LINSCOTT
LAW &
GREENSPAN
engineers

TECHNICAL APPENDICES

SIERRA

San Diego County, California
March 30, 2018

LLG Ref. 3-12-2177

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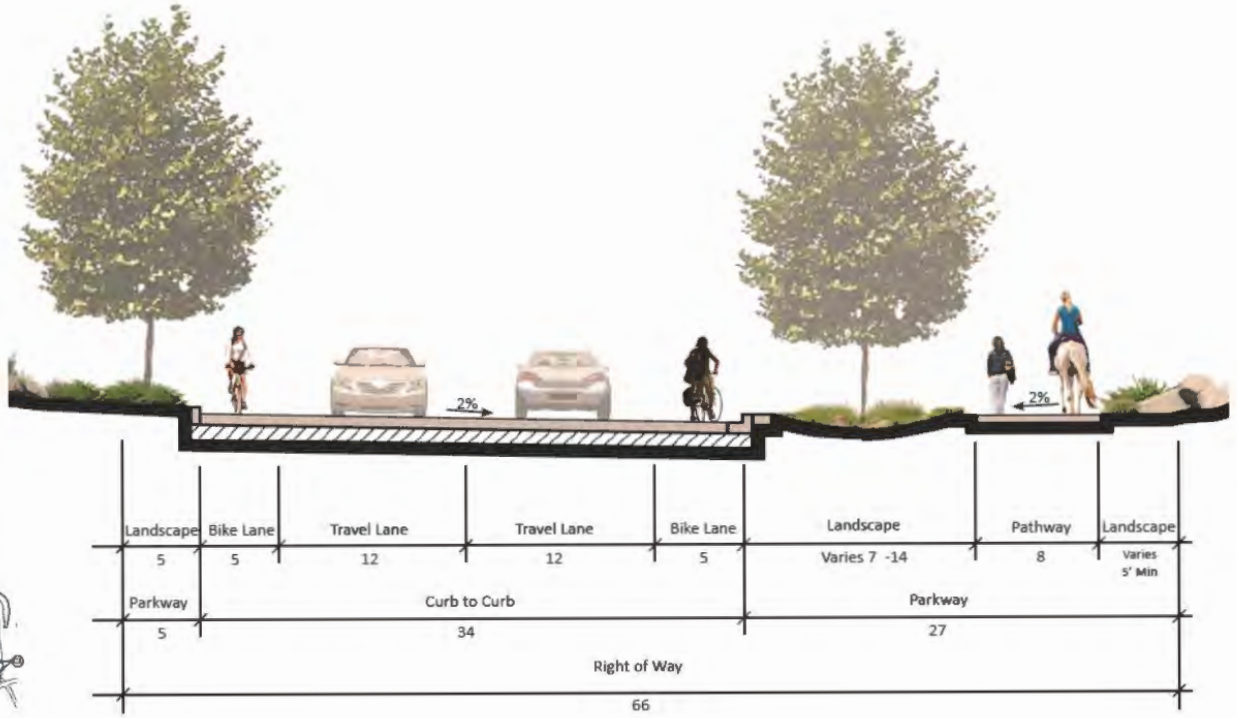
APPENDIX A

PROPOSED PROJECT AND EXISTING CONDITIONS

APPENDIX A–1

INTERNAL ROADWAY CROSS SECTIONS

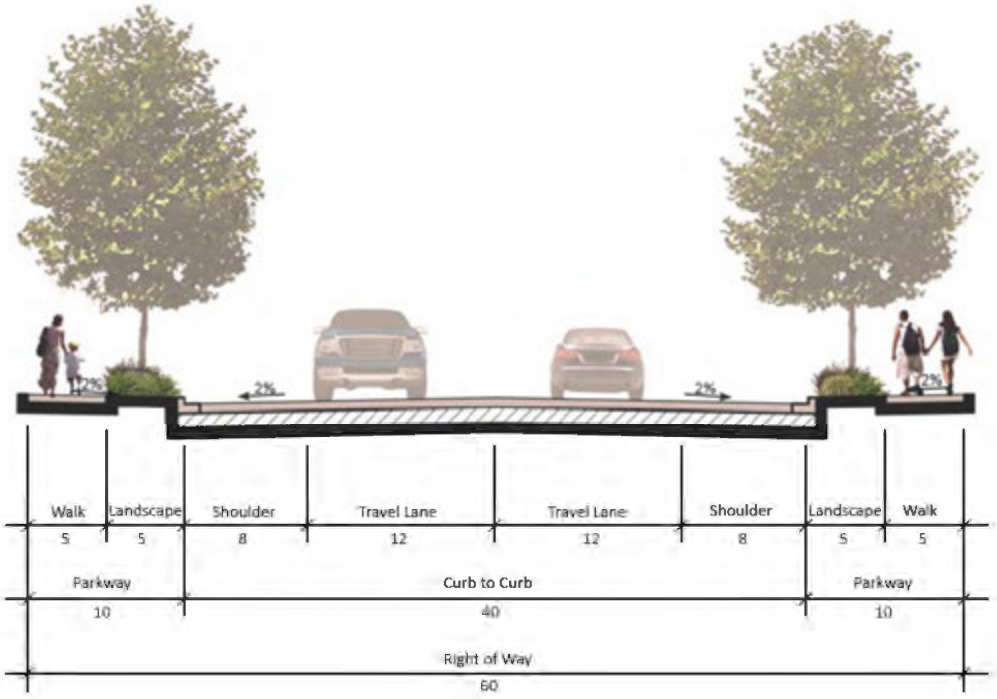


B2

FIGURE 18

Public Modified Light Collector with Reduced Shoulder

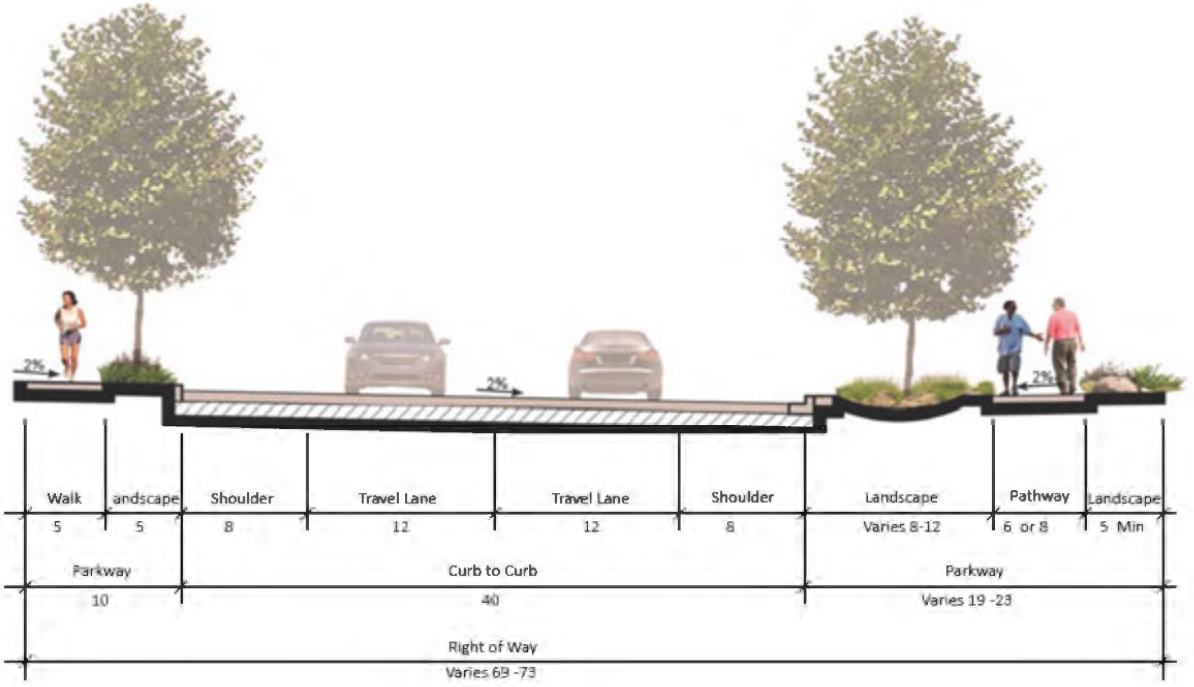
Newland Sierra - Road Sections
2015.01.20



C1

FIGURE 19
Public Residential Collector

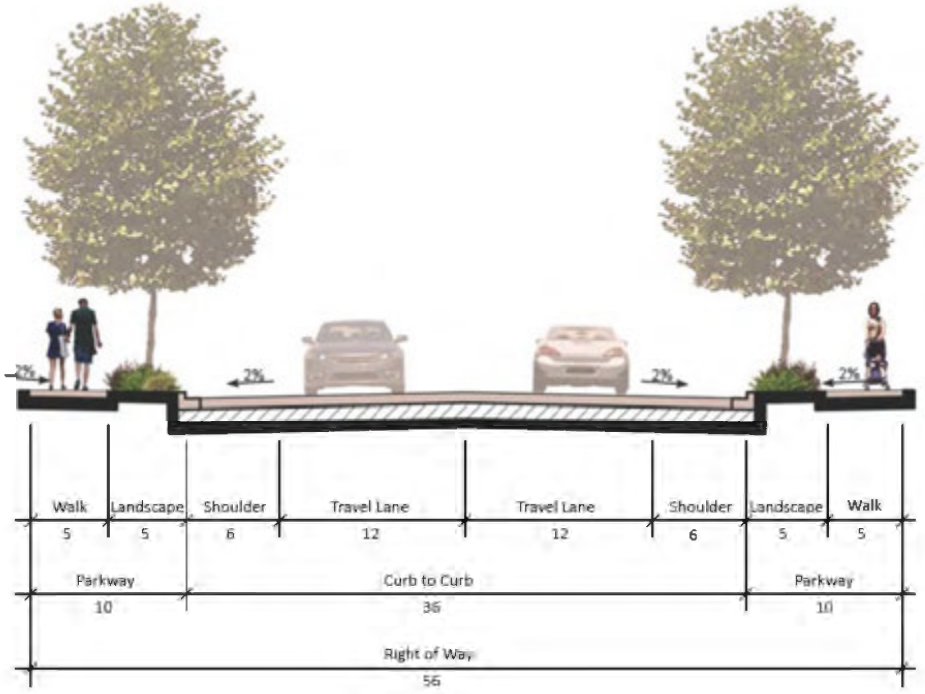
Newland Sierra - Road Sections
2015.01.20



C2

FIGURE 20
Public Modified Residential Collector

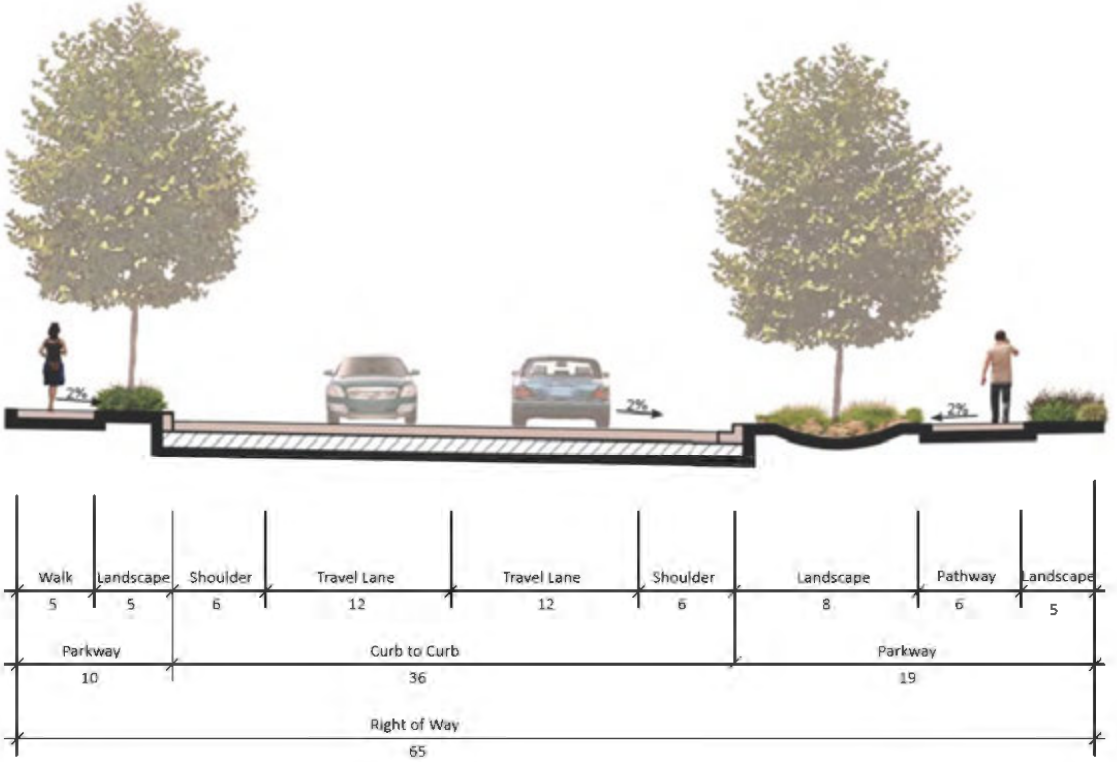
Newland Sierra - Road Sections
2015.01.20



D1

FIGURE 21
Public Residential Road

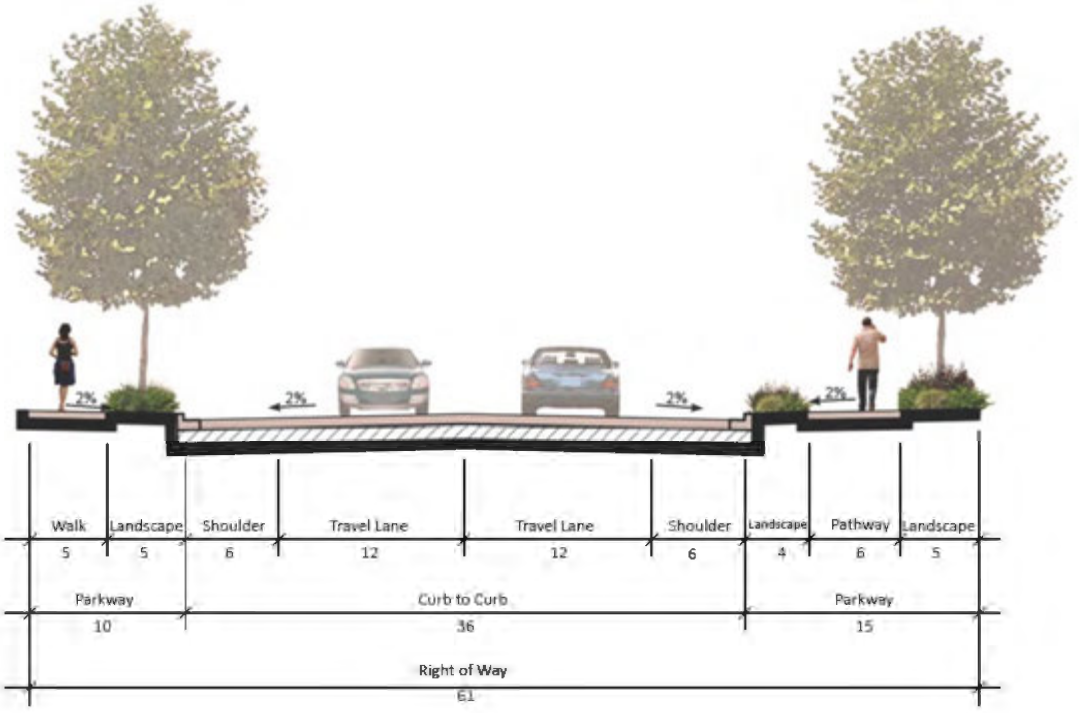
Newland Sierra - Road Sections
2015.01.20



D2

FIGURE 22
Public Modified Residential Road

Newland Sierra - Road Sections
2015.01.20

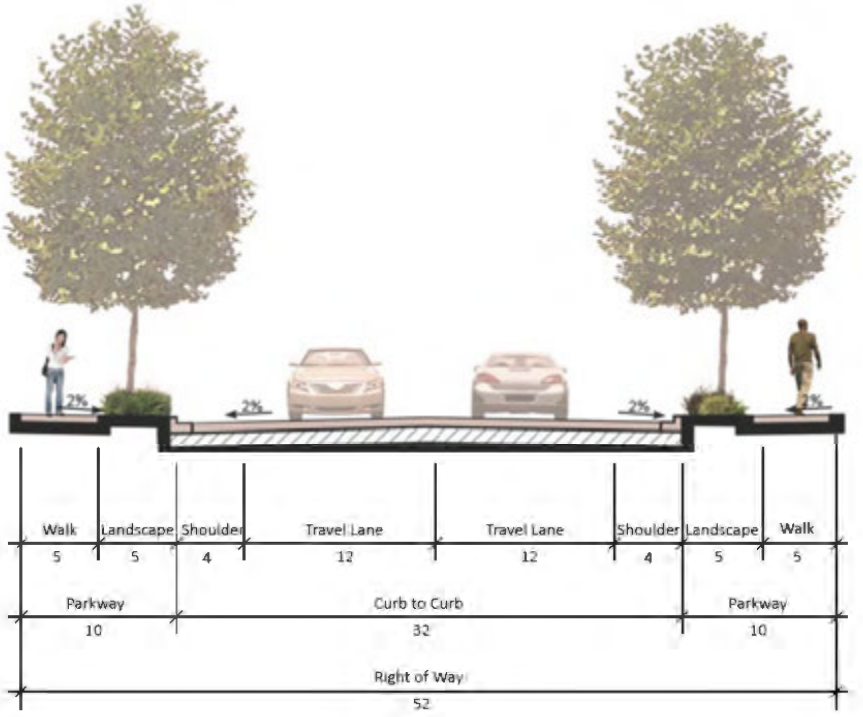


D3

FIGURE 23

Public Modified Residential Road with Parkway

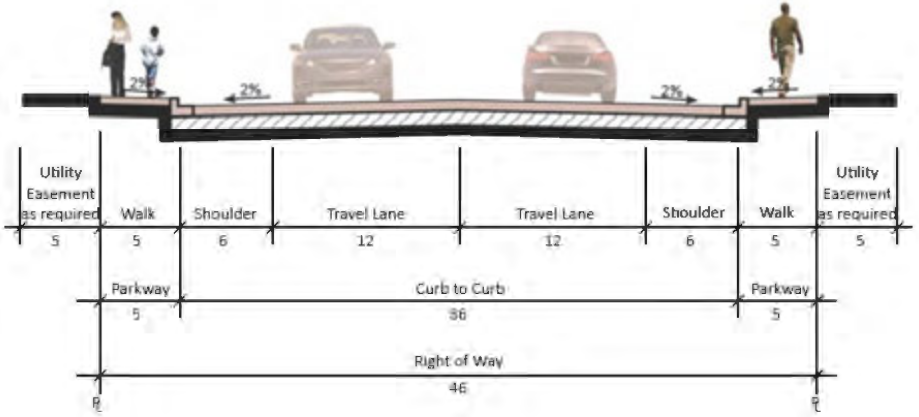
Newland Sierra - Road Sections
2015.01.20



D4

FIGURE 24
Public Residential Loop

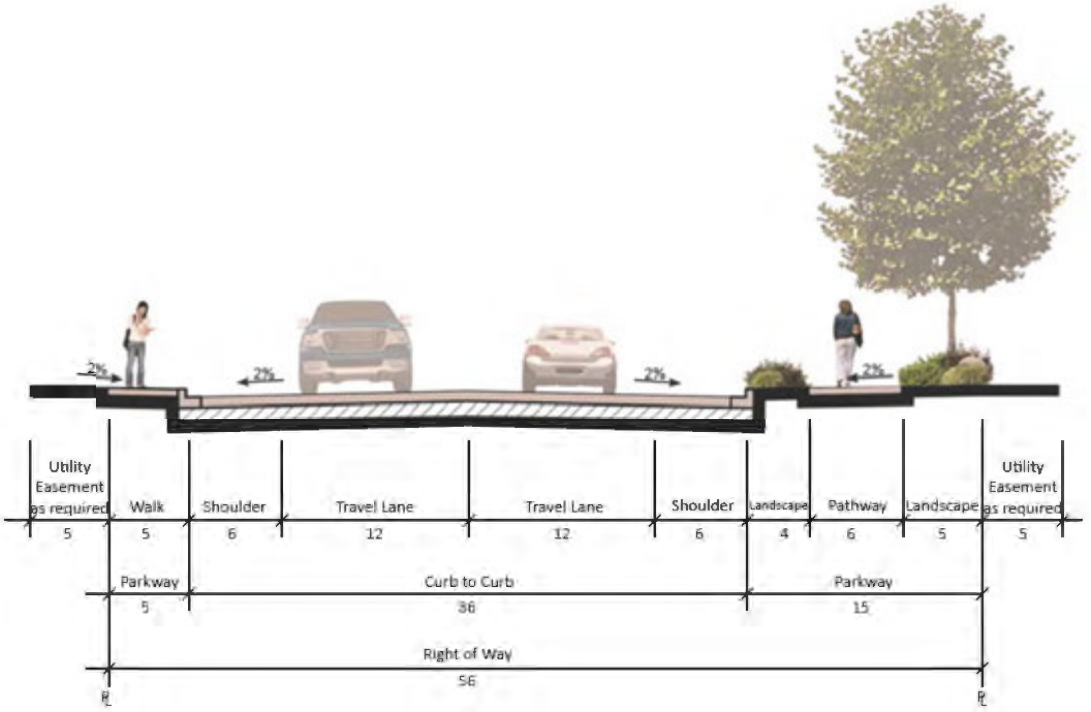
Newland Sierra - Road Sections
2015.01.20



E1

FIGURE 25
Public Modified Residential Road

Newland Sierra - Road Sections
2015.01.20

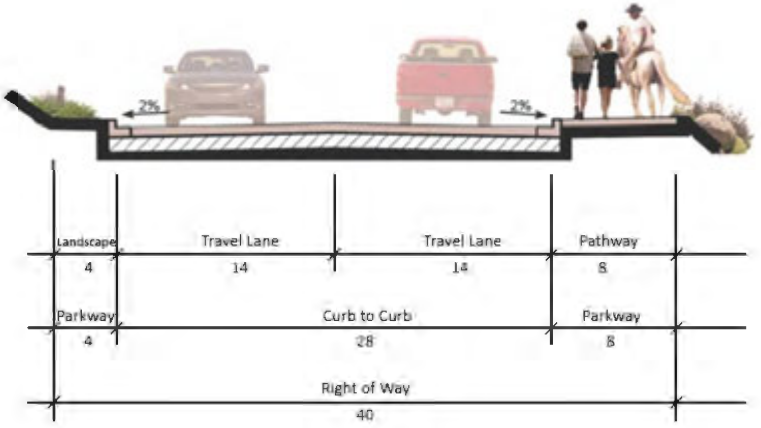


E2

FIGURE 26

Public Modified Residential Road with Parkway

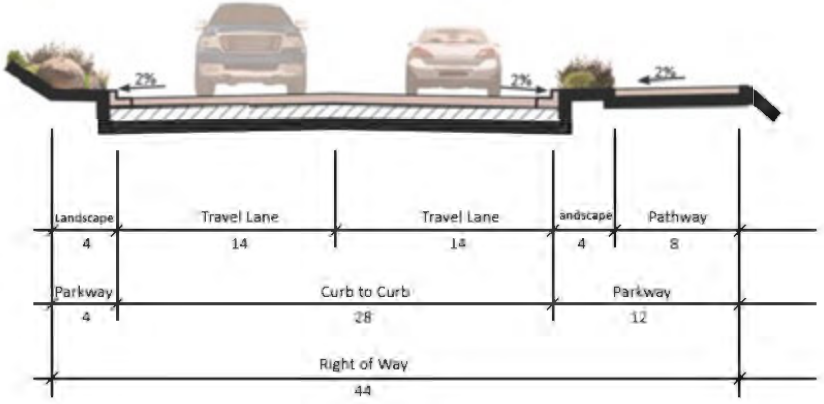
Newland Sierra - Road Sections
2015.01.20



F1

FIGURE 27
Public Modified Hillside Residential Street

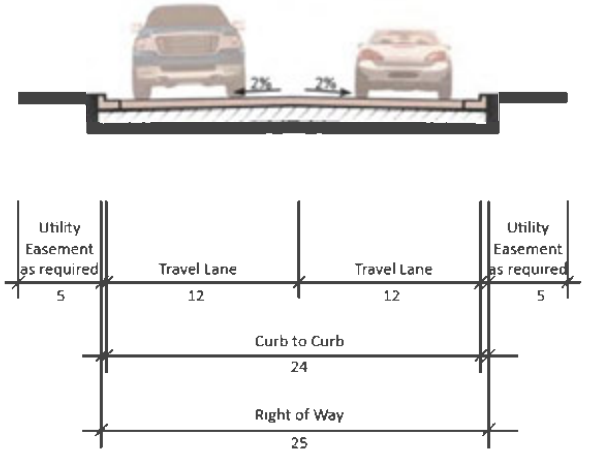
Newland Sierra - Road Sections
2015.01.20



F2

FIGURE 28
Public Modified Hillside Residential Street

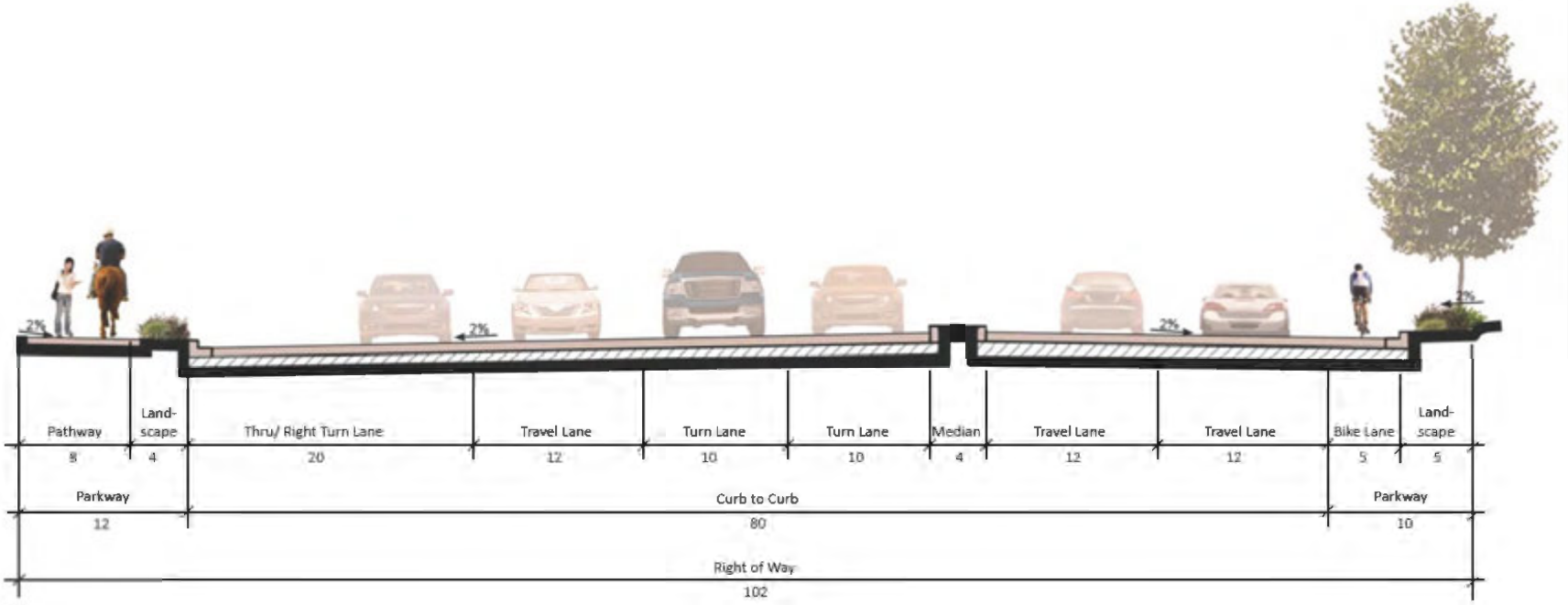
Newland Sierra - Road Sections
2015.01.20



G

FIGURE 29
Utility Access Road

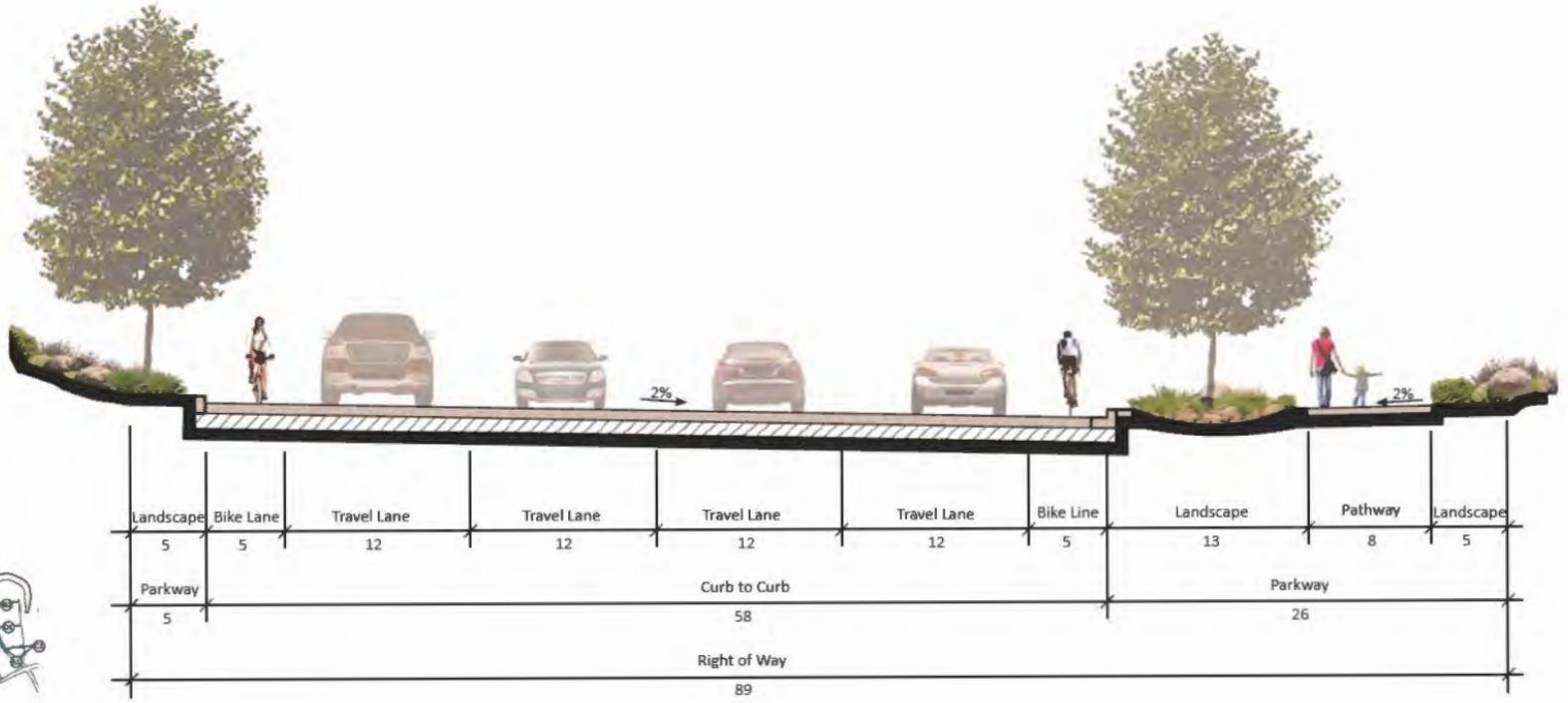
Newland Sierra - Road Sections
2015.01.20



A1

FIGURE 15
Public Modified Boulevard with Raised Median

2015.01.20

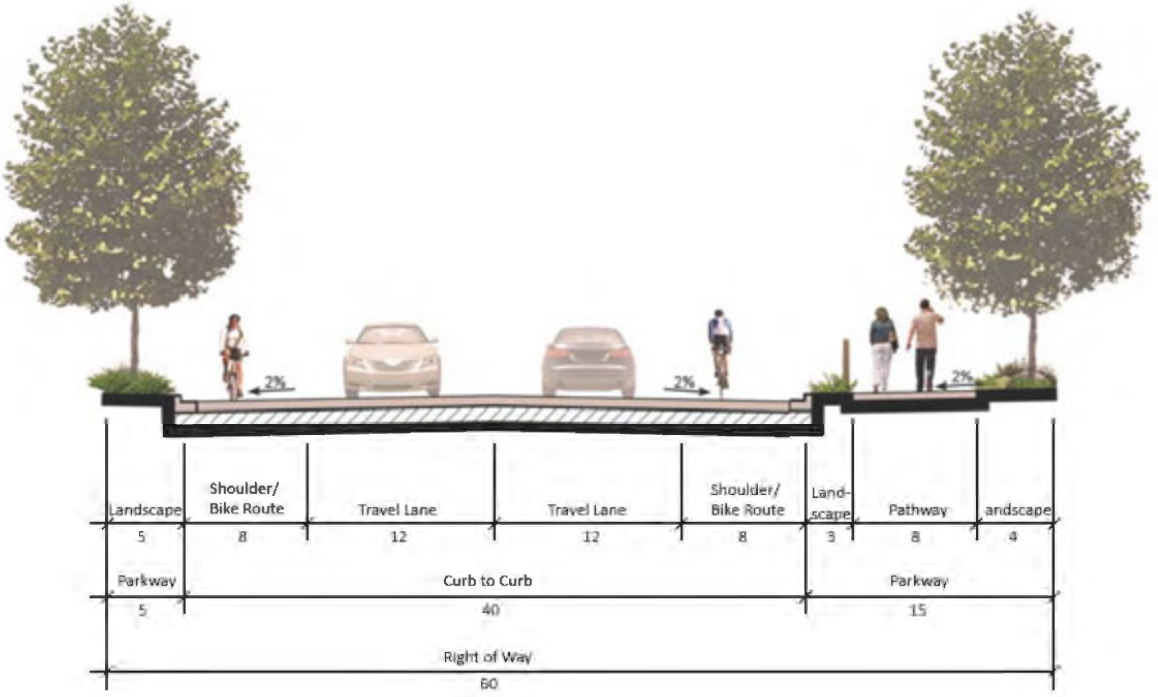


A2

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	TOTAL
7:00 AM	103	74		18	64	29	38	326
7:15 AM	140	68		13	53	25	44	343
7:30 AM	139	66		27	72	37	25	366
7:45 AM	79	53		20	55	52	41	300
8:00 AM	112	62		22	53	38	34	321
8:15 AM	90	45		20	64	48	46	313
8:30 AM	77	38		22	59	42	49	287
8:45 AM	69	25		19	44	35	49	241
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	TOTAL
4:00 PM	67	48		72	52	51	106	396
4:15 PM	91	59		79	57	51	119	456
4:30 PM	95	55		91	56	71	99	467
4:45 PM	86	36		72	60	67	113	434
5:00 PM	52	37		60	65	65	109	388
5:15 PM	62	34		65	56	69	104	390
5:30 PM	36	30		71	55	66	119	377
5:45 PM	53	31		63	44	58	85	334
Total	542	330		573	445	498	854	3,242

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*

Vehicular Count

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

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			TOTAL
	Thru	Left	Right	Left	Right	Thru		
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			TOTAL
	Thru	Left	Right	Left	Right	Thru		
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

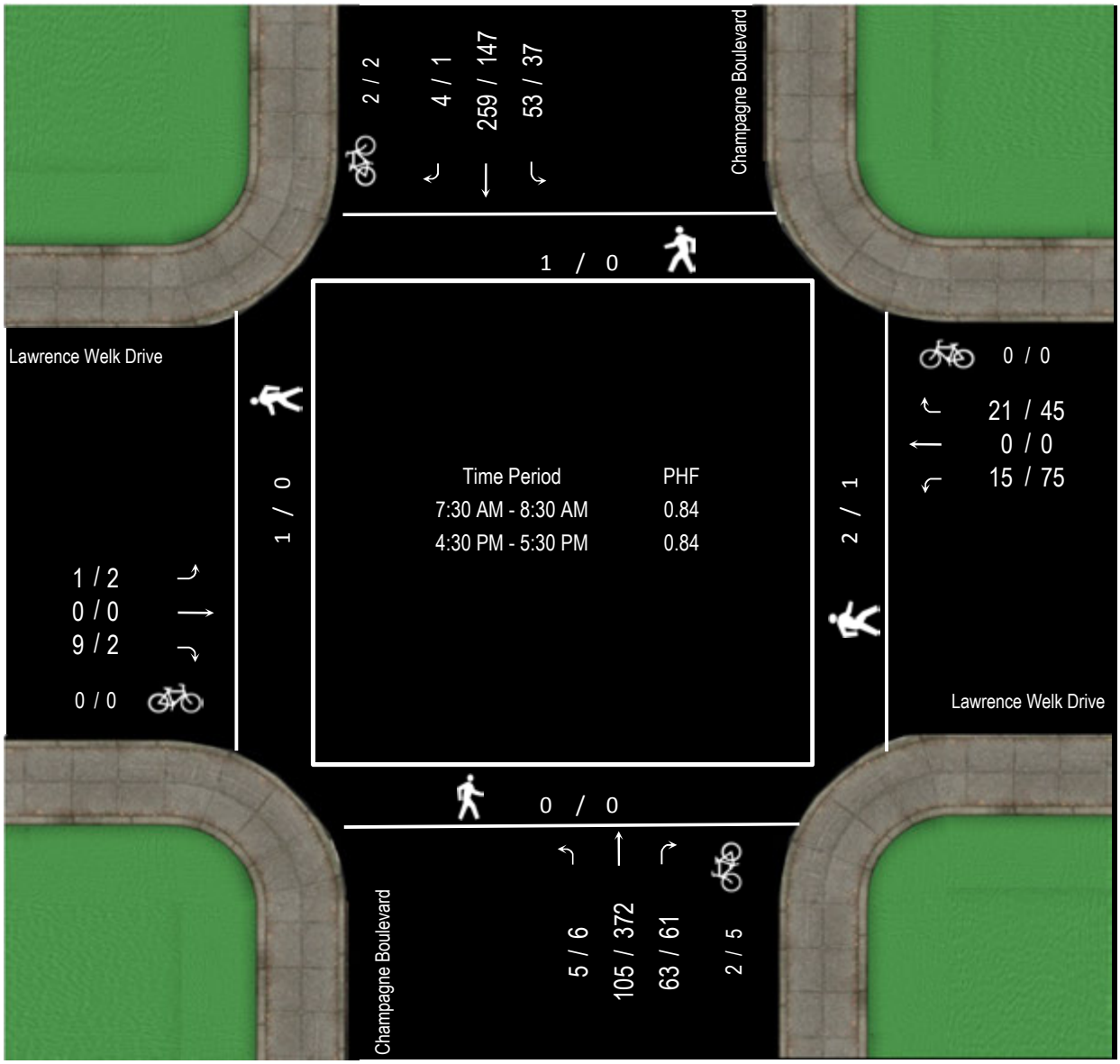
Location: Lawrence Welk Drive @ Champagne Boulevard

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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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
info@accuratevideocounts.com
(619) 987-5136

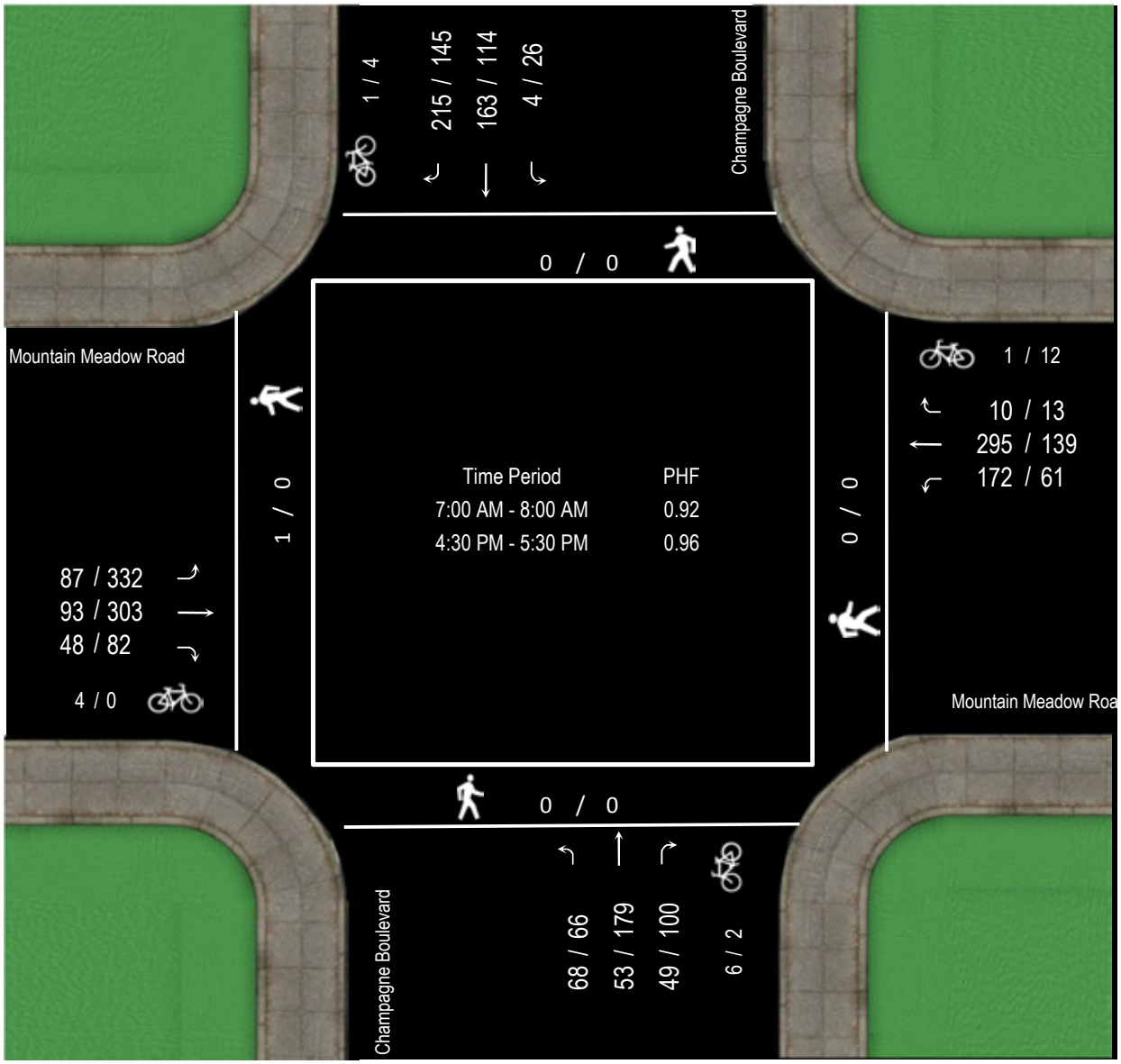
Location: Mountain Meadow Road @ Champagne Boulevard

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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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

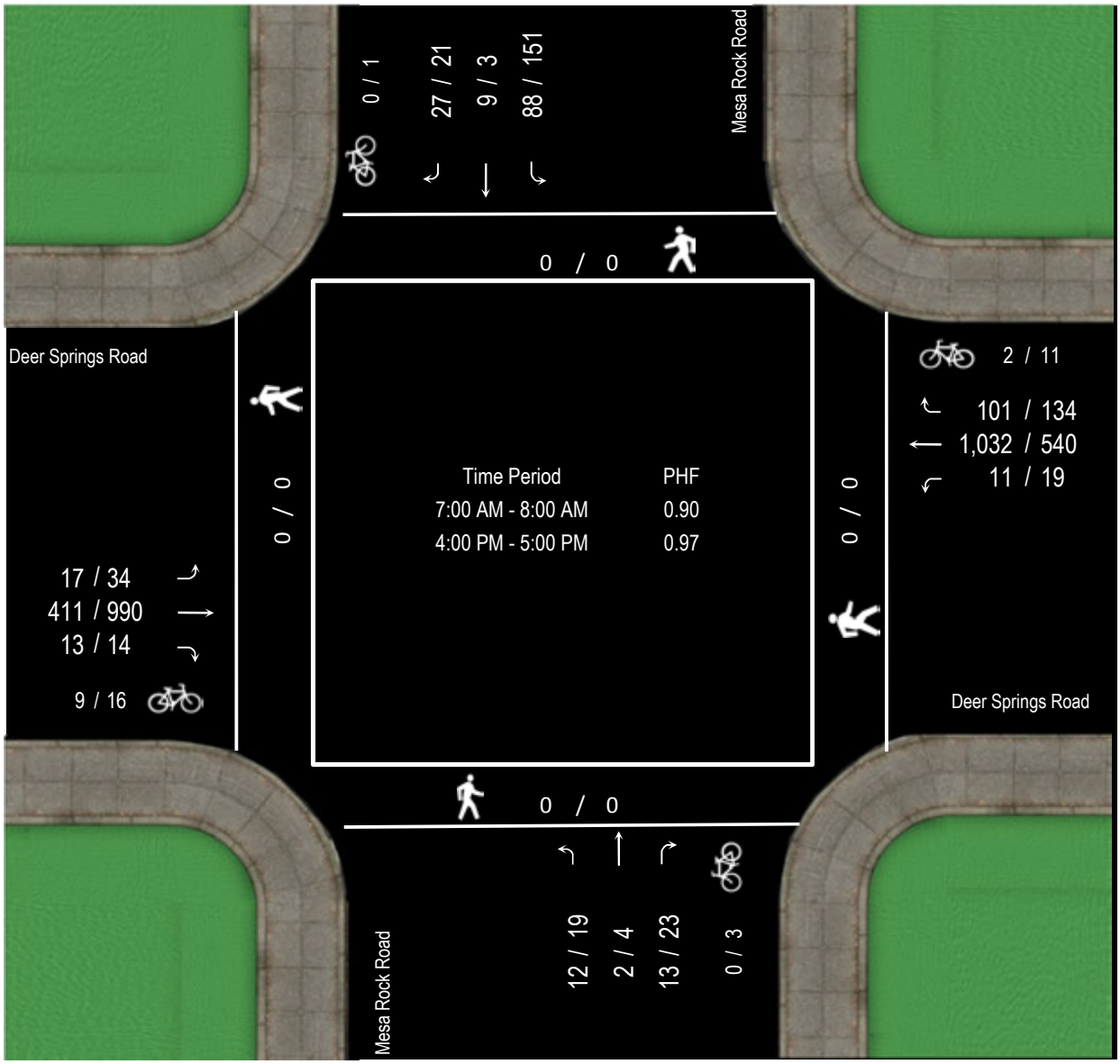
Location: Deer Springs Road @ Mesa Rock Road

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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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*

Vehicular Count

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

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		TOTAL
	Right	Left	Right	Thru		Thru	Left	
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		TOTAL
	Right	Left	Right	Thru		Thru	Left	
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

Turn Count Summary

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

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			
	Thru	Left	Right	Left	Right	Thru		TOTAL
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			
	Thru	Left	Right	Left	Right	Thru		TOTAL
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			TOTAL
	Thru	Left	Right	Left	Right	Thru		
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			TOTAL
	Thru	Left	Right	Left	Right	Thru		
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*

Vehicular Count

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

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		TOTAL
	Right	Left	Right	Thru		Thru	Left	
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		TOTAL
	Right	Left	Right	Thru		Thru	Left	
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*

Vehicular Count

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

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	TOTAL
7:00 AM	90	198		69	19	32	72	480
7:15 AM	69	218		47	19	36	51	440
7:30 AM	75	205		65	30	50	37	462
7:45 AM	80	171		52	45	54	51	453
8:00 AM	79	207		77	23	30	30	446
8:15 AM	70	189		64	17	30	47	417
8:30 AM	64	168		77	43	30	47	429
8:45 AM	49	195		77	19	24	33	397
Total	576	1,551		528	215	286	368	3,524

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	TOTAL
4:00 PM	49	103		153	51	57	77	490
4:15 PM	37	124		208	54	45	80	548
4:30 PM	50	125		148	53	53	89	518
4:45 PM	66	124		133	42	58	64	487
5:00 PM	90	171		155	33	48	88	585
5:15 PM	62	111		131	47	60	92	503
5:30 PM	73	145		179	46	53	78	574
5:45 PM	66	135		135	41	49	78	504
Total	493	1038		1,242	367	423	646	4,209

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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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*

Time Period	PHF
7:45 AM - 8:45 AM	0.91
4:15 PM - 5:15 PM	0.98

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			TOTAL
	Thru	Left	Right	Left	Right	Thru		
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			TOTAL
	Thru	Left	Right	Left	Right	Thru		
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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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

