                                                                       | (6:4) | 7%  | (4:6) |                                     |
| INDUSTRIAL                                                                                                                                                                    |                                                            |                                                                             |                                                                                          |       |     |       |                                     |
| Industrial/Business Park (commercial included) .....                                                                                                                          | [79:19:2]                                                  | 16/1000 sq. ft., 200/acre* **                                               | 12%                                                                                      | (8:2) | 12% | (2:8) | 9.0                                 |
| Industrial Park (no commercial)                                                                                                                                               |                                                            | 8/1000 sq. ft., 90/acre**                                                   | 11%                                                                                      | (9:1) | 12% | (2:8) |                                     |
| Industrial Plant (multiple shifts) .....                                                                                                                                      | [92:5:3]                                                   | 10/1000 sq. ft., 120/acre*                                                  | 14%                                                                                      | (8:2) | 15% | (3:7) | 11.7                                |
| Manufacturing/Assembly                                                                                                                                                        |                                                            | 4/1000 sq. ft., 50/acre**                                                   | 19%                                                                                      | (9:1) | 20% | (2:8) |                                     |
| Warehousing                                                                                                                                                                   |                                                            | 5/1000 sq. ft., 60/acre**                                                   | 13%                                                                                      | (7:3) | 15% | (4:6) |                                     |
| Storage                                                                                                                                                                       |                                                            | 2/1000 sq. ft., 0.2/vault, 30/acre*                                         | 6%                                                                                       | (5:5) | 9%  | (5:5) |                                     |
| Science Research & Development                                                                                                                                                |                                                            | 8/1000 sq. ft., 80/acre*                                                    | 16%                                                                                      | (9:1) | 14% | (1:9) |                                     |
| Landfill & Recycling Center                                                                                                                                                   |                                                            | 6/acre                                                                      | 11%                                                                                      | (5:5) | 10% | (4:6) |                                     |

(OVER)

MEMBER AGENCIES: Cities of Carlsbad, Chula Vista, Coronado, Del Mar, El Cajon, Encinitas, Escondido, Imperial Beach, La Mesa, Lemon Grove, National City, Oceanside, Poway, San Diego, San Marcos, Santee, Solana Beach, Vista and County of San Diego.  
ADVISORY/LIAISON MEMBERS: California Department of Transportation, County Water Authority, U.S. Department of Defense, S.D. Unified Port District and Tijuana/Baja California.

## **APPENDIX C-2**

### **SELECT ZONE ASSIGNMENT PLOTS**