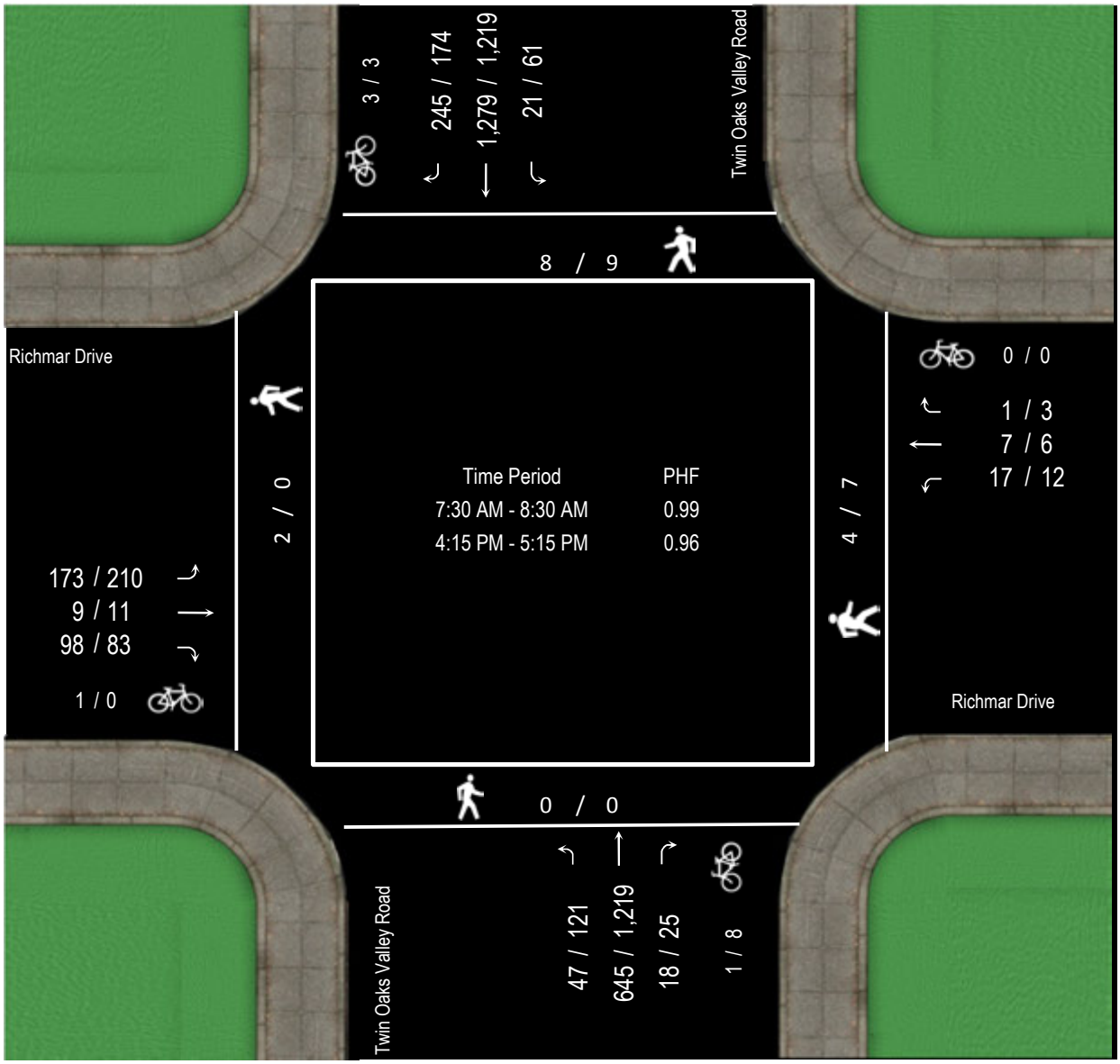
Location: Richmar Drive @ Twin Oaks Valley Road

Date of Count: *Wednesday, April 15, 2015*

Analysts: *LV/CD*

Weather: *Sunny*

AVC Proj No: *15-0338*



Vehicular Count

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

Location: Richmar Drive @ Twin Oaks Valley Road

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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

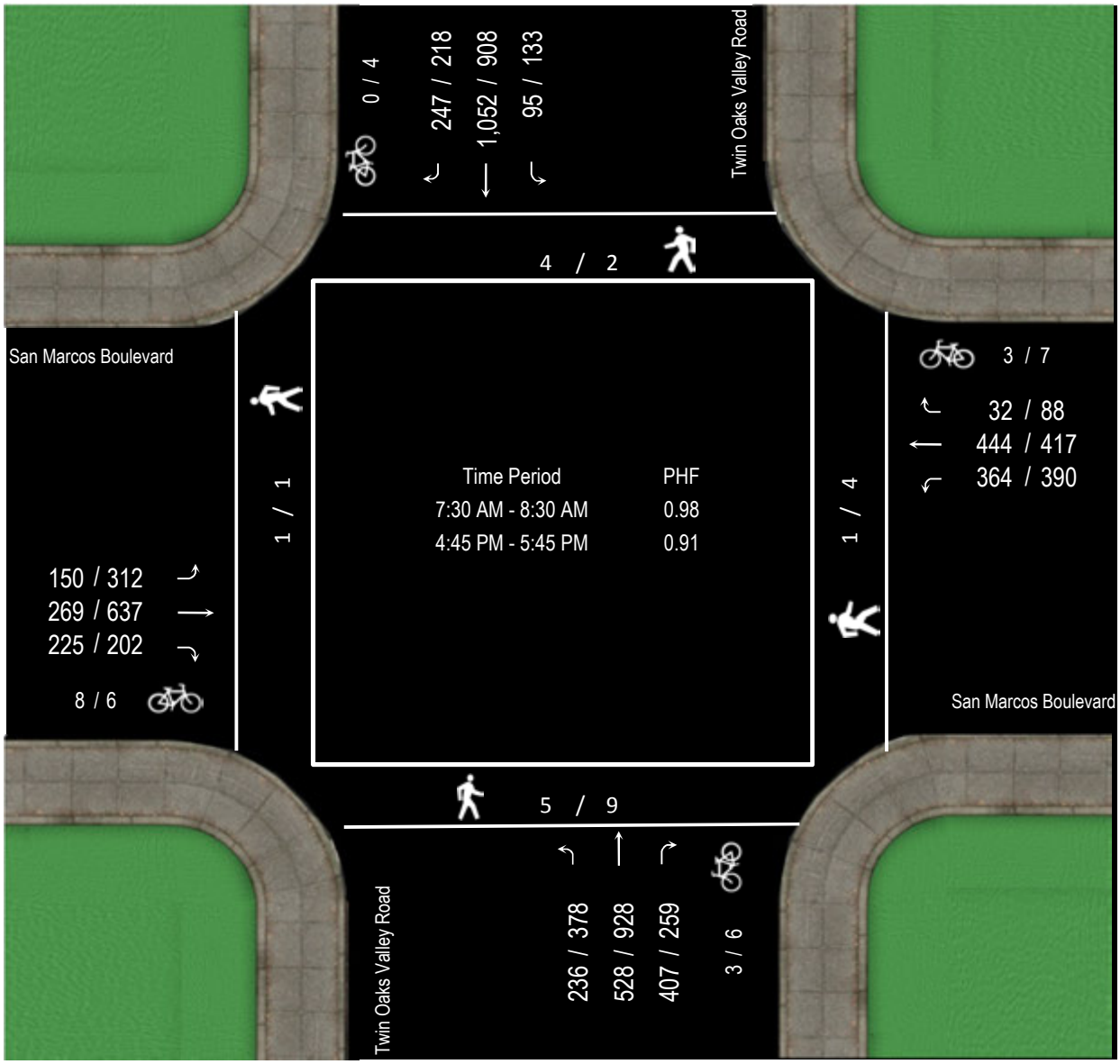
Location: San Marcos Boulevard @ Twin Oaks Valley Road

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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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	4870
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*

Vehicular Count

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

Location: SR 78 WB Ramps @ Twin Oaks Valley Road

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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	1173	0	326	0	488	544	1239	0	0	0	0	4097
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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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		
		Thru	Left	Right	Left	Right	Thru	TOTAL
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		
		Thru	Left	Right	Left	Right	Thru	TOTAL
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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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	1969	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			TOTAL
	Thru	Left	Right	Left	Right	Thru		
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			TOTAL
	Thru	Left	Right	Left	Right	Thru		
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*

Vehicular Count

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

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		TOTAL
	Right	Thru		Thru	Left	Right	Left	
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		TOTAL
	Right	Thru		Thru	Left	Right	Left	
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

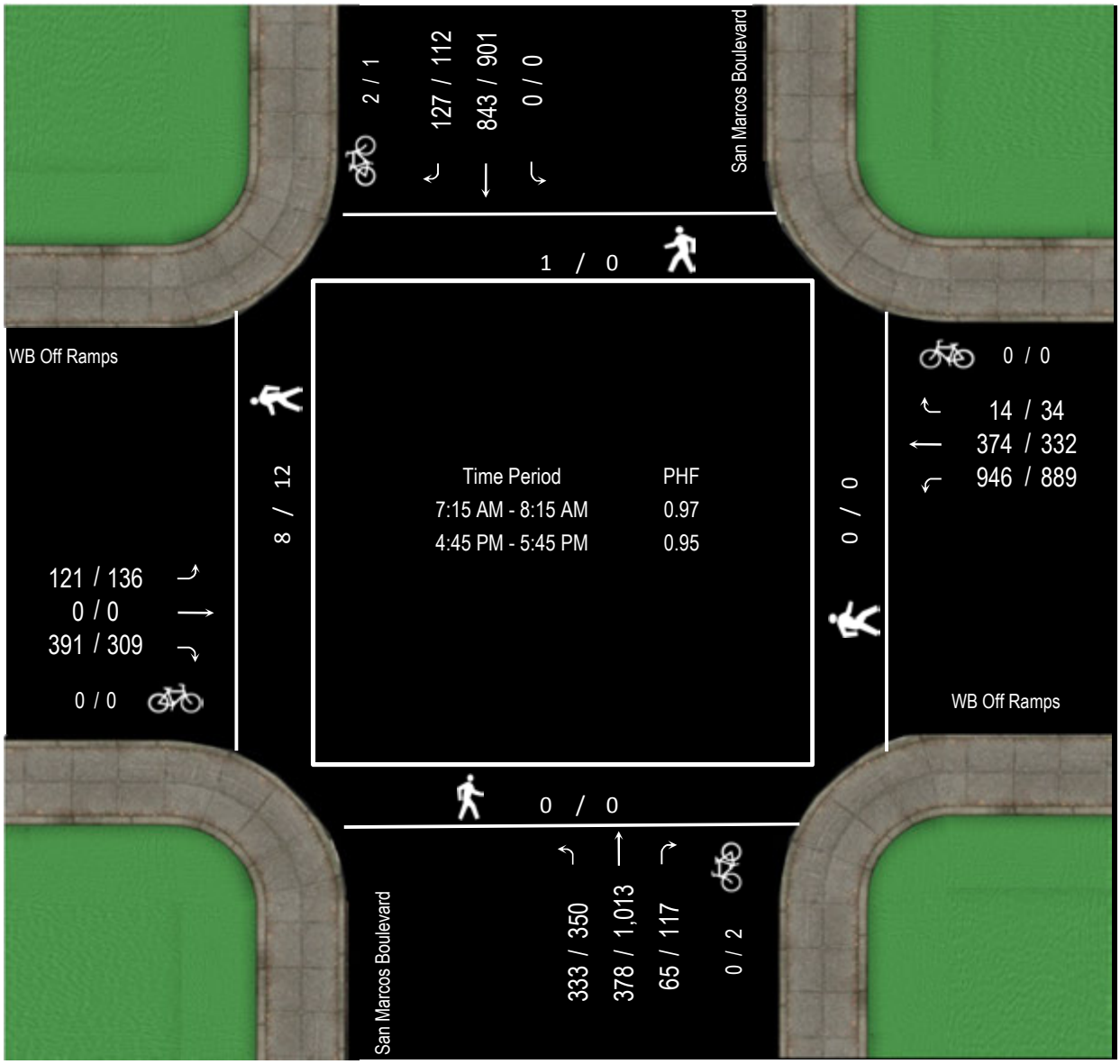
Location: WB Off Ramps @ San Marcos Boulevard

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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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

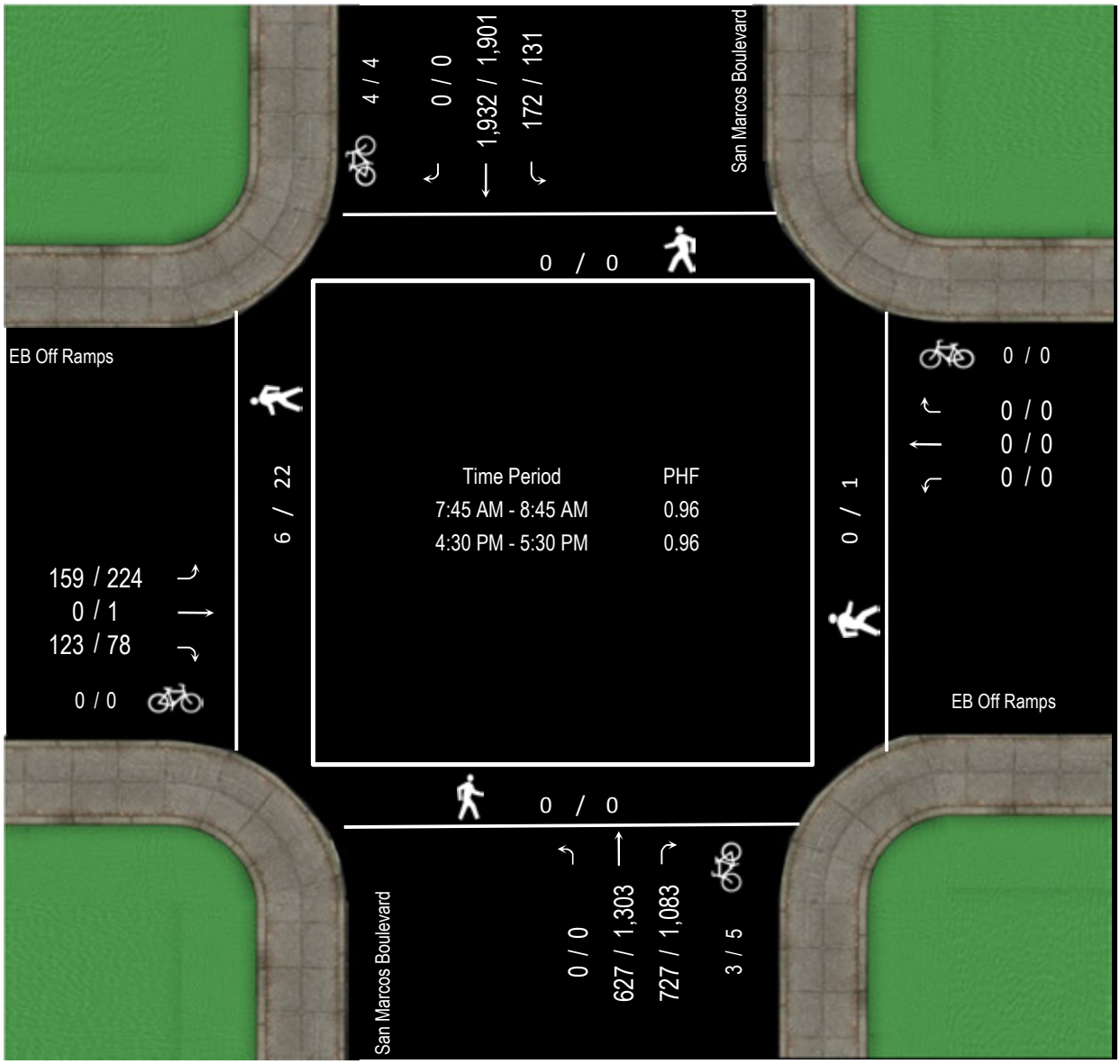
Location: EB Off Ramps @ San Marcos Boulevard

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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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*

Time Period	PHF
7:00 AM - 8:00 AM	0.88
4:30 PM - 5:30 PM	0.90

Vehicular Count

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

Location: Mesa Rock Road @ North Centre City Parkway

AM Period (7:00 AM - 9:00 AM)								
	Southbound			Northbound		Eastbound		
	Right	Thru		Thru	Left	Right	Left	TOTAL
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		TOTAL
	Right	Thru		Thru	Left	Right	Left	
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		
	Right	Thru		Thru	Left	Right	Left	TOTAL
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		TOTAL
	Right	Thru		Thru	Left	Right	Left	
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*

Vehicular Count

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

Location: Country Club Lane @ North Centre City Parkway

AM Period (7:00 AM - 9:00 AM)													
	Southbound			Westbound			Northbound			Eastbound			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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

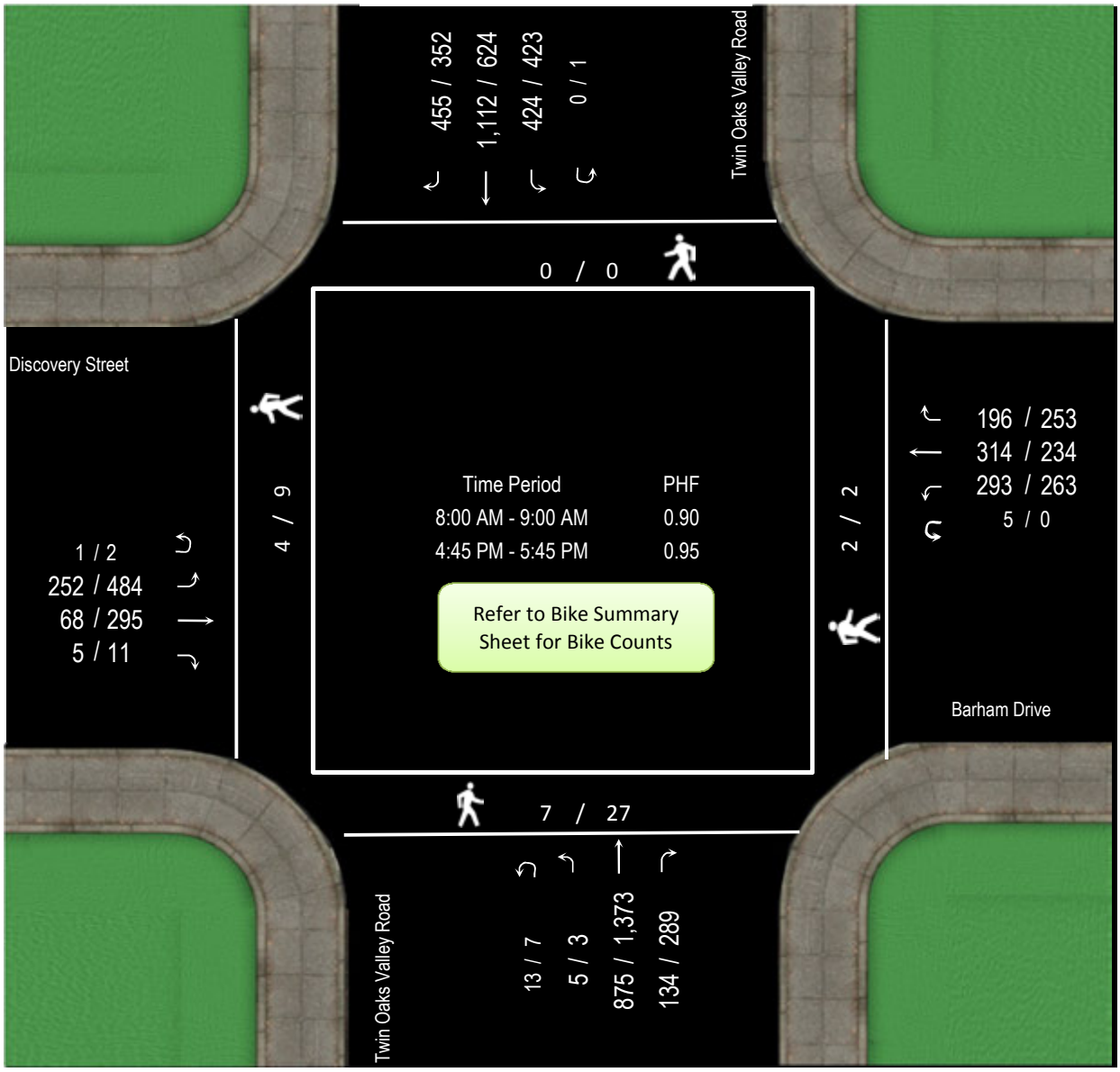
Location: Discovery Street and Barham Driv @ Twin Oaks Valley Road

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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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*

Bike 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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	TOTAL
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*

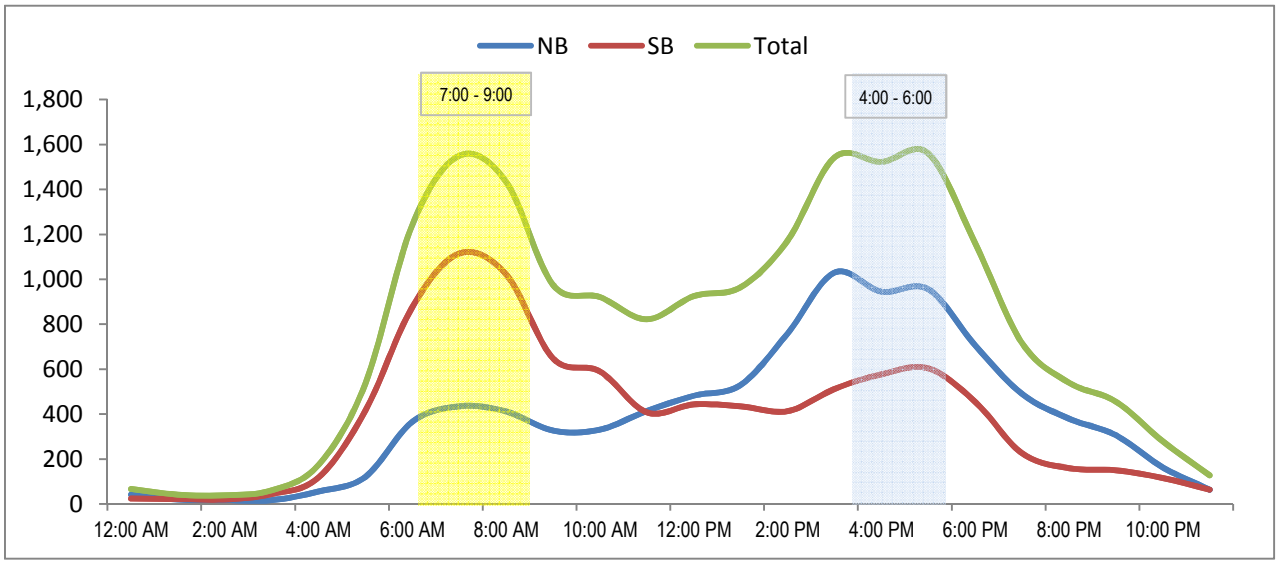
Analysts: *DASH*

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***



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*

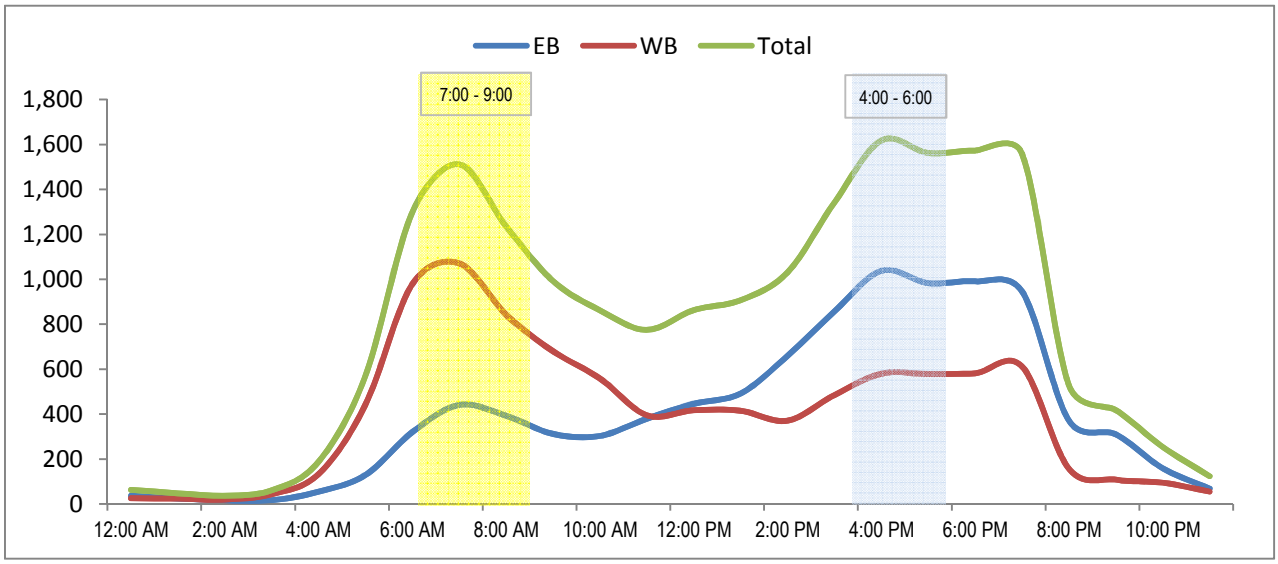
Analysts: *DASH*

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*



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*

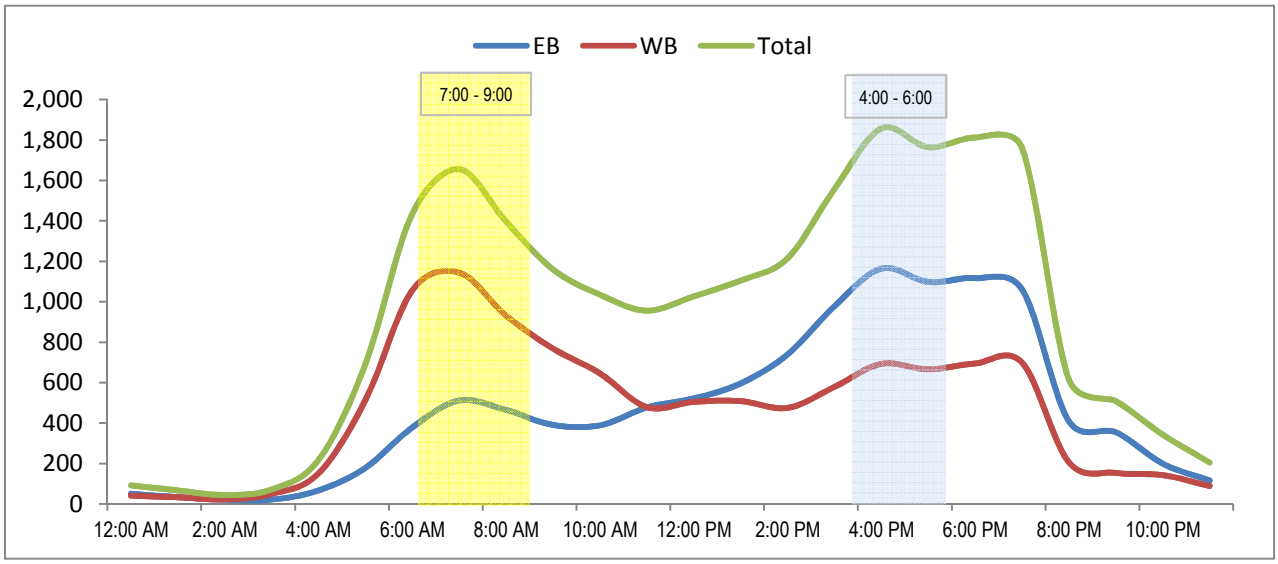
Weather: *Sunny*

AVC Proj. No: *15-0338*

24 Hour Segment Volume ***22,595***

Time	Hourly Volume EB	Hourly Volume WB	Hourly Volume Total	Time	Hourly Volume EB	Hourly Volume WB	Hourly Volume 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***



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*

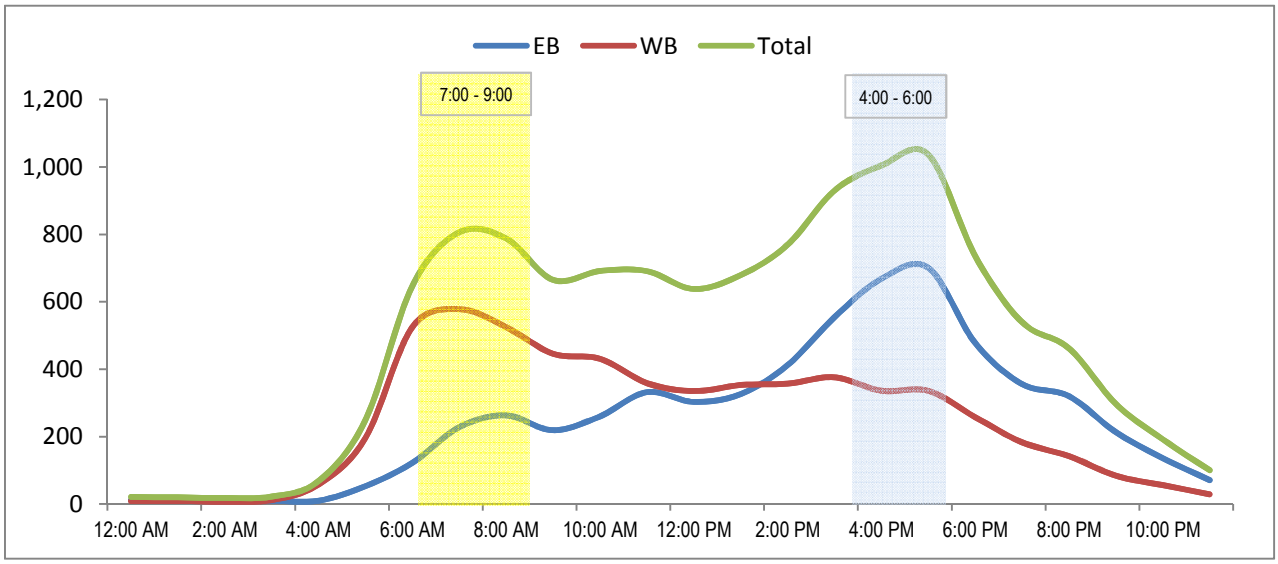
Weather: *Sunny*

AVC Proj. No: *15-0338*

24 Hour Segment Volume ***12,069***

Time	Hourly Volume EB	Hourly Volume WB	Hourly Volume Total	Time	Hourly Volume EB	Hourly Volume WB	Hourly Volume 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***



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*

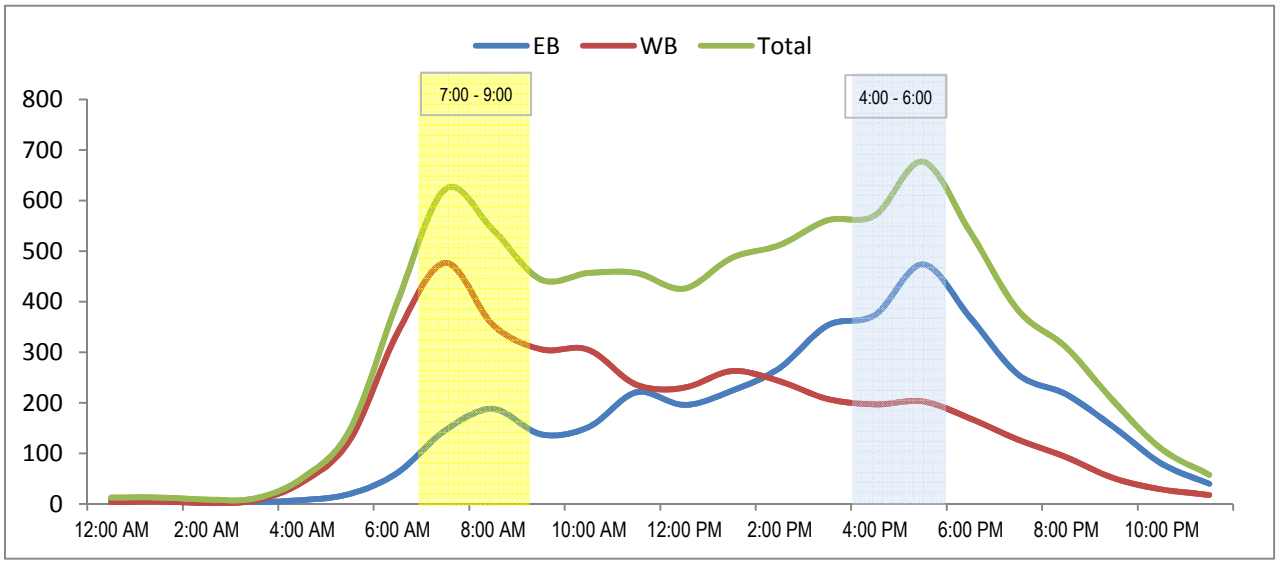
Analysts: *DASH*

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***



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*

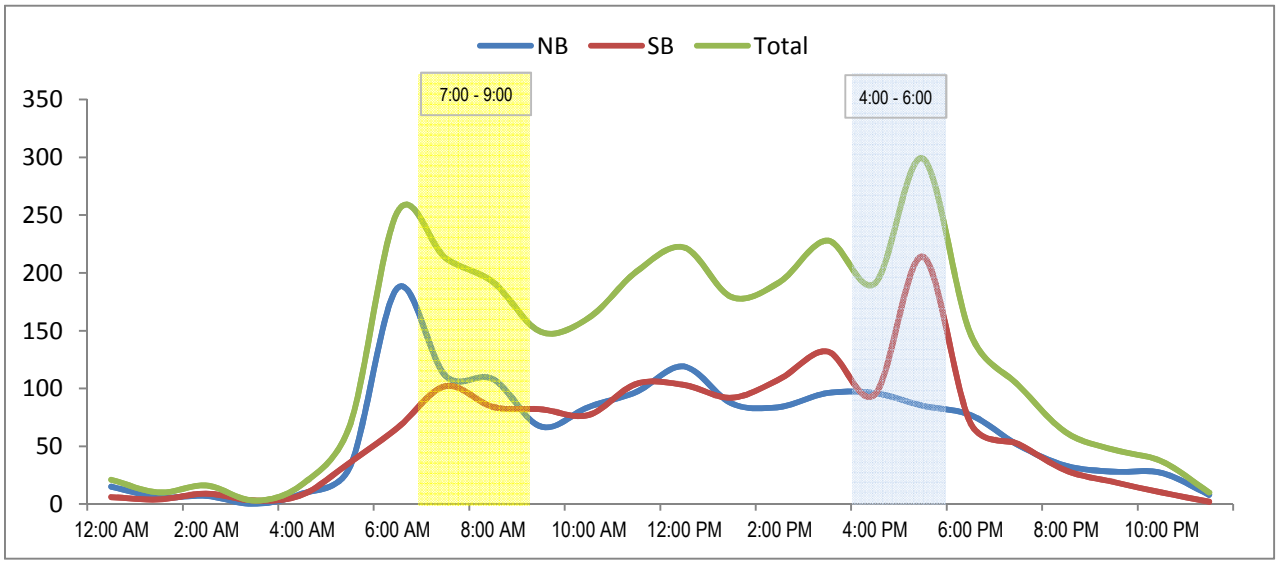
Analysts: *DASH*

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



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*

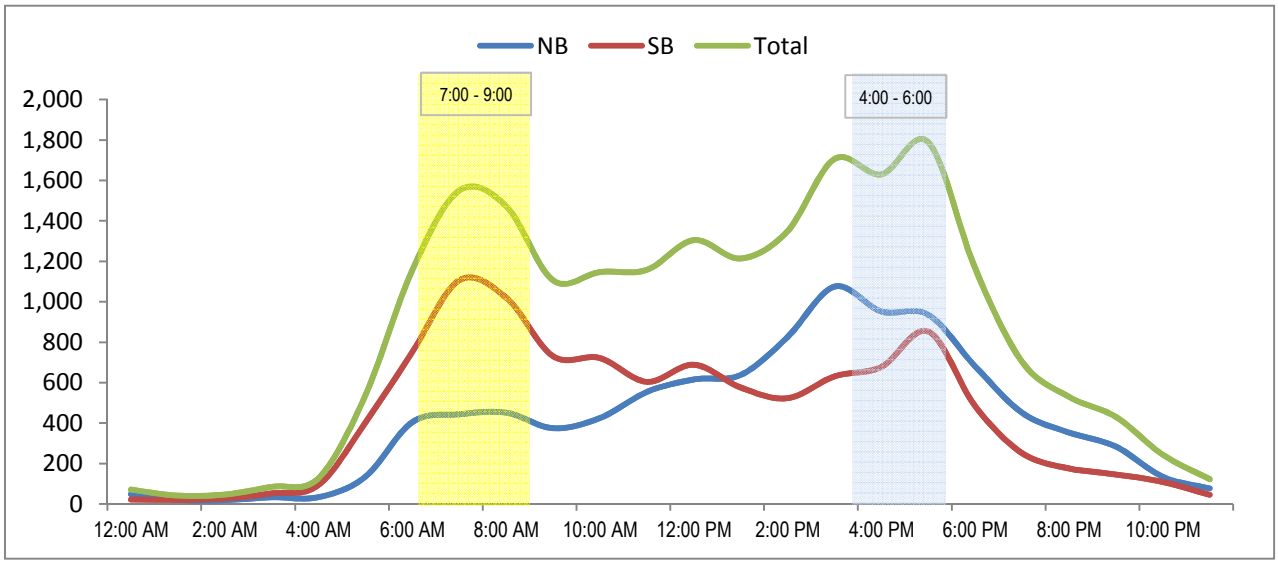
Analysts: *DASH*

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***



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*

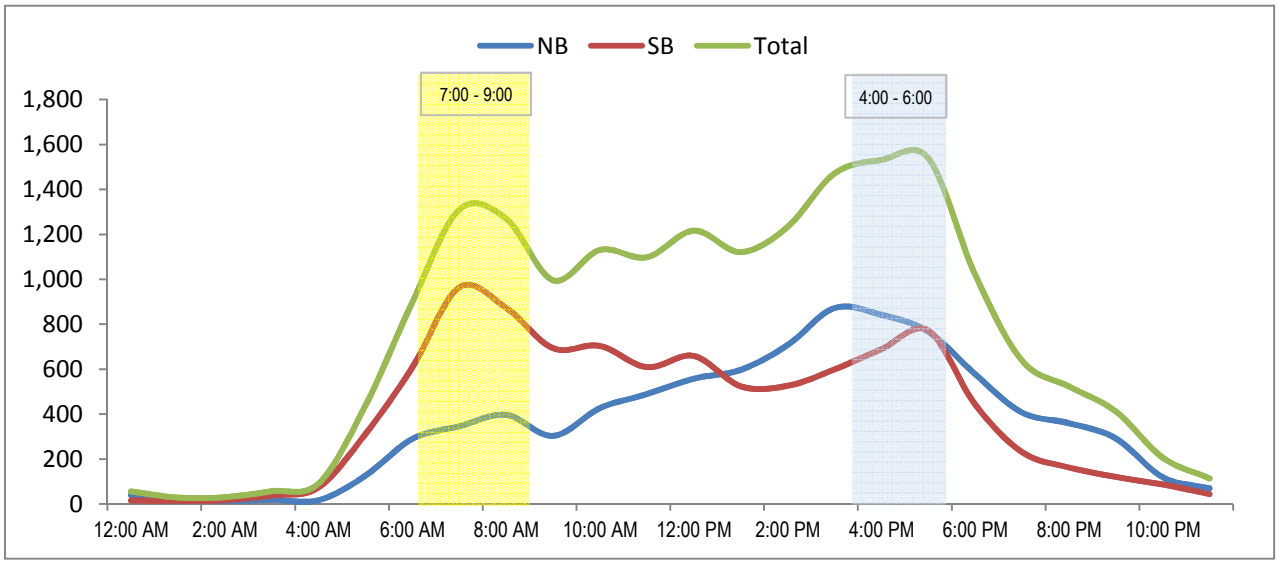
Analysts: *DASH*

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



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*

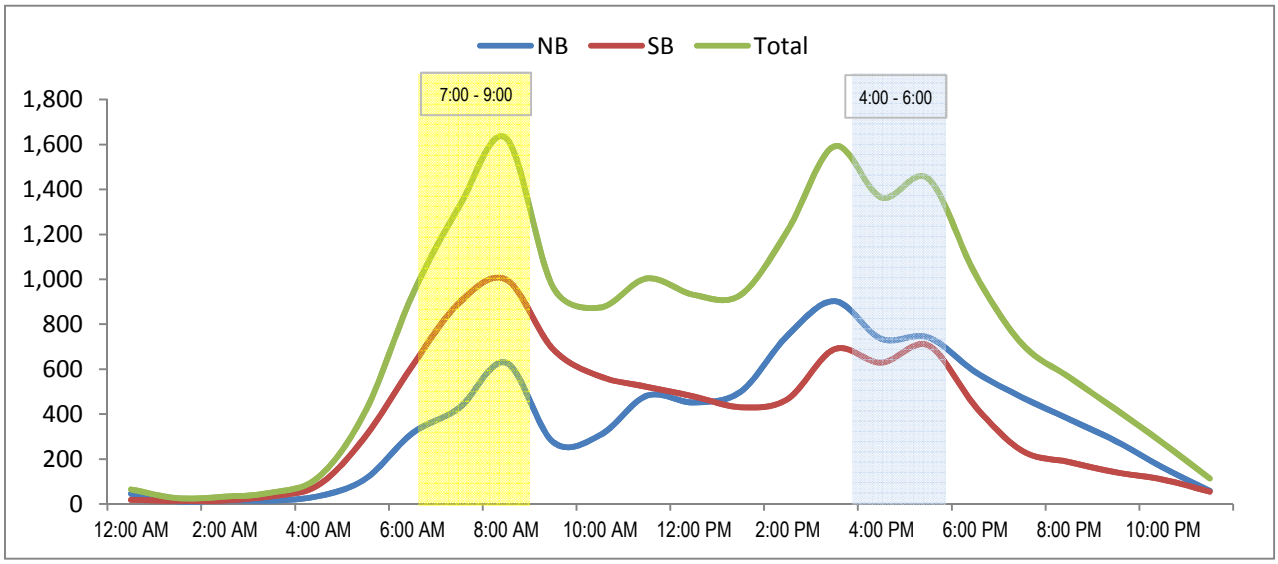
Analysts: *DASH*

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*



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*

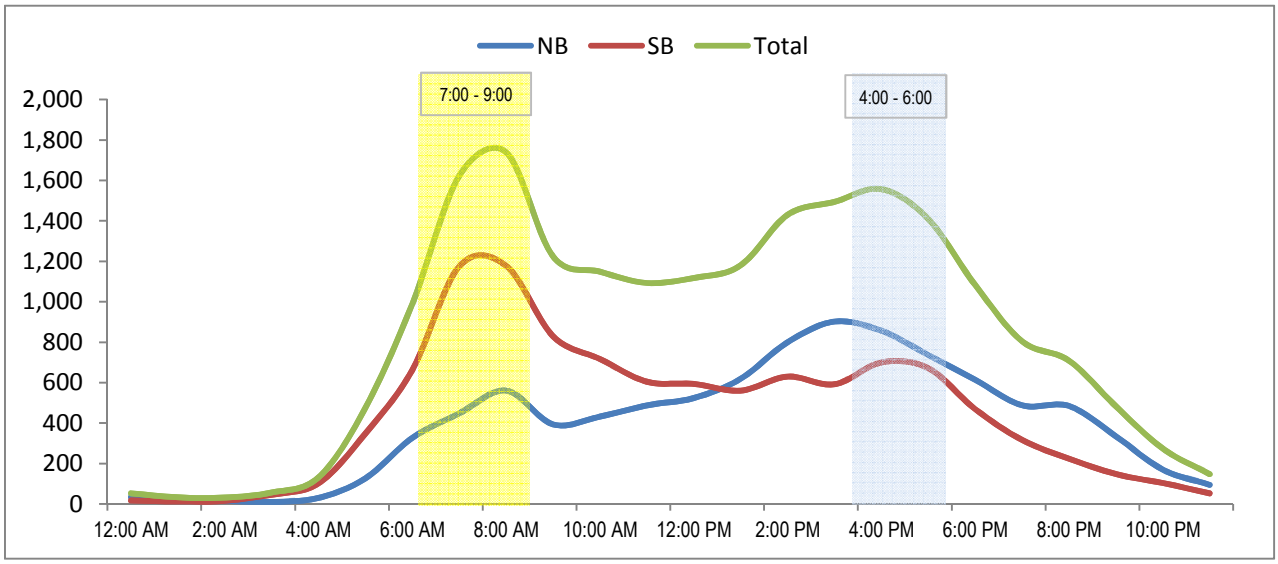
Analysts: *DASH*

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***



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*

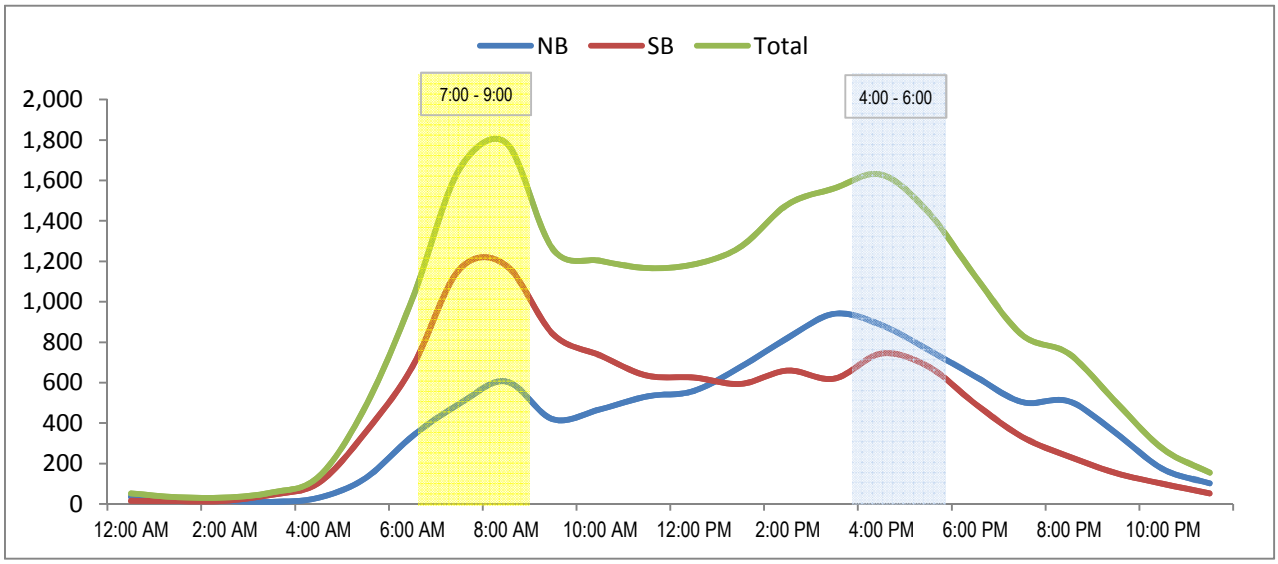
Weather: *Sunny*

AVC Proj. No: *15-0338*

24 Hour Segment Volume ***21,084***

Time	Hourly Volume NB	Hourly Volume SB	Hourly Volume Total	Time	Hourly Volume NB	Hourly Volume SB	Hourly Volume 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***



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*

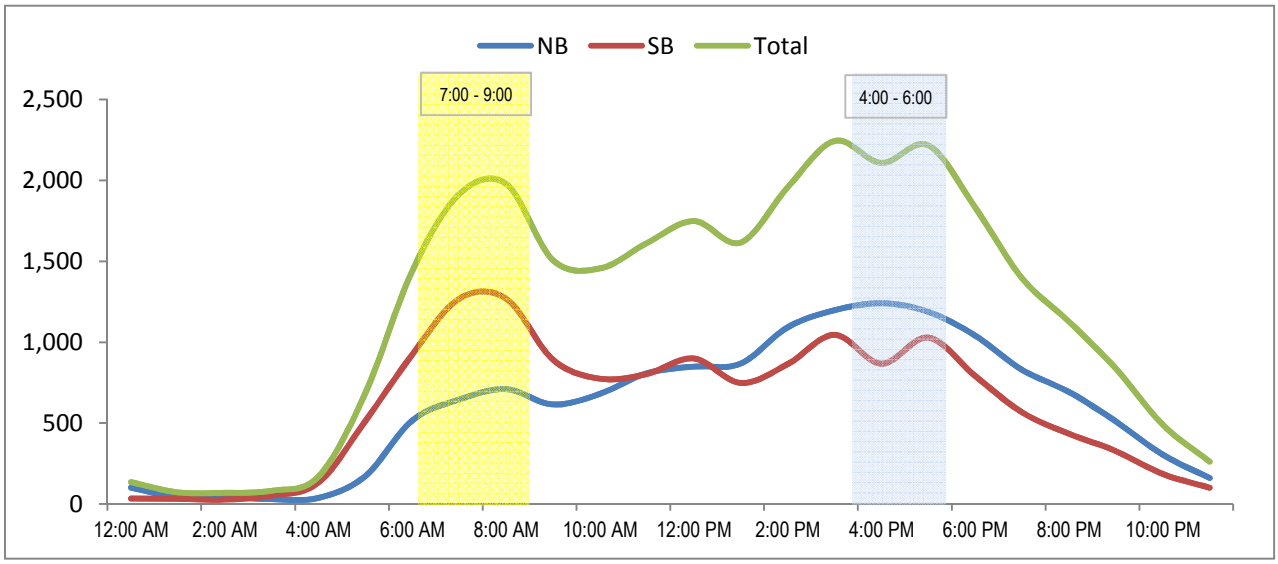
Analysts: *DASH*

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***



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*

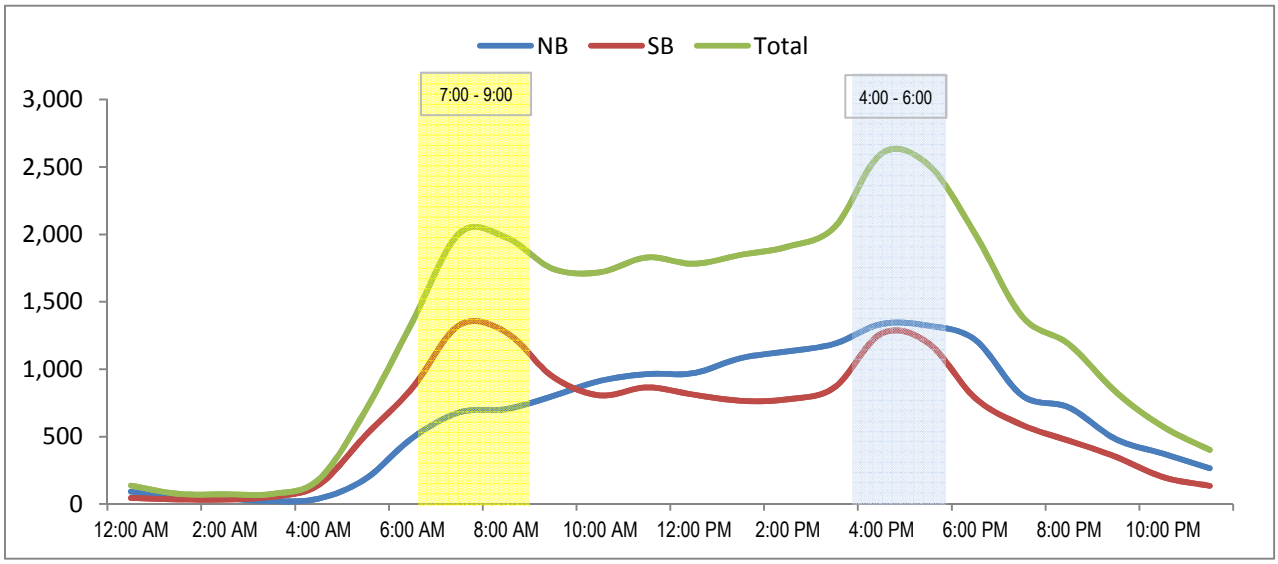
Analysts: *DASH*

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



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*

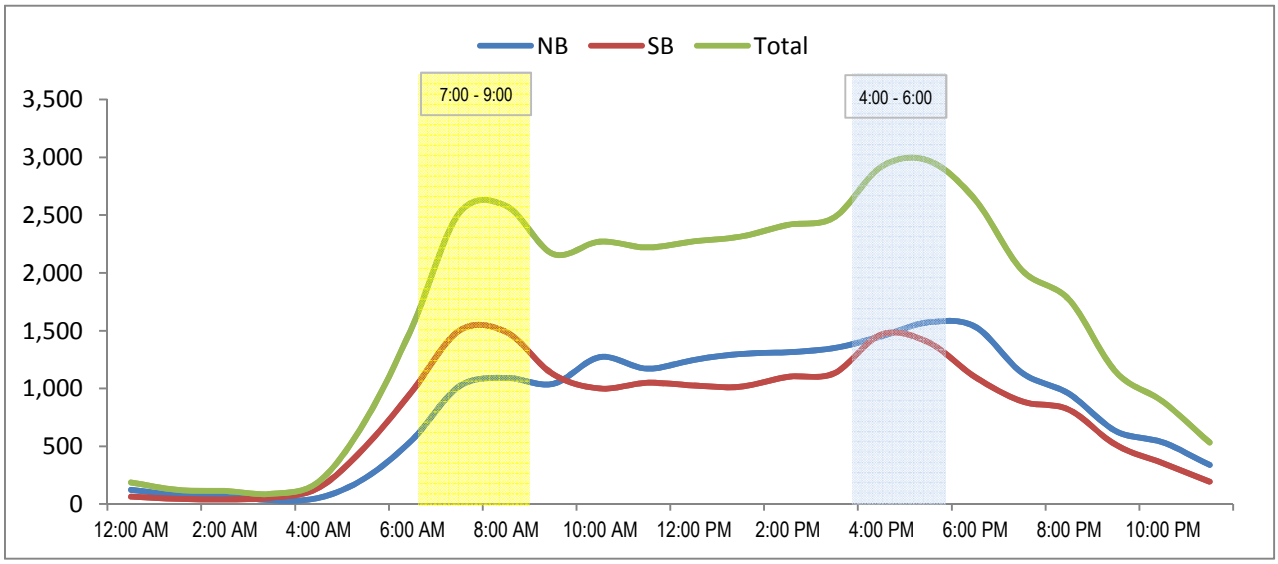
Analysts: *DASH*

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



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*

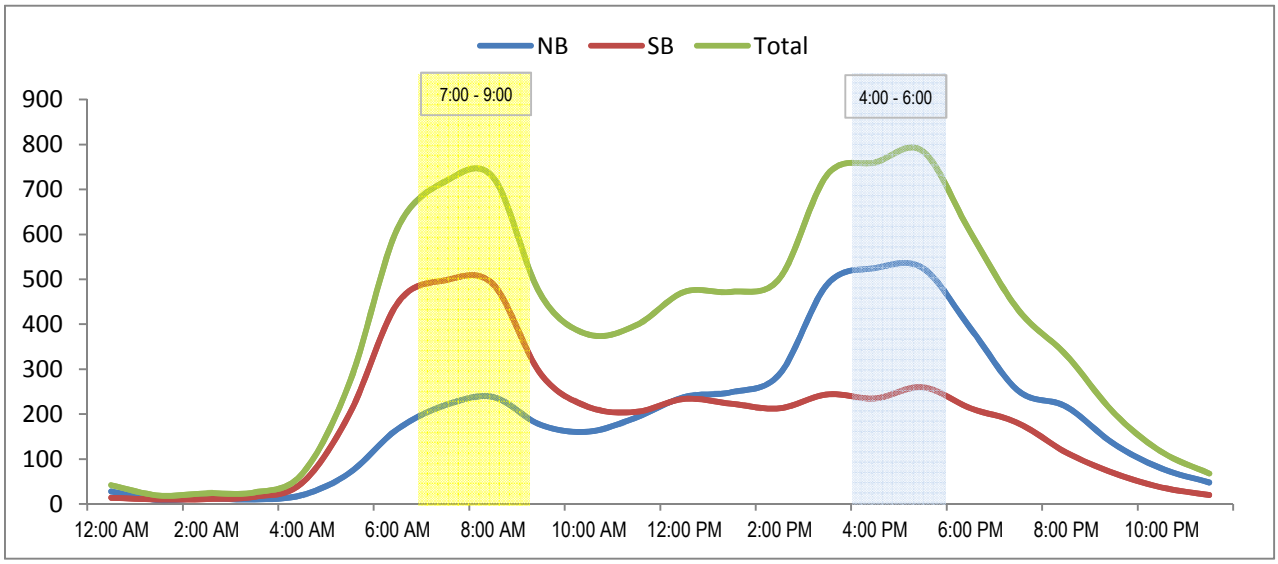
Analysts: *DASH*

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



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*

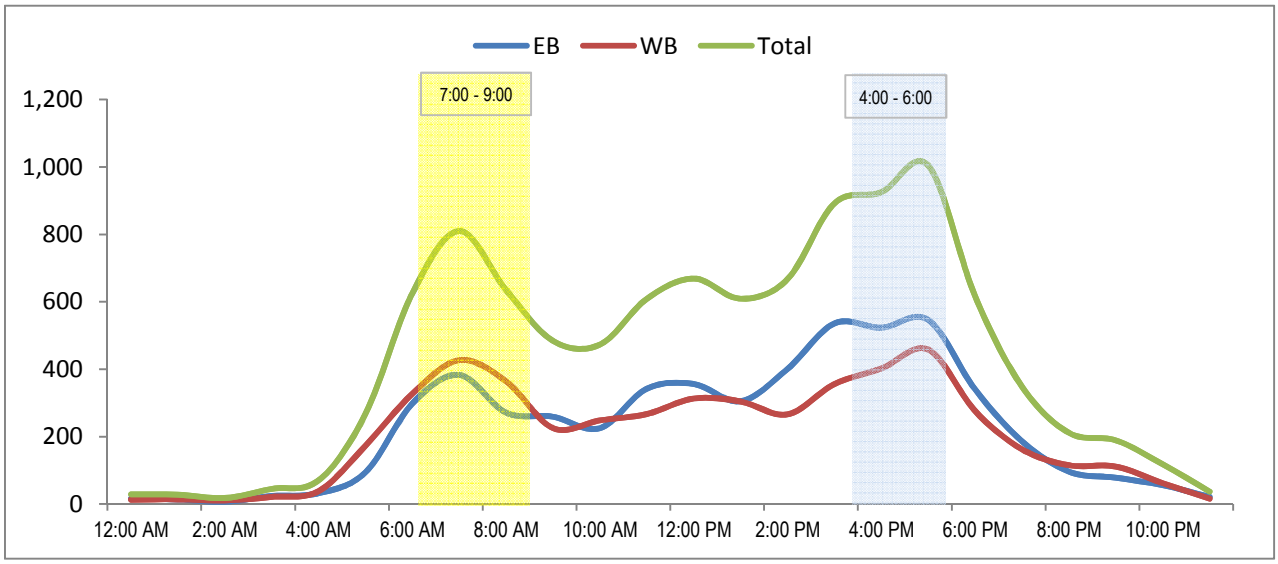
Analysts: *DASH*

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***



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*

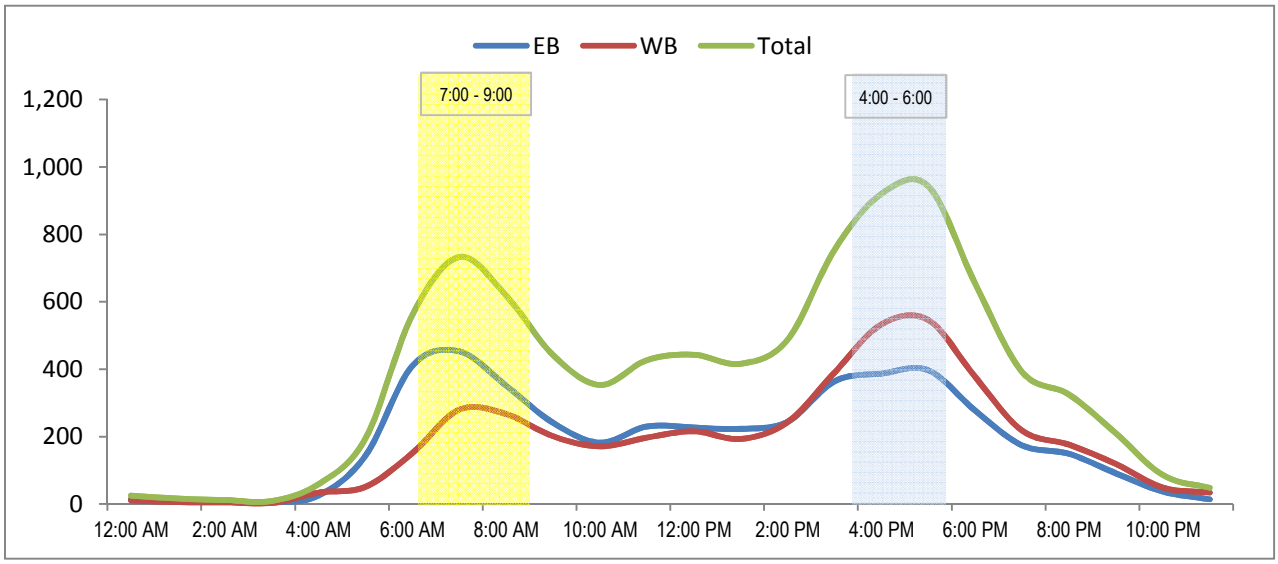
Analysts: *DASH*

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*



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*

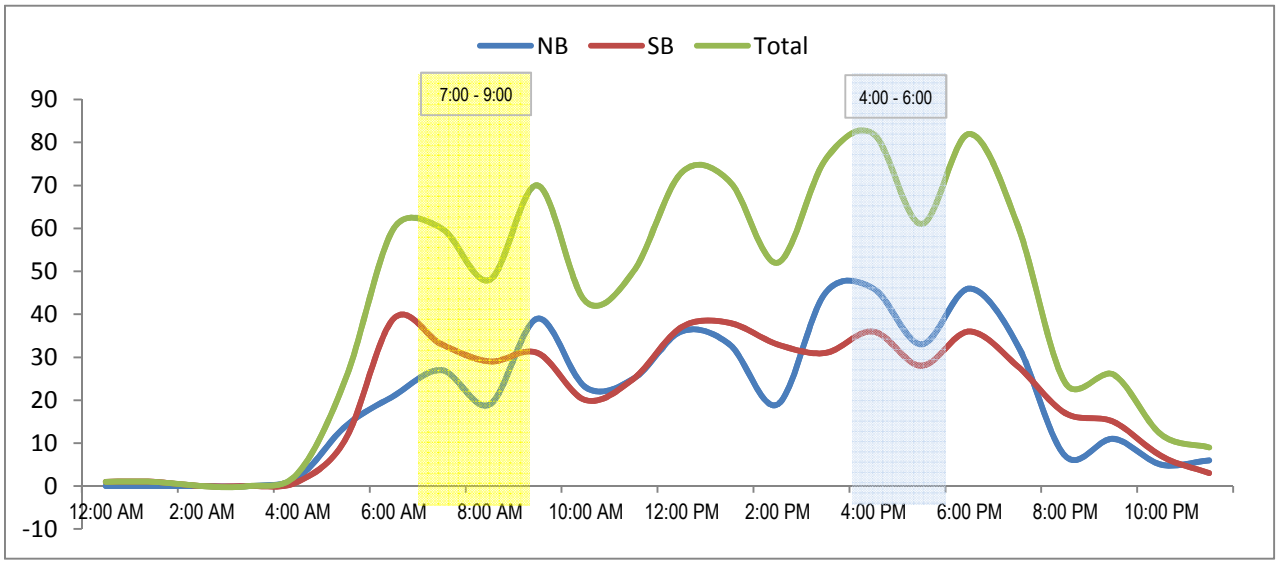
Weather: *Sunny*

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***



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*

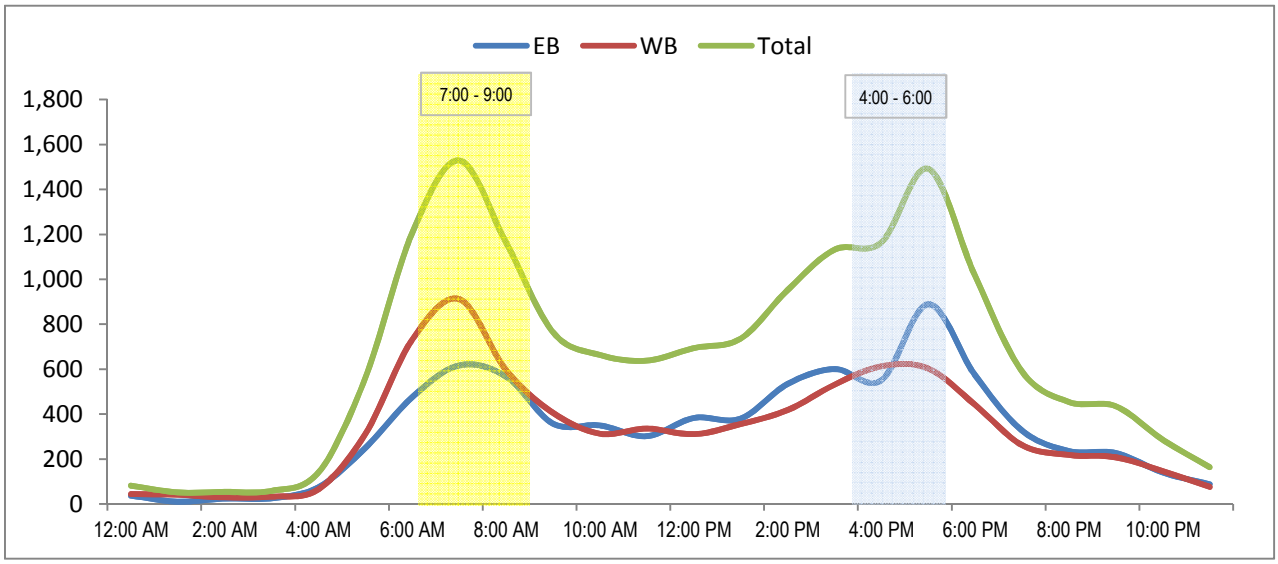
Weather: *Sunny*

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***



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*

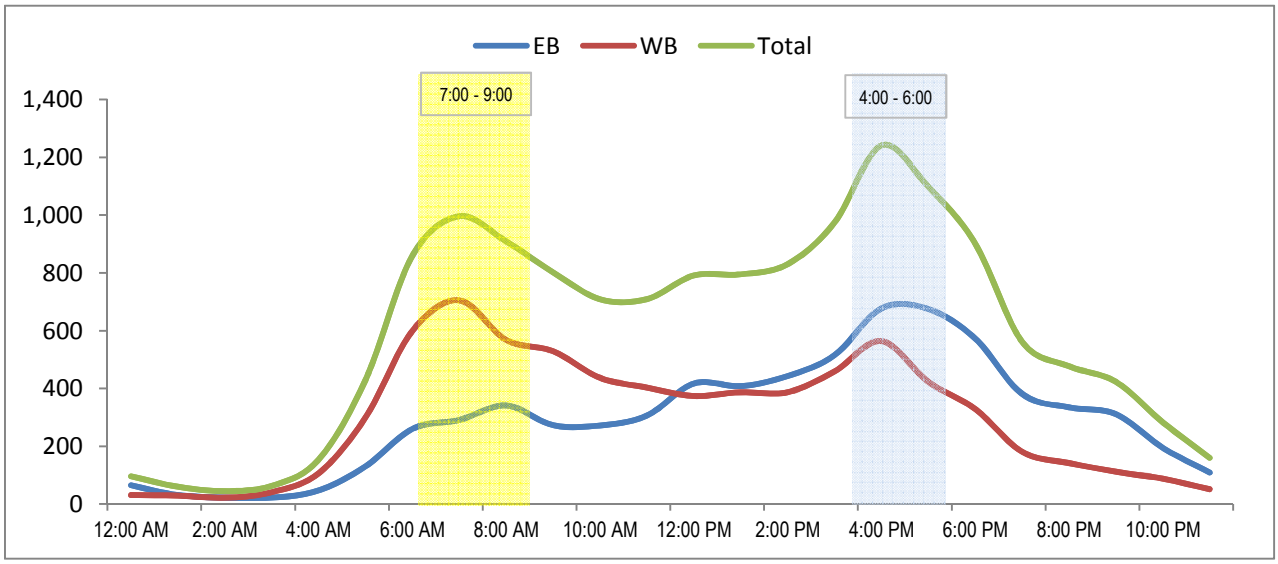
Weather: *Sunny*

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***



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*

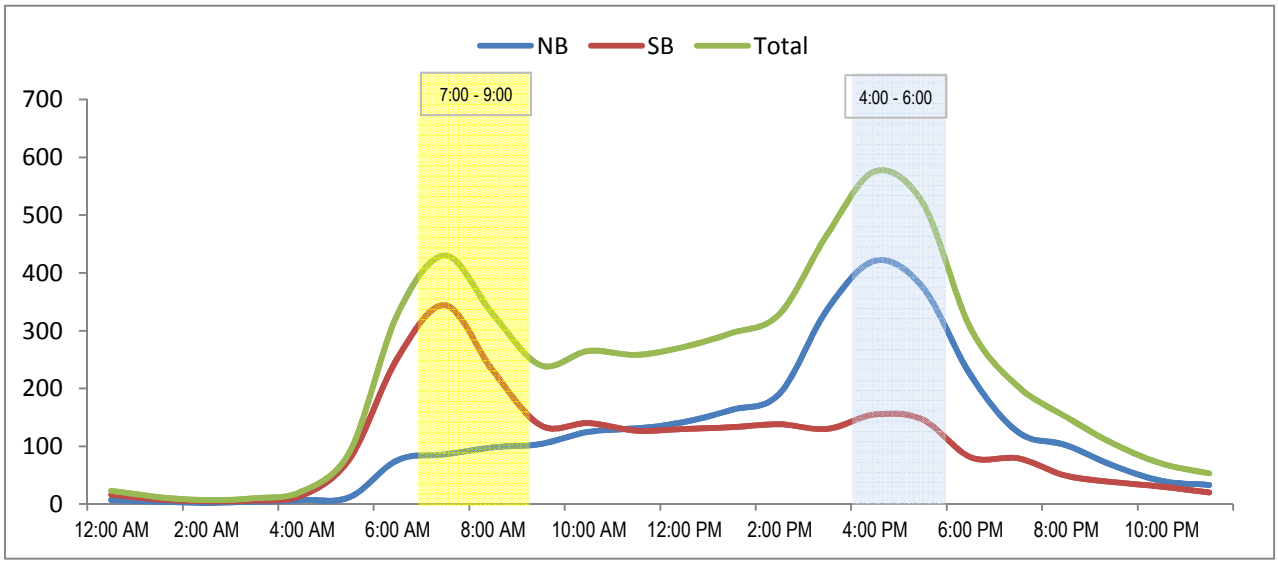
Analysts: *DASH*

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



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*

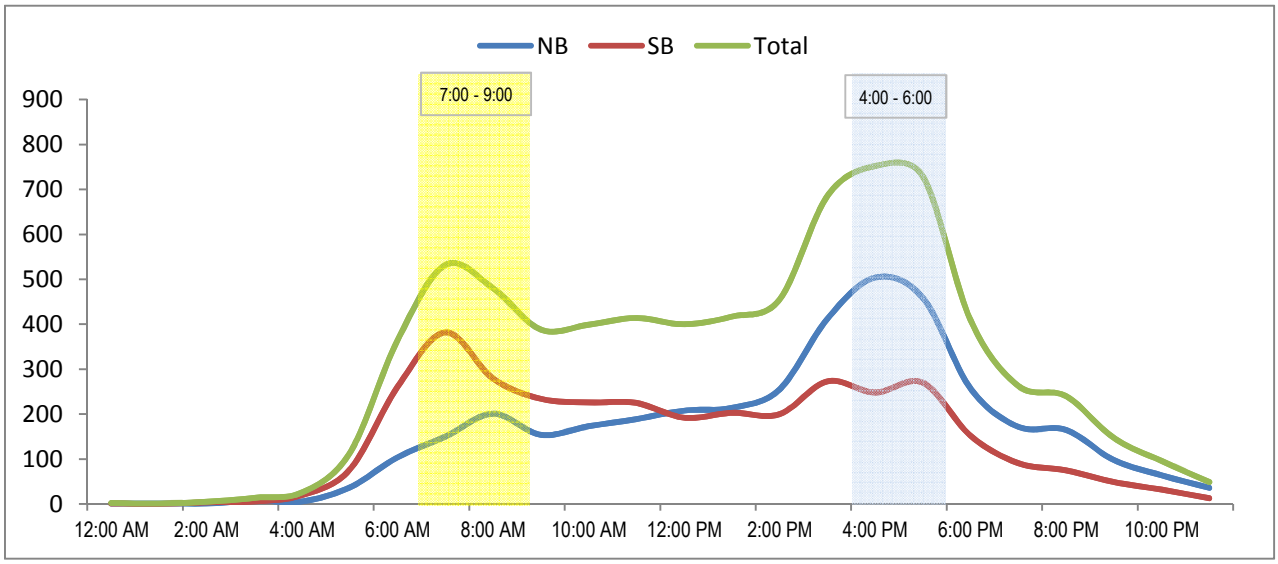
Weather: *Sunny*

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***



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*

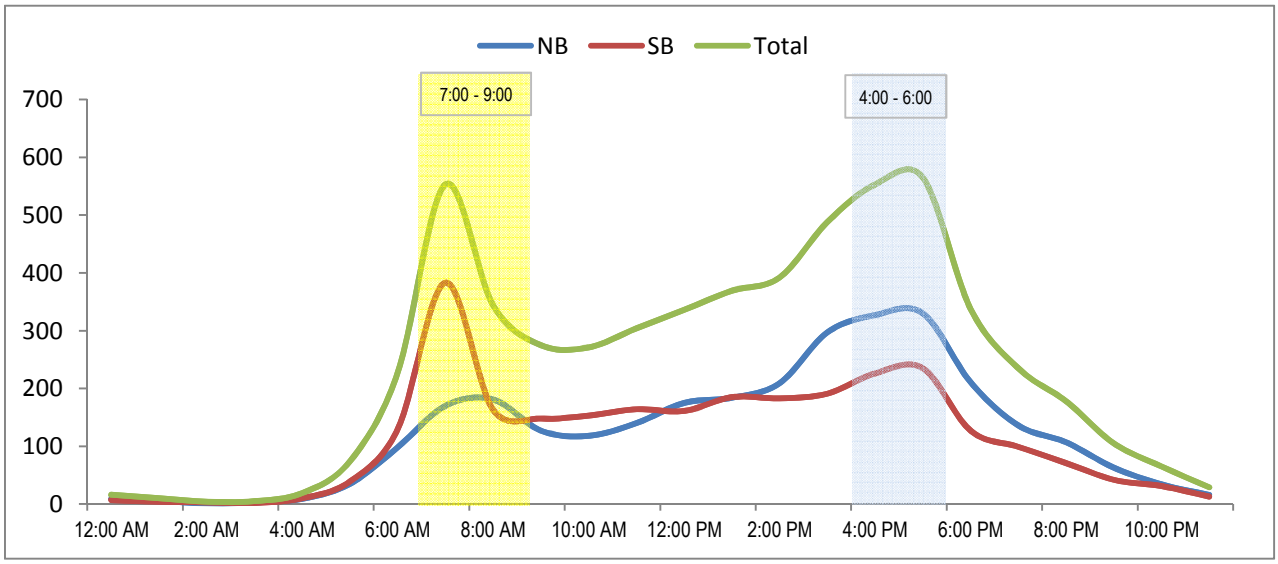
Analysts: *DASH*

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



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*

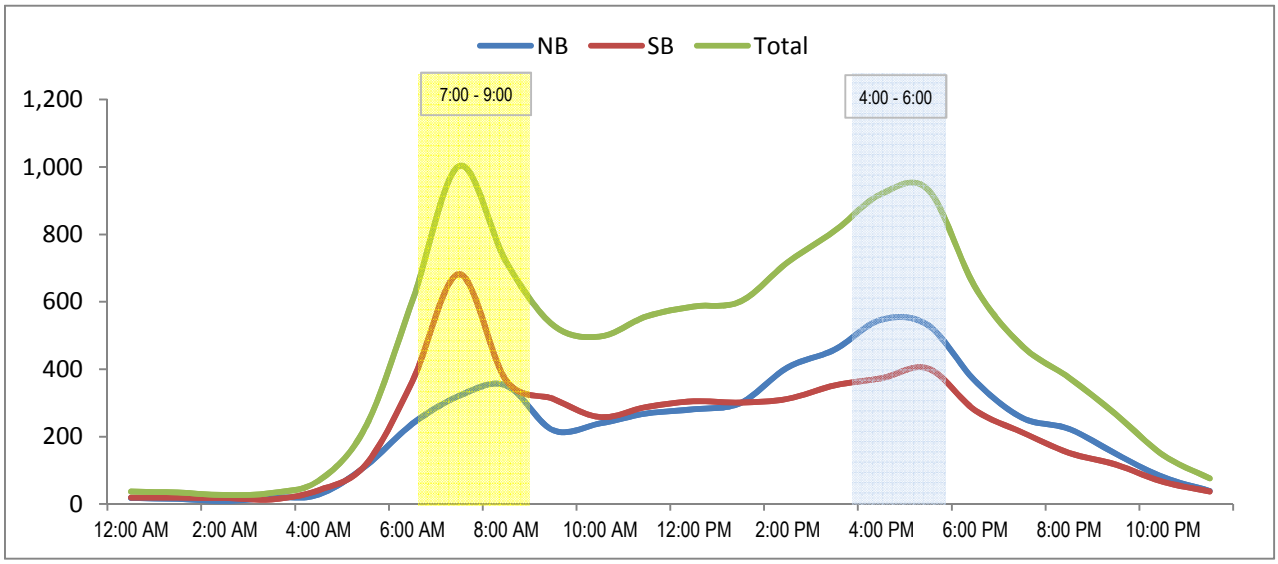
Analysts: *DASH*

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



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*

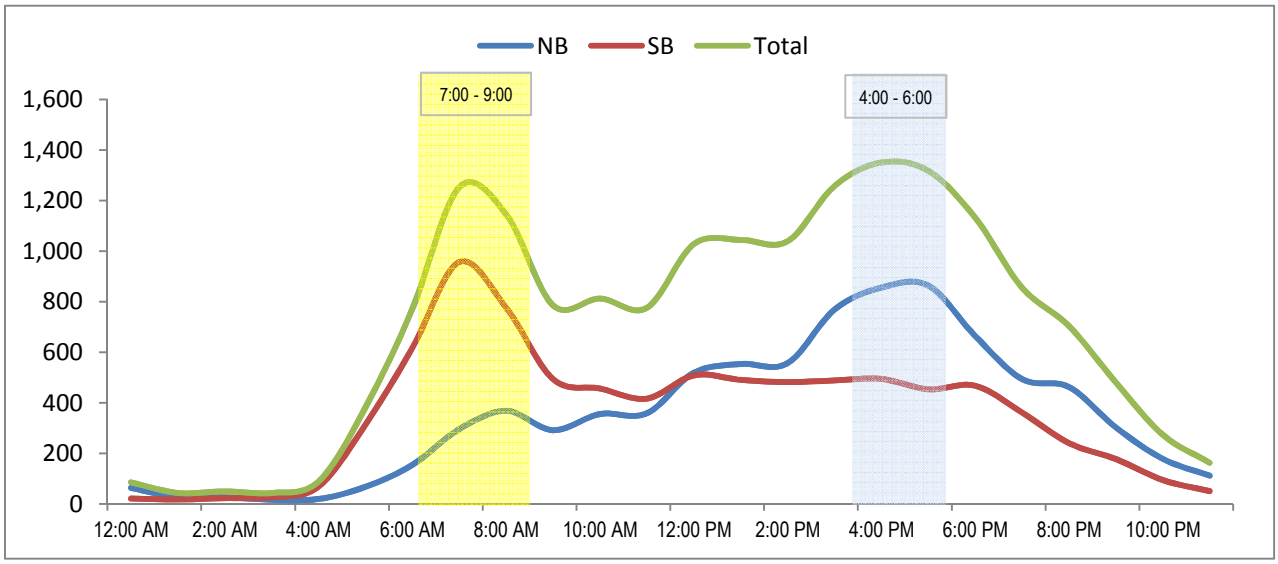
Analysts: *DASH*

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



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*

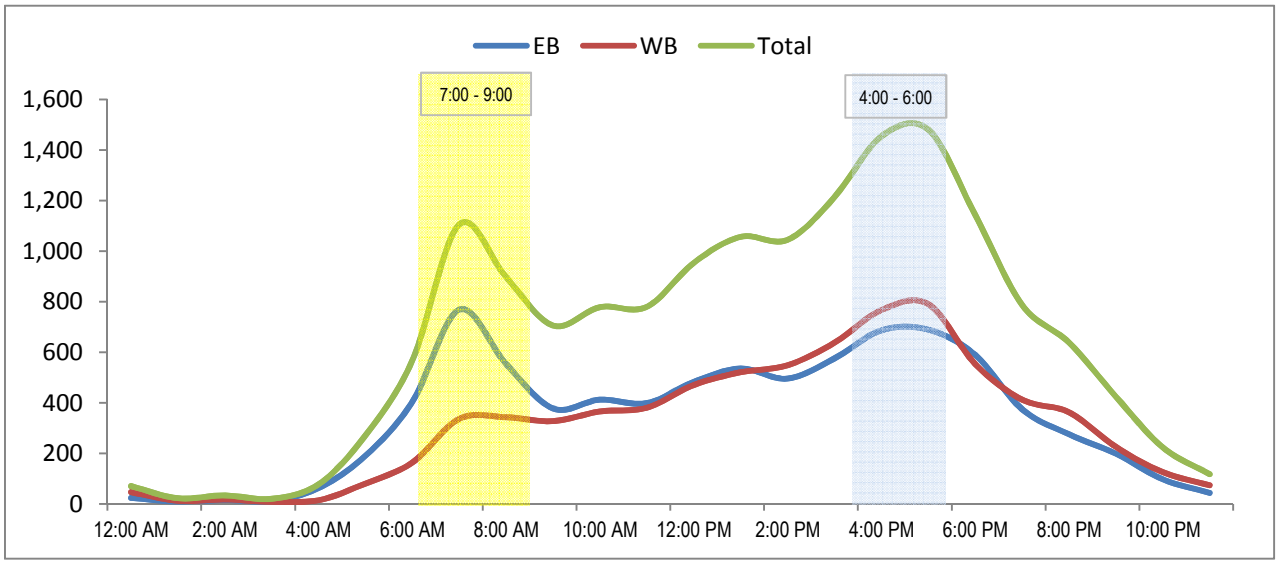
Weather: *Sunny*

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***



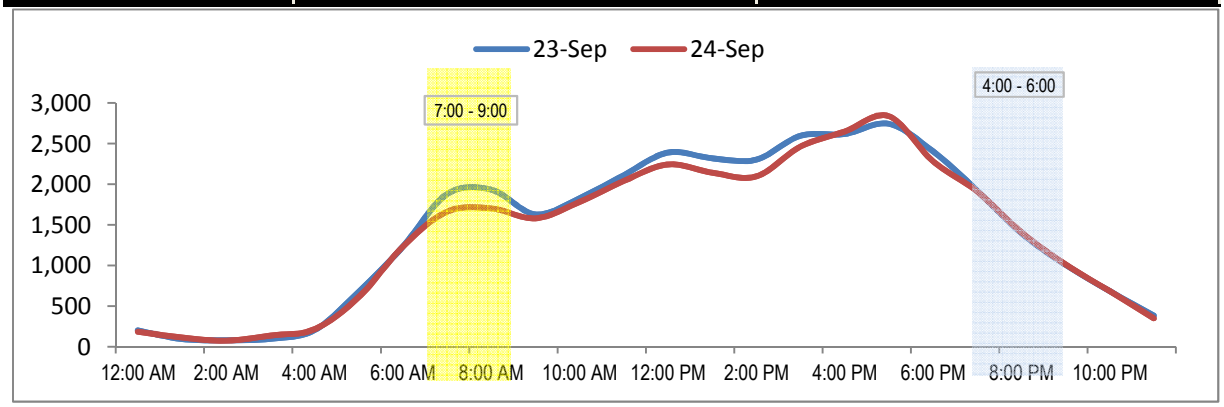
2-Day Segment Counts Summary

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

RAMP METER, **INTERSECTION** SIGNAL TIMING AND FREEWAY MAINLINE TRUCK FACTORS

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

CALTRANS C8 Version 3 DATE: 8/16/10

F PAGE

	INTERVAL	PHASE TIMING 1	2	3	4	5	6	7	8	9	PRE-EMPTION E	
0	WALK	1	7	1	1	1	7	1	1	CLK RST	EV SEL	0
1	DONT WALK	1	10	1	1	1	10	1	1		RR1 CLR	15
2	MIN GREEN	1	5	1	5	5	5	1	5		EVA DLY	0
3	TYPE 3 DET	0	0	0	0	0	0	0	0		EVA CLR	5
4	ADD/VEH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		EVB DLY	0
5	PASSAGE	0.9	2.0	0.9	2.0	4.0	2.0	0.9	2.0		EVB CLR	5
6	MAX GAP	0.9	2.0	0.9	2.0	6.0	2.0	0.9	2.0		EVC DLY	0
7	MIN GAP	0.9	2.0	0.9	2.0	2.0	2.0	0.9	2.0		EVC CLR	5
8	MAX EXT	9	30	9	15	40	20	9	15		EVD DLY	0
9	MAX 2					65				YR	EVD CLR	5
A	MAX 3									MO	MAX EV	255
B										DAY	RR2 CLR	15
C	REDUCE BY	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	DOW		
D	EVERY	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	HR		
E	YELLOW	3.0	4.3	3.0	3.6	3.2	4.3	3.0	3.6	MIN		
F	RED	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	SEC		
3.5	PED XING FT		48				47					
	BIKE XING FT		48				47					

F FLAGS	1	2	3	4	5	6	7	8	
PERMIT	1	2	3	4	5	6	7	8	0
RED LOCK					5			8	1
YEL LOCK									2
V RECALL		2				6			3
P RECALL									4
PED PHASES		2				6			5
RT OLA									6
RT OLB									7
DBL ENTRY				4				8	8
MAX 2 PHASES					5				9
LAG PHASES	READ ONLY								A
RED REST									B
REST-IN-WALK									C
MAX 3 PHASES									D
YEL START UP		2				6			E
FIRST PHASE			3				7		F
	1	2	3	4	5	6	7	8	

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:

ENTRIES IN THESE LOCATIONS CAN BE CHANGED IN CC1 FLASH ONLY

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

CALTRANS C8 Version 3 DATE: 5/23/07

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
CO4 LAST CP
CO7 TRNSMT CP
COD MANUAL OFFSET
CAO LOCAL CYCLE TIMER
CBO MASTER CYCLE TIMER
CAA LOCAL OFFSET
CBA MASTER OFFSET

SYSTEM MASTER:
RTE 15 NB RAMP

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

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

CALTRANS C8 Version 3 DATE: 5/23/07

D 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

E PAGE

	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

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

CALTRANS C8 Version 3 DATE: 8/14/07 PAGE 4

7 PAGE

TIME OF DAY ACTIVITY TABLE											
7+EVENT+HR+MIN+ACT+"E"+ON/OFF+DOW LTS											
				ON/	S	M	T	W	T	F	S
	HR	MIN	ACT	OFF	1	2	3	4	5	6	7
0	**15**	**00**	**2**	**ON**		**2**	**3**	**4**	**5**	**6**	**7**
1	**19**	**00**	**2**			**2**	**3**	**4**	**5**	**6**	**7**
2											
3											
4											
5											
6											
7											
8											
9											
A											
B											
C											
D	**15**	**00**	**E**			**2**	**3**	**4**	**5**	**6**	
E	**18**	**00**	**E**	**ON**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
F											

9 PAGE C09 = 0 or 1

CONTROL PLAN TIME OF DAY											
9+EVENT+HR+MIN+CP+OS+E+DOW											
					S	M	T	W	T	F	S
	HR	MIN	CP	OS	1	2	3	4	5	6	7
0											
1											
2											
3											
4											
5	**15**	**00**	**7**	**A**		**2**	**3**	**4**	**5**	**6**	
6	**18**	**00**	**E**		**1**	**2**	**3**	**4**	**5**	**6**	**7**
7											
8											
9											
A											
B											
C											
D											
E											
F											

9 PAGE CO9 = 2

CONTROL PLAN TIME OF DAY											
9+EVENT+HR+MIN+CP+OS+E+DOW											
					S	M	T	W	T	F	S
	HR	MIN	CP	OS	1	2	3	4	5	6	7
0											
1											
2											
3											
4											
5											
6											
7											
8											
9											
A											
B											
C											
D											
E											
F											

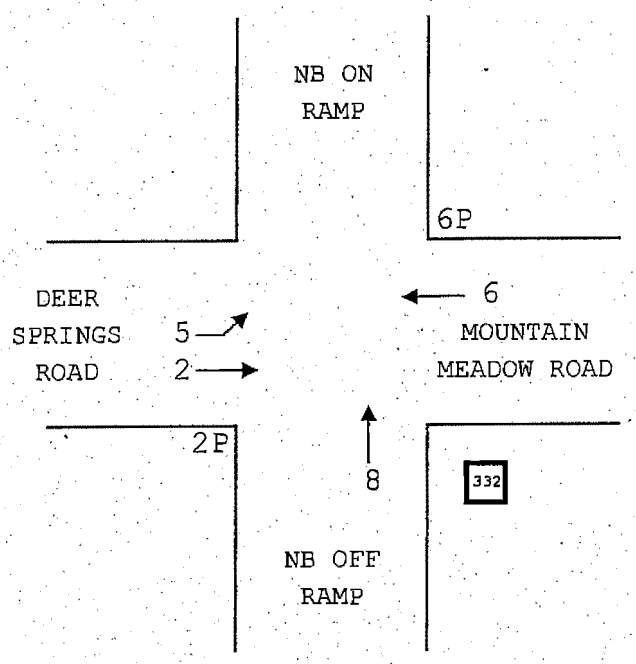
ACTIVITY CODE

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
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

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 C8 Version 3 DATE: 8/16/10

F PAGE

	INTERVAL	PHASE TIMING 1	2	3	4	5	6	7	8	9
0	WALK	1	7	1	1	1	7	1	1	CLK RST
1	DONT WALK	1	10	1	1	1	10	1	1	
2	MIN GREEN	5	6	1	5	5	6	1	1	
3	TYPE 3 DET	0	0	0	0	0	0	0	0	
4	ADD/VEH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
5	PASSAGE	2.0	2.0	0.9	2.0	2.0	2.0	0.9	0.9	
6	MAX GAP	2.0	2.0	0.9	2.0	2.0	2.0	0.9	0.9	
7	MIN GAP	2.0	2.0	0.9	2.0	2.0	2.0	0.9	0.9	
8	MAX EXT	25	35	9	20	20	40	9	9	
9	MAX 2	35				30				YR
A	MAX 3									MO
B										DAY
C	REDUCE BY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	DOW
D	EVERY	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	HR
E	YELLOW	3.2	4.3	3.0	3.6	3.2	4.3	3.0	3.6	MIN
F	RED	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	SEC
3.5	PED XING FT		47				50			
	BIKE XING FT		60				65			

PRE-EMPTION E		F FLAGS	1	2	3	4	5	6	7	8	
EV SEL	0	PERMIT	1	2	3	4	5	6	7	8	0
RR1 CLR	15	RED LOCK	1								1
EVA DLY	0	YEL LOCK									2
EVA CLR	5	V RECALL		2				6			3
EVB DLY	0	P RECALL									4
EVB CLR	5	PED PHASES		2				6			5
EVC DLY	0	RT OLA									6
EVC CLR	5	RT OLB									7
EVD DLY	0	DBL ENTRY				4				8	8
EVD CLR	5	MAX 2 PHASES	1				5				9
MAX EV	255	LAG PHASES	READ ONLY								A
RR2 CLR	15	RED REST									B
		REST-IN-WALK									C
		MAX 3 PHASES									D
		YEL START UP		2				6			E
		FIRST PHASE			3				7		F
			1	2	3	4	5	6	7	8	

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
CO5 FLASH TYPE	1
CC2 DOWNLOAD	1

NOTES:

OLA = FZ5

ENTRIES IN THESE LOCATIONS CAN BE CHANGED IN CC1 FLASH ONLY

LOCATION: **Rte 15 SB @ Deer Springs Road**

CALTRANS C8 Version 3 DATE: **5/23/07**

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	120		90	100	120							LAG FZ FREE		2		4		6		8	0
1	FZ1 GRN FCTR		25	30	40		25	25	27					GAPOUT CP1		LAG FZ CP 1									1
2														GAPOUT CP2	1	LAG FZ CP 2	1			4		6		8	2
3	FZ3 GRN FCTR		0	0	0		0	0	0					GAPOUT CP3	1	LAG FZ CP 3	1			4		6		8	3
4	FZ4 GRN FCTR		10	10	15		10	10	10		PERM TIME			GAPOUT CP4	1	LAG FZ CP 4	1			4		6		8	4
5	FZ5 GRN FCTR		15	20	35		10	10	10		LAG OFFSET			GAPOUT CP5		LAG FZ CP 5									5
6											FORCE OFF			GAPOUT CP6	1	LAG FZ CP 6	1			4		6		8	6
7	FZ7 GRN FCTR		0	0	0		0	0	0		LONG GRN			GAPOUT CP7	1	LAG FZ CP 7	1			4		6		8	7
8	FZ8 GRN FCTR		0	0	0		0	0	0		NO GREEN			GAPOUT CP8	1	LAG FZ CP 8	1			4		6		8	8
9	MULTI CYCLE		0	0	0		0	0	0					GAPOUT 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

SYSTEM MASTER:
RTE 15 NB RAMP

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

LOCATION: **Rte 15 SB @ Deer Springs Road**

CALTRANS C8 Version 3 DATE: **5/23/07** PAGE 3

D 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	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

E PAGE

	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

LOCATION: **Rte 15 SB @ Deer Springs Road**

CALTRANS C8 Version 3 DATE: **8/14/07**

7 PAGE

TIME OF DAY ACTIVITY TABLE											
7+EVENT+HR+MIN+ACT+"E"+ON/OFF+DOW LTS											
				ON/	S	M	T	W	T	F	S
	HR	MIN	ACT	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

9 PAGE C09 = 0 or 1

CONTROL PLAN TIME OF DAY											
9+EVENT+HR+MIN+CP+OS+E+DOW											
					S	M	T	W	T	F	S
	HR	MIN	CP	OS	1	2	3	4	5	6	7
0											
1	06	30	3	A		2	3	4	5	6	
2	08	05	E		1	2	3	4	5	6	7
3											
4	14	00	6	A		2	3	4	5	6	
5	15	00	7	A		2	3	4	5	6	
6	18	00	6	A		2	3	4	5	6	
7	18	30	E		1	2	3	4	5	6	7
8											
9											
A											
B											
C											
D											
E											
F											

9 PAGE CO9 = 2

CONTROL PLAN TIME OF DAY											
9+EVENT+HR+MIN+CP+OS+E+DOW											
					S	M	T	W	T	F	S
	HR	MIN	CP	OS	1	2	3	4	5	6	7
0											
1											
2											
3											
4											
5											
6											
7											
8											
9											
A											
B											
C											
D											
E											
F											

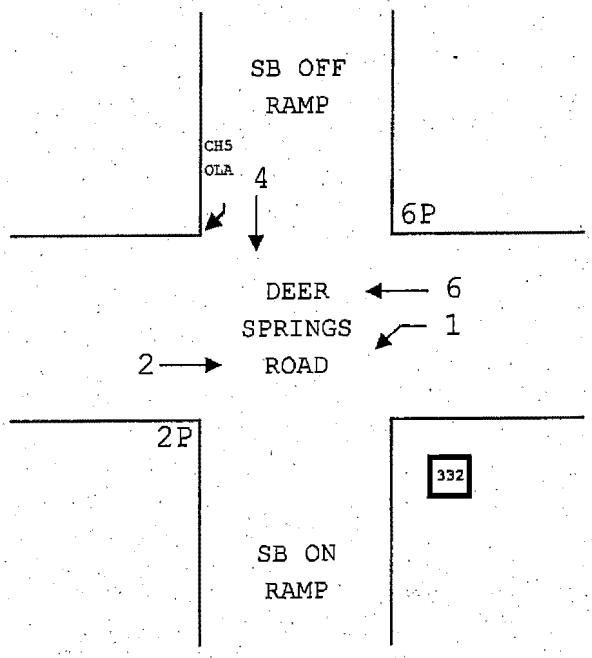
ACTIVITY CODE

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
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

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

F PAGE

	INTERVAL	PHASE TIMING 1	2	3	4	5	6	7	8	9	PRE-EMPTION E		F FLAGS	1	2	3	4	5	6	7	8	
0	WALK	1	1	1	1	1	7	1	7	CLK RST	EV SEL	0	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														

FOC LONG FAILURE	
FOD SHORT FAILURE	
FOE	0
FOF	5

FC0	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

CO5 FLASH TYPE	1
CC2 DOWNLOAD	1

NOTES:

OLA = FZ 5

ENTRIES IN THESE LOCATIONS CAN BE CHANGED IN CC1 FLASH ONLY

YELLOW YIELD TO GRAND AVE ϕ2 (NB SAN MARCOS BLVD)

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

CALTRANS C8 Version 3 DATE: 9/21/12

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	42				LAG C COORD		2		4		6		8	A
B	OFFSET B															LAG D COORD									B
C	OFFSET C															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

SYSTEM MASTER:
RTE 78 WB RAMP
@ KNOLL ROAD

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

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

CALTRANS C8 Version 3 DATE: 3/2/11

D 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 PAGE

	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			3						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

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

CALTRANS C8 Version 3 DATE: 3/21/11

7 PAGE

TIME OF DAY ACTIVITY TABLE											
7+EVENT+HR+MIN+ACT+"E"+ON/OFF+DOW LTS											
				ON/	S	M	T	W	T	F	S
	HR	MIN	ACT	OFF	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

9 PAGE C09 = 0 or 1

CONTROL PLAN TIME OF DAY											
9+EVENT+HR+MIN+CP+OS+E+DOW											
					S	M	T	W	T	F	S
	HR	MIN	CP	OS	1	2	3	4	5	6	7
0											
1											
2											
3											
4											
5											
6											
7											
8											
9											
A											
B											
C											
D											
E											
F											

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

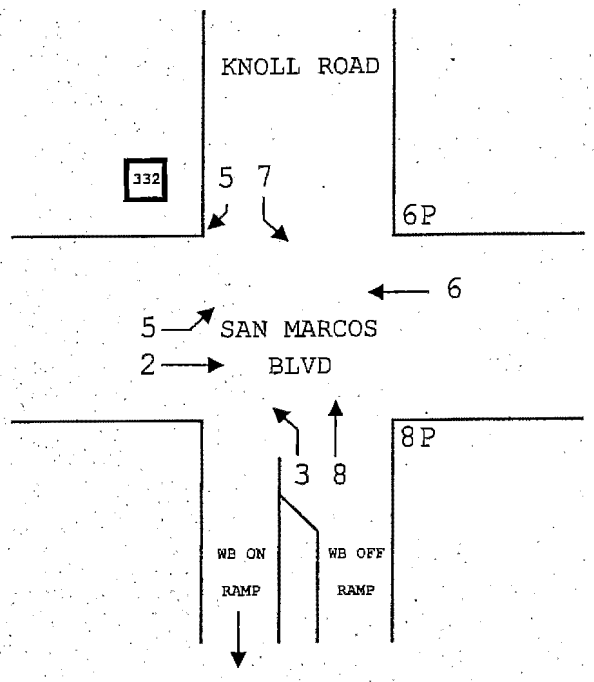
9 PAGE CO9 = 2

CONTROL PLAN TIME OF DAY											
9+EVENT+HR+MIN+CP+OS+E+DOW											
					S	M	T	W	T	F	S
	HR	MIN	CP	OS	1	2	3	4	5	6	7
0											
1											
2											
3											
4											
5											
6											
7											
8											
9											
A											
B											
C											
D											
E											
F											

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 1	2	3	4	5	6	7	8	9
0	WALK	1	1	1	1	1	7	1	1	CLK RST
1	DONT WALK	1	1	1	1	1	24	1	1	
2	MIN GREEN	5	5	1	5	1	12	1	1	
3	TYPE 3 DET	0	0	0	0	0	0	0	0	
4	ADD/VEH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
5	PASSAGE	2.0	1.0	0.9	2.0	0.9	1.0	0.9	0.9	
6	MAX GAP	4.0	1.0	0.9	4.0	0.9	1.0	0.9	0.9	
7	MIN GAP	1.5	1.0	0.9	1.5	0.9	1.0	0.9	0.9	
8	MAX EXT	17	35	9	25	9	35	9	9	
9	MAX 2									YR
A	MAX 3									MO
B										DAY
C	REDUCE BY	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	DOW
D	EVERY	0.5	1.0	1.0	0.5	1.0	1.0	1.0	1.0	HR
E	YELLOW	3.2	4.3	3.0	3.6	3.0	4.3	3.0	3.6	MIN
F	RED	2.0	2.0	1.0	2.0	1.0	2.0	1.0	2.0	SEC
3.5	PED XING FT						105			
	BIKE XING FT		71				167			

PRE-EMPTION E	
EV SEL	0
RR1 CLR	15
EVA DLY	0
EVA CLR	5
EVB DLY	0
EVB CLR	5
EVC DLY	0
EVC CLR	5
EVD DLY	0
EVD CLR	5
MAX EV	255
RR2 CLR	15

F FLAGS	1	2	3	4	5	6	7	8	
PERMIT	1	2	3	4	5	6	7	8	0
RED LOCK	1			4					1
YEL LOCK									2
V RECALL		2				6			3
P RECALL									4
PED PHASES						6			5
RT OLA									6
RT OLB									7
DBL ENTRY				4				8	8
MAX 2 PHASES									9
LAG PHASES	READ ONLY								A
RED REST									B
REST-IN-WALK									C
MAX 3 PHASES									D
YEL START UP		2				6			E
FIRST PHASE			3				7		F
	1	2	3	4	5	6	7	8	

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 2

OLB = FZ 4

YELLOW YIELD TO GRAND AVE ϕ2 (NB SAN MARCOS BLVD)

ENTRIES IN THESE LOCATIONS CAN BE CHANGED IN CC1 FLASH ONLY

LOCATION: **RTE 78 EB @ SAN MARCOS BLVD**

CALTRANS C8 Version 3 DATE: 9/21/12

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 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

SYSTEM MASTER:
RTE 78 WB RAMP
@ KNOLL ROAD

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

LOCATION: **RTE 78 EB @ SAN MARCOS BLVD**

CALTRANS C8 Version 3 DATE: 3/2/11 PAGE 3

D 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 PAGE

	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										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

LOCATION: **RTE 78 EB @ SAN MARCOS BLVD**

CALTRANS C8 Version 3 DATE: 3/21/11

7 PAGE

TIME OF DAY ACTIVITY TABLE											
7+EVENT+HR+MIN+ACT+"E"+ON/OFF+DOW LTS											
				ON/	S	M	T	W	T	F	S
	HR	MIN	ACT	OFF	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

9 PAGE C09 = 0 or 1

CONTROL PLAN TIME OF DAY											
9+EVENT+HR+MIN+CP+OS+E+DOW											
					S	M	T	W	T	F	S
	HR	MIN	CP	OS	1	2	3	4	5	6	7
0											
1											
2											
3											
4											
5											
6											
7											
8											
9											
A											
B											
C											
D											
E											
F											

9 PAGE CO9 = 2

CONTROL PLAN TIME OF DAY											
9+EVENT+HR+MIN+CP+OS+E+DOW											
					S	M	T	W	T	F	S
	HR	MIN	CP	OS	1	2	3	4	5	6	7
0											
1											
2											
3											
4											
5											
6											
7											
8											
9											
A											
B											
C											
D											
E											
F											

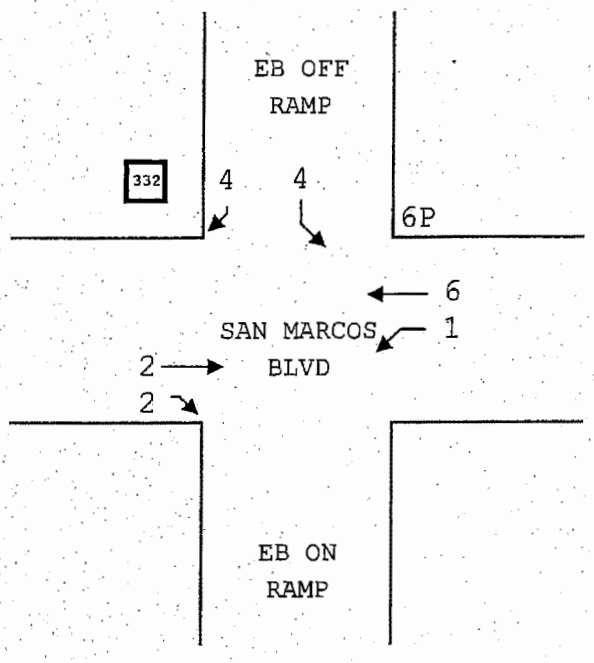
ACTIVITY CODE

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
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

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

F PAGE

	INTERVAL	PHASE TIMING 1	2	3	4	5	6	7	8	9
0	WALK	1	7	1	1	1	7	1	14	CLK RST
1	DONT WALK	1	14	1	1	1	12	1	1	
2	MIN GREEN	1	7	1	1	10	7	1	5	
3	TYPE 3 DET	0	0	0	0	0	0	0	0	
4	ADD/VEH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
5	PASSAGE	0.9	2.0	0.9	0.9	3.0	2.0	0.9	2.0	
6	MAX GAP	0.9	2.0	0.9	0.9	5.0	2.0	0.9	2.0	
7	MIN GAP	0.9	2.0	0.9	0.9	2.0	2.0	0.9	2.0	
8	MAX EXT	9	35	9	9	30	30	9	30	
9	MAX 2									YR
A	MAX 3									MO
B										DAY
C	REDUCE BY	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	DOW
D	EVERY	1.0	1.0	1.0	1.0	0.5	1.0	1.0	1.0	HR
E	YELLOW	3.0	4.0	3.0	3.6	3.2	4.0	3.0	3.6	MIN
F	RED	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	SEC
3.5	PED XING FT		67				59			
	BIKE XING FT		80				73			

PRE-EMPTION E		F FLAGS	1	2	3	4	5	6	7	8	
EV SEL	0	PERMIT	1	2	3	4	5	6	7	8	0
RR1 CLR	15	RED LOCK					5			8	1
EVA DLY	0	YEL LOCK									2
EVA CLR	5	V RECALL		2				6			3
EVB DLY	0	P RECALL									4
EVB CLR	5	PED PHASES		2				6		8	5
EVC DLY	0	RT OLA									6
EVC CLR	5	RT OLB									7
EVD DLY	0	DBL ENTRY				4				8	8
EVD CLR	5	MAX 2 PHASES									9
MAX EV	255	LAG PHASES	READ ONLY								A
RR2 CLR	15	RED REST									B
		REST-IN-WALK									C
		MAX 3 PHASES									D
		YEL START UP		2				6			E
		FIRST PHASE			3				7		F
			1	2	3	4	5	6	7	8	

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

ENTRIES IN THESE LOCATIONS CAN BE CHANGED IN CC1 FLASH ONLY

LOCATION: **RTE 78 WB @ SYCAMORE AVENUE**

CALTRANS C8 Version 3 DATE: 2/25/10

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	
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
CO4 LAST CP
CO7 TRNSMT CP
COD MANUAL OFFSET
CAO LOCAL CYCLE TIMER
CBO MASTER CYCLE TIMER
CAA LOCAL OFFSET
CBA MASTER OFFSET

SYSTEM MASTER:
RTE 78 EB RAMP

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

LOCATION: **RTE 78 WB @ SYCAMORE AVENUE**

CALTRANS C8 Version 3 DATE: 2/25/10

D 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

E PAGE

	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

LOCATION: **RTE 78 WB @ SYCAMORE AVENUE**

CALTRANS C8 Version 3 DATE: 2/25/10

7 PAGE

TIME OF DAY ACTIVITY TABLE											
7+EVENT+HR+MIN+ACT+"E"+ON/OFF+DOW LTS											
	HR	MIN	ACT	ON/ OFF	S 1	M 2	T 3	W 4	T 5	F 6	S 7
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

9 PAGE C09 = 0 or 1

CONTROL PLAN TIME OF DAY											
9+EVENT+HR+MIN+CP+OS+E+DOW											
	HR	MIN	CP	OS	S 1	M 2	T 3	W 4	T 5	F 6	S 7
0											
1	06	00	8	A	1	2	3	4	5	6	7
2	11	30	9	A	1	2	3	4	5	6	7
3	18	30	E		1	2	3	4	5	6	7
4											
5											
6											
7											
8											
9											
A											
B											
C											
D											
E											
F											

9 PAGE C09 = 2

CONTROL PLAN TIME OF DAY											
9+EVENT+HR+MIN+CP+OS+E+DOW											
	HR	MIN	CP	OS	S 1	M 2	T 3	W 4	T 5	F 6	S 7
0											
1											
2											
3											
4											
5											
6											
7											
8											
9											
A											
B											
C											
D											
E											
F											

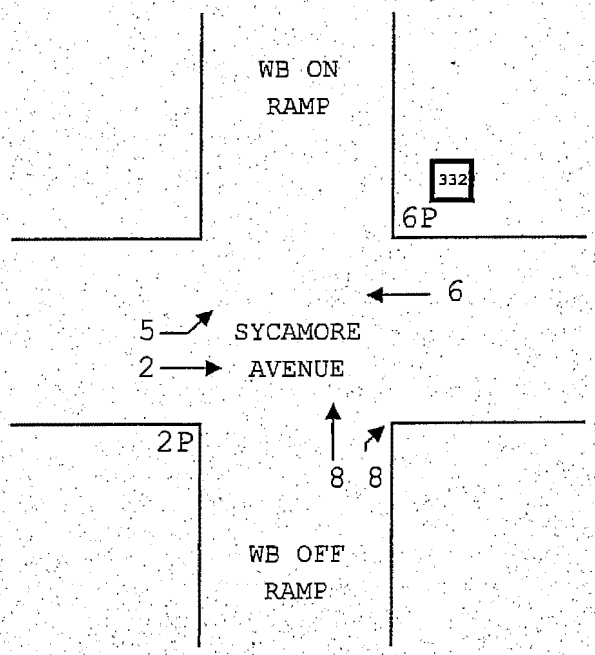
ACTIVITY CODE

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
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

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 1	2	3	4	5	6	7	8	9	PRE-EMPTION E		F 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									MO	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	HR			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

LOCATION: **RTE 78 EB @ SYCAMORE AVENUE**

CALTRANS C8 Version 3 DATE: 2/25/10

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	
0	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
CO4 LAST CP
CO7 TRNSMT CP
COD MANUAL OFFSET
CAO LOCAL CYCLE TIMER
CBO MASTER CYCLE TIMER
CAA LOCAL OFFSET
CBA MASTER OFFSET

SYSTEM MASTER:
RTE 78 EB RAMP

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

LOCATION: RTE 78 EB @ SYCAMORE AVENUE

CALTRANS C8 Version 3 DATE: 2/25/10

D 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

E PAGE

	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

LOCATION: **RTE 78 EB @ SYCAMORE AVENUE**

CALTRANS C8 Version 3 DATE: 2/25/10

7 PAGE

TIME OF DAY ACTIVITY TABLE											
7+EVENT+HR+MIN+ACT+"E"+ON/OFF+DOW LTS											
				ON/	S	M	T	W	T	F	S
	HR	MIN	ACT	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
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

9 PAGE C09 = 0 or 1

CONTROL PLAN TIME OF DAY											
9+EVENT+HR+MIN+CP+OS+E+DOW											
					S	M	T	W	T	F	S
	HR	MIN	CP	OS	1	2	3	4	5	6	7
0											
1	06	00	8	A	1	2	3	4	5	6	7
2	11	30	9	A	1	2	3	4	5	6	7
3	18	30	E		1	2	3	4	5	6	7
4											
5											
6											
7											
8											
9											
A											
B											
C											
D											
E											
F											

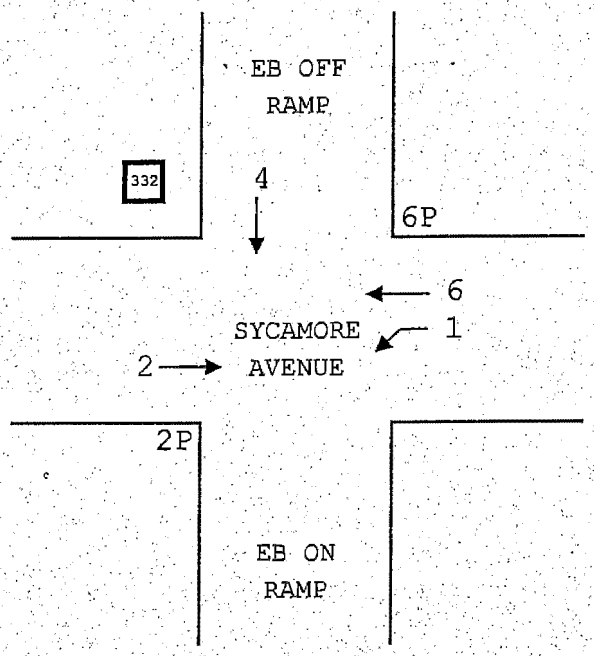
9 PAGE CO9 = 2

CONTROL PLAN TIME OF DAY											
9+EVENT+HR+MIN+CP+OS+E+DOW											
					S	M	T	W	T	F	S
	HR	MIN	CP	OS	1	2	3	4	5	6	7
0											
1											
2											
3											
4											
5											
6											
7											
8											
9											
A											
B											
C											
D											
E											
F											

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

F PAGE

	INTERVAL	PHASE TIMING 1	2	3	4	5	6	7	8	9	PRE-EMPTION E		F 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)

OLB = FZ 8 (5 section NB to WB)

FZ 6 BIKE = 4 sec

ENTRIES IN THESE LOCATIONS CAN BE CHANGED IN CC1 FLASH ONLY

LOCATION: **RTE 78 WB @ TWIN OAKS VALLEY ROAD**

CALTRANS C8 Version 3 DATE: 6/22/10

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
CO4 LAST CP
CO7 TRNSMT CP
COD MANUAL OFFSET
CAO LOCAL CYCLE TIMER
CBO MASTER CYCLE TIMER
CAA LOCAL OFFSET
CBA MASTER OFFSET

SYSTEM MASTER:
RTE 78 EB RAMP

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

LOCATION: **RTE 78 WB @ TWIN OAKS VALLEY ROAD**

CALTRANS C8 Version 3 DATE: 6/22/10

D 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 PAGE

	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

LOCATION: **RTE 78 WB @ TWIN OAKS VALLEY ROAD**

CALTRANS C8 Version 3 DATE: 5/18/09

7 PAGE

TIME OF DAY ACTIVITY TABLE											
7+EVENT+HR+MIN+ACT+"E"+ON/OFF+DOW LTS											
				ON/	S	M	T	W	T	F	S
	HR	MIN	ACT	OFF	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

9 PAGE C09 = 0 or 1

CONTROL PLAN TIME OF DAY											
9+EVENT+HR+MIN+CP+OS+E+DOW											
					S	M	T	W	T	F	S
	HR	MIN	CP	OS	1	2	3	4	5	6	7
0	06	00	1	A		2	3	4	5	6	
1	08	00	2	A	1						7
2	09	00	2	A		2	3	4	5	6	
3	14	00	3	A		2	3	4	5	6	
4	19	00	2	A		2	3	4	5	6	
5	19	00	E		1						7
6	20	00	E			2	3	4	5	6	
7											
8											
9											
A											
B											
C											
D											
E											
F											

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

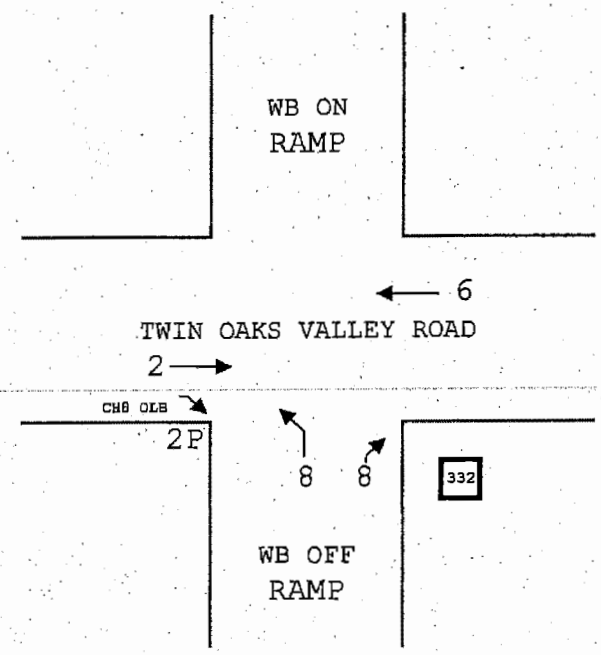
9 PAGE CO9 = 2

CONTROL PLAN TIME OF DAY											
9+EVENT+HR+MIN+CP+OS+E+DOW											
					S	M	T	W	T	F	S
	HR	MIN	CP	OS	1	2	3	4	5	6	7
0											
1											
2											
3											
4											
5											
6											
7											
8											
9											
A											
B											
C											
D											
E											
F											

DATE: 6/24/09

LOCATION: RTE 78 WB @ TWIN OAKS VALLEY ROAD

CONFLICT MONITOR PROGRAM



LOCATION: **RTE 78 EB @ TWIN OAKS VALLEY ROAD**

CALTRANS C8 Version 3 DATE: 8/16/10

F PAGE

	INTERVAL	PHASE TIMING 1	2	3	4	5	6	7	8	9
0	WALK	1	7	1	7	1	7	1	1	CLK RST
1	DONT WALK	1	12	1	30	1	12	1	1	
2	MIN GREEN	5	7	1	5	5	6	1	1	
3	TYPE 3 DET	0	0	0	0	0	0	0	0	
4	ADD/VEH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
5	PASSAGE	3.0	2.0	0.9	2.0	2.0	2.0	0.9	0.9	
6	MAX GAP	5.0	2.0	0.9	2.0	2.0	2.0	0.9	0.9	
7	MIN GAP	2.0	2.0	0.9	2.0	2.0	2.0	0.9	0.9	
8	MAX EXT	35	25	9	35	15	30	9	9	
9	MAX 2									YR
A	MAX 3									MO
B										DAY
C	REDUCE BY	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	DOW
D	EVERY	0.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	HR
E	YELLOW	3.2	4.3	3.0	3.6	3.6	4.3	3.0	3.6	MIN
F	RED	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	SEC
3.5	PED XING FT		58		118		61			
	BIKE XING FT		76				72			

PRE-EMPTION E		F FLAGS	1	2	3	4	5	6	7	8	
EV SEL	0	PERMIT	1	2	3	4	5	6	7	8	0
RR1 CLR	15	RED LOCK	1			4					1
EVA DLY	0	YEL LOCK									2
EVA CLR	5	V RECALL		2				6			3
EVB DLY	0	P RECALL									4
EVB CLR	5	PED PHASES		2		4		6			5
EVC DLY	0	RT OLA									6
EVC CLR	5	RT OLB									7
EVD DLY	0	DBL ENTRY				4				8	8
EVD CLR	5	MAX 2 PHASES									9
MAX EV	255	LAG PHASES	READ ONLY								A
RR2 CLR	15	RED REST									B
		REST-IN-WALK									C
		MAX 3 PHASES									D
		YEL START UP		2				6			E
		FIRST PHASE			3				7		F
			1	2	3	4	5	6	7	8	

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 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

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	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

SYSTEM MASTER:
RTE 78 EB RAMP

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

LOCATION: **RTE 78 EB @ TWIN OAKS VALLEY ROAD**

CALTRANS C8 Version 3 DATE: 6/22/10

D 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 PAGE

	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

LOCATION: **RTE 78 EB @ TWIN OAKS VALLEY ROAD**

CALTRANS C8 Version 3 DATE: 5/18/09

7 PAGE

TIME OF DAY ACTIVITY TABLE											
7+EVENT+HR+MIN+ACT+"E"+ON/OFF+DOW LTS											
				ON/	S	M	T	W	T	F	S
	HR	MIN	ACT	OFF	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

9 PAGE C09 = 0 or 1

CONTROL PLAN TIME OF DAY											
9+EVENT+HR+MIN+CP+OS+E+DOW											
					S	M	T	W	T	F	S
	HR	MIN	CP	OS	1	2	3	4	5	6	7
0	06	00	1	A		2	3	4	5	6	
1	08	00	2	A	1						7
2	09	00	2	A		2	3	4	5	6	
3	14	00	3	A		2	3	4	5	6	
4	19	00	2	A		2	3	4	5	6	
5	19	00	E		1						7
6	20	00	E			2	3	4	5	6	
7											
8											
9											
A											
B											
C											
D											
E											
F											

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

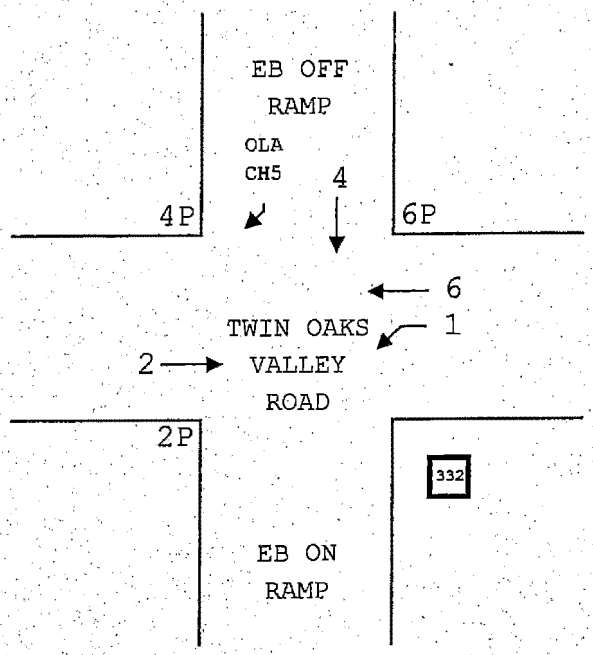
9 PAGE CO9 = 2

CONTROL PLAN TIME OF DAY											
9+EVENT+HR+MIN+CP+OS+E+DOW											
					S	M	T	W	T	F	S
	HR	MIN	CP	OS	1	2	3	4	5	6	7
0											
1											
2											
3											
4											
5											
6											
7											
8											
9											
A											
B											
C											
D											
E											
F											

DATE: 4/24/06

LOCATION: RTE 78 EB @ TWIN OAKS VALLEY ROAD

CONFLICT MONITOR PROGRAM



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

INTERSECTION: Twin Oaks V & Discovery\Barham

Group Assignment: **NONE**
Field Master Assignment: **NONE**
System Reference Number: **46**

N/S Street Name: **Twin Oaks Valley**
E/W Street Name: **Discovery\Barham**

Last Database Change: **9/25/2014 11:47**

Change Record					
Change	By	Date	Change	By	Date

Notes:

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

Communication Addresses

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

Manual Selection

Max Initial	**20**	<F+0+E>
Red Revert	**5.0**	<F+0+F>
All Red Start	**5.0**	<F+C+0>

Start / Revert Times

Row	Column Numbers ---->	Phase 1	2	3	4	5	6	7	8
	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 <F Page>

	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	Row
Permit	**12345678**	0
Red Lock	**1_3_567_**	1
Yellow Lock	**_____6__**	2
Min Recall	**___4___8**	3
Ped Recall	_____	4
View Set Peds	**- - - - -**	5
Rest In Walk	_____	6
Red Rest	_____	7
Dual Entry	_____	8
Max Recall	_____	9
Soft Recall	_____	A
Max 2	_____	B
Cond. Service	_____	C
Man Cntrl Calls	_____	D
Yellow Start	**_2___6__**	E
First Phases	**___4___8**	F

Phase Functions <F Page>

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

(* = Coordination Recall)

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

Coordination <C Page>

	E	Row
		0
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 <C Page>

Row	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 <E Page>

	F
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 <E Page>

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 <C Page>

INTERSECTION: Twin Oaks V & Discovery\Barham

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 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>

<D Page>

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	Holiday # 1 Date	0	0	0	_____
B	Holiday # 2 Date	0	0	0	_____
C	Holiday # 3 Date	0	0	0	_____

Holiday Dates
<8 Key>

Row	1 Delay	3 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	- - -	- - -	- - -	- - -	- - -

Row	2 Delay	4 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 & Carryover <D Page>

Row		9 Green Clear	C Yellow Change	D Red Clear	0 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 <F Page> <D Page>

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 <D Page>

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 <D Page>

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)

INTERSECTION: Twin Oaks V & Discovery\Barham

Row	Column Numbers ---->	Phase 1	2	3	4	5	6	7	8
	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 <F Page>

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

Phase Timing - Bank 3 <F Page>

Row	Delay Only --->	7 Time	8 Dwell	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Output	Row	
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	<--- Limited Service Interval (Set Dwell = 255)
B		0	0	_____	_____	_____	_____	_____	_____	_____	B	
C		0	0	_____	_____	_____	_____	_____	_____	_____	C	
D		0	0	_____	_____	_____	_____	_____	_____	_____	D	
E		0	0	_____	_____	_____	_____	_____	_____	_____	E	
F		0	0	_____	_____	_____	_____	_____	_____	_____	F	

Special Event Schedule <C Page with F+9+F=22>

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.

RTE	DIST	CNTY	POST MILE	LEG	DESCRIPTION	VEHICLE AADT TOTAL	TRUCK AADT TOTAL	TRUCK % TOT VEH	TRUCK AADT By Axle 2	3	4	5+	% By Axle 2	3	4	5+	EAL 2-WAY (1000)	YEAR VER/ 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 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 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 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

RTE	DIST	CNTY	POST MILE	LEG	DESCRIPTION	VEHICLE AADT TOTAL	TRUCK AADT TOTAL	TRUCK % TOT VEH	TRUCK By Axle 2	TRUCK By Axle 3	AADT By Axle 4	TOTAL By Axle 5+	% TRUCK By Axle 2	% TRUCK By Axle 3	% TRUCK By Axle 4	% TRUCK By Axle 5+	EAL 2-WAY (1000)	YEAR VER/ EST
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

RTE	DIST	CNTY	POST MILE	LEG	DESCRIPTION	VEHICLE AADT TOTAL	TRUCK AADT TOTAL	TRUCK % TOT VEH	TRUCK AADT By Axle 2	3	4	5+	% By Axle 2	3	4	5+	EAL 2-WAY (1000)	YEAR VER/ 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 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

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	
Lane Util. Factor	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	1688	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1770	1583	1770	1863	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			

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			

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	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		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		

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

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	4.6			
Lane Util. Factor	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	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	

Intersection Summary			
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

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
Frt		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	

Intersection Summary			
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

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			

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		

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		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		

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		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

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
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	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	

Intersection Summary			
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

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
Frpb, ped/bikes		1.00	0.98				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	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		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	

Intersection Summary			
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

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			

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	6.0	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			

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			

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			

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	

Intersection Summary			
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

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						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	

Intersection Summary			
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

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	
Frt	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			
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	

Intersection Summary			
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

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
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	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	

Intersection Summary			
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

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	

Intersection Summary			
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

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		2				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

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	

Intersection Summary			
HCM 2000 Control Delay	37.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

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					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	0.86	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	

Intersection Summary			
HCM 2000 Control Delay	31.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

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	

Intersection Summary			
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

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

Intersection Summary			
Delay	34.2		
Level of Service	D		
Intersection Capacity Utilization	78.0%	ICU Level of Service	D
Analysis Period (min)	15		

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	

Intersection Summary			
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

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)									3			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	

Intersection Summary			
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	
Frpb, 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	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
Confl. 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	

Intersection Summary			
HCM 2000 Control Delay	27.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.4	Sum of lost time (s)	18.6
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
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			

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	26.9%	ICU Level of Service	A
Analysis Period (min)	15		

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
Frpb, 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				

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	
Lane Util. Factor	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			None	
Median storage veh)												
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					

Intersection Summary			
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			

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	4.6			
Lane Util. Factor	1.00	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						
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	

Intersection Summary			
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

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	

Intersection Summary			
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		

c Critical Lane Group

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		

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		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	55.0%	ICU Level of Service	B
Analysis Period (min)	15		

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		

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

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	

Intersection Summary			
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

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

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			

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	6.0	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			

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	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95			0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frt	1.00	0.85		1.00	0.85		1.00	1.00			1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1770	1560		1770	1583		1770	3521			3533	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (perm)	1770	1560		1770	1583		1770	3521			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	

Intersection Summary			
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

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	

Intersection Summary			
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

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	

Intersection Summary			
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

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	

Intersection Summary			
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

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

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

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	

Intersection Summary			
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

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				8
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				0.14
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

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

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

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	

Intersection Summary			
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

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

Intersection Summary			
Delay	70.2		
Level of Service	F		
Intersection Capacity Utilization	93.2%	ICU Level of Service	F
Analysis Period (min)	15		

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)									2			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	

Intersection Summary			
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

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	

Intersection Summary			
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	
Frpb, 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
Confl. 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		

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

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

SANDAG
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 [PRIMARY:DIVERTED:PASS-BY][P]	ESTIMATED WEEKDAY VEHICLE TRIP GENERATION RATE (DRIVEWAY)	HIGHEST PEAK HOUR % (plus IN:OUT ratio) Between 6:00-9:30 A.M.		Between 3:00-6:30 P.M.		TRIP LENGTH (Miles)[L]
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)	6%	(5:5)	
General Aviation		6/acre, 2/flight, 6/based aircraft* **	9%	(7:3)	15%	(5:5)	
Heliports		100/acre**					
AUTOMOBILE[S]							
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[S]							
Super Regional Shopping Center (More than 80 acres, more than 800,000 sq. ft., w/usually 3 + major stores)		35/1000 sq. ft.,[C] 400/acre*	4%	(7:3)	10%	(5:5)	
Regional Shopping Center (40-80acres, 400,000-800,000 sq. ft., w/usually 2 + major stores)	[54:35:11]	50/1000 sq. ft.,[C] 500/acre*	4%	(7:3)	9%	(5:5)	5.2
Community Shopping Center (15-40 acres, 125,000-400,000 sq. ft., w/usually 1 major store, detached restaurant(s), grocery and drugstore)	[47:31:22]	80/1000 sq. ft., 700/acre* **	4%	(6:4)	10%	(5:5)	3.6
Neighborhood Shopping Center (Less than 15 acres, less than 125,000 sq. ft., w/usually grocery & drugstore, cleaners, beauty & barber shop, & 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[S]	[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)	

22% daily passby for Community Shopping Center. Passby would be higher for a Neighborhood Shopping Center and higher during the AM peak hour as compared to daily.

(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

SANDAG Series 12
2035 2007 RTP
Revenue Constrained
Highway Network
Eastridge East Grading Study
Multi-Family Project Select Zone

Sierra Project Area

Model Run 10/30/15
SR12 V3 2035 RC RTP11 - Serria run B2
No Las Posas extension

Forecasted Volumes:

- Unadjusted Volume (in Thousands)
- Select Link Volume
- Select Link Percentage
- Traffic Analysis Zone

Link Distributions:

- 100%
- 50.1% --> 99.9%
- 25.1% --> 50.0%
- 10.1% --> 25.0%
- 5.1% --> 10.0%
- 0.1% --> 5.0%
- 0%

Zonal Distributions:

- 100%
- 25.1% --> 99.9%
- 10.1% --> 25.0%
- 1.1% --> 10.0%
- 0.6% --> 1.0%
- 0.1% --> 0.5%
- Zero Trips (0.0%)

Feet 0 1,200 2,400
Meters 144 432 720

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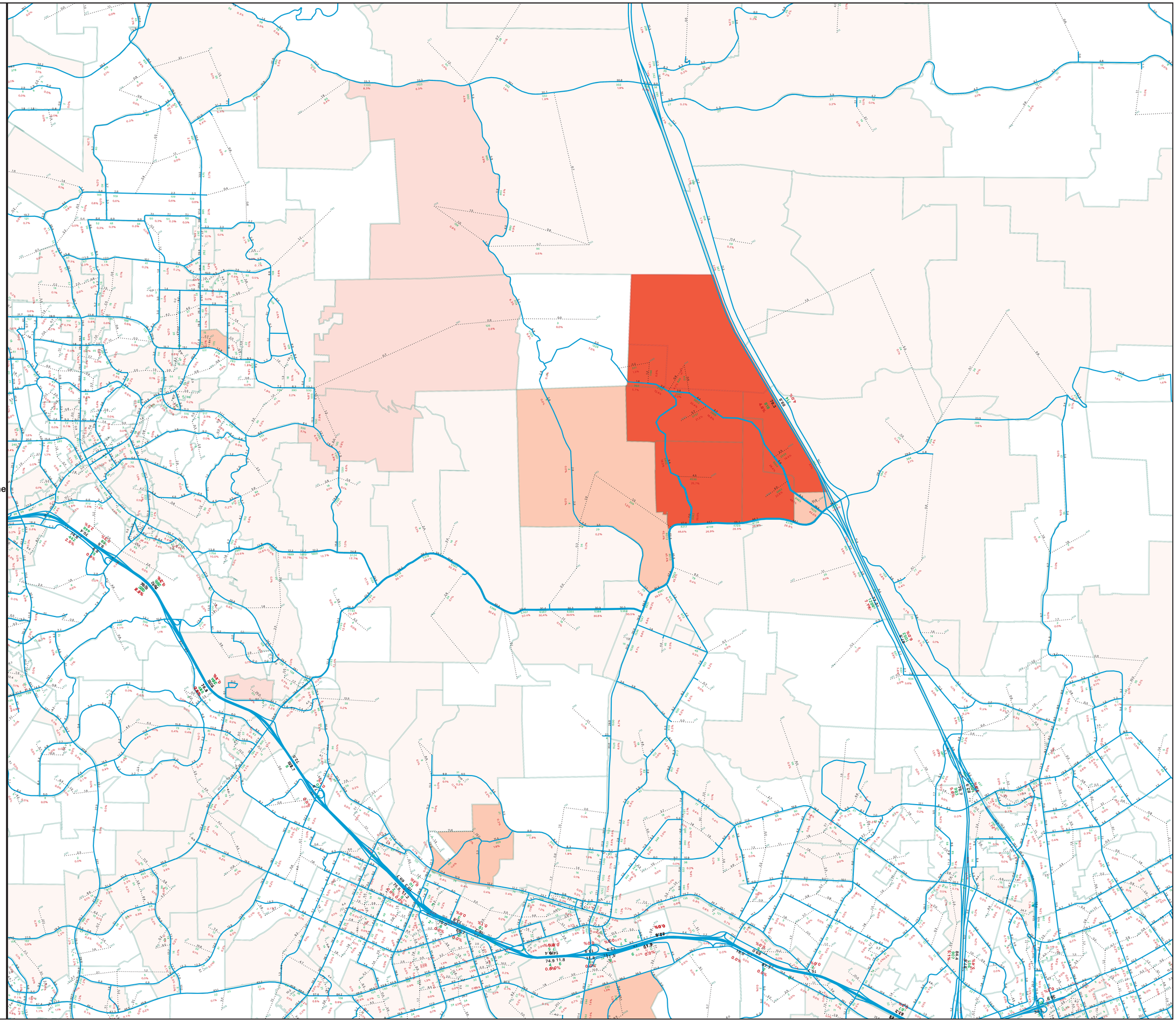
San Diego's Regional Planning Agency

November 2, 2015



SANDAG Series 12
2035 2007 RTP
Revenue Constrained
Highway Network
Eastridge East Grading Study
Multi-Family Project Select Zone

Sierra Project Area

Model Run 10/30/15
SR12 V3 2035 RC RTP11 - Serria run B2
No Las Posas extension

Forecasted Volumes:

- # Unadjusted Volume (in Thousands)
- # Select Link Volume
- # Select Link Percentage
- # Traffic Analysis Zone

Link Distributions:

- 100%
- 50.1% --> 99.9%
- 25.1% --> 50.0%
- 10.1% --> 25.0%
- 5.1% --> 10.0%
- 0.1% --> 5.0%
- 0%

Zonal Distributions:

- 100%
- 25.1% --> 99.9%
- 10.1% --> 25.0%
- 1.1% --> 10.0%
- 0.6% --> 1.0%
- 0.1% --> 0.5%
- Zero Trips (0.0%)

Feet 0 1,200 2,400
Meters 144 432 720

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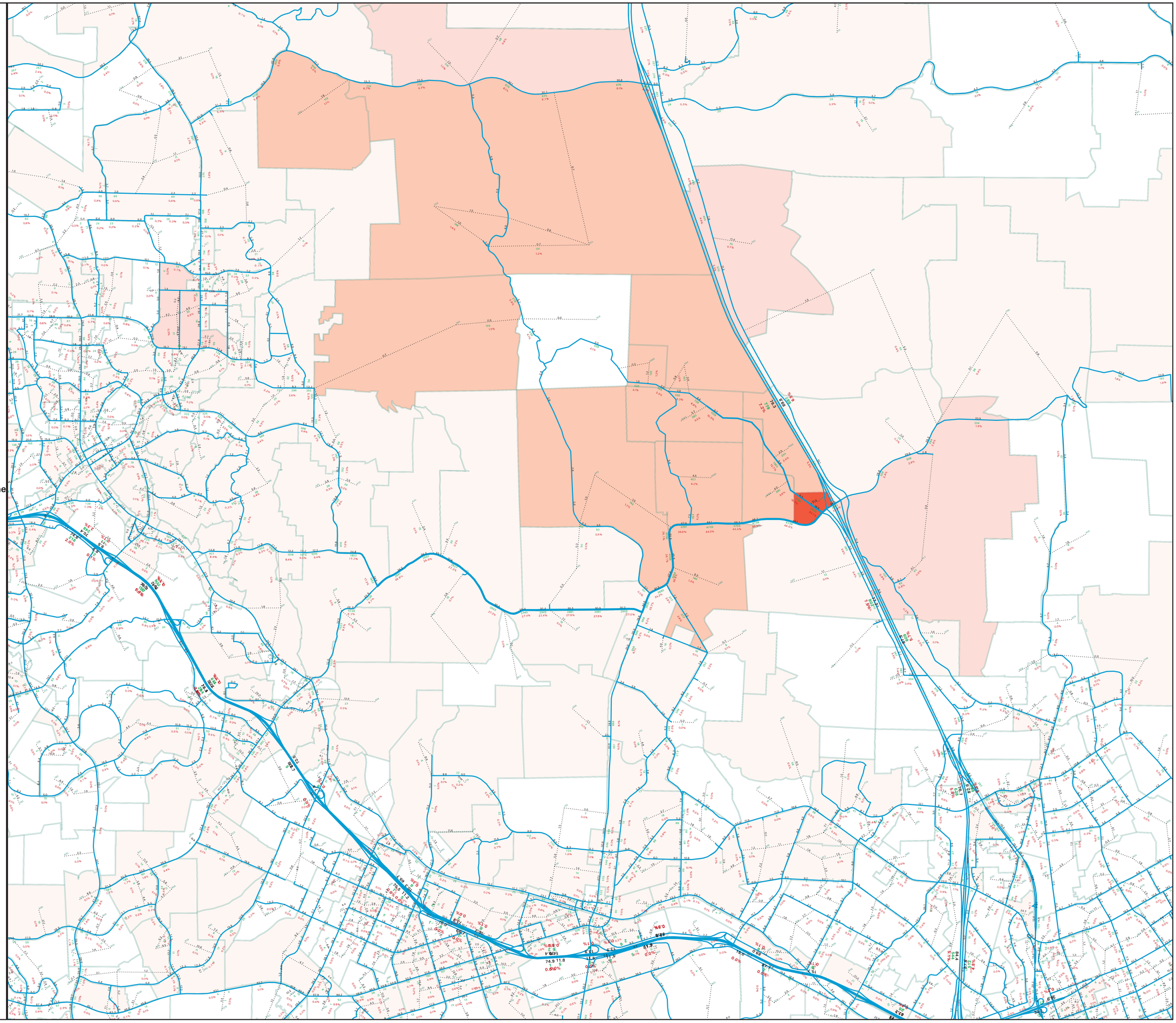
San Diego's Regional Planning Agency

November 2, 2015



APPENDIX D

YEAR 2020 VOLUMES PLOTS (SCENARIOS A AND B) – CUMULATIVE PROJECTS

SANDAG
SR12
2020rc11

Existing Network

ADT Volume

2020rc11cumu
with 3P Update
without Roads 3B and 3C
without Accretive Proposal

Functional Classifications

- Freeway
- Prime
- Major
- Collector
- Light Collector
- Rural Collector
- Local
- Freeway Ramp
- Local Ramp
- Zone Connector

Traffic Analysis Zones

Unadjusted ADT(x1000)

Adjusted ADT(x1000)

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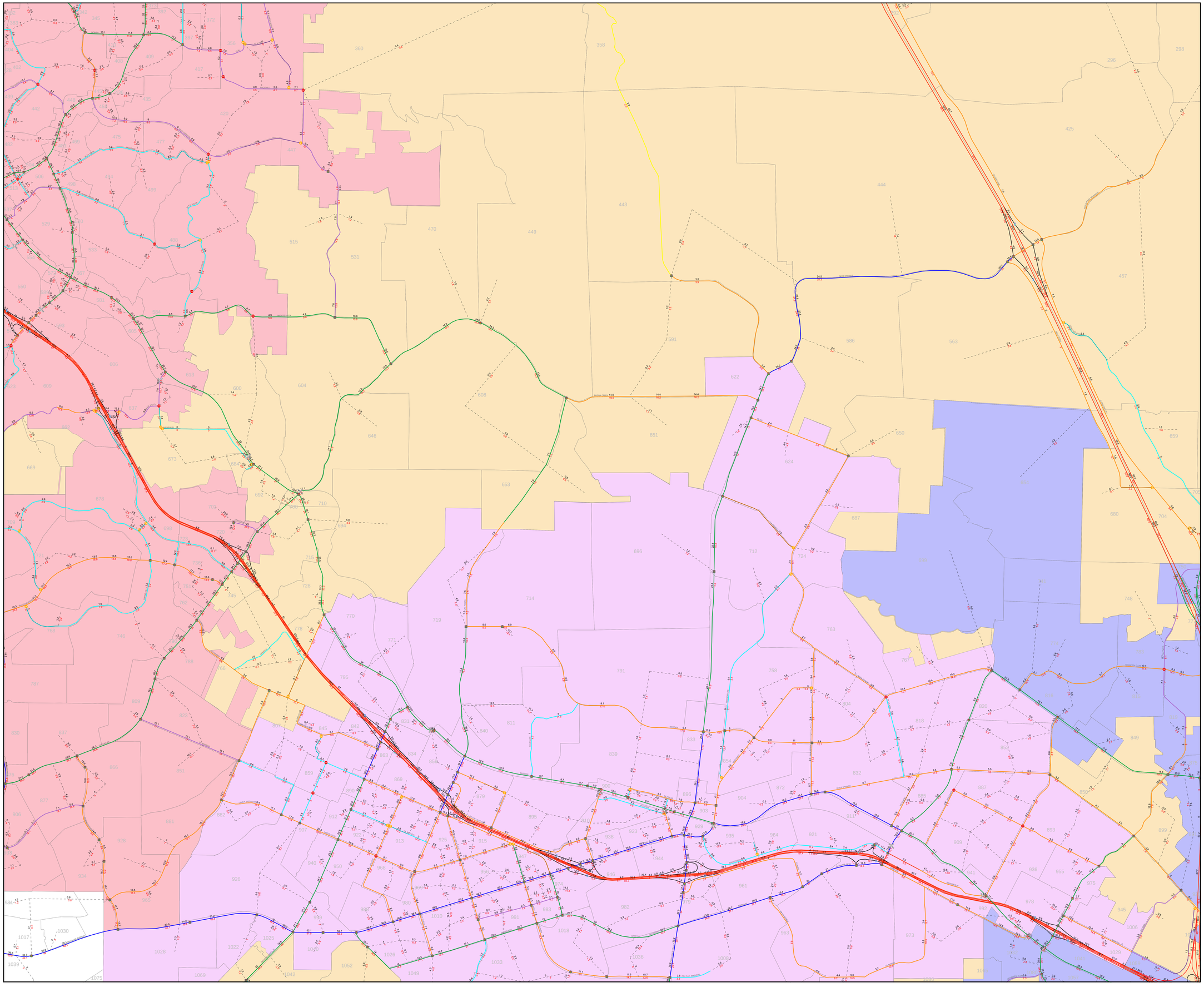
SANDAG

servicebureau

Date: May 29, 2014

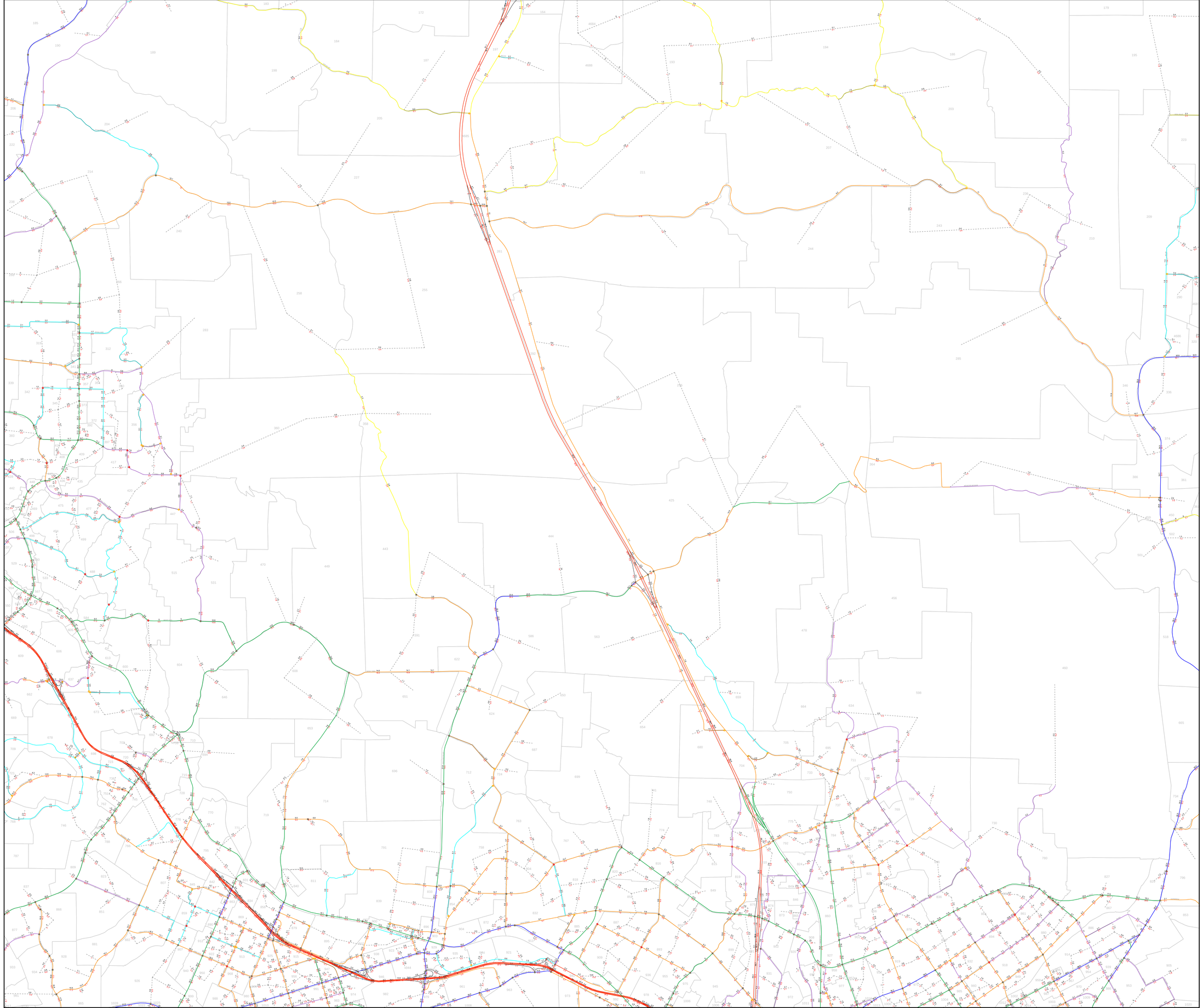


SANDAG Series 12
2020rc11cumu2

With Mountain Meadow Road Extension

LLG Follow Up

ADT Volume with project



Functional Classifications

- Freeway
- Prime
- Major
- Collector
- Light Collector
- Rural Collector
- Local
- Freeway Ramp
- Local Ramp
- Zone Connector

Traffic Analysis Zones

\# Unadjusted ADT(x1000)

\# Adjusted ADT(x1000)

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N

0 0.2 0.4 0.6
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SANDAG

servicebureau

October 26, 2017

APPENDIX E

PEAK HOUR ANALYSIS WORKSHEETS – EXISTING + PROJECT

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	148	148	262	89	266	461
Future Volume (vph)	148	148	262	89	266	461
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	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	1689	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1770	1583	1770	1863	1689	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	163	163	288	98	292	507
RTOR Reduction (vph)	0	139	0	0	54	0
Lane Group Flow (vph)	163	24	288	98	745	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)	14.3	14.3	20.9	74.7	49.3	
Effective Green, g (s)	14.3	14.3	20.9	74.7	49.3	
Actuated g/C Ratio	0.15	0.15	0.21	0.76	0.50	
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)	258	230	377	1420	849	
v/s Ratio Prot	c0.09		c0.16	0.05	c0.44	
v/s Ratio Perm		0.02				
v/c Ratio	0.63	0.10	0.76	0.07	0.88	
Uniform Delay, d1	39.4	36.3	36.2	2.9	21.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.0	0.2	8.9	0.0	10.1	
Delay (s)	44.3	36.5	45.1	2.9	31.8	
Level of Service	D	D	D	A	C	
Approach Delay (s)	40.4			34.4	31.8	
Approach LOS	D			C	C	

Intersection Summary			
HCM 2000 Control Delay	34.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	98.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	115	252	92	41	164	255
Future Volume (vph)	115	252	92	41	164	255
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	1774		1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	1774		1770	1863
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	132	290	106	47	189	293
RTOR Reduction (vph)	0	222	18	0	0	0
Lane Group Flow (vph)	132	68	135	0	189	293
Confl. Bikes (#/hr)				1		
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	10.0	10.0	10.8		8.3	23.6
Effective Green, g (s)	10.0	10.0	10.8		8.3	23.6
Actuated g/C Ratio	0.23	0.23	0.25		0.19	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)	415	371	449		344	1032
v/s Ratio Prot	c0.07		0.08		c0.11	c0.16
v/s Ratio Perm		0.04				
v/c Ratio	0.32	0.18	0.30		0.55	0.28
Uniform Delay, d1	13.5	13.0	12.8		15.5	5.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4	0.2	0.4		1.8	0.2
Delay (s)	13.9	13.3	13.2		17.3	5.2
Level of Service	B	B	B		B	A
Approach Delay (s)	13.5		13.2			9.9
Approach LOS	B		B			A

Intersection Summary			
HCM 2000 Control Delay	11.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	42.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	34.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	17	15	0	21	18	148	63	53	279	4
Future Volume (Veh/h)	1	0	17	15	0	21	18	148	63	53	279	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	20	18	0	25	21	176	75	63	332	5
Pedestrians		1			2						1	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		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	680	756	336	698	684	179	338			253		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	680	756	336	698	684	179	338			253		
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	97	94	100	97	98			95		
cM capacity (veh/h)	335	315	706	327	346	862	1220			1310		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	21	43	21	176	75	63	337
Volume Left	1	18	21	0	0	63	0
Volume Right	20	25	0	0	75	0	5
cSH	671	781	1220	1700	1700	1310	1700
Volume to Capacity	0.03	0.06	0.02	0.10	0.04	0.05	0.20
Queue Length 95th (ft)	2	4	1	0	0	4	0
Control Delay (s)	10.5	12.4	8.0	0.0	0.0	7.9	0.0
Lane LOS	B	B	A			A	
Approach Delay (s)	10.5	12.4	0.6			1.2	
Approach LOS	B	B					

Intersection Summary				
Average Delay		1.9		
Intersection Capacity Utilization		35.3%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	165	66	172	346	10	84	53	49	4	163	243
Future Volume (vph)	143	165	66	172	346	10	84	53	49	4	163	243
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	0.96		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	3361		1770	3522			1750			1699	
Flt Permitted	0.95	1.00		0.95	1.00			0.60			1.00	
Satd. Flow (perm)	1770	3361		1770	3522			1069			1696	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	155	179	72	187	376	11	91	58	53	4	177	264
RTOR Reduction (vph)	0	42	0	0	2	0	0	15	0	0	64	0
Lane Group Flow (vph)	155	209	0	187	385	0	0	187	0	0	382	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)	8.6	12.6		12.0	16.0			18.9			18.9	
Effective Green, g (s)	8.6	12.6		12.0	16.0			18.9			18.9	
Actuated g/C Ratio	0.15	0.22		0.21	0.28			0.33			0.33	
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)	267	742		372	988			354			562	
v/s Ratio Prot	0.09	0.06		c0.11	c0.11							
v/s Ratio Perm								0.17			c0.22	
v/c Ratio	0.58	0.28		0.50	0.39			0.53			0.68	
Uniform Delay, d1	22.5	18.4		19.9	16.6			15.4			16.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	3.2	0.2		1.1	0.3			1.4			3.3	
Delay (s)	25.7	18.6		20.9	16.8			16.9			19.7	
Level of Service	C	B		C	B			B			B	
Approach Delay (s)		21.3			18.2			16.9			19.7	
Approach LOS		C			B			B			B	

Intersection Summary				
HCM 2000 Control Delay		19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio		0.56		
Actuated Cycle Length (s)		57.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization		67.0%	ICU Level of Service	C
Analysis Period (min)		15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	317	259	0	0	580	48	278	4	152	0	0	0
Future Volume (vph)	317	259	0	0	580	48	278	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	4.6			
Lane Util. Factor	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	1583		1775	1583			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	1863			1863	1583		1775	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)	356	291	0	0	652	54	312	4	171	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	29	0	0	144	0	0	0
Lane Group Flow (vph)	356	291	0	0	652	25	0	316	27	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)	23.3	74.1			46.6	46.6		16.0	16.0			
Effective Green, g (s)	23.3	74.1			46.6	46.6		16.0	16.0			
Actuated g/C Ratio	0.23	0.74			0.47	0.47		0.16	0.16			
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)	412	1380			868	737		284	253			
v/s Ratio Prot	c0.20	0.16			c0.35			c0.18				
v/s Ratio Perm						0.02			0.02			
v/c Ratio	0.86	0.21			0.75	0.03		1.11	0.11			
Uniform Delay, d1	36.8	4.0			21.9	14.5		42.0	35.9			
Progression Factor	1.06	2.14			1.00	1.00		1.00	1.00			
Incremental Delay, d2	14.3	0.2			5.9	0.1		87.1	0.1			
Delay (s)	53.4	8.8			27.9	14.6		129.1	36.0			
Level of Service	D	A			C	B		F	D			
Approach Delay (s)		33.3			26.9			96.4			0.0	
Approach LOS		C			C			F			A	

Intersection Summary			
HCM 2000 Control Delay	47.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	75.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	556	625	271	622	0	0	0	0	23	25	818
Future Volume (vph)	0	556	625	271	622	0	0	0	0	23	25	818
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						0.98	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	604	679	295	676	0	0	0	0	25	27	889
RTOR Reduction (vph)	0	0	330	0	0	0	0	0	0	0	0	398
Lane Group Flow (vph)	0	604	349	295	676	0	0	0	0	0	52	491
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		44.0	44.0	21.0	69.2						20.9	20.9
Effective Green, g (s)		44.0	44.0	21.0	69.2						20.9	20.9
Actuated g/C Ratio		0.44	0.44	0.21	0.69						0.21	0.21
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)		819	696	371	1289						380	582
v/s Ratio Prot		c0.32		c0.17	0.36						0.03	
v/s Ratio Perm			0.22									c0.18
v/c Ratio		0.74	0.50	0.80	0.52						0.14	0.84
Uniform Delay, d1		23.2	20.1	37.5	7.4						32.2	38.0
Progression Factor		1.00	1.00	1.04	1.09						1.00	1.00
Incremental Delay, d2		5.9	2.6	5.3	0.7						0.1	10.4
Delay (s)		29.1	22.7	44.4	8.9						32.3	48.4
Level of Service		C	C	D	A						C	D
Approach Delay (s)		25.7			19.7			0.0			47.5	
Approach LOS		C			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	30.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	75.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	148	502	13	11	1055	374	12	15	13	666	33	177
Future Volume (vph)	148	502	13	11	1055	374	12	15	13	666	33	177
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			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	0.96			0.96			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.95	1.00
Satd. Flow (prot)	1770	3524		1770	3381			1757			1778	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.99			0.95	1.00
Satd. Flow (perm)	1770	3524		1770	3381			1757			1778	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)	164	558	14	12	1172	416	13	17	14	740	37	197
RTOR Reduction (vph)	0	1	0	0	31	0	0	13	0	0	0	91
Lane Group Flow (vph)	164	571	0	12	1557	0	0	31	0	0	777	106
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)	4.3	48.3		0.7	44.7			6.0			19.3	19.3
Effective Green, g (s)	4.3	48.3		0.7	44.7			6.0			19.3	19.3
Actuated g/C Ratio	0.05	0.52		0.01	0.48			0.07			0.21	0.21
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)	82	1844		13	1637			114			371	331
v/s Ratio Prot	c0.09	c0.16		0.01	c0.46			c0.02			c0.44	
v/s Ratio Perm												0.07
v/c Ratio	2.00	0.31		0.92	0.95			0.27			2.09	0.32
Uniform Delay, d1	44.0	12.5		45.8	22.8			41.1			36.5	30.9
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	490.3	0.1		207.3	12.5			1.3			501.6	2.5
Delay (s)	534.3	12.6		253.1	35.3			42.4			538.1	33.5
Level of Service	F	B		F	D			D			F	C
Approach Delay (s)		128.9			36.9			42.4			436.0	
Approach LOS		F			D			D			F	

Intersection Summary			
HCM 2000 Control Delay	173.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	92.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	105.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	76	484	1081	23	99	256
Future Volume (Veh/h)	76	484	1081	23	99	256
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)	79	504	1126	24	103	267
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	1150				1800	1138
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1150				1800	1138
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	87				0	0
cM capacity (veh/h)	608				76	245

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	79	504	1150	370
Volume Left	79	0	0	103
Volume Right	0	0	24	267
cSH	608	1700	1700	152
Volume to Capacity	0.13	0.30	0.68	2.44
Queue Length 95th (ft)	11	0	0	792
Control Delay (s)	11.8	0.0	0.0	713.8
Lane LOS	B			F
Approach Delay (s)	1.6		0.0	713.8
Approach LOS				F

Intersection Summary			
Average Delay	126.0		
Intersection Capacity Utilization	91.1%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1	5	561	3	14	1407
Future Volume (Veh/h)	1	5	561	3	14	1407
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	630	3	16	1581
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	0.90	0.90			0.90	
vC, conflicting volume	2244	632			633	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2325	537			539	
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	99			98	
cM capacity (veh/h)	36	491			929	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	7	633	1597
Volume Left	1	0	16
Volume Right	6	3	0
cSH	254	1700	929
Volume to Capacity	0.03	0.37	0.02
Queue Length 95th (ft)	2	0	1
Control Delay (s)	25.9	0.0	2.3
Lane LOS	D		A
Approach Delay (s)	25.9	0.0	2.3
Approach LOS	D		

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	95.2%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	21	1	15	10	1	15
Future Volume (Veh/h)	21	1	15	10	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)	25	1	18	12	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	44	24			30	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	44	24			30	
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	100			100	
cM capacity (veh/h)	966	1052			1583	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	26	30	19
Volume Left	25	0	1
Volume Right	1	12	0
cSH	969	1700	1583
Volume to Capacity	0.03	0.02	0.00
Queue Length 95th (ft)	2	0	0
Control Delay (s)	8.8	0.0	0.4
Lane LOS	A		A
Approach Delay (s)	8.8	0.0	0.4
Approach LOS	A		

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	44	97	88	538	1406	35
Future Volume (vph)	44	97	88	538	1406	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
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	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)	48	107	97	769	2009	38
RTOR Reduction (vph)	0	81	0	0	0	3
Lane Group Flow (vph)	48	26	97	769	2009	35
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	13.0	13.0	7.0	118.1	107.1	107.1
Effective Green, g (s)	13.0	13.0	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)	162	145	87	1557	1412	1199
v/s Ratio Prot	c0.03		c0.05	0.41	c1.08	
v/s Ratio Perm		0.02				0.02
v/c Ratio	0.30	0.18	1.11	0.49	1.42	0.03
Uniform Delay, d1	59.9	59.2	67.2	3.2	17.1	4.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.6	131.0	0.2	194.5	0.0
Delay (s)	60.9	59.8	198.1	3.5	211.6	4.2
Level of Service	E	E	F	A	F	A
Approach Delay (s)	60.2			25.3	207.7	
Approach LOS	E			C	F	

Intersection Summary			
HCM 2000 Control Delay	148.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.29		
Actuated Cycle Length (s)	141.3	Sum of lost time (s)	14.2
Intersection Capacity Utilization	110.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	311	0	172	0	0	0	113	314	0	0	1005	496
Future Volume (vph)	311	0	172	0	0	0	113	314	0	0	1005	496
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	0.98				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	1546				1770	1863			1863	1547
Flt Permitted		0.76	1.00				0.95	1.00			1.00	1.00
Satd. Flow (perm)		1410	1546				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)	324	0	179	0	0	0	118	327	0	0	1047	517
RTOR Reduction (vph)	0	0	121	0	0	0	0	0	0	0	0	83
Lane Group Flow (vph)	0	324	58	0	0	0	118	327	0	0	1047	434
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		4	8								6
Actuated Green, G (s)		23.5	23.5				5.0	53.6			43.6	43.6
Effective Green, g (s)		23.5	23.5				5.0	53.6			43.6	43.6
Actuated g/C Ratio		0.27	0.27				0.06	0.62			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)		382	419				102	1153			937	778
v/s Ratio Prot							c0.07	0.18			c0.56	
v/s Ratio Perm		c0.23	0.04									0.28
v/c Ratio		0.85	0.14				1.16	0.28			1.12	0.56
Uniform Delay, d1		29.9	23.9				40.8	7.6			21.5	14.8
Progression Factor		1.00	1.00				1.00	1.00			1.00	1.00
Incremental Delay, d2		15.9	0.2				137.4	0.1			67.2	0.9
Delay (s)		45.8	24.0				178.2	7.8			88.7	15.7
Level of Service		D	C				F	A			F	B
Approach Delay (s)		38.0			0.0			53.0			64.6	
Approach LOS		D			A			D			E	

Intersection Summary			
HCM 2000 Control Delay	57.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	86.6	Sum of lost time (s)	14.5
Intersection Capacity Utilization	88.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	7	39	197	12	34	25	402	195	67	994	12
Future Volume (vph)	14	7	39	197	12	34	25	402	195	67	994	12
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)		1656			1757		1770	1863	1547	1770	1859	
Flt Permitted		0.99			0.96		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1656			1757		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)	15	7	41	205	12	35	26	419	203	70	1035	12
RTOR Reduction (vph)	0	38	0	0	4	0	0	0	94	0	0	0
Lane Group Flow (vph)	0	26	0	0	249	0	26	419	109	70	1048	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)		11.2			21.4		2.7	70.5	70.5	8.1	75.9	
Effective Green, g (s)		11.2			21.4		2.7	70.5	70.5	8.1	75.9	
Actuated g/C Ratio		0.09			0.16		0.02	0.54	0.54	0.06	0.58	
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)		141			286		36	1001	831	109	1075	
v/s Ratio Prot		c0.02			c0.14		0.01	0.22		c0.04	c0.56	
v/s Ratio Perm									0.07			
v/c Ratio		0.18			0.87		0.72	0.42	0.13	0.64	0.97	
Uniform Delay, d1		55.7			53.5		63.9	18.1	15.1	60.1	26.7	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.6			23.4		52.1	0.3	0.1	12.2	21.3	
Delay (s)		56.4			76.9		116.0	18.4	15.2	72.4	48.0	
Level of Service		E			E		F	B	B	E	D	
Approach Delay (s)		56.4			76.9			21.3			49.6	
Approach LOS		E			E			C			D	

Intersection Summary			
HCM 2000 Control Delay	44.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	131.2	Sum of lost time (s)	20.0
Intersection Capacity Utilization	84.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	170	207	564	57	62	1098
Future Volume (vph)	170	207	564	57	62	1098
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	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	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1563	3476		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1563	3476		1770	3539
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	187	227	620	63	68	1207
RTOR Reduction (vph)	0	0	8	0	0	0
Lane Group Flow (vph)	187	227	675	0	68	1207
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)	14.7	14.7	22.5		4.9	33.4
Effective Green, g (s)	14.7	14.7	22.5		4.9	33.4
Actuated g/C Ratio	0.24	0.24	0.37		0.08	0.55
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)	429	379	1290		143	1950
v/s Ratio Prot	0.11		0.19		0.04	c0.34
v/s Ratio Perm		c0.15				
v/c Ratio	0.44	0.60	0.52		0.48	0.62
Uniform Delay, d1	19.4	20.3	14.9		26.6	9.3
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.7	2.5	0.4		2.5	0.6
Delay (s)	20.1	22.9	15.3		29.1	9.9
Level of Service	C	C	B		C	A
Approach Delay (s)	21.6		15.3			10.9
Approach LOS	C		B			B

Intersection Summary			
HCM 2000 Control Delay	14.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	60.6	Sum of lost time (s)	18.5
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	0	41	3	0	1	23	607	20	8	1314	13
Future Volume (vph)	13	0	41	3	0	1	23	607	20	8	1314	13
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	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	1583		1770	1583		1770	3520		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	3520		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)	15	0	46	3	0	1	26	682	22	9	1476	15
RTOR Reduction (vph)	0	42	0	0	1	0	0	1	0	0	0	0
Lane Group Flow (vph)	15	4	0	3	0	0	26	703	0	9	1491	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)	0.5	5.6		0.5	5.6		1.3	45.4		0.5	44.6	
Effective Green, g (s)	0.5	5.6		0.5	5.6		1.3	45.4		0.5	44.6	
Actuated g/C Ratio	0.01	0.08		0.01	0.08		0.02	0.63		0.01	0.62	
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)	12	123		12	123		32	2235		12	2204	
v/s Ratio Prot	c0.01	c0.00		0.00	0.00		c0.01	0.20		0.01	c0.42	
v/s Ratio Perm												
v/c Ratio	1.25	0.03		0.25	0.00		0.81	0.31		0.75	0.68	
Uniform Delay, d1	35.5	30.4		35.3	30.4		35.0	6.0		35.4	8.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	352.1	0.1		10.7	0.0		84.7	0.1		128.3	0.8	
Delay (s)	387.6	30.5		46.0	30.4		119.7	6.0		163.7	9.6	
Level of Service	F	C		D	C		F	A		F	A	
Approach Delay (s)		118.3			42.1			10.1			10.5	
Approach LOS		F			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	71.5	Sum of lost time (s)	19.5
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

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	632	2	0	1313	61
Future Volume (vph)	10	1	43	0	0	0	49	632	2	0	1313	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			3511	
Flt Permitted	0.95	1.00					0.95	1.00			1.00	
Satd. Flow (perm)	1770	1564					1770	3537			3511	
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	710	2	0	1475	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	712	0	0	1541	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)	5.3	5.3					3.5	50.3			42.8	
Effective Green, g (s)	5.3	5.3					3.5	50.3			42.8	
Actuated g/C Ratio	0.08	0.08					0.05	0.77			0.65	
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)	143	126					94	2712			2290	
v/s Ratio Prot	c0.01	0.00					c0.03	0.20			c0.44	
v/s Ratio Perm												
v/c Ratio	0.08	0.04					0.59	0.26			0.67	
Uniform Delay, d1	27.9	27.8					30.3	2.2			7.1	
Progression Factor	1.00	1.00					1.00	1.00			1.00	
Incremental Delay, d2	0.2	0.1					9.0	0.1			0.8	
Delay (s)	28.1	27.9					39.3	2.3			7.9	
Level of Service	C	C					D	A			A	
Approach Delay (s)		28.0			0.0			4.9			7.9	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	65.6	Sum of lost time (s)	14.0
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	39	210	182	84	27	79	368	34	13	877	132
Future Volume (vph)	59	39	210	182	84	27	79	368	34	13	877	132
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	0.96		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	3040		1770	3399		1770	3539	1558	1770	3539	1553
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	3040		1770	3399		1770	3539	1558	1770	3539	1553
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)	62	41	221	192	88	28	83	387	36	14	923	139
RTOR Reduction (vph)	0	193	0	0	19	0	0	0	19	0	0	71
Lane Group Flow (vph)	62	69	0	192	97	0	83	387	17	14	923	68
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)	8.1	12.8		18.3	23.0		11.3	48.3	48.3	2.3	39.3	39.3
Effective Green, g (s)	8.1	12.8		18.3	23.0		11.3	48.3	48.3	2.3	39.3	39.3
Actuated g/C Ratio	0.08	0.13		0.18	0.23		0.11	0.48	0.48	0.02	0.39	0.39
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)	142	387		322	779		199	1704	750	40	1386	608
v/s Ratio Prot	0.04	c0.02		c0.11	0.03		c0.05	0.11		0.01	c0.26	
v/s Ratio Perm									0.01			0.04
v/c Ratio	0.44	0.18		0.60	0.12		0.42	0.23	0.02	0.35	0.67	0.11
Uniform Delay, d1	43.9	39.1		37.6	30.7		41.4	15.1	13.6	48.3	25.1	19.4
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	2.1	0.2		3.0	0.1		1.4	0.1	0.0	5.2	1.2	0.1
Delay (s)	46.1	39.3		40.6	30.7		42.8	15.2	13.6	53.5	26.3	19.5
Level of Service	D	D		D	C		D	B	B	D	C	B
Approach Delay (s)		40.6			36.9			19.6			25.8	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	28.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	100.3	Sum of lost time (s)	18.6
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

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	682	18	21	1425	245
Future Volume (vph)	173	9	98	17	7	1	47	682	18	21	1425	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	3523		1770	3447	
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	3523		1770	3447	
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	689	18	21	1439	247
RTOR Reduction (vph)	0	85	0	0	1	0	0	1	0	0	8	0
Lane Group Flow (vph)	175	23	0	17	7	0	47	706	0	21	1678	0
Confl. Peds. (#/hr)						8			4			2
Confl. Bikes (#/hr)			1						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)	15.8	15.8		7.0	7.0		5.2	71.4		2.1	68.3	
Effective Green, g (s)	15.8	15.8		7.0	7.0		5.2	71.4		2.1	68.3	
Actuated g/C Ratio	0.14	0.14		0.06	0.06		0.05	0.62		0.02	0.59	
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)	243	218		107	111		80	2189		32	2049	
v/s Ratio Prot	c0.10	0.01		c0.01	0.00		c0.03	c0.20		0.01	c0.49	
v/s Ratio Perm												
v/c Ratio	0.72	0.10		0.16	0.06		0.59	0.32		0.66	0.82	
Uniform Delay, d1	47.4	43.4		51.2	50.9		53.8	10.3		56.0	18.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	10.0	0.2		0.7	0.2		10.6	0.1		39.4	2.7	
Delay (s)	57.5	43.6		51.9	51.1		64.4	10.4		95.4	21.1	
Level of Service	E	D		D	D		E	B		F	C	
Approach Delay (s)		52.2			51.6			13.7			22.0	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	114.9	Sum of lost time (s)	18.6
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	164	269	225	364	444	37	236	546	407	113	1125	302
Future Volume (vph)	164	269	225	364	444	37	236	546	407	113	1125	302
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	
Frt	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	3493		3433	3539	1566	3433	3417	
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	3493		3433	3539	1566	3433	3417	
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)	167	274	230	371	453	38	241	557	415	115	1148	308
RTOR Reduction (vph)	0	0	118	0	6	0	0	0	76	0	19	0
Lane Group Flow (vph)	167	274	112	371	485	0	241	557	339	115	1437	0
Confl. Peds. (#/hr)			5			4			1			1
Confl. Bikes (#/hr)			8			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)	9.4	16.2	16.2	14.6	21.7		9.8	51.1	65.7	7.2	48.5	
Effective Green, g (s)	9.4	16.2	16.2	14.6	21.7		9.8	51.1	65.7	7.2	48.5	
Actuated g/C Ratio	0.09	0.15	0.15	0.14	0.20		0.09	0.47	0.61	0.07	0.45	
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)	298	530	230	463	701		311	1672	951	228	1533	
v/s Ratio Prot	0.05	0.08		c0.11	c0.14		c0.07	0.16	c0.05	0.03	c0.42	
v/s Ratio Perm			0.07						0.17			
v/c Ratio	0.56	0.52	0.49	0.80	0.69		0.77	0.33	0.36	0.50	0.94	
Uniform Delay, d1	47.4	42.3	42.1	45.3	40.1		48.1	17.8	10.6	48.7	28.4	
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	2.4	0.9	1.6	9.6	3.0		11.4	0.1	0.2	1.8	11.2	
Delay (s)	49.8	43.2	43.8	55.0	43.1		59.5	18.0	10.8	50.5	39.6	
Level of Service	D	D	D	D	D		E	B	B	D	D	
Approach Delay (s)		45.0			48.2			23.8			40.4	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	38.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	108.1	Sum of lost time (s)	19.0
Intersection Capacity Utilization	83.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

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	945	454	0	1306	408
Future Volume (vph)	0	0	0	406	0	244	0	945	454	0	1306	408
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
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	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	964	463	0	1333	416
RTOR Reduction (vph)	0	0	0	0	0	190	0	0	0	0	0	102
Lane Group Flow (vph)	0	0	0	414	0	59	0	964	463	0	1333	314
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)				19.6		19.6		90.5	110.1		90.5	90.5
Effective Green, g (s)				19.6		19.6		90.5	110.1		90.5	90.5
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)				560		455		3834	1464		3834	1164
v/s Ratio Prot				c0.12				0.19	0.05		c0.26	
v/s Ratio Perm						0.02			0.25			0.20
v/c Ratio				0.74		0.13		0.25	0.32		0.35	0.27
Uniform Delay, d1				47.8		42.9		4.5	0.6		4.9	4.6
Progression Factor				1.00		1.00		1.02	6.20		1.00	1.00
Incremental Delay, d2				4.4		0.0		0.1	0.0		0.3	0.6
Delay (s)				52.2		43.0		4.7	3.6		5.2	5.1
Level of Service				D		D		A	A		A	A
Approach Delay (s)		0.0			48.7			4.3			5.2	
Approach LOS		A			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	532	7	536	0	0	0	0	867	464	312	1400	0
Future Volume (vph)	532	7	536	0	0	0	0	867	464	312	1400	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	1514	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	1514	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)	548	7	553	0	0	0	0	894	478	322	1443	0
RTOR Reduction (vph)	0	19	41	0	0	0	0	0	268	0	0	0
Lane Group Flow (vph)	384	351	313	0	0	0	0	894	210	322	1443	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)	37.0	37.0	37.0					52.8	52.8	16.1	73.1	
Effective Green, g (s)	37.0	37.0	37.0					52.8	52.8	16.1	73.1	
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)	518	466	457					2237	683	460	3097	
v/s Ratio Prot	0.23	c0.23						0.18		c0.09	c0.28	
v/s Ratio Perm			0.21						0.14			
v/c Ratio	0.74	0.75	0.69					0.40	0.31	0.70	0.47	
Uniform Delay, d1	37.2	37.4	36.4					22.8	21.8	49.6	12.8	
Progression Factor	1.00	1.00	1.00					1.00	1.00	1.10	0.80	
Incremental Delay, d2	5.7	6.8	4.2					0.5	1.2	4.4	0.5	
Delay (s)	42.9	44.2	40.6					23.4	22.9	59.0	10.7	
Level of Service	D	D	D					C	C	E	B	
Approach Delay (s)		42.6			0.0			23.2			19.5	
Approach LOS		D			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	26.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	333	440	608	229	126	193
Future Volume (vph)	333	440	608	229	126	193
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)	362	478	661	249	137	210
RTOR Reduction (vph)	0	14	0	0	0	39
Lane Group Flow (vph)	362	464	661	249	137	171
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				8
Actuated Green, G (s)	25.7	74.1	31.6	38.9	48.4	80.0
Effective Green, g (s)	25.7	74.1	31.6	38.9	48.4	80.0
Actuated g/C Ratio	0.21	0.62	0.26	0.32	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	603	713	1055
v/s Ratio Prot	c0.19	c0.19	c0.37	0.13	0.08	0.04
v/s Ratio Perm		0.10				0.07
v/c Ratio	0.91	0.48	1.42	0.41	0.19	0.16
Uniform Delay, d1	46.0	12.5	44.2	31.6	23.2	7.5
Progression Factor	1.00	1.00	1.09	1.09	1.00	1.00
Incremental Delay, d2	24.0	0.4	189.5	0.0	0.1	0.1
Delay (s)	70.0	12.8	237.8	34.6	23.3	7.5
Level of Service	E	B	F	C	C	A
Approach Delay (s)	37.5			182.2	13.8	
Approach LOS	D			F	B	

Intersection Summary			
HCM 2000 Control Delay	96.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

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	448	0	0	838	379
Future Volume (vph)	0	0	0	1104	2	89	368	448	0	0	838	379
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	498	0	0	931	421
RTOR Reduction (vph)	0	0	0	0	0	57	0	0	0	0	0	294
Lane Group Flow (vph)	0	0	0	613	616	42	409	498	0	0	931	127
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)				46.3	46.3	46.3	16.7	54.1			33.2	33.2
Effective Green, g (s)				46.3	46.3	46.3	16.7	54.1			33.2	33.2
Actuated g/C Ratio				0.42	0.42	0.42	0.15	0.49			0.30	0.30
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)				707	709	1157	521	2500			1534	462
v/s Ratio Prot				0.36	c0.37		c0.12	0.10			c0.18	
v/s Ratio Perm						0.02						0.08
v/c Ratio				0.87	0.87	0.04	0.79	0.20			0.61	0.28
Uniform Delay, d1				29.0	29.1	18.7	44.9	15.7			32.8	29.2
Progression Factor				1.00	1.00	1.00	1.58	0.94			1.00	1.00
Incremental Delay, d2				10.9	11.0	0.0	7.5	0.2			1.8	1.5
Delay (s)				39.9	40.1	18.7	78.3	15.0			34.6	30.7
Level of Service				D	D	B	E	B			C	C
Approach Delay (s)		0.0			38.4			43.5			33.4	
Approach LOS		A			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	37.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	229	1	881	0	0	0	0	587	636	208	1734	0
Future Volume (vph)	229	1	881	0	0	0	0	587	636	208	1734	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	0.86	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)	241	1	927	0	0	0	0	618	669	219	1825	0
RTOR Reduction (vph)	0	4	38	0	0	0	0	0	404	0	0	0
Lane Group Flow (vph)	217	475	435	0	0	0	0	618	265	219	1825	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)	42.0	42.0	42.0					43.5	43.5	10.7	58.4	
Effective Green, g (s)	42.0	42.0	42.0					43.5	43.5	10.7	58.4	
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)	641	553	574					2010	614	333	2699	
v/s Ratio Prot	0.13	c0.33						0.12		0.06	c0.36	
v/s Ratio Perm			0.29						0.17			
v/c Ratio	0.34	0.86	0.76					0.31	0.43	0.66	0.68	
Uniform Delay, d1	24.1	31.3	29.6					22.9	24.2	47.9	18.9	
Progression Factor	1.00	1.00	1.00					1.00	1.00	1.52	1.28	
Incremental Delay, d2	0.3	12.6	5.7					0.4	2.2	3.6	0.9	
Delay (s)	24.5	43.9	35.3					23.3	26.4	76.5	25.1	
Level of Service	C	D	D					C	C	E	C	
Approach Delay (s)		36.8			0.0			24.9			30.6	
Approach LOS		D			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	161	383	269	83	170	548
Future Volume (vph)	161	383	269	83	170	548
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	1288	
Flt Permitted	0.95	1.00	1.00	1.00	0.99	
Satd. Flow (perm)	1416	1863	1863	1195	1288	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	169	403	283	87	179	577
RTOR Reduction (vph)	0	0	0	34	0	0
Lane Group Flow (vph)	169	403	283	53	756	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)	18.4	25.7	38.9	38.9	49.0	
Effective Green, g (s)	18.4	25.7	38.9	38.9	49.0	
Actuated g/C Ratio	0.15	0.21	0.32	0.32	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)	217	398	603	387	525	
v/s Ratio Prot	c0.12	c0.22	c0.15		c0.59	
v/s Ratio Perm				0.04		
v/c Ratio	0.78	1.01	0.47	0.14	1.44	
Uniform Delay, d1	48.8	47.1	32.3	28.7	35.5	
Progression Factor	1.31	0.66	1.00	1.00	1.00	
Incremental Delay, d2	12.6	42.6	0.6	0.2	208.6	
Delay (s)	76.4	73.7	32.9	28.8	244.1	
Level of Service	E	E	C	C	F	
Approach Delay (s)		74.5	31.9		244.1	
Approach LOS		E	C		F	

Intersection Summary			
HCM 2000 Control Delay	140.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	92.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	88	181	474	234	334	148
Future Volume (vph)	88	181	474	234	334	148
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	93	191	499	246	352	156

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	284	745	508
Volume Left (vph)	93	0	352
Volume Right (vph)	0	246	156
Hadj (s)	0.10	-0.16	-0.01
Departure Headway (s)	6.9	6.2	6.4
Degree Utilization, x	0.54	1.28	0.91
Capacity (veh/h)	497	578	548
Control Delay (s)	17.8	157.8	43.6
Approach Delay (s)	17.8	157.8	43.6
Approach LOS	C	F	E

Intersection Summary			
Delay	94.2		
Level of Service	F		
Intersection Capacity Utilization	91.2%	ICU Level of Service	F
Analysis Period (min)	15		

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	387	65	0	879	127
Future Volume (vph)	121	0	391	946	374	14	333	387	65	0	879	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	399	67	0	906	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	399	37	0	906	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			c0.18	
v/s Ratio Perm			0.05						0.02			0.03
v/c Ratio	0.63		0.49	0.80	0.58		0.72	0.21	0.04		0.49	0.09
Uniform Delay, d1	51.0		38.4	35.0	43.7		49.4	13.9	12.6		29.5	25.1
Progression Factor	1.00		1.00	1.00	1.00		1.03	0.80	0.44		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	11.4	5.7		30.4	25.5
Level of Service	E		D	D	D		E	B	A		C	C
Approach Delay (s)		43.3			40.6			29.8			29.8	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	35.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.69		
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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	168	0	123	0	0	0	0	627	727	172	1932	0
Future Volume (vph)	168	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)	175	0	128	0	0	0	0	653	757	179	2012	0
RTOR Reduction (vph)	0	0	70	0	0	0	0	0	254	0	0	0
Lane Group Flow (vph)	175	0	58	0	0	0	0	653	503	179	2013	0
Confl. Peds. (#/hr)												6
Confl. Bikes (#/hr)									3			4
Turn Type	Prot		Perm					NA	Perm	Prot	NA	
Protected Phases	4							2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	11.6		11.6					79.7	79.7	11.6	96.5	
Effective Green, g (s)	11.6		11.6					79.7	79.7	11.6	96.5	
Actuated g/C Ratio	0.10		0.10					0.66	0.66	0.10	0.80	
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)	331		153					3377	1810	331	4089	
v/s Ratio Prot	c0.05							0.13		0.05	c0.40	
v/s Ratio Perm			0.04						0.18			
v/c Ratio	0.53		0.38					0.19	0.28	0.54	0.49	
Uniform Delay, d1	51.6		50.8					7.8	8.3	51.7	3.8	
Progression Factor	1.00		1.00					1.00	1.00	1.13	0.47	
Incremental Delay, d2	1.5		1.6					0.1	0.4	1.6	0.4	
Delay (s)	53.1		52.4					7.9	8.7	60.2	2.2	
Level of Service	D		D					A	A	E	A	
Approach Delay (s)		52.8			0.0			8.3			6.9	
Approach LOS		D			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	11.0	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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	358	20	593	722	79	8	34	271	96	323	49
Future Volume (vph)	25	358	20	593	722	79	8	34	271	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	
Frpb, 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	0.86
Adj. Flow (vph)	29	416	23	690	840	92	9	40	315	112	376	57
RTOR Reduction (vph)	0	0	18	0	0	47	0	0	266	0	7	0
Lane Group Flow (vph)	29	416	5	690	840	45	9	40	49	112	426	0
Confl. 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	20.1	20.1	25.5	41.3	41.3	0.7	14.0	14.0	12.5	25.8	
Effective Green, g (s)	4.3	20.1	20.1	25.5	41.3	41.3	0.7	14.0	14.0	12.5	25.8	
Actuated g/C Ratio	0.05	0.22	0.22	0.28	0.46	0.46	0.01	0.15	0.15	0.14	0.28	
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)	83	784	345	965	1611	697	13	546	244	243	986	
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	0.72	0.52	0.06	0.69	0.07	0.20	0.46	0.43	
Uniform Delay, d1	41.8	31.1	27.6	29.3	17.6	13.9	44.9	32.8	33.5	36.0	26.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.5	0.7	0.0	2.5	0.3	0.0	96.3	0.1	0.4	1.4	0.3	
Delay (s)	44.4	31.8	27.6	31.9	17.9	13.9	141.2	32.9	33.9	37.4	26.8	
Level of Service	D	C	C	C	B	B	F	C	C	D	C	
Approach Delay (s)		32.4			23.6			36.4			29.0	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	27.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.7	Sum of lost time (s)	18.6
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	54	26	102	340	0
Future Volume (Veh/h)	0	54	26	102	340	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	61	30	116	386	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	562	386	386			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	562	386	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 %	100	91	97			
cM capacity (veh/h)	476	662	1172			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	61	30	116	386
Volume Left	0	30	0	0
Volume Right	61	0	0	0
cSH	662	1172	1700	1700
Volume to Capacity	0.09	0.03	0.07	0.23
Queue Length 95th (ft)	8	2	0	0
Control Delay (s)	11.0	8.2	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	11.0	1.7		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	31.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	331	105	270	374	79	36	250	50	134	420	70
Future Volume (vph)	66	331	105	270	374	79	36	250	50	134	420	70
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
Frpb, 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)	72	360	114	293	407	86	39	272	54	146	457	76
RTOR Reduction (vph)	0	0	91	0	0	55	0	0	44	0	0	56
Lane Group Flow (vph)	72	360	23	293	407	31	39	272	10	146	457	20
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)	6.0	14.4	14.4	17.1	25.5	25.5	3.2	12.7	12.7	8.9	18.4	18.4
Effective Green, g (s)	6.0	14.4	14.4	17.1	25.5	25.5	3.2	12.7	12.7	8.9	18.4	18.4
Actuated g/C Ratio	0.08	0.20	0.20	0.24	0.36	0.36	0.05	0.18	0.18	0.13	0.26	0.26
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)	149	716	315	425	1269	567	79	632	282	221	915	409
v/s Ratio Prot	0.04	c0.10		c0.17	0.11		0.02	0.08		c0.08	c0.13	
v/s Ratio Perm			0.01			0.02			0.01			0.01
v/c Ratio	0.48	0.50	0.07	0.69	0.32	0.05	0.49	0.43	0.03	0.66	0.50	0.05
Uniform Delay, d1	31.1	25.2	22.9	24.6	16.5	14.9	33.2	26.0	24.1	29.7	22.4	19.8
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	2.5	0.6	0.1	4.6	0.1	0.0	4.8	0.5	0.0	7.2	0.4	0.0
Delay (s)	33.5	25.7	23.0	29.2	16.7	15.0	37.9	26.5	24.2	36.9	22.9	19.8
Level of Service	C	C	C	C	B	B	D	C	C	D	C	B
Approach Delay (s)		26.2			21.2			27.3			25.5	
Approach LOS		C			C			C			C	

Intersection Summary				
HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.61			
Actuated Cycle Length (s)	71.1	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	54.6%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	253	68	5	298	314	205	18	880	134	460	1131	455
Future Volume (vph)	253	68	5	298	314	205	18	880	134	460	1131	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	223	20	957	146	500	1229	495
RTOR Reduction (vph)	0	0	4	0	0	166	0	16	0	0	0	283
Lane Group Flow (vph)	275	74	1	324	341	57	20	1087	0	500	1229	212
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	15.1	15.1	25.7	28.4	28.4	1.8	31.3		18.2	47.7	47.7
Effective Green, g (s)	12.4	15.1	15.1	25.7	28.4	28.4	1.8	31.3		18.2	47.7	47.7
Actuated g/C Ratio	0.11	0.14	0.14	0.23	0.25	0.25	0.02	0.28		0.16	0.43	0.43
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)	381	688	214	407	474	402	28	1397		559	2173	676
v/s Ratio Prot	0.08	0.01		c0.18	c0.18		0.01	c0.22		c0.15	0.24	
v/s Ratio Perm			0.00			0.04						0.13
v/c Ratio	0.72	0.11	0.00	0.80	0.72	0.14	0.71	0.78		0.89	0.57	0.31
Uniform Delay, d1	47.9	42.3	41.7	40.5	38.0	32.2	54.6	37.0		45.8	24.1	21.1
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	5.6	0.1	0.0	9.7	5.9	0.3	52.5	4.3		16.3	1.1	1.2
Delay (s)	53.6	42.5	41.7	50.2	43.9	32.4	107.1	41.3		62.1	25.2	22.3
Level of Service	D	D	D	D	D	C	F	D		E	C	C
Approach Delay (s)		51.1			43.3			42.5			32.8	
Approach LOS		D			D			D			C	

Intersection Summary				
HCM 2000 Control Delay	38.6	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.82			
Actuated Cycle Length (s)	111.6	Sum of lost time (s)	21.3	
Intersection Capacity Utilization	74.6%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

1: Champagne Boulevard & Gopher Canyon Road

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	437	262	233	321	212	339
Future Volume (vph)	437	262	233	321	212	339
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	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	0.92	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	1583	1770	1863	1689	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1770	1583	1770	1863	1689	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	465	279	248	341	226	361
RTOR Reduction (vph)	0	192	0	0	50	0
Lane Group Flow (vph)	465	87	248	341	537	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)	31.6	31.6	18.8	61.1	37.8	
Effective Green, g (s)	31.6	31.6	18.8	61.1	37.8	
Actuated g/C Ratio	0.31	0.31	0.18	0.60	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)	549	491	327	1119	627	
v/s Ratio Prot	c0.26		c0.14	0.18	c0.32	
v/s Ratio Perm		0.05				
v/c Ratio	0.85	0.18	0.76	0.30	0.86	
Uniform Delay, d1	32.8	25.6	39.3	9.9	29.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	11.6	0.2	9.7	0.2	11.1	
Delay (s)	44.4	25.7	49.0	10.1	40.6	
Level of Service	D	C	D	B	D	
Approach Delay (s)	37.4			26.5	40.6	
Approach LOS	D			C	D	

Intersection Summary			
HCM 2000 Control Delay	35.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	101.7	Sum of lost time (s)	13.5
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

2: Champagne Boulevard & Old Castle Road

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	63	200	359	108	334	152
Future Volume (vph)	63	200	359	108	334	152
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	1796		1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1543	1796		1770	1863
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	75	238	427	129	398	181
RTOR Reduction (vph)	0	206	12	0	0	0
Lane Group Flow (vph)	75	32	544	0	398	181
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)	9.6	9.6	26.9		21.0	52.4
Effective Green, g (s)	9.6	9.6	26.9		21.0	52.4
Actuated g/C Ratio	0.14	0.14	0.38		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)	239	208	680		523	1374
v/s Ratio Prot	c0.04		c0.30		c0.22	0.10
v/s Ratio Perm		0.02				
v/c Ratio	0.31	0.15	0.80		0.76	0.13
Uniform Delay, d1	27.7	27.1	19.7		22.7	2.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.8	0.3	6.7		6.5	0.0
Delay (s)	28.5	27.5	26.4		29.2	2.7
Level of Service	C	C	C		C	A
Approach Delay (s)	27.7		26.4			20.9
Approach LOS	C		C			C

Intersection Summary			
HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	71.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	0	19	75	0	45	15	400	61	37	201	1
Future Volume (Veh/h)	2	0	19	75	0	45	15	400	61	37	201	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	23	89	0	54	18	476	73	44	239	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			None	
Median storage veh)												
Upstream signal (ft)											874	
pX, platoon unblocked												
vC, conflicting volume	840	914	240	863	841	477	240			550		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	840	914	240	863	841	477	240			550		
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	97	65	100	91	99			96		
cM capacity (veh/h)	248	258	799	255	284	588	1327			1019		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	25	143	18	476	73	44	240
Volume Left	2	89	18	0	0	44	0
Volume Right	23	54	0	0	73	0	1
cSH	678	410	1327	1700	1700	1019	1700
Volume to Capacity	0.04	0.35	0.01	0.28	0.04	0.04	0.14
Queue Length 95th (ft)	3	38	1	0	0	3	0
Control Delay (s)	10.5	20.9	7.8	0.0	0.0	8.7	0.0
Lane LOS	B	C	A			A	
Approach Delay (s)	10.5	20.9	0.2			1.3	
Approach LOS	B	C					

Intersection Summary				
Average Delay		3.7		
Intersection Capacity Utilization		45.2%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	369	364	100	61	232	13	91	179	100	26	114	216
Future Volume (vph)	369	364	100	61	232	13	91	179	100	26	114	216
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			0.92	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1770	3425		1770	3501			1767			1689	
Flt Permitted	0.95	1.00		0.95	1.00			0.77			0.96	
Satd. Flow (perm)	1770	3425		1770	3501			1369			1626	
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)	384	379	104	64	242	14	95	186	104	27	119	225
RTOR Reduction (vph)	0	26	0	0	4	0	0	14	0	0	57	0
Lane Group Flow (vph)	384	457	0	64	252	0	0	371	0	0	314	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)	21.7	28.5		6.3	13.1			26.2			26.2	
Effective Green, g (s)	21.7	28.5		6.3	13.1			26.2			26.2	
Actuated g/C Ratio	0.29	0.38		0.08	0.18			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)	515	1310		149	615			481			571	
v/s Ratio Prot	c0.22	c0.13		0.04	0.07							
v/s Ratio Perm								c0.27			0.19	
v/c Ratio	0.75	0.35		0.43	0.41			0.77			0.55	
Uniform Delay, d1	23.9	16.4		32.4	27.3			21.5			19.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	5.8	0.2		2.0	0.4			7.5			1.1	
Delay (s)	29.7	16.6		34.4	27.7			29.0			20.5	
Level of Service	C	B		C	C			C			C	
Approach Delay (s)		22.4			29.0			29.0			20.5	
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		0.69		
Actuated Cycle Length (s)		74.5	Sum of lost time (s)	13.5
Intersection Capacity Utilization		83.5%	ICU Level of Service	E
Analysis Period (min)		15		
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	803	367	0	0	499	26	773	5	450	0	0	0
Future Volume (vph)	803	367	0	0	499	26	773	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	4.6			
Lane Util. Factor	1.00	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		1775	1563			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	1863			1863	1545		1775	1563			
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)	836	382	0	0	520	27	805	5	469	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	20	0	0	229	0	0	0
Lane Group Flow (vph)	836	382	0	0	520	7	0	810	240	0	0	0
Confl. Peds. (#/hr)						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)	27.8	56.7			24.7	24.7		33.4	33.4			
Effective Green, g (s)	27.8	56.7			24.7	24.7		33.4	33.4			
Actuated g/C Ratio	0.28	0.57			0.25	0.25		0.33	0.33			
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)	492	1056			460	381		592	522			
v/s Ratio Prot	c0.47	0.21			c0.28			c0.46				
v/s Ratio Perm						0.00			0.15			
v/c Ratio	1.70	0.36			1.13	0.02		1.37	0.46			
Uniform Delay, d1	36.1	11.8			37.6	28.5		33.3	26.2			
Progression Factor	0.94	1.97			1.00	1.00		1.00	1.00			
Incremental Delay, d2	315.4	0.1			82.8	0.1		176.3	0.6			
Delay (s)	349.3	23.3			120.4	28.6		209.6	26.8			
Level of Service	F	C			F	C		F	C			
Approach Delay (s)		247.0			115.9			142.6			0.0	
Approach LOS		F			F			F			A	

Intersection Summary			
HCM 2000 Control Delay	179.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.41		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	143.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1167	412	174	1061	0	0	0	0	39	2	460
Future Volume (vph)	0	1167	412	174	1061	0	0	0	0	39	2	460
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	0.80	0.80	0.80	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1459	515	189	1153	0	0	0	0	42	2	500
RTOR Reduction (vph)	0	0	140	0	0	0	0	0	0	0	0	181
Lane Group Flow (vph)	0	1459	375	189	1153	0	0	0	0	0	44	319
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		57.7	57.7	12.0	73.9						16.2	16.2
Effective Green, g (s)		57.7	57.7	12.0	73.9						16.2	16.2
Actuated g/C Ratio		0.58	0.58	0.12	0.74						0.16	0.16
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)		1074	913	212	1376						288	451
v/s Ratio Prot		c0.78		0.11	c0.62						0.02	
v/s Ratio Perm			0.24									c0.11
v/c Ratio		1.36	0.41	0.89	0.84						0.15	0.71
Uniform Delay, d1		21.1	11.7	43.4	8.9						36.0	39.7
Progression Factor		1.00	1.00	0.87	1.37						1.00	1.00
Incremental Delay, d2		167.4	1.4	4.7	0.6						0.2	5.0
Delay (s)		188.6	13.1	42.3	12.9						36.3	44.7
Level of Service		F	B	D	B						D	D
Approach Delay (s)		142.8			17.0			0.0			44.0	
Approach LOS		F			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	85.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	143.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	235	1031	14	19	648	854	19	34	23	525	20	172
Future Volume (vph)	235	1031	14	19	648	854	19	34	23	525	20	172
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	0.98			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	0.91			0.96			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.95	1.00
Satd. Flow (prot)	1770	3531		1770	3183			1754			1777	1563
Flt Permitted	0.95	1.00		0.95	1.00			0.99			0.95	1.00
Satd. Flow (perm)	1770	3531		1770	3183			1754			1777	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)	242	1063	14	20	668	880	20	35	24	541	21	177
RTOR Reduction (vph)	0	1	0	0	215	0	0	17	0	0	0	90
Lane Group Flow (vph)	242	1076	0	20	1333	0	0	62	0	0	562	87
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)	6.5	45.1		2.1	40.7			8.3			20.0	20.0
Effective Green, g (s)	6.5	45.1		2.1	40.7			8.3			20.0	20.0
Actuated g/C Ratio	0.07	0.48		0.02	0.44			0.09			0.21	0.21
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)	123	1703		39	1385			155			380	334
v/s Ratio Prot	c0.14	c0.30		0.01	c0.42			c0.04			c0.32	
v/s Ratio Perm												0.06
v/c Ratio	1.97	0.63		0.51	0.96			0.40			1.48	0.26
Uniform Delay, d1	43.5	18.0		45.2	25.7			40.2			36.8	30.6
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	463.3	0.8		10.9	16.0			1.7			229.3	1.9
Delay (s)	506.8	18.8		56.1	41.6			41.9			266.0	32.5
Level of Service	F	B		E	D			D			F	C
Approach Delay (s)		108.3			41.8			41.9			210.1	
Approach LOS		F			D			D			F	

Intersection Summary			
HCM 2000 Control Delay	99.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	93.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	106.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	305	1300	715	109	45	114
Future Volume (Veh/h)	305	1300	715	109	45	114
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)	321	1368	753	115	47	120
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	868				2820	810
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	868				2820	810
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	59				0	68
cM capacity (veh/h)	776				12	380

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	321	1368	868	167
Volume Left	321	0	0	47
Volume Right	0	0	115	120
cSH	776	1700	1700	38
Volume to Capacity	0.41	0.80	0.51	4.39
Queue Length 95th (ft)	51	0	0	Err
Control Delay (s)	12.9	0.0	0.0	Err
Lane LOS	B			F
Approach Delay (s)	2.4		0.0	Err
Approach LOS				F

Intersection Summary			
Average Delay	614.5		
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	2	11	1345	3	5	849
Future Volume (Veh/h)	2	11	1345	3	5	849
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	1431	3	5	903
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	0.26	0.26			0.26	
vC, conflicting volume	2346	1432			1434	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	4775	1239			1244	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	78			97	
cM capacity (veh/h)	0	55			144	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	14	1434	908
Volume Left	2	0	5
Volume Right	12	3	0
cSH	2	1700	144
Volume to Capacity	8.40	0.84	0.03
Queue Length 95th (ft)	Err	0	3
Control Delay (s)	Err	0.0	2.4
Lane LOS	F		A
Approach Delay (s)	Err	0.0	2.4
Approach LOS	F		

Intersection Summary			
Average Delay	60.4		
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	16	1	7	24	1	8
Future Volume (Veh/h)	16	1	7	24	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)	21	1	9	32	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	38	25			41	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	38	25			41	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	100			100	
cM capacity (veh/h)	974	1051			1568	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	22	41	12
Volume Left	21	0	1
Volume Right	1	32	0
cSH	977	1700	1568
Volume to Capacity	0.02	0.02	0.00
Queue Length 95th (ft)	2	0	0
Control Delay (s)	8.8	0.0	0.6
Lane LOS	A		A
Approach Delay (s)	8.8	0.0	0.6
Approach LOS	A		

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

12: Twin Oaks Valley Rd #1/Deer Springs Rd & Twin Oaks Valley Rd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	48	240	105	1333	872	47
Future Volume (vph)	48	240	105	1333	872	47
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)	55	273	119	1969	1288	53
RTOR Reduction (vph)	0	143	0	0	0	9
Lane Group Flow (vph)	55	130	119	1969	1288	44
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)	12.5	12.5	7.0	68.1	57.1	57.1
Effective Green, g (s)	12.5	12.5	7.0	68.1	57.1	57.1
Actuated g/C Ratio	0.14	0.14	0.08	0.75	0.63	0.63
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)	243	217	136	1397	1171	972
v/s Ratio Prot	0.03		0.07	c1.06	0.69	
v/s Ratio Perm		c0.08				0.03
v/c Ratio	0.23	0.60	0.88	1.41	1.10	0.05
Uniform Delay, d1	34.8	36.8	41.5	11.4	16.8	6.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	4.4	42.0	188.6	58.1	0.0
Delay (s)	35.3	41.2	83.5	199.9	74.9	6.5
Level of Service	D	D	F	F	E	A
Approach Delay (s)	40.2			193.3	72.2	
Approach LOS	D			F	E	

Intersection Summary			
HCM 2000 Control Delay	136.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.35		
Actuated Cycle Length (s)	90.8	Sum of lost time (s)	14.2
Intersection Capacity Utilization	103.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

13: Twin Oaks Valley Rd #1 & Buena Creek Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	565	0	210	0	0	0	167	861	0	0	683	421
Future Volume (vph)	565	0	210	0	0	0	167	861	0	0	683	421
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)	608	0	226	0	0	0	180	926	0	0	734	453
RTOR Reduction (vph)	0	0	99	0	0	0	0	0	0	0	0	108
Lane Group Flow (vph)	0	608	127	0	0	0	180	926	0	0	734	345
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)		28.4	28.4				11.5	51.6			35.1	35.1
Effective Green, g (s)		28.4	28.4				11.5	51.6			35.1	35.1
Actuated g/C Ratio		0.32	0.32				0.13	0.58			0.39	0.39
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)		447	502				227	1074			730	604
v/s Ratio Prot							0.10	c0.50			c0.39	
v/s Ratio Perm		c0.43	0.08									0.22
v/c Ratio		1.36	0.25				0.79	0.86			1.01	0.57
Uniform Delay, d1		30.6	22.7				37.8	16.0			27.2	21.3
Progression Factor		1.00	1.00				1.00	1.00			1.00	1.00
Incremental Delay, d2		176.1	0.3				17.1	7.3			34.7	1.3
Delay (s)		206.6	22.9				54.9	23.2			61.9	22.6
Level of Service		F	C				D	C			E	C
Approach Delay (s)		156.9			0.0			28.4			46.9	
Approach LOS		F			A			C			D	

Intersection Summary			
HCM 2000 Control Delay	69.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	89.5	Sum of lost time (s)	14.5
Intersection Capacity Utilization	91.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	0	51	14	0	27	50	1002	19	10	771	21
Future Volume (vph)	15	0	51	14	0	27	50	1002	19	10	771	21
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		0.90			0.91		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99			0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1633			1669		1770	1863	1583	1770	1855	
Flt Permitted		0.99			0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1633			1669		1770	1863	1583	1770	1855	
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)	16	0	55	15	0	29	54	1077	20	11	829	23
RTOR Reduction (vph)	0	66	0	0	41	0	0	0	7	0	0	0
Lane Group Flow (vph)	0	5	0	0	3	0	54	1077	13	11	852	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			5.8		3.9	58.2	58.2	0.7	55.0	
Effective Green, g (s)		7.0			5.8		3.9	58.2	58.2	0.7	55.0	
Actuated g/C Ratio		0.08			0.06		0.04	0.63	0.63	0.01	0.60	
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			105		75	1182	1004	13	1112	
v/s Ratio Prot		c0.00			c0.00		c0.03	c0.58		0.01	0.46	
v/s Ratio Perm									0.01			
v/c Ratio		0.04			0.03		0.72	0.91	0.01	0.85	0.77	
Uniform Delay, d1		39.2			40.3		43.4	14.5	6.2	45.4	13.6	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1			0.1		28.0	10.6	0.0	166.4	3.2	
Delay (s)		39.4			40.4		71.3	25.1	6.2	211.9	16.8	
Level of Service		D			D		E	C	A	F	B	
Approach Delay (s)		39.4			40.4			26.9			19.3	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	91.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	88	59	1055	105	105	715
Future Volume (vph)	88	59	1055	105	105	715
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	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	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3476		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3476		1770	3539
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	90	60	1077	107	107	730
RTOR Reduction (vph)	0	0	6	0	0	0
Lane Group Flow (vph)	90	60	1178	0	107	730
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)	8.5	8.5	35.1		7.6	48.7
Effective Green, g (s)	8.5	8.5	35.1		7.6	48.7
Actuated g/C Ratio	0.12	0.12	0.50		0.11	0.70
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)	215	193	1750		192	2472
v/s Ratio Prot	c0.05		c0.34		c0.06	0.21
v/s Ratio Perm		0.04				
v/c Ratio	0.42	0.31	0.67		0.56	0.30
Uniform Delay, d1	28.3	27.9	13.0		29.5	4.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	0.9	1.0		3.5	0.1
Delay (s)	29.6	28.8	14.0		32.9	4.1
Level of Service	C	C	B		C	A
Approach Delay (s)	29.3		14.0			7.7
Approach LOS	C		B			A

Intersection Summary			
HCM 2000 Control Delay	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	69.7	Sum of lost time (s)	18.5
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	0	29	25	0	10	56	1067	23	0	741	10
Future Volume (vph)	7	0	29	25	0	10	56	1067	23	0	741	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	0.95			0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frt	1.00	0.85		1.00	0.85		1.00	1.00			1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1770	1560		1770	1583		1770	3524			3531	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (perm)	1770	1560		1770	1583		1770	3524			3531	
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)	8	0	32	28	0	11	62	1186	26	0	823	11
RTOR Reduction (vph)	0	30	0	0	10	0	0	1	0	0	1	0
Lane Group Flow (vph)	8	2	0	28	1	0	62	1211	0	0	833	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	4.5		1.7	5.8		4.5	39.4			29.9	
Effective Green, g (s)	0.4	4.5		1.7	5.8		4.5	39.4			29.9	
Actuated g/C Ratio	0.01	0.07		0.03	0.10		0.07	0.65			0.49	
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)	11	115		49	151		131	2291			1742	
v/s Ratio Prot	0.00	c0.00		c0.02	0.00		0.04	c0.34			0.24	
v/s Ratio Perm												
v/c Ratio	0.73	0.02		0.57	0.01		0.47	0.53			0.48	
Uniform Delay, d1	30.0	26.0		29.1	24.8		26.9	5.6			10.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	123.5	0.1		15.1	0.0		2.7	0.2			0.2	
Delay (s)	153.6	26.1		44.2	24.8		29.6	5.9			10.4	
Level of Service	F	C		D	C		C	A			B	
Approach Delay (s)		51.6			38.7			7.0			10.4	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	60.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

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	1052	2	2	777	5
Future Volume (vph)	17	0	51	0	0	0	43	1052	2	2	777	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	1052	2	2	777	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	1054	0	2	782	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	31.5		0.7	29.8	
Effective Green, g (s)	5.2		5.2				2.4	31.5		0.7	29.8	
Actuated g/C Ratio	0.10		0.10				0.05	0.61		0.01	0.58	
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)	179		158				82	2168		24	2049	
v/s Ratio Prot	c0.01						c0.02	c0.30		0.00	0.22	
v/s Ratio Perm			0.00									
v/c Ratio	0.09		0.03				0.52	0.49		0.08	0.38	
Uniform Delay, d1	21.0		20.8				23.9	5.5		25.0	5.8	
Progression Factor	1.00		1.00				1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2		0.1				5.9	0.2		1.5	0.1	
Delay (s)	21.2		20.9				29.9	5.7		26.5	5.9	
Level of Service	C		C				C	A		C	A	
Approach Delay (s)		21.0			0.0			6.6			6.0	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	51.4	Sum of lost time (s)	14.0
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	193	192	112	168	35	194	842	182	63	636	113
Future Volume (vph)	190	193	192	112	168	35	194	842	182	63	636	113
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	0.97		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	3252		1770	3439		1770	3539	1560	1770	3539	1556
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	3439		1770	3539	1560	1770	3539	1556
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)	198	201	200	117	175	36	202	877	190	66	662	118
RTOR Reduction (vph)	0	103	0	0	10	0	0	0	61	0	0	82
Lane Group Flow (vph)	198	298	0	117	201	0	202	877	129	66	663	36
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)	18.8	19.2		13.6	14.0		19.1	40.4	40.4	8.3	29.6	29.6
Effective Green, g (s)	18.8	19.2		13.6	14.0		19.1	40.4	40.4	8.3	29.6	29.6
Actuated g/C Ratio	0.19	0.19		0.14	0.14		0.19	0.40	0.40	0.08	0.30	0.30
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)	332	623		240	480		337	1428	629	146	1046	460
v/s Ratio Prot	c0.11	c0.09		0.07	0.06		c0.11	c0.25		0.04	0.19	
v/s Ratio Perm									0.08			0.02
v/c Ratio	0.60	0.48		0.49	0.42		0.60	0.61	0.20	0.45	0.63	0.08
Uniform Delay, d1	37.2	36.0		40.0	39.3		37.0	23.7	19.4	43.7	30.6	25.4
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	2.9	0.6		1.6	0.6		2.9	0.8	0.2	2.2	1.3	0.1
Delay (s)	40.1	36.6		41.6	39.9		39.9	24.5	19.6	46.0	31.8	25.5
Level of Service	D	D		D	D		D	C	B	D	C	C
Approach Delay (s)		37.7			40.5			26.2			32.0	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	31.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	100.1	Sum of lost time (s)	18.6
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

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	1392	25	61	1284	174
Future Volume (vph)	210	11	83	12	6	3	121	1392	25	61	1284	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	3527		1770	3467	
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	3527		1770	3467	
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	1450	26	64	1338	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	1475	0	64	1512	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)	18.5	18.5		7.0	7.0		11.8	64.6		6.1	58.9	
Effective Green, g (s)	18.5	18.5		7.0	7.0		11.8	64.6		6.1	58.9	
Actuated g/C Ratio	0.16	0.16		0.06	0.06		0.10	0.56		0.05	0.51	
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)	285	260		107	107		181	1984		94	1778	
v/s Ratio Prot	c0.12	0.02		c0.01	0.00		c0.07	0.42		0.04	c0.44	
v/s Ratio Perm												
v/c Ratio	0.77	0.10		0.12	0.06		0.70	0.74		0.68	0.85	
Uniform Delay, d1	46.1	41.0		51.0	50.8		49.8	18.9		53.4	24.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	11.8	0.2		0.5	0.2		11.0	1.5		18.4	4.1	
Delay (s)	57.9	41.2		51.5	51.0		60.8	20.4		71.8	28.3	
Level of Service	E	D		D	D		E	C		E	C	
Approach Delay (s)		52.7			51.3			23.6			30.0	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	29.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	114.8	Sum of lost time (s)	18.6
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	376	637	202	390	417	110	378	1015	259	141	940	243
Future Volume (vph)	376	637	202	390	417	110	378	1015	259	141	940	243
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	0.98	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	1536	3433	3413		3433	3539	1559	3433	3419	
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	1536	3433	3413		3433	3539	1559	3433	3419	
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)	404	685	217	419	448	118	406	1091	278	152	1011	261
RTOR Reduction (vph)	0	0	141	0	19	0	0	0	0	0	18	0
Lane Group Flow (vph)	404	685	76	419	547	0	406	1091	278	152	1254	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)	17.8	27.7	27.7	15.8	26.0		15.8	53.3	69.1	8.0	46.3	
Effective Green, g (s)	17.8	27.7	27.7	15.8	26.0		15.8	53.3	69.1	8.0	46.3	
Actuated g/C Ratio	0.14	0.22	0.22	0.13	0.21		0.13	0.43	0.55	0.06	0.37	
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)	490	786	341	435	712		435	1513	864	220	1270	
v/s Ratio Prot	0.12	c0.19		c0.12	0.16		c0.12	0.31	0.04	0.04	c0.37	
v/s Ratio Perm			0.05						0.14			
v/c Ratio	0.82	0.87	0.22	0.96	0.77		0.93	0.72	0.32	0.69	0.99	
Uniform Delay, d1	51.9	46.7	39.6	54.1	46.5		53.9	29.5	15.0	57.1	38.9	
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	10.8	10.4	0.3	33.5	5.0		27.1	1.7	0.2	9.0	22.0	
Delay (s)	62.7	57.2	40.0	87.6	51.5		80.9	31.2	15.3	66.1	60.8	
Level of Service	E	E	D	F	D		F	C	B	E	E	
Approach Delay (s)		56.0			66.8			40.1			61.4	
Approach LOS		E			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	54.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	124.6	Sum of lost time (s)	19.8
Intersection Capacity Utilization	90.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

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	1326	544	0	1197	335
Future Volume (vph)	0	0	0	488	0	326	0	1326	544	0	1197	335
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	1381	567	0	1247	349
RTOR Reduction (vph)	0	0	0	0	0	17	0	0	0	0	0	108
Lane Group Flow (vph)	0	0	0	508	0	323	0	1381	567	0	1247	241
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)				27.1		27.1		83.0	110.1		83.0	83.0
Effective Green, g (s)				27.1		27.1		83.0	110.1		83.0	83.0
Actuated g/C Ratio				0.23		0.23		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)				775		629		3517	1434		3517	1070
v/s Ratio Prot				c0.15		0.12		0.27	c0.09		0.25	
v/s Ratio Perm									0.29			0.16
v/c Ratio				0.66		0.51		0.39	0.40		0.35	0.23
Uniform Delay, d1				42.2		40.7		7.8	0.6		7.6	6.8
Progression Factor				1.00		1.00		0.61	3.64		1.00	1.00
Incremental Delay, d2				2.0		0.7		0.3	0.1		0.3	0.5
Delay (s)				44.2		41.4		5.0	2.5		7.8	7.2
Level of Service				D		D		A	A		A	A
Approach Delay (s)		0.0			43.1			4.3			7.7	
Approach LOS		A			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	13.0	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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	32	274	0	0	0	0	1660	627	322	1363	0
Future Volume (vph)	210	32	274	0	0	0	0	1660	627	322	1363	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	0.91	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	1506	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	1506	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)	219	33	285	0	0	0	0	1729	653	335	1420	0
RTOR Reduction (vph)	0	39	48	0	0	0	0	0	254	0	0	0
Lane Group Flow (vph)	186	141	123	0	0	0	0	1729	399	335	1420	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)	21.5	21.5	21.5					68.0	68.0	16.4	88.6	
Effective Green, g (s)	21.5	21.5	21.5					68.0	68.0	16.4	88.6	
Actuated g/C Ratio	0.18	0.18	0.18					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)	301	269	265					2881	884	469	3754	
v/s Ratio Prot	c0.11	0.09						c0.34		c0.10	0.28	
v/s Ratio Perm			0.08						0.26			
v/c Ratio	0.62	0.53	0.46					0.60	0.45	0.71	0.38	
Uniform Delay, d1	45.5	44.6	44.1					17.1	15.1	49.6	5.7	
Progression Factor	1.00	1.00	1.00					1.00	1.00	1.10	0.88	
Incremental Delay, d2	3.7	1.9	1.3					0.9	1.7	4.9	0.3	
Delay (s)	49.2	46.5	45.4					18.0	16.8	59.6	5.3	
Level of Service	D	D	D					B	B	E	A	
Approach Delay (s)		47.1			0.0			17.7			15.7	
Approach LOS		D			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	507	251	251	441	358	577
Future Volume (vph)	507	251	251	441	358	577
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	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)	528	261	261	459	373	627
RTOR Reduction (vph)	0	45	0	0	0	129
Lane Group Flow (vph)	528	216	261	459	373	498
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				8
Actuated Green, G (s)	38.9	60.9	14.8	24.5	22.0	36.8
Effective Green, g (s)	38.9	60.9	14.8	24.5	22.0	36.8
Actuated g/C Ratio	0.43	0.68	0.16	0.27	0.24	0.41
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)	805	1055	291	507	432	647
v/s Ratio Prot	c0.28	0.05	c0.15	c0.25	c0.21	0.13
v/s Ratio Perm		0.09				0.19
v/c Ratio	0.66	0.20	0.90	0.91	0.86	0.77
Uniform Delay, d1	20.2	5.5	36.9	31.6	32.6	22.9
Progression Factor	1.00	1.00	0.95	0.86	1.00	1.00
Incremental Delay, d2	1.9	0.1	3.7	2.4	16.2	5.5
Delay (s)	22.2	5.6	38.7	29.5	48.7	28.4
Level of Service	C	A	D	C	D	C
Approach Delay (s)	16.7			32.9	36.0	
Approach LOS	B			C	D	

Intersection Summary			
HCM 2000 Control Delay	29.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

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	1061	0	0	539	563
Future Volume (vph)	0	0	0	618	6	302	753	1061	0	0	539	563
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	1083	0	0	550	574
RTOR Reduction (vph)	0	0	0	0	0	172	0	0	0	0	0	308
Lane Group Flow (vph)	0	0	0	315	322	136	768	1083	0	0	550	266
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)				25.4	25.4	25.4	29.3	75.0			41.5	41.5
Effective Green, g (s)				25.4	25.4	25.4	29.3	75.0			41.5	41.5
Actuated g/C Ratio				0.23	0.23	0.23	0.27	0.68			0.38	0.38
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)				388	389	635	914	3467			1918	581
v/s Ratio Prot				0.19	c0.19		c0.22	0.21			0.11	
v/s Ratio Perm						0.05						c0.17
v/c Ratio				0.81	0.83	0.21	0.84	0.31			0.29	0.46
Uniform Delay, d1				40.0	40.2	34.2	38.1	7.1			23.9	25.8
Progression Factor				1.00	1.00	1.00	1.55	0.68			1.00	1.00
Incremental Delay, d2				12.2	13.5	0.2	6.1	0.2			0.4	2.6
Delay (s)				52.2	53.7	34.4	65.0	5.0			24.3	28.4
Level of Service				D	D	C	E	A			C	C
Approach Delay (s)		0.0			46.9			29.9			26.4	
Approach LOS		A			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	33.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	86.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	522	3	407	0	0	0	0	1342	548	148	986	0
Future Volume (vph)	522	3	407	0	0	0	0	1342	548	148	986	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	0.95	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	0.97	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1681	1554	1504					5085	1557	3433	5085	
Flt Permitted	0.95	0.97	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1681	1554	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)	538	3	420	0	0	0	0	1384	565	153	1016	0
RTOR Reduction (vph)	0	20	83	0	0	0	0	0	175	0	0	0
Lane Group Flow (vph)	334	305	219	0	0	0	0	1384	390	153	1016	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)	28.9	28.9	28.9					57.6	57.6	9.7	71.5	
Effective Green, g (s)	28.9	28.9	28.9					57.6	57.6	9.7	71.5	
Actuated g/C Ratio	0.26	0.26	0.26					0.52	0.52	0.09	0.65	
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)	441	408	395					2662	815	302	3305	
v/s Ratio Prot	c0.20	0.20						c0.27		c0.04	0.20	
v/s Ratio Perm			0.15						0.25			
v/c Ratio	0.76	0.75	0.55					0.52	0.48	0.51	0.31	
Uniform Delay, d1	37.3	37.2	35.0					17.1	16.7	47.9	8.4	
Progression Factor	1.00	1.00	1.00					1.00	1.00	1.56	2.06	
Incremental Delay, d2	7.3	7.3	1.7					0.7	2.0	1.3	0.2	
Delay (s)	44.6	44.5	36.7					17.9	18.7	75.7	17.5	
Level of Service	D	D	D					B	B	E	B	
Approach Delay (s)		42.1			0.0			18.1			25.2	
Approach LOS		D			A			B			C	

Intersection Summary			
HCM 2000 Control Delay	25.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	86.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	663	421	467	209	123	225
Future Volume (vph)	663	421	467	209	123	225
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	0.91	
Flt Protected	0.95	1.00	1.00	1.00	0.98	
Satd. Flow (prot)	1416	1863	1863	1184	1295	
Flt Permitted	0.95	1.00	1.00	1.00	0.98	
Satd. Flow (perm)	1416	1863	1863	1184	1295	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	691	439	486	218	128	234
RTOR Reduction (vph)	0	0	0	68	0	0
Lane Group Flow (vph)	691	439	486	150	362	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	38.9	24.5	24.5	22.6	
Effective Green, g (s)	29.2	38.9	24.5	24.5	22.6	
Actuated g/C Ratio	0.32	0.43	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)	459	805	507	322	325	
v/s Ratio Prot	c0.49	0.24	c0.26		c0.28	
v/s Ratio Perm				0.13		
v/c Ratio	1.51	0.55	0.96	0.46	1.11	
Uniform Delay, d1	30.4	19.0	32.3	27.3	33.7	
Progression Factor	1.21	0.81	1.00	1.00	1.00	
Incremental Delay, d2	235.4	0.5	29.4	1.1	84.2	
Delay (s)	272.0	15.8	61.6	28.3	117.9	
Level of Service	F	B	E	C	F	
Approach Delay (s)		172.5	51.3		117.9	
Approach LOS		F	D		F	

Intersection Summary			
HCM 2000 Control Delay	124.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	108.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	205	492	226	410	363	93
Future Volume (vph)	205	492	226	410	363	93
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	223	535	246	446	395	101

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	758	692	496
Volume Left (vph)	223	0	395
Volume Right (vph)	0	446	101
Hadj (s)	0.09	-0.35	0.07
Departure Headway (s)	7.0	6.6	7.1
Degree Utilization, x	1.48	1.27	0.97
Capacity (veh/h)	515	555	507
Control Delay (s)	247.3	155.9	59.7
Approach Delay (s)	247.3	155.9	59.7
Approach LOS	F	F	F

Intersection Summary			
Delay	167.0		
Level of Service	F		
Intersection Capacity Utilization	110.1%	ICU Level of Service	H
Analysis Period (min)	15		

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	1056	117	0	917	112
Future Volume (vph)	136	0	309	889	332	34	350	1056	117	0	917	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	1112	123	0	965	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	1112	69	0	965	44
Confl. Peds. (#/hr)												12
Confl. Bikes (#/hr)									2			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	c0.31			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	0.56	0.08		0.51	0.08
Uniform Delay, d1	51.0		36.4	35.7	45.2		49.3	17.1	12.2		29.2	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	1.2	0.2		1.0	0.3
Delay (s)	60.9		36.7	39.5	46.9		55.5	18.2	12.4		30.2	24.6
Level of Service	E		D	D	D		E	B	B		C	C
Approach Delay (s)		44.1			41.7			26.3			29.6	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	33.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	267	0	78	0	0	0	0	1303	1083	131	1901	0
Future Volume (vph)	267	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)	278	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)	278	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)	14.4		14.4					78.4	78.4	10.1	93.7	
Effective Green, g (s)	14.4		14.4					78.4	78.4	10.1	93.7	
Actuated g/C Ratio	0.12		0.12					0.65	0.65	0.08	0.78	
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)	411		189					3322	1777	288	3970	
v/s Ratio Prot	c0.08							0.27		0.04	c0.39	
v/s Ratio Perm			0.01						c0.41			
v/c Ratio	0.68		0.07					0.41	0.63	0.47	0.50	
Uniform Delay, d1	50.6		46.9					9.8	12.3	52.4	4.7	
Progression Factor	1.00		1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.4		0.2					0.4	1.7	1.2	0.5	
Delay (s)	54.9		47.0					10.2	14.1	53.6	5.2	
Level of Service	D		D					B	B	D	A	
Approach Delay (s)		53.2			0.0			12.0			8.3	
Approach LOS		D			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	13.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.1
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	794	60	327	632	95	47	244	556	38	176	39
Future Volume (vph)	95	794	60	327	632	95	47	244	556	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	
Frpb, 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	359	695	104	52	268	611	42	193	43
RTOR Reduction (vph)	0	0	45	0	0	64	0	0	220	0	18	0
Lane Group Flow (vph)	104	873	21	359	695	40	52	268	391	42	218	0
Confl. 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	31.3	31.3	14.8	37.4	37.4	6.2	29.3	29.3	2.7	25.8	
Effective Green, g (s)	8.7	31.3	31.3	14.8	37.4	37.4	6.2	29.3	29.3	2.7	25.8	
Actuated g/C Ratio	0.09	0.32	0.32	0.15	0.39	0.39	0.06	0.30	0.30	0.03	0.27	
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)	159	1145	504	525	1368	596	113	1072	479	49	916	
v/s Ratio Prot	0.06	c0.25		c0.10	0.20		0.03	0.08	c0.25	c0.02	0.06	
v/s Ratio Perm			0.01			0.03						
v/c Ratio	0.65	0.76	0.04	0.68	0.51	0.07	0.46	0.25	0.82	0.86	0.24	
Uniform Delay, d1	42.5	29.4	22.4	38.7	22.6	18.7	43.6	25.4	31.2	46.8	27.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.3	3.1	0.0	3.7	0.3	0.0	3.0	0.1	10.3	76.5	0.1	
Delay (s)	51.8	32.4	22.5	42.4	22.9	18.7	46.6	25.5	41.5	123.3	27.9	
Level of Service	D	C	C	D	C	B	D	C	D	F	C	
Approach Delay (s)		33.7			28.6			37.2			42.3	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	33.6	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.77			
Actuated Cycle Length (s)	96.7	Sum of lost time (s)	18.6	
Intersection Capacity Utilization	71.9%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	47	62	289	172	1
Future Volume (Veh/h)	2	47	62	289	172	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	52	69	321	191	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	650	192	192			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	650	192	192			
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	94	95			
cM capacity (veh/h)	412	850	1381			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	54	69	321	192
Volume Left	2	69	0	0
Volume Right	52	0	0	1
cSH	818	1381	1700	1700
Volume to Capacity	0.07	0.05	0.19	0.11
Queue Length 95th (ft)	5	4	0	0
Control Delay (s)	9.7	7.7	0.0	0.0
Lane LOS	A	A		
Approach Delay (s)	9.7	1.4		0.0
Approach LOS	A			

Intersection Summary				
Average Delay	1.7			
Intersection Capacity Utilization	25.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	328	93	114	228	79	108	393	126	101	275	58
Future Volume (vph)	137	328	93	114	228	79	108	393	126	101	275	58
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)	144	345	98	120	240	83	114	414	133	106	289	61
RTOR Reduction (vph)	0	0	77	0	0	66	0	0	101	0	0	47
Lane Group Flow (vph)	144	345	21	120	240	17	114	414	32	106	289	14
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)	8.1	12.5	12.5	7.6	12.0	12.0	7.5	14.3	14.3	7.2	14.0	14.0
Effective Green, g (s)	8.1	12.5	12.5	7.6	12.0	12.0	7.5	14.3	14.3	7.2	14.0	14.0
Actuated g/C Ratio	0.14	0.21	0.21	0.13	0.20	0.20	0.13	0.24	0.24	0.12	0.23	0.23
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)	240	742	332	225	712	318	222	849	379	213	831	371
v/s Ratio Prot	c0.08	c0.10		0.07	0.07		c0.06	c0.12		0.06	0.08	
v/s Ratio Perm			0.01			0.01			0.02			0.01
v/c Ratio	0.60	0.46	0.06	0.53	0.34	0.05	0.51	0.49	0.08	0.50	0.35	0.04
Uniform Delay, d1	24.2	20.6	18.9	24.3	20.4	19.2	24.3	19.5	17.6	24.5	19.0	17.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.0	0.5	0.1	2.4	0.3	0.1	2.0	0.4	0.1	1.8	0.3	0.0
Delay (s)	28.2	21.1	18.9	26.8	20.7	19.3	26.3	19.9	17.7	26.3	19.2	17.6
Level of Service	C	C	B	C	C	B	C	B	B	C	B	B
Approach Delay (s)		22.5			22.1			20.6			20.7	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	21.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	59.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	486	295	11	263	234	296	10	1395	289	440	632	352
Future Volume (vph)	486	295	11	263	234	296	10	1395	289	440	632	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	4954		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	4954		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	322	11	1516	314	478	687	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	322	11	1810	0	478	687	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	146.7	24.8	19.8	146.7	1.5	58.2		21.1	77.8	146.7
Effective Green, g (s)	26.3	21.3	146.7	24.8	19.8	146.7	1.5	58.2		21.1	77.8	146.7
Actuated g/C Ratio	0.18	0.15	1.00	0.17	0.13	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)	615	738	1583	299	251	1583	18	1965		493	2696	1583
v/s Ratio Prot	0.15	0.06		c0.16	c0.14		0.01	c0.37		c0.14	0.14	
v/s Ratio Perm			0.01			0.20						c0.24
v/c Ratio	0.86	0.43	0.01	0.96	1.01	0.20	0.61	0.92		0.97	0.25	0.24
Uniform Delay, d1	58.4	57.2	0.0	60.4	63.4	0.0	72.3	42.1		62.5	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	11.0	0.7	0.0	39.8	59.9	0.3	36.2	8.6		32.2	0.2	0.4
Delay (s)	69.4	57.9	0.0	100.2	123.3	0.3	108.5	50.7		94.7	18.9	0.4
Level of Service	E	E	A	F	F	A	F	D		F	B	A
Approach Delay (s)		64.2			69.7			51.0			37.7	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	52.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	146.7	Sum of lost time (s)	21.3
Intersection Capacity Utilization	89.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX F

PEAK HOUR ANALYSIS WORKSHEETS
– EXISTING + PROJECT + CUMULATIVE PROJECTS - **EXISTING NETWORK**

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	150	185	318	111	285	480
Future Volume (vph)	150	185	318	111	285	480
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	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	0.92	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	1583	1770	1863	1691	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1770	1583	1770	1863	1691	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	165	203	349	122	313	527
RTOR Reduction (vph)	0	175	0	0	51	0
Lane Group Flow (vph)	165	28	349	122	789	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)	14.7	14.7	24.6	83.7	54.6	
Effective Green, g (s)	14.7	14.7	24.6	83.7	54.6	
Actuated g/C Ratio	0.14	0.14	0.23	0.78	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)	242	216	405	1451	859	
v/s Ratio Prot	c0.09		c0.20	0.07	c0.47	
v/s Ratio Perm		0.02				
v/c Ratio	0.68	0.13	0.86	0.08	0.92	
Uniform Delay, d1	44.1	40.7	39.8	2.8	24.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	7.7	0.3	16.9	0.0	14.5	
Delay (s)	51.8	41.0	56.7	2.8	38.8	
Level of Service	D	D	E	A	D	
Approach Delay (s)	45.8			42.7	38.8	
Approach LOS	D			D	D	

Intersection Summary			
HCM 2000 Control Delay	41.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	107.4	Sum of lost time (s)	13.5
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	171	280	149	104	190	280
Future Volume (vph)	171	280	149	104	190	280
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	0.94		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	1744		1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	1744		1770	1863
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	197	322	171	120	218	322
RTOR Reduction (vph)	0	247	28	0	0	0
Lane Group Flow (vph)	197	75	263	0	218	322
Confl. Bikes (#/hr)				1		
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	12.1	12.1	14.1		12.5	31.1
Effective Green, g (s)	12.1	12.1	14.1		12.5	31.1
Actuated g/C Ratio	0.23	0.23	0.27		0.24	0.60
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)	410	366	471		423	1109
v/s Ratio Prot	c0.11		c0.15		c0.12	0.17
v/s Ratio Perm		0.05				
v/c Ratio	0.48	0.20	0.56		0.52	0.29
Uniform Delay, d1	17.3	16.2	16.4		17.2	5.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.9	0.3	1.4		1.1	0.1
Delay (s)	18.2	16.4	17.8		18.3	5.3
Level of Service	B	B	B		B	A
Approach Delay (s)	17.1		17.8			10.5
Approach LOS	B		B			B

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	52.2	Sum of lost time (s)	13.5
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	0	18	20	0	30	18	173	70	60	340	5
Future Volume (Veh/h)	5	0	18	20	0	30	18	173	70	60	340	5
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)	6	0	21	24	0	36	21	206	83	71	405	6
Pedestrians		1			2						1	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		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	800	884	409	818	804	209	412			291		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	800	884	409	818	804	209	412			291		
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 %	98	100	97	91	100	96	98			94		
cM capacity (veh/h)	273	263	642	268	293	829	1146			1269		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	27	60	21	206	83	71	411
Volume Left	6	24	21	0	0	71	0
Volume Right	21	36	0	0	83	0	6
cSH	493	670	1146	1700	1700	1269	1700
Volume to Capacity	0.05	0.09	0.02	0.12	0.05	0.06	0.24
Queue Length 95th (ft)	4	7	1	0	0	4	0
Control Delay (s)	12.7	13.6	8.2	0.0	0.0	8.0	0.0
Lane LOS	B	B	A			A	
Approach Delay (s)	12.7	13.6	0.6			1.2	
Approach LOS	B	B					

Intersection Summary				
Average Delay	2.2			
Intersection Capacity Utilization	37.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	182	78	210	381	10	96	60	60	5	190	258
Future Volume (vph)	146	182	78	210	381	10	96	60	60	5	190	258
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	3352		1770	3524			1746			1705	
Flt Permitted	0.95	1.00		0.95	1.00			0.57			1.00	
Satd. Flow (perm)	1770	3352		1770	3524			1018			1701	
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)	159	198	85	228	414	11	104	65	65	5	207	280
RTOR Reduction (vph)	0	48	0	0	2	0	0	16	0	0	55	0
Lane Group Flow (vph)	159	235	0	228	423	0	0	218	0	0	437	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)	11.2	11.7		14.1	14.6			22.3			22.3	
Effective Green, g (s)	11.2	11.7		14.1	14.6			22.3			22.3	
Actuated g/C Ratio	0.18	0.19		0.23	0.24			0.36			0.36	
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)	321	636		405	835			368			615	
v/s Ratio Prot	0.09	0.07		c0.13	c0.12							
v/s Ratio Perm								0.21			c0.26	
v/c Ratio	0.50	0.37		0.56	0.51			0.59			0.71	
Uniform Delay, d1	22.7	21.7		21.0	20.4			16.0			16.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.2	0.4		1.8	0.5			2.6			3.9	
Delay (s)	23.9	22.1		22.8	20.9			18.5			20.7	
Level of Service	C	C		C	C			B			C	
Approach Delay (s)		22.7			21.5			18.5			20.7	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	21.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	61.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	365	296	0	0	734	50	301	5	170	0	0	0
Future Volume (vph)	365	296	0	0	734	50	301	5	170	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	4.6			
Lane Util. Factor	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	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)	410	333	0	0	825	56	338	6	191	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	30	0	0	160	0	0	0
Lane Group Flow (vph)	410	333	0	0	825	26	0	344	31	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)	23.8	73.7			45.7	45.7		16.4	16.4			
Effective Green, g (s)	23.8	73.7			45.7	45.7		16.4	16.4			
Actuated g/C Ratio	0.24	0.74			0.46	0.46		0.16	0.16			
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)	421	1373			851	723		291	259			
v/s Ratio Prot	c0.23	0.18			c0.44			c0.19				
v/s Ratio Perm						0.02			0.02			
v/c Ratio	0.97	0.24			0.97	0.04		1.18	0.12			
Uniform Delay, d1	37.8	4.2			26.5	15.0		41.8	35.7			
Progression Factor	0.95	2.65			1.00	1.00		1.00	1.00			
Incremental Delay, d2	16.6	0.1			24.3	0.1		111.5	0.1			
Delay (s)	52.5	11.3			50.7	15.1		153.3	35.7			
Level of Service	D	B			D	B		F	D			
Approach Delay (s)		34.0			48.5			111.3			0.0	
Approach LOS		C			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	59.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	661	658	330	755	0	0	0	0	30	30	911
Future Volume (vph)	0	661	658	330	755	0	0	0	0	30	30	911
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						0.98	1.00
Satd. Flow (prot)		1863	1583	1770	1863						1817	2787
Flt Permitted		1.00	1.00	0.95	1.00						0.98	1.00
Satd. Flow (perm)		1863	1583	1770	1863						1817	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	718	715	359	821	0	0	0	0	33	33	990
RTOR Reduction (vph)	0	0	335	0	0	0	0	0	0	0	0	283
Lane Group Flow (vph)	0	718	380	359	821	0	0	0	0	0	66	707
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		37.7	37.7	23.8	65.7						24.4	24.4
Effective Green, g (s)		37.7	37.7	23.8	65.7						24.4	24.4
Actuated g/C Ratio		0.38	0.38	0.24	0.66						0.24	0.24
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)		702	596	421	1223						443	680
v/s Ratio Prot		c0.39		c0.20	0.44						0.04	
v/s Ratio Perm			0.24									c0.25
v/c Ratio		1.02	0.64	0.85	0.67						0.15	1.04
Uniform Delay, d1		31.1	25.6	36.4	10.5						29.7	37.8
Progression Factor		1.00	1.00	1.17	1.21						1.00	1.00
Incremental Delay, d2		39.9	5.2	1.6	0.3						0.1	45.4
Delay (s)		71.0	30.7	44.1	13.0						29.7	83.2
Level of Service		E	C	D	B						C	F
Approach Delay (s)		50.9			22.4			0.0			79.8	
Approach LOS		D			C			A			E	

Intersection Summary			
HCM 2000 Control Delay	50.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	581	30	20	1253	383	20	18	30	668	44	180
Future Volume (vph)	151	581	30	20	1253	383	20	18	30	668	44	180
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			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	0.99		1.00	0.96			0.94			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.96	1.00
Satd. Flow (prot)	1770	3509		1770	3398			1727			1779	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.99			0.96	1.00
Satd. Flow (perm)	1770	3509		1770	3398			1727			1779	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)	168	646	33	22	1392	426	22	20	33	742	49	200
RTOR Reduction (vph)	0	3	0	0	26	0	0	30	0	0	0	91
Lane Group Flow (vph)	168	676	0	22	1792	0	0	45	0	0	791	109
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)	4.3	46.4		1.5	43.6			7.7			19.2	19.2
Effective Green, g (s)	4.3	46.4		1.5	43.6			7.7			19.2	19.2
Actuated g/C Ratio	0.05	0.50		0.02	0.47			0.08			0.21	0.21
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)	82	1754		28	1596			143			368	327
v/s Ratio Prot	c0.09	c0.19		0.01	c0.53			c0.03			c0.44	
v/s Ratio Perm												0.07
v/c Ratio	2.05	0.39		0.79	1.12			0.31			2.15	0.33
Uniform Delay, d1	44.2	14.4		45.5	24.6			40.1			36.8	31.3
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	511.5	0.1		82.7	64.2			1.3			526.2	2.7
Delay (s)	555.8	14.5		128.2	88.8			41.3			563.0	34.1
Level of Service	F	B		F	F			D			F	C
Approach Delay (s)		121.9			89.2			41.3			456.3	
Approach LOS		F			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	192.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.34		
Actuated Cycle Length (s)	92.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	112.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	651	15	10	1365	5	5
Future Volume (Veh/h)	651	15	10	1365	5	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	708	16	11	1484	5	5
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			724		2222	716
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			724		2222	716
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		89	99
cM capacity (veh/h)			879		47	430

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	724	1495	10
Volume Left	0	11	5
Volume Right	16	0	5
cSH	1700	879	85
Volume to Capacity	0.43	0.01	0.12
Queue Length 95th (ft)	0	1	10
Control Delay (s)	0.0	1.0	53.0
Lane LOS		A	F
Approach Delay (s)	0.0	1.0	53.0
Approach LOS			F

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	77	581	1340	23	101	256
Future Volume (Veh/h)	77	581	1340	23	101	256
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)	80	605	1396	24	105	267
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	1420				2173	1408
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1420				2173	1408
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	83				0	0
cM capacity (veh/h)	479				43	170

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	80	605	1420	372
Volume Left	80	0	0	105
Volume Right	0	0	24	267
cSH	479	1700	1700	92
Volume to Capacity	0.17	0.36	0.84	4.03
Queue Length 95th (ft)	15	0	0	Err
Control Delay (s)	14.0	0.0	0.0	Err
Lane LOS	B			F
Approach Delay (s)	1.6		0.0	Err
Approach LOS				F

Intersection Summary			
Average Delay	1502.1		
Intersection Capacity Utilization	99.9%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	40	20	663	190	80	1696
Future Volume (Veh/h)	40	20	663	190	80	1696
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)	45	22	745	213	90	1906
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	0.80	0.80			0.80	
vC, conflicting volume	2938	852			958	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3290	693			825	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	94			86	
cM capacity (veh/h)	7	356			647	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	67	958	1996
Volume Left	45	0	90
Volume Right	22	213	0
cSH	10	1700	647
Volume to Capacity	6.76	0.56	0.14
Queue Length 95th (ft)	Err	0	12
Control Delay (s)	Err	0.0	0.5
Lane LOS	F		A
Approach Delay (s)	Err	0.0	0.5
Approach LOS	F		

Intersection Summary			
Average Delay	222.1		
Intersection Capacity Utilization	153.5%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	25	5	120	14	5	120
Future Volume (Veh/h)	25	5	120	14	5	120
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)	30	6	145	17	6	145
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	310	154			162	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	310	154			162	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	99			100	
cM capacity (veh/h)	679	892			1417	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	36	162	151
Volume Left	30	0	6
Volume Right	6	17	0
cSH	707	1700	1417
Volume to Capacity	0.05	0.10	0.00
Queue Length 95th (ft)	4	0	0
Control Delay (s)	10.4	0.0	0.3
Lane LOS	B		A
Approach Delay (s)	10.4	0.0	0.3
Approach LOS	B		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	20.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	51	119	112	619	1646	47
Future Volume (vph)	51	119	112	619	1646	47
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
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	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)	56	131	123	884	2351	52
RTOR Reduction (vph)	0	71	0	0	0	3
Lane Group Flow (vph)	56	60	123	884	2351	49
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	13.4	13.4	7.0	118.1	107.1	107.1
Effective Green, g (s)	13.4	13.4	7.0	118.1	107.1	107.1
Actuated g/C Ratio	0.09	0.09	0.05	0.83	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)	167	149	87	1552	1408	1196
v/s Ratio Prot	0.03		c0.07	0.47	c1.26	
v/s Ratio Perm		c0.04				0.03
v/c Ratio	0.34	0.41	1.41	0.57	1.67	0.04
Uniform Delay, d1	60.0	60.4	67.3	3.7	17.3	4.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	1.8	240.9	0.5	304.5	0.0
Delay (s)	61.2	62.2	308.2	4.2	321.8	4.4
Level of Service	E	E	F	A	F	A
Approach Delay (s)	61.9			41.4	315.0	
Approach LOS	E			D	F	

Intersection Summary			
HCM 2000 Control Delay	225.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.52		
Actuated Cycle Length (s)	141.7	Sum of lost time (s)	14.2
Intersection Capacity Utilization	128.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	0	220	5	5	0	140	341	5	5	1093	592
Future Volume (vph)	380	0	220	5	5	0	140	341	5	5	1093	592
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		5.0	5.5		5.0	5.5	5.5
Lane Util. Factor		1.00	1.00		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	1.00	0.98
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		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1770	1546		1817		1770	1859		1770	1863	1547
Flt Permitted		0.75	1.00		0.87		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1399	1546		1624		1770	1859		1770	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)	396	0	229	5	5	0	146	355	5	5	1139	617
RTOR Reduction (vph)	0	0	111	0	0	0	0	0	0	0	0	91
Lane Group Flow (vph)	0	396	118	0	10	0	146	360	0	5	1139	526
Confl. Peds. (#/hr)			2									1
Confl. Bikes (#/hr)												3
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								6
Actuated Green, G (s)		26.0	26.0		26.0		7.0	52.5		1.0	46.5	46.5
Effective Green, g (s)		26.0	26.0		26.0		7.0	52.5		1.0	46.5	46.5
Actuated g/C Ratio		0.28	0.28		0.28		0.07	0.56		0.01	0.49	0.49
Clearance Time (s)		4.0	4.0		4.0		5.0	5.5		5.0	5.5	5.5
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		386	427		449		131	1038		18	921	765
v/s Ratio Prot							c0.08	0.19		0.00	c0.61	
v/s Ratio Perm		c0.28	0.08		0.01							0.34
v/c Ratio		1.03	0.28		0.02		1.11	0.35		0.28	1.24	0.69
Uniform Delay, d1		34.0	26.6		24.7		43.5	11.4		46.1	23.8	18.2
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		52.6	0.4		0.0		112.7	0.2		8.3	115.9	2.6
Delay (s)		86.6	27.0		24.8		156.2	11.6		54.4	139.6	20.8
Level of Service		F	C		C		F	B		D	F	C
Approach Delay (s)		64.8			24.8			53.3			97.8	
Approach LOS		E			C			D			F	

Intersection Summary			
HCM 2000 Control Delay	82.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	94.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	105.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	10	45	202	15	39	27	412	200	72	1014	12
Future Volume (vph)	18	10	45	202	15	39	27	412	200	72	1014	12
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		0.92			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)		1665			1755		1770	1863	1547	1770	1859	
Flt Permitted		0.99			0.96		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1665			1755		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)	19	10	47	210	16	41	28	429	208	75	1056	12
RTOR Reduction (vph)	0	44	0	0	5	0	0	0	103	0	0	0
Lane Group Flow (vph)	0	32	0	0	262	0	28	429	105	75	1069	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)		8.6			21.0		2.7	59.2	59.2	8.1	64.6	
Effective Green, g (s)		8.6			21.0		2.7	59.2	59.2	8.1	64.6	
Actuated g/C Ratio		0.07			0.18		0.02	0.51	0.51	0.07	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)		122			315		40	943	783	122	1027	
v/s Ratio Prot		c0.02			c0.15		0.02	0.23		c0.04	c0.57	
v/s Ratio Perm									0.07			
v/c Ratio		0.27			0.83		0.70	0.45	0.13	0.61	1.04	
Uniform Delay, d1		51.2			46.2		56.7	18.5	15.3	52.9	26.2	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.2			16.8		42.0	0.3	0.1	8.9	39.2	
Delay (s)		52.3			63.1		98.7	18.9	15.4	61.8	65.3	
Level of Service		D			E		F	B	B	E	E	
Approach Delay (s)		52.3			63.1			21.1			65.1	
Approach LOS		D			E			C			E	

Intersection Summary			
HCM 2000 Control Delay	50.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	116.9	Sum of lost time (s)	20.0
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	200	224	619	66	69	1189
Future Volume (vph)	200	224	619	66	69	1189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	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	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1563	3472		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1563	3472		1770	3539
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	220	246	680	73	76	1307
RTOR Reduction (vph)	0	0	8	0	0	0
Lane Group Flow (vph)	220	246	745	0	76	1307
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)	16.2	16.2	23.0		6.9	35.9
Effective Green, g (s)	16.2	16.2	23.0		6.9	35.9
Actuated g/C Ratio	0.25	0.25	0.36		0.11	0.56
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)	443	391	1236		189	1966
v/s Ratio Prot	0.12		0.21		0.04	c0.37
v/s Ratio Perm		c0.16				
v/c Ratio	0.50	0.63	0.60		0.40	0.66
Uniform Delay, d1	20.7	21.5	17.1		26.9	10.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.9	3.2	0.8		1.4	0.9
Delay (s)	21.6	24.7	17.9		28.3	11.0
Level of Service	C	C	B		C	B
Approach Delay (s)	23.2		17.9			11.9
Approach LOS	C		B			B

Intersection Summary			
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	64.6	Sum of lost time (s)	18.5
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	0	65	5	0	5	38	673	20	10	1447	17
Future Volume (vph)	27	0	65	5	0	5	38	673	20	10	1447	17
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	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	1583		1770	1583		1770	3522		1770	3533	
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	3522		1770	3533	
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)	30	0	73	6	0	6	43	756	22	11	1626	19
RTOR Reduction (vph)	0	66	0	0	6	0	0	1	0	0	1	0
Lane Group Flow (vph)	30	7	0	6	0	0	43	777	0	11	1644	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)	1.8	7.4		0.5	6.1		2.4	49.4		0.5	47.5	
Effective Green, g (s)	1.8	7.4		0.5	6.1		2.4	49.4		0.5	47.5	
Actuated g/C Ratio	0.02	0.10		0.01	0.08		0.03	0.64		0.01	0.61	
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)	41	151		11	124		54	2250		11	2170	
v/s Ratio Prot	c0.02	c0.00		0.00	0.00		c0.02	0.22		0.01	c0.47	
v/s Ratio Perm												
v/c Ratio	0.73	0.05		0.55	0.00		0.80	0.35		1.00	0.76	
Uniform Delay, d1	37.5	31.7		38.3	32.8		37.2	6.5		38.4	10.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	49.4	0.1		45.6	0.0		54.4	0.1		271.4	1.6	
Delay (s)	86.9	31.9		83.9	32.8		91.7	6.6		309.8	12.3	
Level of Service	F	C		F	C		F	A		F	B	
Approach Delay (s)		47.9			58.4			11.0			14.3	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	77.3	Sum of lost time (s)	19.5
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	5	45	0	0	0	50	716	5	5	1467	65
Future Volume (vph)	10	5	45	0	0	0	50	716	5	5	1467	65
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	4.0	
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	0.87					1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00					0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1589					1770	3534		1770	3513	
Flt Permitted	0.95	1.00					0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1589					1770	3534		1770	3513	
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	6	51	0	0	0	56	804	6	6	1648	73
RTOR Reduction (vph)	0	47	0	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	11	10	0	0	0	0	56	810	0	6	1719	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)	5.7	5.7					3.6	50.8		0.7	47.9	
Effective Green, g (s)	5.7	5.7					3.6	50.8		0.7	47.9	
Actuated g/C Ratio	0.08	0.08					0.05	0.71		0.01	0.67	
Clearance Time (s)	4.0	4.0					6.0	6.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0					3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	141	127					89	2521		17	2363	
v/s Ratio Prot	0.01	c0.01					c0.03	c0.23		0.00	c0.49	
v/s Ratio Perm												
v/c Ratio	0.08	0.08					0.63	0.32		0.35	0.73	
Uniform Delay, d1	30.3	30.3					33.1	3.8		35.0	7.5	
Progression Factor	1.00	1.00					1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.3					13.1	0.1		12.2	1.1	
Delay (s)	30.6	30.6					46.3	3.9		47.2	8.6	
Level of Service	C	C					D	A		D	A	
Approach Delay (s)		30.6			0.0			6.6			8.7	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	71.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	50	240	282	112	34	93	453	63	22	1046	139
Future Volume (vph)	60	50	240	282	112	34	93	453	63	22	1046	139
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	0.88		1.00	0.96		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	3045		1770	3403		1770	3539	1556	1770	3539	1551
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	3045		1770	3403		1770	3539	1556	1770	3539	1551
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)	63	53	253	297	118	36	98	477	66	23	1101	146
RTOR Reduction (vph)	0	189	0	0	17	0	0	0	35	0	0	69
Lane Group Flow (vph)	63	117	0	297	137	0	98	477	31	23	1101	77
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)	8.8	16.8		28.5	36.5		13.6	61.7	61.7	3.9	52.0	52.0
Effective Green, g (s)	8.8	16.8		28.5	36.5		13.6	61.7	61.7	3.9	52.0	52.0
Actuated g/C Ratio	0.07	0.13		0.22	0.28		0.11	0.48	0.48	0.03	0.40	0.40
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)	120	395		389	959		185	1686	741	53	1421	622
v/s Ratio Prot	0.04	c0.04		c0.17	0.04		c0.06	0.13		0.01	c0.31	
v/s Ratio Perm									0.02			0.05
v/c Ratio	0.53	0.30		0.76	0.14		0.53	0.28	0.04	0.43	0.77	0.12
Uniform Delay, d1	58.3	51.0		47.3	34.8		54.9	20.5	18.1	61.7	33.7	24.4
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	4.1	0.4		8.6	0.1		2.7	0.1	0.0	5.6	2.7	0.1
Delay (s)	62.4	51.4		56.0	34.9		57.6	20.6	18.1	67.3	36.4	24.5
Level of Service	E	D		E	C		E	C	B	E	D	C
Approach Delay (s)		53.3			48.8			26.0			35.6	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	37.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	129.5	Sum of lost time (s)	18.6
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	10	142	20	10	5	75	771	20	25	1566	260
Future Volume (vph)	193	10	142	20	10	5	75	771	20	25	1566	260
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	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	0.86		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	1581		1770	1757		1770	3523		1770	3449	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1581		1770	1757		1770	3523		1770	3449	
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)	195	10	143	20	10	5	76	779	20	25	1582	263
RTOR Reduction (vph)	0	123	0	0	5	0	0	1	0	0	8	0
Lane Group Flow (vph)	195	30	0	20	10	0	76	798	0	25	1837	0
Confl. Peds. (#/hr)						8			4			2
Confl. Bikes (#/hr)			1						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)	16.9	16.9		7.5	7.5		6.9	74.1		3.4	70.6	
Effective Green, g (s)	16.9	16.9		7.5	7.5		6.9	74.1		3.4	70.6	
Actuated g/C Ratio	0.14	0.14		0.06	0.06		0.06	0.61		0.03	0.59	
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)	248	221		110	109		101	2166		49	2020	
v/s Ratio Prot	c0.11	0.02		c0.01	0.01		c0.04	c0.23		0.01	c0.53	
v/s Ratio Perm												
v/c Ratio	0.79	0.14		0.18	0.09		0.75	0.37		0.51	0.91	
Uniform Delay, d1	50.1	45.4		53.6	53.3		56.0	11.5		57.7	22.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	15.1	0.3		0.8	0.4		26.7	0.1		8.7	6.5	
Delay (s)	65.1	45.7		54.4	53.7		82.6	11.7		66.4	28.6	
Level of Service	E	D		D	D		F	B		E	C	
Approach Delay (s)		56.6			54.1			17.8			29.1	
Approach LOS		E			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	29.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.5	Sum of lost time (s)	18.6
Intersection Capacity Utilization	85.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	348	358	560	580	54	326	662	562	136	1317	358
Future Volume (vph)	193	348	358	560	580	54	326	662	562	136	1317	358
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	
Frt	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	1541	3433	3488		3433	3539	1566	3433	3416	
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	1541	3433	3488		3433	3539	1566	3433	3416	
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)	197	355	365	571	592	55	333	676	573	139	1344	365
RTOR Reduction (vph)	0	0	108	0	6	0	0	0	51	0	20	0
Lane Group Flow (vph)	197	355	257	571	641	0	333	676	522	139	1689	0
Confl. Peds. (#/hr)			5			4			1			1
Confl. Bikes (#/hr)			8			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)	9.8	23.0	23.0	14.9	28.4		9.8	50.9	65.8	7.3	48.4	
Effective Green, g (s)	9.8	23.0	23.0	14.9	28.4		9.8	50.9	65.8	7.3	48.4	
Actuated g/C Ratio	0.09	0.20	0.20	0.13	0.25		0.09	0.44	0.57	0.06	0.42	
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)	292	707	307	444	860		292	1565	895	217	1436	
v/s Ratio Prot	0.06	0.10		c0.17	c0.18		c0.10	0.19	0.08	0.04	c0.49	
v/s Ratio Perm			0.17						0.26			
v/c Ratio	0.67	0.50	0.84	1.29	0.75		1.14	0.43	0.58	0.64	1.18	
Uniform Delay, d1	51.1	41.0	44.2	50.1	40.0		52.6	22.1	15.8	52.6	33.3	
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	6.0	0.6	17.7	144.9	3.5		96.1	0.2	1.0	6.3	87.0	
Delay (s)	57.1	41.5	61.9	195.0	43.6		148.8	22.3	16.8	58.9	120.4	
Level of Service	E	D	E	F	D		F	C	B	E	F	
Approach Delay (s)		53.0			114.6			46.9			115.7	
Approach LOS		D			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	85.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	115.1	Sum of lost time (s)	19.0
Intersection Capacity Utilization	100.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	687	0	313	0	1260	591	0	1769	451
Future Volume (vph)	0	0	0	687	0	313	0	1260	591	0	1769	451
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	0.97
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	1539		5085	1543
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3433		2787		5085	1539		5085	1543
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	701	0	319	0	1286	603	0	1805	460
RTOR Reduction (vph)	0	0	0	0	0	64	0	0	0	0	0	154
Lane Group Flow (vph)	0	0	0	701	0	255	0	1286	603	0	1805	306
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)				31.1		31.1		79.0	110.1		79.0	79.0
Effective Green, g (s)				31.1		31.1		79.0	110.1		79.0	79.0
Actuated g/C Ratio				0.26		0.26		0.66	0.92		0.66	0.66
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)				889		722		3347	1471		3347	1015
v/s Ratio Prot				c0.20				0.25	0.11		c0.35	
v/s Ratio Perm						0.09			0.29			0.20
v/c Ratio				0.79		0.35		0.38	0.41		0.54	0.30
Uniform Delay, d1				41.4		36.2		9.4	0.7		10.9	8.7
Progression Factor				1.00		1.00		0.45	9.95		1.00	1.00
Incremental Delay, d2				4.3		0.1		0.2	0.0		0.6	0.8
Delay (s)				45.7		36.4		4.4	6.6		11.5	9.5
Level of Service				D		D		A	A		B	A
Approach Delay (s)		0.0			42.8			5.1			11.1	
Approach LOS		A			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	596	10	797	0	0	0	0	1284	675	330	2126	0
Future Volume (vph)	596	10	797	0	0	0	0	1284	675	330	2126	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	0.89	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	1474	1485					5085	1553	3433	5085	
Flt Permitted	0.95	0.99	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1681	1474	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)	614	10	822	0	0	0	0	1324	696	340	2192	0
RTOR Reduction (vph)	0	2	37	0	0	0	0	0	433	0	0	0
Lane Group Flow (vph)	503	472	432	0	0	0	0	1324	263	340	2192	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)	44.0	44.0	44.0					45.4	45.4	16.5	66.1	
Effective Green, g (s)	44.0	44.0	44.0					45.4	45.4	16.5	66.1	
Actuated g/C Ratio	0.37	0.37	0.37					0.38	0.38	0.14	0.55	
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)	616	540	544					1923	587	472	2800	
v/s Ratio Prot	0.30	c0.32						0.26		0.10	c0.43	
v/s Ratio Perm			0.29						0.17			
v/c Ratio	0.82	0.87	0.79					0.69	0.45	0.72	0.78	
Uniform Delay, d1	34.4	35.4	33.9					31.4	27.9	49.5	21.3	
Progression Factor	1.00	1.00	1.00					1.00	1.00	1.12	1.16	
Incremental Delay, d2	8.2	14.6	7.8					2.0	2.5	4.6	1.9	
Delay (s)	42.6	50.0	41.8					33.4	30.4	60.2	26.5	
Level of Service	D	D	D					C	C	E	C	
Approach Delay (s)		44.7			0.0			32.4			31.0	
Approach LOS		D			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	34.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	88.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	344	450	611	238	130	193
Future Volume (vph)	344	450	611	238	130	193
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)	374	489	664	259	141	210
RTOR Reduction (vph)	0	14	0	0	0	36
Lane Group Flow (vph)	374	475	664	259	141	174
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				8
Actuated Green, G (s)	25.7	74.1	31.6	35.4	48.4	80.0
Effective Green, g (s)	25.7	74.1	31.6	35.4	48.4	80.0
Actuated g/C Ratio	0.21	0.62	0.26	0.29	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	549	713	1055
v/s Ratio Prot	c0.20	c0.20	c0.38	0.14	0.08	0.04
v/s Ratio Perm		0.10				0.07
v/c Ratio	0.94	0.49	1.42	0.47	0.20	0.17
Uniform Delay, d1	46.4	12.6	44.2	34.6	23.2	7.5
Progression Factor	1.00	1.00	1.23	1.12	1.00	1.00
Incremental Delay, d2	29.8	0.4	192.4	0.1	0.1	0.1
Delay (s)	76.2	13.0	246.9	38.9	23.3	7.6
Level of Service	E	B	F	D	C	A
Approach Delay (s)	40.4			188.5	13.9	
Approach LOS	D			F	B	

Intersection Summary			
HCM 2000 Control Delay	100.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1190	5	100	400	503	0	0	949	402
Future Volume (vph)	0	0	0	1190	5	100	400	503	0	0	949	402
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	1322	6	111	444	559	0	0	1054	447
RTOR Reduction (vph)	0	0	0	0	0	61	0	0	0	0	0	328
Lane Group Flow (vph)	0	0	0	661	667	50	444	559	0	0	1054	119
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)				49.7	49.7	49.7	17.2	50.7			29.3	29.3
Effective Green, g (s)				49.7	49.7	49.7	17.2	50.7			29.3	29.3
Actuated g/C Ratio				0.45	0.45	0.45	0.16	0.46			0.27	0.27
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)				759	761	1242	536	2343			1354	408
v/s Ratio Prot				0.39	c0.40		c0.13	0.11			c0.21	
v/s Ratio Perm						0.02						0.08
v/c Ratio				0.87	0.88	0.04	0.83	0.24			0.78	0.29
Uniform Delay, d1				27.3	27.4	16.8	45.0	18.0			37.3	32.1
Progression Factor				1.00	1.00	1.00	1.50	0.87			1.00	1.00
Incremental Delay, d2				10.7	11.1	0.0	9.6	0.2			4.5	1.8
Delay (s)				37.9	38.4	16.8	77.0	15.8			41.8	33.9
Level of Service				D	D	B	E	B			D	C
Approach Delay (s)		0.0			36.6			42.9			39.5	
Approach LOS		A			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	39.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	107.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	271	5	1020	0	0	0	0	702	1090	360	2079	0
Future Volume (vph)	271	5	1020	0	0	0	0	702	1090	360	2079	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	0.86	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	1453	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	1453	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)	285	5	1074	0	0	0	0	739	1147	379	2188	0
RTOR Reduction (vph)	0	1	36	0	0	0	0	0	563	0	0	0
Lane Group Flow (vph)	256	559	512	0	0	0	0	739	584	379	2188	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)	45.3	45.3	45.3					39.0	39.0	11.9	55.1	
Effective Green, g (s)	45.3	45.3	45.3					39.0	39.0	11.9	55.1	
Actuated g/C Ratio	0.41	0.41	0.41					0.35	0.35	0.11	0.50	
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)	692	598	619					1802	550	371	2547	
v/s Ratio Prot	0.15	c0.38						0.15		c0.11	0.43	
v/s Ratio Perm			0.34						c0.38			
v/c Ratio	0.37	0.93	0.83					0.41	1.06	1.02	0.86	
Uniform Delay, d1	22.4	30.9	28.9					26.8	35.5	49.0	24.0	
Progression Factor	1.00	1.00	1.00					1.00	1.00	1.40	1.09	
Incremental Delay, d2	0.3	21.9	8.9					0.7	55.6	47.7	2.9	
Delay (s)	22.8	52.8	37.8					27.5	91.1	116.5	29.1	
Level of Service	C	D	D					C	F	F	C	
Approach Delay (s)		41.1			0.0			66.2			42.0	
Approach LOS		D			A			E			D	

Intersection Summary			
HCM 2000 Control Delay	49.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	107.8%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	247	610	430	160	320	819
Future Volume (vph)	247	610	430	160	320	819
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	1194	1296	
Flt Permitted	0.95	1.00	1.00	1.00	0.99	
Satd. Flow (perm)	1416	1863	1863	1194	1296	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	260	642	453	168	337	862
RTOR Reduction (vph)	0	0	0	42	0	0
Lane Group Flow (vph)	260	642	453	126	1199	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)	21.9	25.7	35.4	35.4	49.0	
Effective Green, g (s)	21.9	25.7	35.4	35.4	49.0	
Actuated g/C Ratio	0.18	0.21	0.29	0.29	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)	258	398	549	352	529	
v/s Ratio Prot	c0.18	c0.34	c0.24		c0.93	
v/s Ratio Perm				0.11		
v/c Ratio	1.01	1.61	0.83	0.36	2.27	
Uniform Delay, d1	49.0	47.1	39.4	33.3	35.5	
Progression Factor	1.22	0.77	1.00	1.00	1.00	
Incremental Delay, d2	55.7	286.4	9.8	0.6	576.0	
Delay (s)	115.6	322.9	49.2	34.0	611.5	
Level of Service	F	F	D	C	F	
Approach Delay (s)		263.2	45.1		611.5	
Approach LOS		F	D		F	

Intersection Summary			
HCM 2000 Control Delay	366.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	136.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	110	229	604	272	399	180
Future Volume (vph)	110	229	604	272	399	180
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	116	241	636	286	420	189

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	357	922	609
Volume Left (vph)	116	0	420
Volume Right (vph)	0	286	189
Hadj (s)	0.10	-0.15	-0.01
Departure Headway (s)	7.1	6.5	6.6
Degree Utilization, x	0.70	1.66	1.12
Capacity (veh/h)	499	560	548
Control Delay (s)	25.1	321.6	100.1
Approach Delay (s)	25.1	321.6	100.1
Approach LOS	D	F	F

Intersection Summary			
Delay	194.1		
Level of Service	F		
Intersection Capacity Utilization	109.7%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	186	0	564	1139	391	21	372	477	138	4	1093	223
Future Volume (vph)	186	0	564	1139	391	21	372	477	138	4	1093	223
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	3509		3433	3539	1583		5084	1546
Flt Permitted	0.95		1.00	0.95	1.00		0.95	1.00	1.00		0.94	1.00
Satd. Flow (perm)	1770		2787	3433	3509		3433	3539	1583		4771	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)	192	0	581	1174	403	22	384	492	142	4	1127	230
RTOR Reduction (vph)	0	0	59	0	4	0	0	0	72	0	0	85
Lane Group Flow (vph)	192	0	522	1174	421	0	384	492	70	0	1131	145
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)	15.0		33.0	48.9	28.3		18.0	59.2	59.2		36.0	36.0
Effective Green, g (s)	15.0		33.0	48.9	28.3		18.0	59.2	59.2		36.0	36.0
Actuated g/C Ratio	0.12		0.28	0.41	0.24		0.15	0.49	0.49		0.30	0.30
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)	221		766	1398	827		514	1745	780		1431	463
v/s Ratio Prot	0.11		0.10	c0.34	0.12		c0.11	0.14				
v/s Ratio Perm			0.09						0.04		c0.24	0.09
v/c Ratio	0.87		0.68	0.84	0.51		0.75	0.28	0.09		0.79	0.31
Uniform Delay, d1	51.5		38.8	32.0	39.8		48.8	17.9	16.1		38.5	32.4
Progression Factor	1.00		1.00	1.00	1.00		0.94	1.45	3.65		1.00	1.00
Incremental Delay, d2	28.3		2.5	4.6	0.5		5.7	0.4	0.2		4.5	1.8
Delay (s)	79.8		41.3	36.6	40.3		51.4	26.3	59.0		43.1	34.2
Level of Service	E		D	D	D		D	C	E		D	C
Approach Delay (s)		50.9			37.6			40.3			41.6	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	41.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.7
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	221	0	319	0	0	0	0	836	828	183	2466	0
Future Volume (vph)	221	0	319	0	0	0	0	836	828	183	2466	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)	230	0	332	0	0	0	0	871	862	191	2569	0
RTOR Reduction (vph)	0	0	63	0	0	0	0	0	366	0	0	0
Lane Group Flow (vph)	230	0	269	0	0	0	0	871	497	191	2569	0
Confl. Peds. (#/hr)												6
Confl. Bikes (#/hr)									3			4
Turn Type	Prot		Perm					NA	Perm	Prot	NA	
Protected Phases	4							2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	21.8		21.8					69.1	69.1	12.0	86.3	
Effective Green, g (s)	21.8		21.8					69.1	69.1	12.0	86.3	
Actuated g/C Ratio	0.18		0.18					0.58	0.58	0.10	0.72	
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)	623		287					2928	1569	343	3656	
v/s Ratio Prot	0.07							0.17		0.06	c0.51	
v/s Ratio Perm			c0.17						0.18			
v/c Ratio	0.37		0.94					0.30	0.32	0.56	0.70	
Uniform Delay, d1	43.1		48.4					13.0	13.2	51.5	9.6	
Progression Factor	1.00		1.00					1.00	1.00	1.14	0.56	
Incremental Delay, d2	0.4		36.4					0.3	0.5	1.4	0.8	
Delay (s)	43.4		84.8					13.3	13.7	60.2	6.2	
Level of Service	D		F					B	B	E	A	
Approach Delay (s)		67.9			0.0			13.5			10.0	
Approach LOS		E			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.1
Intersection Capacity Utilization	77.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	440	21	756	736	80	10	78	351	100	421	51
Future Volume (vph)	30	440	21	756	736	80	10	78	351	100	421	51
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	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.96	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	1560	3433	3539	1523	1770	3539	1583	1770	3482	
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	1560	3433	3539	1523	1770	3539	1583	1770	3482	
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	0.86
Adj. Flow (vph)	35	512	24	879	856	93	12	91	408	116	490	59
RTOR Reduction (vph)	0	0	18	0	0	42	0	0	347	0	6	0
Lane Group Flow (vph)	35	512	6	879	856	51	12	91	61	116	543	0
Confl. 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)	4.5	25.9	25.9	35.9	57.3	57.3	1.5	16.7	16.7	14.0	29.2	
Effective Green, g (s)	4.5	25.9	25.9	35.9	57.3	57.3	1.5	16.7	16.7	14.0	29.2	
Actuated g/C Ratio	0.04	0.23	0.23	0.32	0.52	0.52	0.01	0.15	0.15	0.13	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)	71	825	363	1109	1825	785	23	531	237	223	915	
v/s Ratio Prot	0.02	c0.14		c0.26	0.24		0.01	0.03	0.04	c0.07	c0.16	
v/s Ratio Perm			0.00			0.03						
v/c Ratio	0.49	0.62	0.02	0.79	0.47	0.06	0.52	0.17	0.26	0.52	0.59	
Uniform Delay, d1	52.2	38.2	32.8	34.2	17.2	13.5	54.4	41.2	41.7	45.4	35.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.3	1.5	0.0	4.0	0.2	0.0	19.7	0.2	0.6	2.2	1.0	
Delay (s)	57.5	39.7	32.8	38.2	17.4	13.5	74.2	41.3	42.3	47.6	36.8	
Level of Service	E	D	C	D	B	B	E	D	D	D	D	
Approach Delay (s)		40.5			27.2			42.9			38.7	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	33.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	111.1	Sum of lost time (s)	18.6
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	84	43	126	438	0
Future Volume (Veh/h)	0	84	43	126	438	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	95	49	143	498	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	739	498	498			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	739	498	498			
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	83	95			
cM capacity (veh/h)	367	572	1066			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	95	49	143	498
Volume Left	0	49	0	0
Volume Right	95	0	0	0
cSH	572	1066	1700	1700
Volume to Capacity	0.17	0.05	0.08	0.29
Queue Length 95th (ft)	15	4	0	0
Control Delay (s)	12.5	8.5	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	12.5	2.2		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	41.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	360	110	280	400	130	40	399	115	220	667	105
Future Volume (vph)	100	360	110	280	400	130	40	399	115	220	667	105
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
Frpb, 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	1555	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	1555	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)	109	391	120	304	435	141	43	434	125	239	725	114
RTOR Reduction (vph)	0	0	98	0	0	95	0	0	100	0	0	76
Lane Group Flow (vph)	109	391	22	304	435	46	43	434	25	239	725	38
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)	6.6	14.7	14.7	18.3	26.4	26.4	3.4	16.4	16.4	14.0	27.0	27.0
Effective Green, g (s)	6.6	14.7	14.7	18.3	26.4	26.4	3.4	16.4	16.4	14.0	27.0	27.0
Actuated g/C Ratio	0.08	0.18	0.18	0.22	0.32	0.32	0.04	0.20	0.20	0.17	0.33	0.33
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)	143	639	280	397	1147	513	73	713	318	304	1173	525
v/s Ratio Prot	0.06	c0.11		c0.17	0.12		0.02	0.12		c0.14	c0.20	
v/s Ratio Perm			0.01			0.03			0.02			0.02
v/c Ratio	0.76	0.61	0.08	0.77	0.38	0.09	0.59	0.61	0.08	0.79	0.62	0.07
Uniform Delay, d1	36.6	30.7	27.7	29.5	21.2	19.1	38.3	29.6	26.4	32.3	22.9	18.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.0	1.7	0.1	8.6	0.2	0.1	11.6	1.5	0.1	12.6	1.0	0.1
Delay (s)	57.7	32.5	27.8	38.1	21.4	19.2	49.9	31.1	26.5	44.8	23.8	18.7
Level of Service	E	C	C	D	C	B	D	C	C	D	C	B
Approach Delay (s)		36.0			26.8			31.5			27.9	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	81.4	Sum of lost time (s)	18.0
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	270	70	10	320	340	219	20	915	140	486	1179	490
Future Volume (vph)	270	70	10	320	340	219	20	915	140	486	1179	490
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)	293	76	11	348	370	238	22	995	152	528	1282	533
RTOR Reduction (vph)	0	0	9	0	0	175	0	16	0	0	0	278
Lane Group Flow (vph)	293	76	2	348	370	63	22	1131	0	528	1282	255
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)	12.2	17.4	17.4	25.6	30.8	30.8	1.9	33.1		18.1	49.3	49.3
Effective Green, g (s)	12.2	17.4	17.4	25.6	30.8	30.8	1.9	33.1		18.1	49.3	49.3
Actuated g/C Ratio	0.11	0.15	0.15	0.22	0.27	0.27	0.02	0.29		0.16	0.43	0.43
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)	362	766	238	392	496	422	29	1428		537	2170	675
v/s Ratio Prot	0.09	0.01		c0.20	c0.20		0.01	c0.23		c0.15	0.25	
v/s Ratio Perm			0.00			0.04						0.16
v/c Ratio	0.81	0.10	0.01	0.89	0.75	0.15	0.76	0.79		0.98	0.59	0.38
Uniform Delay, d1	50.5	42.3	41.7	43.6	38.8	32.4	56.6	38.0		48.5	25.4	22.6
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	11.9	0.1	0.0	20.3	6.8	0.3	65.7	4.6		34.2	1.2	1.6
Delay (s)	62.4	42.4	41.7	63.9	45.6	32.6	122.2	42.6		82.8	26.6	24.2
Level of Service	E	D	D	E	D	C	F	D		F	C	C
Approach Delay (s)		57.8			49.0			44.1			38.7	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	43.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	115.5	Sum of lost time (s)	21.3
Intersection Capacity Utilization	78.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	480	352	278	357	254	350
Future Volume (vph)	480	352	278	357	254	350
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	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	0.92	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	1583	1770	1863	1699	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1770	1583	1770	1863	1699	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	511	374	296	380	270	372
RTOR Reduction (vph)	0	242	0	0	42	0
Lane Group Flow (vph)	511	132	296	380	600	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)	35.3	35.3	21.4	68.9	43.0	
Effective Green, g (s)	35.3	35.3	21.4	68.9	43.0	
Actuated g/C Ratio	0.31	0.31	0.19	0.61	0.38	
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)	551	493	334	1133	645	
v/s Ratio Prot	c0.29		c0.17	0.20	c0.35	
v/s Ratio Perm		0.08				
v/c Ratio	0.93	0.27	0.89	0.34	0.93	
Uniform Delay, d1	37.7	29.3	44.7	10.9	33.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	21.8	0.3	23.3	0.2	20.2	
Delay (s)	59.5	29.5	68.0	11.1	53.9	
Level of Service	E	C	E	B	D	
Approach Delay (s)	46.9			36.0	53.9	
Approach LOS	D			D	D	

Intersection Summary			
HCM 2000 Control Delay	45.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	113.2	Sum of lost time (s)	13.5
Intersection Capacity Utilization	88.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	99	240	395	157	380	226
Future Volume (vph)	99	240	395	157	380	226
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	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	1543	1781		1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1543	1781		1770	1863
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	118	286	470	187	452	269
RTOR Reduction (vph)	0	246	15	0	0	0
Lane Group Flow (vph)	118	40	642	0	452	269
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)	11.2	11.2	32.5		23.8	60.8
Effective Green, g (s)	11.2	11.2	32.5		23.8	60.8
Actuated g/C Ratio	0.14	0.14	0.40		0.29	0.75
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)	244	213	714		520	1398
v/s Ratio Prot	c0.07		c0.36		c0.26	0.14
v/s Ratio Perm		0.03				
v/c Ratio	0.48	0.19	0.90		0.87	0.19
Uniform Delay, d1	32.2	30.9	22.7		27.1	2.9
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.5	0.4	14.1		14.4	0.1
Delay (s)	33.7	31.3	36.8		41.5	3.0
Level of Service	C	C	D		D	A
Approach Delay (s)	32.0		36.8			27.1
Approach LOS	C		D			C

Intersection Summary			
HCM 2000 Control Delay	31.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	81.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	22	90	0	50	19	488	70	40	234	5
Future Volume (Veh/h)	5	5	22	90	0	50	19	488	70	40	234	5
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)	6	6	26	107	0	60	23	581	83	48	279	6
Pedestrians					1							
Lane Width (ft)					12.0							
Walking Speed (ft/s)					4.0							
Percent Blockage					0							
Right turn flare (veh)						7						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											874	
pX, platoon unblocked												
vC, conflicting volume	1005	1089	282	1032	1009	582	285			665		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1005	1089	282	1032	1009	582	285			665		
tC, single (s)	7.1	6.5	6.2	*7.0	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 %	97	97	97	45	100	88	98			95		
cM capacity (veh/h)	184	200	757	195	223	512	1277			923		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	38	167	23	581	83	48	285
Volume Left	6	107	23	0	0	48	0
Volume Right	26	60	0	0	83	0	6
cSH	392	304	1277	1700	1700	923	1700
Volume to Capacity	0.10	0.55	0.02	0.34	0.05	0.05	0.17
Queue Length 95th (ft)	8	77	1	0	0	4	0
Control Delay (s)	15.2	32.8	7.9	0.0	0.0	9.1	0.0
Lane LOS	C	D	A			A	
Approach Delay (s)	15.2	32.8	0.3			1.3	
Approach LOS	C	D					

Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	387	401	118	70	253	15	105	210	120	30	130	221
Future Volume (vph)	387	401	118	70	253	15	105	210	120	30	130	221
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			0.92	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1770	3419		1770	3499			1766			1696	
Flt Permitted	0.95	1.00		0.95	1.00			0.76			0.95	
Satd. Flow (perm)	1770	3419		1770	3499			1359			1615	
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)	403	418	123	73	264	16	109	219	125	31	135	230
RTOR Reduction (vph)	0	29	0	0	4	0	0	13	0	0	47	0
Lane Group Flow (vph)	403	512	0	73	276	0	0	440	0	0	349	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)	23.8	30.9		6.6	13.7			33.9			33.9	
Effective Green, g (s)	23.8	30.9		6.6	13.7			33.9			33.9	
Actuated g/C Ratio	0.28	0.36		0.08	0.16			0.40			0.40	
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)	496	1244		137	564			542			644	
v/s Ratio Prot	c0.23	0.15		0.04	c0.08							
v/s Ratio Perm								c0.32			0.22	
v/c Ratio	0.81	0.41		0.53	0.49			0.81			0.54	
Uniform Delay, d1	28.5	20.2		37.7	32.4			22.7			19.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	9.8	0.2		3.9	0.7			9.0			0.9	
Delay (s)	38.3	20.4		41.6	33.1			31.7			20.5	
Level of Service	D	C		D	C			C			C	
Approach Delay (s)		28.0			34.8			31.7			20.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	84.9	Sum of lost time (s)	13.5
Intersection Capacity Utilization	90.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	958	446	0	0	599	30	819	10	500	0	0	0
Future Volume (vph)	958	446	0	0	599	30	819	10	500	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	4.6			
Lane Util. Factor	1.00	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		1775	1563			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	1863			1863	1545		1775	1563			
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)	998	465	0	0	624	31	853	10	521	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	23	0	0	239	0	0	0
Lane Group Flow (vph)	998	465	0	0	624	8	0	863	282	0	0	0
Confl. Peds. (#/hr)						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)	27.8	56.7			24.7	24.7		33.4	33.4			
Effective Green, g (s)	27.8	56.7			24.7	24.7		33.4	33.4			
Actuated g/C Ratio	0.28	0.57			0.25	0.25		0.33	0.33			
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)	492	1056			460	381		592	522			
v/s Ratio Prot	c0.56	0.25			c0.33			c0.49				
v/s Ratio Perm						0.00			0.18			
v/c Ratio	2.03	0.44			1.36	0.02		1.46	0.54			
Uniform Delay, d1	36.1	12.5			37.6	28.5		33.3	27.1			
Progression Factor	0.93	1.97			1.00	1.00		1.00	1.00			
Incremental Delay, d2	463.5	0.1			174.2	0.1		215.3	1.1			
Delay (s)	497.0	24.7			211.8	28.6		248.6	28.2			
Level of Service	F	C			F	C		F	C			
Approach Delay (s)		346.9			203.1			165.6			0.0	
Approach LOS		F			F			F			A	

Intersection Summary			
HCM 2000 Control Delay	248.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.61		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	169.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1514	441	220	1188	0	0	0	0	50	5	500
Future Volume (vph)	0	1514	441	220	1188	0	0	0	0	50	5	500
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						0.96	1.00
Satd. Flow (prot)		1863	1583	1770	1863						1781	2787
Flt Permitted		1.00	1.00	0.95	1.00						0.96	1.00
Satd. Flow (perm)		1863	1583	1770	1863						1781	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	1646	479	239	1291	0	0	0	0	54	5	543
RTOR Reduction (vph)	0	0	115	0	0	0	0	0	0	0	0	161
Lane Group Flow (vph)	0	1646	364	239	1291	0	0	0	0	0	59	382
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		58.1	58.1	12.3	74.6						15.5	15.5
Effective Green, g (s)		58.1	58.1	12.3	74.6						15.5	15.5
Actuated g/C Ratio		0.58	0.58	0.12	0.75						0.16	0.16
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)		1082	919	217	1389						276	431
v/s Ratio Prot		c0.88		c0.14	0.69						0.03	
v/s Ratio Perm			0.23									c0.14
v/c Ratio		1.52	0.40	1.10	0.93						0.21	0.89
Uniform Delay, d1		20.9	11.4	43.9	10.5						36.9	41.4
Progression Factor		1.00	1.00	0.89	1.30						1.00	1.00
Incremental Delay, d2		239.3	1.3	52.6	1.5						0.4	19.0
Delay (s)		260.3	12.7	91.8	15.2						37.3	60.4
Level of Service		F	B	F	B						D	E
Approach Delay (s)		204.5			27.1			0.0			58.2	
Approach LOS		F			C			A			E	

Intersection Summary			
HCM 2000 Control Delay	120.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.35		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	169.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	241	1221	30	40	748	860	40	40	50	534	27	176
Future Volume (vph)	241	1221	30	40	748	860	40	40	50	534	27	176
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	0.98			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	0.92			0.95			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.95	1.00
Satd. Flow (prot)	1770	3524		1770	3203			1727			1778	1563
Flt Permitted	0.95	1.00		0.95	1.00			0.98			0.95	1.00
Satd. Flow (perm)	1770	3524		1770	3203			1727			1778	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)	248	1259	31	41	771	887	41	41	52	551	28	181
RTOR Reduction (vph)	0	2	0	0	195	0	0	25	0	0	0	91
Lane Group Flow (vph)	248	1288	0	41	1463	0	0	109	0	0	579	90
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)	6.5	42.7		3.2	39.4			11.4			19.9	19.9
Effective Green, g (s)	6.5	42.7		3.2	39.4			11.4			19.9	19.9
Actuated g/C Ratio	0.07	0.45		0.03	0.41			0.12			0.21	0.21
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)	120	1580		59	1325			206			371	326
v/s Ratio Prot	c0.14	c0.37		0.02	c0.46			c0.06			c0.33	
v/s Ratio Perm												0.06
v/c Ratio	2.07	0.82		0.69	1.10			0.53			1.56	0.28
Uniform Delay, d1	44.4	22.8		45.5	27.9			39.4			37.7	31.6
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	507.5	3.4		29.9	58.5			2.6			265.1	2.1
Delay (s)	551.8	26.2		75.4	86.4			42.0			302.8	33.7
Level of Service	F	C		E	F			D			F	C
Approach Delay (s)		110.9			86.2			42.0			238.7	
Approach LOS		F			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	122.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	95.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	110.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1656	5	5	950	10	10
Future Volume (Veh/h)	1656	5	5	950	10	10
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1800	5	5	1033	11	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			1805		2846	1802
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1805		2846	1802
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		41	89
cM capacity (veh/h)			341		19	99

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	1805	1038	22
Volume Left	0	5	11
Volume Right	5	0	11
cSH	1700	341	31
Volume to Capacity	1.06	0.01	0.70
Queue Length 95th (ft)	0	1	59
Control Delay (s)	0.0	0.7	253.5
Lane LOS		A	F
Approach Delay (s)	0.0	0.7	253.5
Approach LOS			F

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	97.5%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	307	1611	871	113	46	115
Future Volume (Veh/h)	307	1611	871	113	46	115
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)	323	1696	917	119	48	121
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	1036				3318	976
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1036				3318	976
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	52				0	60
cM capacity (veh/h)	671				5	304

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	323	1696	1036	169
Volume Left	323	0	0	48
Volume Right	0	0	119	121
cSH	671	1700	1700	16
Volume to Capacity	0.48	1.00	0.61	10.36
Queue Length 95th (ft)	66	0	0	Err
Control Delay (s)	15.2	0.0	0.0	Err
Lane LOS	C			F
Approach Delay (s)	2.4		0.0	Err
Approach LOS				F

Intersection Summary			
Average Delay	525.7		
Intersection Capacity Utilization	101.1%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	30	20	1583	10	10	1021
Future Volume (Veh/h)	30	20	1583	10	10	1021
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)	32	21	1684	11	11	1086
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	0.29	0.29			0.29	
vC, conflicting volume	2798	1690			1695	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	5912	2144			2163	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	0			85	
cM capacity (veh/h)	0	18			73	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	53	1695	1097
Volume Left	32	0	11
Volume Right	21	11	0
cSH	0	1700	73
Volume to Capacity	821.45	1.00	0.15
Queue Length 95th (ft)	Err	0	13
Control Delay (s)	Err	0.0	26.8
Lane LOS	F		D
Approach Delay (s)	Err	0.0	26.8
Approach LOS	F		

Intersection Summary			
Average Delay	196.6		
Intersection Capacity Utilization	93.9%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	20	5	50	28	5	60
Future Volume (Veh/h)	20	5	50	28	5	60
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)	27	7	67	37	7	80
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	180	86			104	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	180	86			104	
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	99			100	
cM capacity (veh/h)	806	973			1488	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	34	104	87
Volume Left	27	0	7
Volume Right	7	37	0
cSH	836	1700	1488
Volume to Capacity	0.04	0.06	0.00
Queue Length 95th (ft)	3	0	0
Control Delay (s)	9.5	0.0	0.6
Lane LOS	A		A
Approach Delay (s)	9.5	0.0	0.6
Approach LOS	A		

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	17.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	61	304	131	1529	1017	52
Future Volume (vph)	61	304	131	1529	1017	52
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	1546
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	1863	1863	1546
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)	69	345	149	2259	1502	59
RTOR Reduction (vph)	0	121	0	0	0	9
Lane Group Flow (vph)	69	224	149	2259	1502	50
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)	17.1	17.1	7.0	68.0	57.0	57.0
Effective Green, g (s)	17.1	17.1	7.0	68.0	57.0	57.0
Actuated g/C Ratio	0.18	0.18	0.07	0.71	0.60	0.60
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)	317	284	130	1329	1114	924
v/s Ratio Prot	0.04		0.08	c1.21	0.81	
v/s Ratio Perm		c0.14				0.03
v/c Ratio	0.22	0.79	1.15	1.70	1.35	0.05
Uniform Delay, d1	33.4	37.4	44.1	13.6	19.1	8.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	13.9	123.6	318.2	162.8	0.0
Delay (s)	33.7	51.2	167.7	331.8	181.9	8.0
Level of Service	C	D	F	F	F	A
Approach Delay (s)	48.3			321.7	175.3	
Approach LOS	D			F	F	

Intersection Summary			
HCM 2000 Control Delay	243.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.59		
Actuated Cycle Length (s)	95.3	Sum of lost time (s)	14.2
Intersection Capacity Utilization	116.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	669	0	260	5	0	0	210	931	0	5	741	510
Future Volume (vph)	669	0	260	5	0	0	210	931	0	5	741	510
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		5.0	5.5		4.5	5.5	5.5
Lane Util. Factor		1.00	1.00		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		1.00	1.00	0.97
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		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.95		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1770	1583		1770		1770	1863		1770	1863	1543
Flt Permitted		0.75	1.00		0.14		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1405	1583		262		1770	1863		1770	1863	1543
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)	719	0	280	5	0	0	226	1001	0	5	797	548
RTOR Reduction (vph)	0	0	174	0	0	0	0	0	0	0	0	116
Lane Group Flow (vph)	0	719	106	0	5	0	226	1001	0	5	797	432
Confl. Peds. (#/hr)												1
Confl. Bikes (#/hr)												5
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8								6
Actuated Green, G (s)		28.4	28.4		28.4		12.0	50.4		0.8	38.7	38.7
Effective Green, g (s)		28.4	28.4		28.4		12.0	50.4		0.8	38.7	38.7
Actuated g/C Ratio		0.30	0.30		0.30		0.13	0.54		0.01	0.41	0.41
Clearance Time (s)		4.0	4.0		4.0		5.0	5.5		4.5	5.5	5.5
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		426	480		79		226	1003		15	770	637
v/s Ratio Prot							c0.13	c0.54		0.00	0.43	
v/s Ratio Perm		c0.51	0.07		0.02							0.28
v/c Ratio		1.69	0.22		0.06		1.00	1.00		0.33	1.04	0.68
Uniform Delay, d1		32.6	24.3		23.2		40.8	21.5		46.1	27.4	22.4
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		319.5	0.2		0.3		59.9	27.7		12.7	41.8	2.9
Delay (s)		352.1	24.6		23.5		100.7	49.3		58.8	69.3	25.2
Level of Service		F	C		C		F	D		E	E	C
Approach Delay (s)		260.3			23.5			58.7			51.4	
Approach LOS		F			C			E			D	

Intersection Summary			
HCM 2000 Control Delay	112.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	93.6	Sum of lost time (s)	14.5
Intersection Capacity Utilization	98.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	0	55	20	5	32	50	1048	20	13	811	23
Future Volume (vph)	18	0	55	20	5	32	50	1048	20	13	811	23
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		0.90			0.92		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99			0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1636			1692		1770	1863	1583	1770	1855	
Flt Permitted		0.99			0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1636			1692		1770	1863	1583	1770	1855	
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)	19	0	59	22	5	34	54	1127	22	14	872	25
RTOR Reduction (vph)	0	72	0	0	31	0	0	0	8	0	0	0
Lane Group Flow (vph)	0	6	0	0	30	0	54	1127	14	14	897	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)		7.1			7.8		3.9	57.1	57.1	0.7	53.9	
Effective Green, g (s)		7.1			7.8		3.9	57.1	57.1	0.7	53.9	
Actuated g/C Ratio		0.08			0.08		0.04	0.62	0.62	0.01	0.58	
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)		125			142		74	1147	975	13	1078	
v/s Ratio Prot		c0.00			c0.02		c0.03	c0.61		0.01	0.48	
v/s Ratio Perm									0.01			
v/c Ratio		0.05			0.21		0.73	0.98	0.01	1.08	0.83	
Uniform Delay, d1		39.7			39.6		43.9	17.3	6.9	46.0	15.7	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.2			0.7		29.9	22.3	0.0	276.9	5.6	
Delay (s)		39.8			40.3		73.8	39.6	6.9	322.9	21.3	
Level of Service		D			D		E	D	A	F	C	
Approach Delay (s)		39.8			40.3			40.5			26.0	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	34.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	92.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	113	64	1150	125	109	790
Future Volume (vph)	113	64	1150	125	109	790
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	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	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3469		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3469		1770	3539
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	115	65	1173	128	111	806
RTOR Reduction (vph)	0	0	7	0	0	0
Lane Group Flow (vph)	115	65	1294	0	111	806
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)	11.8	11.8	39.3		8.4	53.7
Effective Green, g (s)	11.8	11.8	39.3		8.4	53.7
Actuated g/C Ratio	0.15	0.15	0.50		0.11	0.69
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)	267	239	1747		190	2436
v/s Ratio Prot	c0.06		c0.37		c0.06	0.23
v/s Ratio Perm		0.04				
v/c Ratio	0.43	0.27	0.74		0.58	0.33
Uniform Delay, d1	30.1	29.3	15.3		33.1	4.9
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.1	0.6	1.7		4.5	0.1
Delay (s)	31.2	29.9	17.0		37.7	5.0
Level of Service	C	C	B		D	A
Approach Delay (s)	30.7		17.0			8.9
Approach LOS	C		B			A

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	78.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	0	57	30	0	10	90	1183	25	15	830	18
Future Volume (vph)	12	0	57	30	0	10	90	1183	25	15	830	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	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	3524		1770	3526	
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	3524		1770	3526	
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)	13	0	63	33	0	11	100	1314	28	17	922	20
RTOR Reduction (vph)	0	57	0	0	10	0	0	1	0	0	2	0
Lane Group Flow (vph)	13	6	0	33	1	0	100	1341	0	17	940	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)	0.5	6.2		1.8	7.5		6.8	39.7		0.4	33.3	
Effective Green, g (s)	0.5	6.2		1.8	7.5		6.8	39.7		0.4	33.3	
Actuated g/C Ratio	0.01	0.09		0.03	0.11		0.10	0.58		0.01	0.49	
Clearance Time (s)	5.0	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	3.0	
Lane Grp Cap (vph)	12	142		46	174		176	2054		10	1724	
v/s Ratio Prot	0.01	c0.00		c0.02	0.00		c0.06	c0.38		0.01	0.27	
v/s Ratio Perm												
v/c Ratio	1.08	0.04		0.72	0.01		0.57	0.65		1.70	0.55	
Uniform Delay, d1	33.8	28.2		32.9	27.0		29.2	9.6		33.8	12.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	289.8	0.1		41.5	0.0		4.2	0.8		560.6	0.4	
Delay (s)	323.6	28.4		74.4	27.0		33.4	10.3		594.5	12.5	
Level of Service	F	C		E	C		C	B		F	B	
Approach Delay (s)		78.9			62.5			11.9			22.8	
Approach LOS		E			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	0	55	0	0	0	45	1193	5	5	897	10
Future Volume (vph)	20	0	55	0	0	0	45	1193	5	5	897	10
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	3537		1770	3532	
Flt Permitted	0.95		1.00				0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770		1563				1770	3537		1770	3532	
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)	20	0	55	0	0	0	45	1193	5	5	897	10
RTOR Reduction (vph)	0	0	50	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	20	0	6	0	0	0	45	1198	0	5	906	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)	5.3		5.3				2.4	33.0		0.7	31.3	
Effective Green, g (s)	5.3		5.3				2.4	33.0		0.7	31.3	
Actuated g/C Ratio	0.10		0.10				0.05	0.62		0.01	0.59	
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)	177		156				80	2202		23	2085	
v/s Ratio Prot	c0.01						c0.03	c0.34		0.00	0.26	
v/s Ratio Perm			0.00									
v/c Ratio	0.11		0.04				0.56	0.54		0.22	0.43	
Uniform Delay, d1	21.7		21.5				24.8	5.7		25.9	6.0	
Progression Factor	1.00		1.00				1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3		0.1				8.8	0.3		4.7	0.1	
Delay (s)	22.0		21.6				33.5	6.0		30.6	6.1	
Level of Service	C		C				C	A		C	A	
Approach Delay (s)		21.7			0.0			7.0			6.3	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	53.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	252	237	187	221	54	241	1024	293	94	788	116
Future Volume (vph)	196	252	237	187	221	54	241	1024	293	94	788	116
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	0.97		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	3259		1770	3425		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	3259		1770	3425		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)	204	262	247	195	230	56	251	1067	305	98	821	121
RTOR Reduction (vph)	0	98	0	0	12	0	0	0	81	0	0	80
Lane Group Flow (vph)	204	412	0	195	274	0	251	1067	224	98	821	41
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)	21.7	23.8		20.5	22.6		25.4	51.6	51.6	12.9	39.1	39.1
Effective Green, g (s)	21.7	23.8		20.5	22.6		25.4	51.6	51.6	12.9	39.1	39.1
Actuated g/C Ratio	0.17	0.19		0.16	0.18		0.20	0.41	0.41	0.10	0.31	0.31
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)	301	608		284	607		352	1433	631	179	1086	477
v/s Ratio Prot	c0.12	c0.13		0.11	0.08		c0.14	c0.30		0.06	0.23	
v/s Ratio Perm									0.14			0.03
v/c Ratio	0.68	0.68		0.69	0.45		0.71	0.74	0.36	0.55	0.76	0.09
Uniform Delay, d1	49.6	48.2		50.4	46.9		47.6	32.3	26.3	54.5	39.8	31.4
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	5.9	3.0		6.7	0.5		6.7	2.1	0.3	3.4	3.0	0.1
Delay (s)	55.5	51.2		57.2	47.4		54.3	34.4	26.7	57.9	42.9	31.5
Level of Service	E	D		E	D		D	C	C	E	D	C
Approach Delay (s)		52.4			51.4			36.0			43.0	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	42.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	127.4	Sum of lost time (s)	18.6
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	217	15	144	15	10	5	193	1582	30	70	1449	194
Future Volume (vph)	217	15	144	15	10	5	193	1582	30	70	1449	194
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	0.86		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	1610		1770	1756		1770	3526		1770	3467	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1610		1770	1756		1770	3526		1770	3467	
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)	226	16	150	16	10	5	201	1648	31	73	1509	202
RTOR Reduction (vph)	0	126	0	0	5	0	0	1	0	0	6	0
Lane Group Flow (vph)	226	40	0	16	10	0	201	1678	0	73	1705	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)	18.8	18.8		7.5	7.5		12.1	67.1		7.9	62.9	
Effective Green, g (s)	18.8	18.8		7.5	7.5		12.1	67.1		7.9	62.9	
Actuated g/C Ratio	0.16	0.16		0.06	0.06		0.10	0.56		0.07	0.52	
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)	277	252		110	109		178	1973		116	1818	
v/s Ratio Prot	c0.13	0.02		c0.01	0.01		c0.11	0.48		0.04	c0.49	
v/s Ratio Perm												
v/c Ratio	0.82	0.16		0.15	0.09		1.13	0.85		0.63	0.94	
Uniform Delay, d1	48.9	43.7		53.2	53.0		53.9	22.2		54.6	26.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	16.7	0.3		0.6	0.4		106.4	3.7		10.2	9.8	
Delay (s)	65.6	44.0		53.8	53.4		160.3	25.9		64.8	36.5	
Level of Service	E	D		D	D		F	C		E	D	
Approach Delay (s)		56.4			53.6			40.3			37.6	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	40.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	119.9	Sum of lost time (s)	18.6
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	444	815	346	617	551	135	579	1266	494	167	1172	285
Future Volume (vph)	444	815	346	617	551	135	579	1266	494	167	1172	285
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	1538	3433	3421		3433	3539	1560	3433	3425	
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	1538	3433	3421		3433	3539	1560	3433	3425	
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)	477	876	372	663	592	145	623	1361	531	180	1260	306
RTOR Reduction (vph)	0	0	127	0	18	0	0	0	0	0	17	0
Lane Group Flow (vph)	477	876	245	663	719	0	623	1361	531	180	1549	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)	15.4	28.1	28.1	15.5	28.5		15.0	47.2	62.7	9.4	42.4	
Effective Green, g (s)	15.4	28.1	28.1	15.5	28.5		15.0	47.2	62.7	9.4	42.4	
Actuated g/C Ratio	0.13	0.23	0.23	0.13	0.24		0.12	0.39	0.52	0.08	0.35	
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)	440	828	360	443	812		429	1392	815	268	1210	
v/s Ratio Prot	0.14	c0.25		c0.19	0.21		c0.18	0.38	0.08	0.05	c0.45	
v/s Ratio Perm			0.16						0.26			
v/c Ratio	1.08	1.06	0.68	1.50	0.89		1.45	0.98	0.65	0.67	1.28	
Uniform Delay, d1	52.3	46.0	41.9	52.2	44.2		52.5	35.9	20.7	53.8	38.8	
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	67.4	47.8	5.2	235.1	11.4		216.2	18.8	1.9	6.5	132.4	
Delay (s)	119.7	93.7	47.1	287.4	55.6		268.7	54.7	22.6	60.3	171.2	
Level of Service	F	F	D	F	E		F	D	C	E	F	
Approach Delay (s)		90.8			165.3			100.9			159.7	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	124.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.29		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.8
Intersection Capacity Utilization	114.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	806	0	333	0	1969	816	0	1748	364
Future Volume (vph)	0	0	0	806	0	333	0	1969	816	0	1748	364
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	0.96		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	1515		5085	1548
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3433		2787		5085	1515		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	840	0	347	0	2051	850	0	1821	379
RTOR Reduction (vph)	0	0	0	0	0	14	0	0	0	0	0	137
Lane Group Flow (vph)	0	0	0	840	0	333	0	2051	850	0	1821	242
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)				40.9		40.9		69.2	110.1		69.2	69.2
Effective Green, g (s)				40.9		40.9		69.2	110.1		69.2	69.2
Actuated g/C Ratio				0.34		0.34		0.58	0.92		0.58	0.58
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)				1170		949		2932	1448		2932	892
v/s Ratio Prot				c0.24		0.12		c0.40	0.20		0.36	
v/s Ratio Perm									0.36			0.16
v/c Ratio				0.72		0.35		0.70	0.59		0.62	0.27
Uniform Delay, d1				34.5		29.6		18.0	0.9		16.8	12.7
Progression Factor				1.00		1.00		0.38	16.75		1.00	1.00
Incremental Delay, d2				2.1		0.2		0.1	0.1		1.0	0.7
Delay (s)				36.6		29.8		7.0	14.9		17.8	13.5
Level of Service				D		C		A	B		B	B
Approach Delay (s)		0.0			34.7			9.3			17.0	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	241	35	532	0	0	0	0	2565	1029	340	2204	0
Future Volume (vph)	241	35	532	0	0	0	0	2565	1029	340	2204	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	0.88	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	1467	1482					5085	1561	3433	5085	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1681	1467	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)	251	36	554	0	0	0	0	2672	1072	354	2296	0
RTOR Reduction (vph)	0	4	44	0	0	0	0	0	321	0	0	0
Lane Group Flow (vph)	226	306	261	0	0	0	0	2672	751	354	2296	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)	31.2	31.2	31.2					58.1	58.1	16.6	78.9	
Effective Green, g (s)	31.2	31.2	31.2					58.1	58.1	16.6	78.9	
Actuated g/C Ratio	0.26	0.26	0.26					0.48	0.48	0.14	0.66	
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)	437	381	385					2461	755	474	3343	
v/s Ratio Prot	0.13	c0.21						c0.53		0.10	c0.45	
v/s Ratio Perm			0.18						0.48			
v/c Ratio	0.52	0.80	0.68					1.09	0.99	0.75	0.69	
Uniform Delay, d1	38.0	41.5	39.9					30.9	30.8	49.7	12.8	
Progression Factor	1.00	1.00	1.00					1.00	1.00	1.07	0.66	
Incremental Delay, d2	1.0	11.5	4.7					46.3	31.5	5.1	0.9	
Delay (s)	39.0	53.0	44.6					77.3	62.3	58.3	9.4	
Level of Service	D	D	D					E	E	E	A	
Approach Delay (s)		46.2			0.0			73.0			15.9	
Approach LOS		D			A			E			B	

Intersection Summary			
HCM 2000 Control Delay	49.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	100.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	522	260	251	458	370	588
Future Volume (vph)	522	260	251	458	370	588
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	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)	544	271	261	477	385	639
RTOR Reduction (vph)	0	45	0	0	0	124
Lane Group Flow (vph)	544	226	261	477	385	515
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				8
Actuated Green, G (s)	38.9	60.9	14.8	24.5	22.0	36.8
Effective Green, g (s)	38.9	60.9	14.8	24.5	22.0	36.8
Actuated g/C Ratio	0.43	0.68	0.16	0.27	0.24	0.41
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)	805	1055	291	507	432	647
v/s Ratio Prot	c0.29	0.05	c0.15	c0.26	c0.22	0.13
v/s Ratio Perm		0.09				0.19
v/c Ratio	0.68	0.21	0.90	0.94	0.89	0.80
Uniform Delay, d1	20.5	5.5	36.9	32.0	32.8	23.3
Progression Factor	1.00	1.00	0.94	0.92	1.00	1.00
Incremental Delay, d2	2.3	0.1	3.7	4.0	20.0	6.8
Delay (s)	22.8	5.6	38.5	33.6	52.8	30.1
Level of Service	C	A	D	C	D	C
Approach Delay (s)	17.0			35.3	38.6	
Approach LOS	B			D	D	

Intersection Summary			
HCM 2000 Control Delay	30.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	670	10	330	810	1188	0	0	614	607
Future Volume (vph)	0	0	0	670	10	330	810	1188	0	0	614	607
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	1688	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	1688	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	684	10	337	827	1212	0	0	627	619
RTOR Reduction (vph)	0	0	0	0	0	104	0	0	0	0	0	350
Lane Group Flow (vph)	0	0	0	349	345	233	827	1212	0	0	627	269
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)				28.7	28.7	28.7	30.4	71.7			37.1	37.1
Effective Green, g (s)				28.7	28.7	28.7	30.4	71.7			37.1	37.1
Actuated g/C Ratio				0.26	0.26	0.26	0.28	0.65			0.34	0.34
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)				438	440	717	948	3314			1715	519
v/s Ratio Prot				c0.21	0.20		c0.24	0.24			0.12	
v/s Ratio Perm						0.08						c0.17
v/c Ratio				0.80	0.78	0.32	0.87	0.37			0.37	0.52
Uniform Delay, d1				37.9	37.8	32.8	38.0	8.8			27.6	29.3
Progression Factor				1.00	1.00	1.00	1.44	0.95			1.00	1.00
Incremental Delay, d2				9.7	8.9	0.3	6.8	0.2			0.6	3.7
Delay (s)				47.6	46.6	33.1	61.3	8.5			28.2	32.9
Level of Service				D	D	C	E	A			C	C
Approach Delay (s)		0.0			42.5			29.9			30.5	
Approach LOS		A			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	33.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	98.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	607	5	470	0	0	0	0	1611	940	250	1184	0
Future Volume (vph)	607	5	470	0	0	0	0	1611	940	250	1184	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	0.95	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	0.97	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1681	1555	1504					5085	1557	3433	5085	
Flt Permitted	0.95	0.97	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1681	1555	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)	626	5	485	0	0	0	0	1661	969	258	1221	0
RTOR Reduction (vph)	0	19	50	0	0	0	0	0	268	0	0	0
Lane Group Flow (vph)	388	360	299	0	0	0	0	1661	701	258	1221	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)	31.3	31.3	31.3					53.9	53.9	11.0	69.1	
Effective Green, g (s)	31.3	31.3	31.3					53.9	53.9	11.0	69.1	
Actuated g/C Ratio	0.28	0.28	0.28					0.49	0.49	0.10	0.63	
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)	478	442	427					2491	762	343	3194	
v/s Ratio Prot	0.23	c0.23						0.33		c0.08	0.24	
v/s Ratio Perm			0.20						c0.45			
v/c Ratio	0.81	0.81	0.70					0.67	0.92	0.75	0.38	
Uniform Delay, d1	36.6	36.6	35.2					21.2	26.1	48.2	10.0	
Progression Factor	1.00	1.00	1.00					1.00	1.00	1.47	1.41	
Incremental Delay, d2	10.1	11.0	5.1					1.4	18.1	8.8	0.3	
Delay (s)	46.7	47.6	40.3					22.7	44.2	79.8	14.4	
Level of Service	D	D	D					C	D	E	B	
Approach Delay (s)		45.0			0.0			30.6			25.8	
Approach LOS		D			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	32.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	98.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	990	680	750	400	230	329
Future Volume (vph)	990	680	750	400	230	329
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)	1031	708	781	417	240	343
RTOR Reduction (vph)	0	0	0	82	0	0
Lane Group Flow (vph)	1031	708	781	335	583	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	38.9	24.5	24.5	22.6	
Effective Green, g (s)	29.2	38.9	24.5	24.5	22.6	
Actuated g/C Ratio	0.32	0.43	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)	459	805	507	322	327	
v/s Ratio Prot	c0.73	0.38	c0.42		c0.45	
v/s Ratio Perm				0.28		
v/c Ratio	2.25	0.88	1.54	1.04	1.78	
Uniform Delay, d1	30.4	23.4	32.8	32.8	33.7	
Progression Factor	1.14	0.89	1.00	1.00	1.00	
Incremental Delay, d2	567.0	9.7	252.9	61.5	364.4	
Delay (s)	601.5	30.5	285.7	94.2	398.1	
Level of Service	F	C	F	F	F	
Approach Delay (s)		369.1	219.0		398.1	
Approach LOS		F	F		F	

Intersection Summary			
HCM 2000 Control Delay	322.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.89		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	161.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	250	612	282	485	424	110
Future Volume (vph)	250	612	282	485	424	110
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	272	665	307	527	461	120

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	937	834	581
Volume Left (vph)	272	0	461
Volume Right (vph)	0	527	120
Hadj (s)	0.09	-0.35	0.07
Departure Headway (s)	7.1	6.6	7.1
Degree Utilization, x	1.84	1.54	1.14
Capacity (veh/h)	515	547	515
Control Delay (s)	403.8	269.6	108.8
Approach Delay (s)	403.8	269.6	108.8
Approach LOS	F	F	F

Intersection Summary			
Delay	283.3		
Level of Service	F		
Intersection Capacity Utilization	130.8%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	266	0	548	1032	343	46	425	1297	286	3	1105	220
Future Volume (vph)	266	0	548	1032	343	46	425	1297	286	3	1105	220
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	0.98		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	3477		3433	3539	1549		5085	1539
Flt Permitted	0.95		1.00	0.95	1.00		0.95	1.00	1.00		0.94	1.00
Satd. Flow (perm)	1770		2787	3433	3477		3433	3539	1549		4759	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)	280	0	577	1086	361	48	447	1365	301	3	1163	232
RTOR Reduction (vph)	0	0	57	0	9	0	0	0	118	0	0	85
Lane Group Flow (vph)	280	0	520	1086	400	0	447	1365	183	0	1166	147
Confl. Peds. (#/hr)												12
Confl. Bikes (#/hr)									2			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)	15.4		35.9	46.1	25.1		20.5	62.0	62.0		36.3	36.3
Effective Green, g (s)	15.4		35.9	46.1	25.1		20.5	62.0	62.0		36.3	36.3
Actuated g/C Ratio	0.13		0.30	0.38	0.21		0.17	0.52	0.52		0.30	0.30
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)	227		833	1318	727		586	1828	800		1439	465
v/s Ratio Prot	c0.16		0.11	c0.32	0.11		0.13	c0.39				
v/s Ratio Perm			0.08						0.12		c0.25	0.10
v/c Ratio	1.23		0.62	0.82	0.55		0.76	0.75	0.23		0.81	0.32
Uniform Delay, d1	52.3		36.2	33.3	42.4		47.4	22.8	15.9		38.7	32.3
Progression Factor	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	137.2		1.5	4.3	0.9		5.8	2.8	0.7		5.0	1.8
Delay (s)	189.5		37.7	37.6	43.3		53.3	25.7	16.6		43.7	34.1
Level of Service	F		D	D	D		D	C	B		D	C
Approach Delay (s)		87.3			39.2			30.2			42.1	
Approach LOS		F			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	43.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.7
Intersection Capacity Utilization	104.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	349	5	212	0	0	0	0	1790	1297	142	2336	0
Future Volume (vph)	349	5	212	0	0	0	0	1790	1297	142	2336	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	1590						5085	2720	3433	5085	
Flt Permitted	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	1590						5085	2720	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)	364	5	221	0	0	0	0	1865	1351	148	2433	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	364	218	0	0	0	0	0	1865	1351	148	2433	0
Confl. Peds. (#/hr)									1			22
Confl. Bikes (#/hr)									5			4
Turn Type	Split	NA						NA	Perm	Prot	NA	
Protected Phases	4	4						2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	19.5	19.5						72.9	72.9	10.5	88.6	
Effective Green, g (s)	19.5	19.5						72.9	72.9	10.5	88.6	
Actuated g/C Ratio	0.16	0.16						0.61	0.61	0.09	0.74	
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)	557	258						3089	1652	300	3754	
v/s Ratio Prot	0.11	c0.14						0.37		0.04	c0.48	
v/s Ratio Perm									c0.50			
v/c Ratio	0.65	0.84						0.60	0.82	0.49	0.65	
Uniform Delay, d1	47.1	48.8						14.6	18.4	52.2	7.9	
Progression Factor	1.00	1.00						1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.8	21.4						0.9	4.6	1.3	0.9	
Delay (s)	49.8	70.2						15.5	23.0	53.5	8.8	
Level of Service	D	E						B	C	D	A	
Approach Delay (s)		57.6			0.0			18.6			11.3	
Approach LOS		E			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.1
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	206	810	70	445	649	100	50	352	740	40	279	126
Future Volume (vph)	206	810	70	445	649	100	50	352	740	40	279	126
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	
Frpb, 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	0.95	
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	1556	3433	3539	1538	1770	3539	1583	1770	3360	
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	1556	3433	3539	1538	1770	3539	1583	1770	3360	
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)	226	890	77	489	713	110	55	387	813	44	307	138
RTOR Reduction (vph)	0	0	55	0	0	76	0	0	253	0	41	0
Lane Group Flow (vph)	226	890	22	489	713	34	55	387	560	44	404	0
Confl. 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)	17.5	32.7	32.7	19.8	35.0	35.0	6.7	39.2	39.2	4.1	36.6	
Effective Green, g (s)	17.5	32.7	32.7	19.8	35.0	35.0	6.7	39.2	39.2	4.1	36.6	
Actuated g/C Ratio	0.15	0.29	0.29	0.17	0.31	0.31	0.06	0.34	0.34	0.04	0.32	
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)	270	1011	444	594	1082	470	103	1212	542	63	1074	
v/s Ratio Prot	0.13	c0.25		c0.14	0.20		c0.03	0.11	c0.35	0.02	0.12	
v/s Ratio Perm			0.01			0.02						
v/c Ratio	0.84	0.88	0.05	0.82	0.66	0.07	0.53	0.32	1.03	0.70	0.38	
Uniform Delay, d1	47.1	39.0	29.6	45.6	34.5	28.2	52.3	27.8	37.6	54.5	30.1	
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	19.7	9.1	0.0	9.0	1.5	0.1	5.2	0.2	47.4	28.6	0.2	
Delay (s)	66.7	48.0	29.6	54.6	36.0	28.2	57.6	27.9	85.0	83.2	30.3	
Level of Service	E	D	C	D	D	C	E	C	F	F	C	
Approach Delay (s)		50.4			42.3			66.2			35.0	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	50.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	114.4	Sum of lost time (s)	18.6
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	77	100	375	218	5
Future Volume (Veh/h)	5	77	100	375	218	5
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)	6	86	111	417	242	6
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	884	245	248			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	884	245	248			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	89	92			
cM capacity (veh/h)	289	794	1318			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	92	111	417	248
Volume Left	6	111	0	0
Volume Right	86	0	0	6
cSH	713	1318	1700	1700
Volume to Capacity	0.13	0.08	0.25	0.15
Queue Length 95th (ft)	11	7	0	0
Control Delay (s)	10.8	8.0	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	10.8	1.7		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	32.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	209	350	100	120	250	130	110	616	130	170	432	83
Future Volume (vph)	209	350	100	120	250	130	110	616	130	170	432	83
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)	220	368	105	126	263	137	116	648	137	179	455	87
RTOR Reduction (vph)	0	0	81	0	0	113	0	0	93	0	0	60
Lane Group Flow (vph)	220	368	24	126	263	24	116	648	44	179	455	27
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)	13.2	17.7	17.7	8.8	13.3	13.3	8.6	20.5	20.5	11.9	23.8	23.8
Effective Green, g (s)	13.2	17.7	17.7	8.8	13.3	13.3	8.6	20.5	20.5	11.9	23.8	23.8
Actuated g/C Ratio	0.17	0.23	0.23	0.11	0.17	0.17	0.11	0.27	0.27	0.15	0.31	0.31
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)	303	814	364	202	612	273	197	943	421	273	1095	489
v/s Ratio Prot	c0.12	c0.10		0.07	0.07		0.07	c0.18		c0.10	c0.13	
v/s Ratio Perm			0.02			0.01			0.03			0.02
v/c Ratio	0.73	0.45	0.07	0.62	0.43	0.09	0.59	0.69	0.10	0.66	0.42	0.06
Uniform Delay, d1	30.1	25.4	23.1	32.5	28.4	26.7	32.5	25.3	21.3	30.6	21.0	18.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.4	0.4	0.1	5.9	0.5	0.1	4.4	2.1	0.1	5.6	0.3	0.0
Delay (s)	38.5	25.8	23.2	38.4	28.9	26.8	36.9	27.4	21.4	36.1	21.3	18.7
Level of Service	D	C	C	D	C	C	D	C	C	D	C	B
Approach Delay (s)		29.5			30.6			27.7			24.7	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	76.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	520	320	10	280	250	313	10	1452	310	466	658	380
Future Volume (vph)	520	320	10	280	250	313	10	1452	310	466	658	380
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	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	0.86	0.86	0.97	0.91	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)	3433	5085	1583	1770	1863	1583	1770	4791	1362	3433	5085	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)	3433	5085	1583	1770	1863	1583	1770	4791	1362	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)	565	348	11	304	272	340	11	1578	337	507	715	413
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	145	0	0	0
Lane Group Flow (vph)	565	348	11	304	272	340	11	1611	158	507	715	413
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			2			Free
Actuated Green, G (s)	22.9	24.9	135.0	22.0	24.0	135.0	1.6	47.8	47.8	19.0	65.2	135.0
Effective Green, g (s)	22.9	24.9	135.0	22.0	24.0	135.0	1.6	47.8	47.8	19.0	65.2	135.0
Actuated g/C Ratio	0.17	0.18	1.00	0.16	0.18	1.00	0.01	0.35	0.35	0.14	0.48	1.00
Clearance Time (s)	5.0	5.3		5.0	5.3		5.0	6.0	6.0	5.0	6.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	3.0	3.0	2.0	4.0	
Lane Grp Cap (vph)	582	937	1583	288	331	1583	20	1696	482	483	2455	1583
v/s Ratio Prot	0.16	0.07		c0.17	c0.15		0.01	c0.34		c0.15	0.14	
v/s Ratio Perm			0.01			0.21			0.12			c0.26
v/c Ratio	0.97	0.37	0.01	1.06	0.82	0.21	0.55	0.95	0.33	1.05	0.29	0.26
Uniform Delay, d1	55.7	48.2	0.0	56.5	53.4	0.0	66.3	42.4	31.9	58.0	21.0	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	1.00
Incremental Delay, d2	29.8	0.4	0.0	68.4	16.3	0.3	17.2	12.8	1.8	54.6	0.3	0.4
Delay (s)	85.5	48.6	0.0	124.9	69.8	0.3	83.6	55.2	33.7	112.6	21.3	0.4
Level of Service	F	D	A	F	E	A	F	E	C	F	C	A
Approach Delay (s)		70.6			62.3			52.0			44.3	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	54.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	21.3
Intersection Capacity Utilization	89.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX G

PEAK HOUR ANALYSIS WORKSHEETS
– EXISTING + PROJECT + CUMULATIVE PROJECTS (WITH MOUNTAIN MEADOW ROAD CONNECTION)

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	150	185	318	101	275	480
Future Volume (vph)	150	185	318	101	275	480
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	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	1689	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1770	1583	1770	1863	1689	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	165	203	349	111	302	527
RTOR Reduction (vph)	0	175	0	0	53	0
Lane Group Flow (vph)	165	28	349	111	776	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)	14.7	14.7	24.7	82.6	53.4	
Effective Green, g (s)	14.7	14.7	24.7	82.6	53.4	
Actuated g/C Ratio	0.14	0.14	0.23	0.78	0.50	
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)	244	218	411	1447	848	
v/s Ratio Prot	c0.09		c0.20	0.06	c0.46	
v/s Ratio Perm		0.02				
v/c Ratio	0.68	0.13	0.85	0.08	0.92	
Uniform Delay, d1	43.5	40.2	39.0	2.8	24.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	7.2	0.3	15.0	0.0	14.3	
Delay (s)	50.8	40.5	54.0	2.8	38.7	
Level of Service	D	D	D	A	D	
Approach Delay (s)	45.1			41.7	38.7	
Approach LOS	D			D	D	

Intersection Summary			
HCM 2000 Control Delay	40.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	106.3	Sum of lost time (s)	13.5
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	140	320	99	44	190	270
Future Volume (vph)	140	320	99	44	190	270
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	1773		1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	1773		1770	1863
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	161	368	114	51	218	310
RTOR Reduction (vph)	0	284	19	0	0	0
Lane Group Flow (vph)	161	84	146	0	218	310
Confl. Bikes (#/hr)				1		
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	10.5	10.5	10.3		11.5	26.3
Effective Green, g (s)	10.5	10.5	10.3		11.5	26.3
Actuated g/C Ratio	0.23	0.23	0.22		0.25	0.57
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)	405	362	398		444	1069
v/s Ratio Prot	c0.09		c0.08		c0.12	0.17
v/s Ratio Perm		0.05				
v/c Ratio	0.40	0.23	0.37		0.49	0.29
Uniform Delay, d1	15.0	14.4	15.0		14.6	5.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.6	0.3	0.6		0.9	0.2
Delay (s)	15.6	14.7	15.6		15.5	5.1
Level of Service	B	B	B		B	A
Approach Delay (s)	15.0		15.6			9.4
Approach LOS	B		B			A

Intersection Summary			
HCM 2000 Control Delay	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	45.8	Sum of lost time (s)	13.5
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	0	18	20	0	25	23	153	70	60	300	10
Future Volume (Veh/h)	5	0	18	20	0	25	23	153	70	60	300	10
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)	6	0	21	24	0	30	27	182	83	71	357	12
Pedestrians		1			2						1	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		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	743	827	364	758	750	185	370			267		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	743	827	364	758	750	185	370			267		
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 %	98	100	97	92	100	96	98			95		
cM capacity (veh/h)	300	283	680	294	313	855	1188			1295		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	27	54	27	182	83	71	369
Volume Left	6	24	27	0	0	71	0
Volume Right	21	30	0	0	83	0	12
cSH	531	662	1188	1700	1700	1295	1700
Volume to Capacity	0.05	0.08	0.02	0.11	0.05	0.05	0.22
Queue Length 95th (ft)	4	7	2	0	0	4	0
Control Delay (s)	12.1	13.3	8.1	0.0	0.0	7.9	0.0
Lane LOS	B	B	A			A	
Approach Delay (s)	12.1	13.3	0.7			1.3	
Approach LOS	B	B					

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	35.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	232	88	260	441	10	106	70	80	10	210	268
Future Volume (vph)	166	232	88	260	441	10	106	70	80	10	210	268
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	0.96		1.00	1.00			0.96			0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.98			1.00	
Satd. Flow (prot)	1770	3366		1770	3526			1739			1710	
Flt Permitted	0.95	1.00		0.95	1.00			0.55			0.99	
Satd. Flow (perm)	1770	3366		1770	3526			970			1699	
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)	180	252	96	283	479	11	115	76	87	11	228	291
RTOR Reduction (vph)	0	40	0	0	2	0	0	19	0	0	49	0
Lane Group Flow (vph)	180	308	0	283	488	0	0	259	0	0	481	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)	12.3	12.6		16.6	16.9			26.0			26.0	
Effective Green, g (s)	12.3	12.6		16.6	16.9			26.0			26.0	
Actuated g/C Ratio	0.18	0.18		0.24	0.25			0.38			0.38	
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)	316	617		427	867			367			642	
v/s Ratio Prot	0.10	0.09		c0.16	c0.14							
v/s Ratio Perm								0.27			c0.28	
v/c Ratio	0.57	0.50		0.66	0.56			0.71			0.75	
Uniform Delay, d1	25.8	25.2		23.5	22.7			18.1			18.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	2.4	0.6		3.8	0.8			6.1			4.8	
Delay (s)	28.1	25.9		27.4	23.5			24.2			23.3	
Level of Service	C	C		C	C			C			C	
Approach Delay (s)		26.6			24.9			24.2			23.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	24.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	68.7	Sum of lost time (s)	13.5
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	325	286	0	0	744	70	301	10	200	0	0	0
Future Volume (vph)	325	286	0	0	744	70	301	10	200	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	4.6			
Lane Util. Factor	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	1583		1777	1583			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	1863			1863	1583		1777	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)	365	321	0	0	836	79	338	11	225	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	37	0	0	188	0	0	0
Lane Group Flow (vph)	365	321	0	0	836	42	0	349	37	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)	23.4	73.7			46.1	46.1		16.4	16.4			
Effective Green, g (s)	23.4	73.7			46.1	46.1		16.4	16.4			
Actuated g/C Ratio	0.23	0.74			0.46	0.46		0.16	0.16			
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)	414	1373			858	729		291	259			
v/s Ratio Prot	c0.21	0.17			c0.45			c0.20				
v/s Ratio Perm						0.03			0.02			
v/c Ratio	0.88	0.23			0.97	0.06		1.20	0.14			
Uniform Delay, d1	37.0	4.2			26.4	14.9		41.8	35.8			
Progression Factor	0.94	2.57			1.00	1.00		1.00	1.00			
Incremental Delay, d2	12.9	0.2			25.1	0.2		118.0	0.1			
Delay (s)	47.7	11.0			51.5	15.1		159.8	35.9			
Level of Service	D	B			D	B		F	D			
Approach Delay (s)		30.5			48.3			111.2			0.0	
Approach LOS		C			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	59.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	86.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	571	648	350	695	0	0	0	0	30	30	891
Future Volume (vph)	0	571	648	350	695	0	0	0	0	30	30	891
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						0.98	1.00
Satd. Flow (prot)		1863	1583	1770	1863						1817	2787
Flt Permitted		1.00	1.00	0.95	1.00						0.98	1.00
Satd. Flow (perm)		1863	1583	1770	1863						1817	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	621	704	380	755	0	0	0	0	33	33	968
RTOR Reduction (vph)	0	0	331	0	0	0	0	0	0	0	0	326
Lane Group Flow (vph)	0	621	373	380	755	0	0	0	0	0	66	642
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		37.0	37.0	24.8	66.0						24.1	24.1
Effective Green, g (s)		37.0	37.0	24.8	66.0						24.1	24.1
Actuated g/C Ratio		0.37	0.37	0.25	0.66						0.24	0.24
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)		689	585	438	1229						437	671
v/s Ratio Prot		c0.33		c0.21	0.41						0.04	
v/s Ratio Perm			0.24									c0.23
v/c Ratio		0.90	0.64	0.87	0.61						0.15	0.96
Uniform Delay, d1		29.8	26.0	36.0	9.7						29.9	37.4
Progression Factor		1.00	1.00	1.19	1.26						1.00	1.00
Incremental Delay, d2		17.2	5.2	1.8	0.2						0.1	24.2
Delay (s)		47.0	31.2	44.7	12.5						30.0	61.7
Level of Service		D	C	D	B						C	E
Approach Delay (s)		38.6			23.3			0.0			59.6	
Approach LOS		D			C			A			E	

Intersection Summary			
HCM 2000 Control Delay	39.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	86.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	541	20	20	1183	383	20	18	20	668	44	180
Future Volume (vph)	151	541	20	20	1183	383	20	18	20	668	44	180
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			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	0.99		1.00	0.96			0.95			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.96	1.00
Satd. Flow (prot)	1770	3517		1770	3391			1746			1779	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.98			0.96	1.00
Satd. Flow (perm)	1770	3517		1770	3391			1746			1779	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)	168	601	22	22	1314	426	22	20	22	742	49	200
RTOR Reduction (vph)	0	2	0	0	28	0	0	20	0	0	0	91
Lane Group Flow (vph)	168	621	0	22	1712	0	0	44	0	0	791	109
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)	4.3	46.4		1.5	43.6			7.7			19.2	19.2
Effective Green, g (s)	4.3	46.4		1.5	43.6			7.7			19.2	19.2
Actuated g/C Ratio	0.05	0.50		0.02	0.47			0.08			0.21	0.21
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)	82	1758		28	1593			144			368	327
v/s Ratio Prot	c0.09	c0.18		0.01	c0.50			c0.03			c0.44	
v/s Ratio Perm												0.07
v/c Ratio	2.05	0.35		0.79	1.07			0.30			2.15	0.33
Uniform Delay, d1	44.2	14.1		45.5	24.6			40.0			36.8	31.3
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	511.5	0.1		82.7	45.6			1.2			526.2	2.7
Delay (s)	555.8	14.2		128.2	70.2			41.2			563.0	34.1
Level of Service	F	B		F	E			D			F	C
Approach Delay (s)		129.2			70.9			41.2			456.3	
Approach LOS		F			E			D			F	

Intersection Summary			
HCM 2000 Control Delay	189.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	92.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	110.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	742	18	12	1605	9	8
Future Volume (Veh/h)	742	18	12	1605	9	8
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	807	20	13	1745	10	9
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			827		2588	817
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			827		2588	817
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		63	98
cM capacity (veh/h)			804		27	376

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	827	1758	19
Volume Left	0	13	10
Volume Right	20	0	9
cSH	1700	804	49
Volume to Capacity	0.49	0.02	0.39
Queue Length 95th (ft)	0	1	35
Control Delay (s)	0.0	0.1	119.6
Lane LOS		A	F
Approach Delay (s)	0.0	0.1	119.6
Approach LOS			F

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	104.0%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	82	561	1280	23	101	256
Future Volume (Veh/h)	82	561	1280	23	101	256
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)	85	584	1333	24	105	267
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	1357				2099	1345
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1357				2099	1345
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	83				0	0
cM capacity (veh/h)	507				47	185

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	85	584	1357	372
Volume Left	85	0	0	105
Volume Right	0	0	24	267
cSH	507	1700	1700	102
Volume to Capacity	0.17	0.34	0.80	3.65
Queue Length 95th (ft)	15	0	0	Err
Control Delay (s)	13.5	0.0	0.0	Err
Lane LOS	B			F
Approach Delay (s)	1.7		0.0	Err
Approach LOS				F

Intersection Summary			
Average Delay	1551.6		
Intersection Capacity Utilization	96.8%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	5	10	643	5	20	1636
Future Volume (Veh/h)	5	10	643	5	20	1636
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)	6	11	722	6	22	1838
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	0.86	0.86			0.86	
vC, conflicting volume	2607	725			728	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2782	603			606	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	66	97			97	
cM capacity (veh/h)	18	431			839	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	17	728	1860
Volume Left	6	0	22
Volume Right	11	6	0
cSH	50	1700	839
Volume to Capacity	0.34	0.43	0.03
Queue Length 95th (ft)	30	0	2
Control Delay (s)	112.4	0.0	0.1
Lane LOS	F		A
Approach Delay (s)	112.4	0.0	0.1
Approach LOS	F		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	112.1%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	30	10	120	19	10	120
Future Volume (Veh/h)	30	10	120	19	10	120
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)	36	12	145	23	12	145
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	326	156			168	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	326	156			168	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	99			99	
cM capacity (veh/h)	663	889			1410	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	48	168	157
Volume Left	36	0	12
Volume Right	12	23	0
cSH	708	1700	1410
Volume to Capacity	0.07	0.10	0.01
Queue Length 95th (ft)	5	0	1
Control Delay (s)	10.5	0.0	0.6
Lane LOS	B		A
Approach Delay (s)	10.5	0.0	0.6
Approach LOS	B		

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	24.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	51	119	112	609	1606	47
Future Volume (vph)	51	119	112	609	1606	47
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
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	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)	56	131	123	870	2294	52
RTOR Reduction (vph)	0	72	0	0	0	3
Lane Group Flow (vph)	56	59	123	870	2294	49
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	13.4	13.4	7.0	118.1	107.1	107.1
Effective Green, g (s)	13.4	13.4	7.0	118.1	107.1	107.1
Actuated g/C Ratio	0.09	0.09	0.05	0.83	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)	167	149	87	1552	1408	1196
v/s Ratio Prot	0.03		c0.07	0.47	c1.23	
v/s Ratio Perm		c0.04				0.03
v/c Ratio	0.34	0.40	1.41	0.56	1.63	0.04
Uniform Delay, d1	60.0	60.4	67.3	3.7	17.3	4.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	1.8	240.9	0.5	286.4	0.0
Delay (s)	61.2	62.1	308.2	4.2	303.7	4.4
Level of Service	E	E	F	A	F	A
Approach Delay (s)	61.8			41.8	297.1	
Approach LOS	E			D	F	

Intersection Summary			
HCM 2000 Control Delay	212.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.49		
Actuated Cycle Length (s)	141.7	Sum of lost time (s)	14.2
Intersection Capacity Utilization	125.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	370	0	210	0	0	0	140	331	0	0	1073	572
Future Volume (vph)	370	0	210	0	0	0	140	331	0	0	1073	572
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	0.98				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	1546				1770	1863			1863	1546
Flt Permitted		0.76	1.00				0.95	1.00			1.00	1.00
Satd. Flow (perm)		1410	1546				1770	1863			1863	1546
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)	385	0	219	0	0	0	146	345	0	0	1118	596
RTOR Reduction (vph)	0	0	111	0	0	0	0	0	0	0	0	94
Lane Group Flow (vph)	0	385	108	0	0	0	146	345	0	0	1118	502
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		4	8								6
Actuated Green, G (s)		25.6	25.6				7.0	54.5			42.5	42.5
Effective Green, g (s)		25.6	25.6				7.0	54.5			42.5	42.5
Actuated g/C Ratio		0.29	0.29				0.08	0.61			0.47	0.47
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)		402	441				138	1133			883	733
v/s Ratio Prot							c0.08	0.19			c0.60	
v/s Ratio Perm		c0.27	0.07									0.32
v/c Ratio		0.96	0.25				1.06	0.30			1.27	0.69
Uniform Delay, d1		31.5	24.6				41.3	8.4			23.5	18.3
Progression Factor		1.00	1.00				1.00	1.00			1.00	1.00
Incremental Delay, d2		33.7	0.3				92.9	0.2			128.8	2.7
Delay (s)		65.1	24.9				134.2	8.6			152.3	21.0
Level of Service		E	C				F	A			F	C
Approach Delay (s)		50.5			0.0			45.9			106.7	
Approach LOS		D			A			D			F	

Intersection Summary			
HCM 2000 Control Delay	84.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	89.6	Sum of lost time (s)	14.5
Intersection Capacity Utilization	96.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	10	40	202	15	39	27	412	200	72	1014	12
Future Volume (vph)	18	10	40	202	15	39	27	412	200	72	1014	12
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		0.92			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)		1671			1755		1770	1863	1547	1770	1859	
Flt Permitted		0.99			0.96		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1671			1755		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)	19	10	42	210	16	41	28	429	208	75	1056	12
RTOR Reduction (vph)	0	39	0	0	5	0	0	0	101	0	0	0
Lane Group Flow (vph)	0	32	0	0	262	0	28	429	107	75	1069	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)		8.6			21.5		2.7	61.2	61.2	8.1	66.6	
Effective Green, g (s)		8.6			21.5		2.7	61.2	61.2	8.1	66.6	
Actuated g/C Ratio		0.07			0.18		0.02	0.51	0.51	0.07	0.56	
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)		120			316		40	954	792	120	1036	
v/s Ratio Prot		c0.02			c0.15		0.02	0.23		c0.04	c0.57	
v/s Ratio Perm									0.07			
v/c Ratio		0.27			0.83		0.70	0.45	0.13	0.62	1.03	
Uniform Delay, d1		52.4			47.2		57.9	18.4	15.2	54.2	26.4	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.2			16.3		42.0	0.3	0.1	9.7	36.3	
Delay (s)		53.6			63.4		99.9	18.8	15.3	63.9	62.7	
Level of Service		D			E		F	B	B	E	E	
Approach Delay (s)		53.6			63.4			21.1			62.8	
Approach LOS		D			E			C			E	

Intersection Summary			
HCM 2000 Control Delay	49.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	119.4	Sum of lost time (s)	20.0
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	190	224	600	66	69	1149
Future Volume (vph)	190	224	600	66	69	1149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	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	0.99		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)	209	246	659	73	76	1263
RTOR Reduction (vph)	0	0	8	0	0	0
Lane Group Flow (vph)	209	246	724	0	76	1263
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)	16.0	16.0	22.2		6.9	35.1
Effective Green, g (s)	16.0	16.0	22.2		6.9	35.1
Actuated g/C Ratio	0.25	0.25	0.35		0.11	0.55
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)	445	393	1211		192	1953
v/s Ratio Prot	0.12		0.21		0.04	c0.36
v/s Ratio Perm		c0.16				
v/c Ratio	0.47	0.63	0.60		0.40	0.65
Uniform Delay, d1	20.2	21.1	17.0		26.4	9.9
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.8	3.1	0.8		1.3	0.7
Delay (s)	21.0	24.2	17.8		27.8	10.7
Level of Service	C	C	B		C	B
Approach Delay (s)	22.7		17.8			11.6
Approach LOS	C		B			B

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	63.6	Sum of lost time (s)	18.5
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	0	65	5	0	5	43	704	20	10	1497	17
Future Volume (vph)	17	0	65	5	0	5	43	704	20	10	1497	17
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	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	1583		1770	1583		1770	3523		1770	3533	
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	3523		1770	3533	
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)	19	0	73	6	0	6	48	791	22	11	1682	19
RTOR Reduction (vph)	0	66	0	0	5	0	0	1	0	0	1	0
Lane Group Flow (vph)	19	7	0	6	1	0	48	812	0	11	1700	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)	0.5	7.3		0.5	7.3		2.4	49.4		0.5	47.5	
Effective Green, g (s)	0.5	7.3		0.5	7.3		2.4	49.4		0.5	47.5	
Actuated g/C Ratio	0.01	0.09		0.01	0.09		0.03	0.64		0.01	0.62	
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	149		11	149		55	2254		11	2173	
v/s Ratio Prot	c0.01	c0.00		0.00	0.00		c0.03	0.23		0.01	c0.48	
v/s Ratio Perm												
v/c Ratio	1.73	0.05		0.55	0.00		0.87	0.36		1.00	0.78	
Uniform Delay, d1	38.4	31.8		38.2	31.7		37.2	6.5		38.4	11.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	556.0	0.1		45.6	0.0		76.2	0.1		271.4	1.9	
Delay (s)	594.4	31.9		83.8	31.7		113.5	6.6		309.7	12.9	
Level of Service	F	C		F	C		F	A		F	B	
Approach Delay (s)		148.1			57.8			12.6			14.8	
Approach LOS		F			E			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	77.2	Sum of lost time (s)	19.5
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	5	50	0	0	0	50	741	5	1	1516	65
Future Volume (vph)	10	5	50	0	0	0	50	741	5	1	1516	65
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	4.0	
Lane Util. Factor	1.00	1.00					1.00	0.95		1.00	0.95	
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	0.86					1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00					0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1586					1770	3535		1770	3513	
Flt Permitted	0.95	1.00					0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1586					1770	3535		1770	3513	
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	6	56	0	0	0	56	833	6	1	1703	73
RTOR Reduction (vph)	0	51	0	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	11	11	0	0	0	0	56	839	0	1	1774	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)	7.3	7.3					5.2	56.3		0.7	51.8	
Effective Green, g (s)	7.3	7.3					5.2	56.3		0.7	51.8	
Actuated g/C Ratio	0.09	0.09					0.07	0.72		0.01	0.66	
Clearance Time (s)	4.0	4.0					6.0	6.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0					3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	165	147					117	2541		15	2324	
v/s Ratio Prot	0.01	c0.01					c0.03	0.24		0.00	c0.50	
v/s Ratio Perm												
v/c Ratio	0.07	0.08					0.48	0.33		0.07	0.76	
Uniform Delay, d1	32.4	32.4					35.2	4.1		38.5	9.1	
Progression Factor	1.00	1.00					1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.2					3.1	0.1		1.9	1.5	
Delay (s)	32.6	32.6					38.3	4.1		40.4	10.6	
Level of Service	C	C					D	A		D	B	
Approach Delay (s)		32.6			0.0			6.3			10.6	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	9.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	78.3	Sum of lost time (s)	14.0
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	50	240	283	112	34	93	447	67	22	1044	140
Future Volume (vph)	67	50	240	283	112	34	93	447	67	22	1044	140
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	0.88		1.00	0.96		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	3045		1770	3403		1770	3539	1556	1770	3539	1551
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	3045		1770	3403		1770	3539	1556	1770	3539	1551
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)	71	53	253	298	118	36	98	471	71	23	1099	147
RTOR Reduction (vph)	0	189	0	0	17	0	0	0	37	0	0	70
Lane Group Flow (vph)	71	117	0	298	137	0	98	471	34	23	1099	77
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)	9.2	16.8		28.6	36.2		13.6	61.6	61.6	3.9	51.9	51.9
Effective Green, g (s)	9.2	16.8		28.6	36.2		13.6	61.6	61.6	3.9	51.9	51.9
Actuated g/C Ratio	0.07	0.13		0.22	0.28		0.11	0.48	0.48	0.03	0.40	0.40
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)	125	395		390	951		185	1683	740	53	1418	621
v/s Ratio Prot	0.04	c0.04		c0.17	0.04		c0.06	0.13		0.01	c0.31	
v/s Ratio Perm									0.02			0.05
v/c Ratio	0.57	0.30		0.76	0.14		0.53	0.28	0.05	0.43	0.78	0.12
Uniform Delay, d1	58.2	51.0		47.3	35.0		54.9	20.5	18.2	61.7	33.7	24.5
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	5.8	0.4		8.6	0.1		2.7	0.1	0.0	5.6	2.7	0.1
Delay (s)	64.0	51.4		55.9	35.1		57.6	20.6	18.2	67.3	36.4	24.6
Level of Service	E	D		E	D		E	C	B	E	D	C
Approach Delay (s)		53.8			48.8			26.0			35.6	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	38.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	129.5	Sum of lost time (s)	18.6
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	183	10	142	20	10	5	75	779	20	25	1581	260
Future Volume (vph)	183	10	142	20	10	5	75	779	20	25	1581	260
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	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	0.86		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	1581		1770	1757		1770	3523		1770	3450	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1581		1770	1757		1770	3523		1770	3450	
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)	185	10	143	20	10	5	76	787	20	25	1597	263
RTOR Reduction (vph)	0	124	0	0	5	0	0	1	0	0	7	0
Lane Group Flow (vph)	185	29	0	20	10	0	76	806	0	25	1853	0
Confl. Peds. (#/hr)						8			4			2
Confl. Bikes (#/hr)			1						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)	16.3	16.3		7.5	7.5		6.9	74.2		3.4	70.7	
Effective Green, g (s)	16.3	16.3		7.5	7.5		6.9	74.2		3.4	70.7	
Actuated g/C Ratio	0.14	0.14		0.06	0.06		0.06	0.62		0.03	0.59	
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)	240	214		110	109		101	2178		50	2032	
v/s Ratio Prot	c0.10	0.02		c0.01	0.01		c0.04	c0.23		0.01	c0.54	
v/s Ratio Perm												
v/c Ratio	0.77	0.14		0.18	0.09		0.75	0.37		0.50	0.91	
Uniform Delay, d1	50.0	45.7		53.3	53.0		55.7	11.3		57.5	21.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	14.2	0.3		0.8	0.4		26.7	0.1		7.7	6.7	
Delay (s)	64.2	46.0		54.1	53.4		82.4	11.4		65.1	28.6	
Level of Service	E	D		D	D		F	B		E	C	
Approach Delay (s)		55.9			53.8			17.5			29.1	
Approach LOS		E			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	29.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	184	328	358	530	540	54	326	659	522	126	1309	361
Future Volume (vph)	184	328	358	530	540	54	326	659	522	126	1309	361
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	
Frt	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	1541	3433	3485		3433	3539	1566	3433	3415	
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	1541	3433	3485		3433	3539	1566	3433	3415	
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)	188	335	365	541	551	55	333	672	533	129	1336	368
RTOR Reduction (vph)	0	0	108	0	7	0	0	0	58	0	20	0
Lane Group Flow (vph)	188	335	257	541	599	0	333	672	475	129	1684	0
Confl. Peds. (#/hr)			5			4			1			1
Confl. Bikes (#/hr)			8			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)	9.7	22.9	22.9	14.9	28.4		9.8	51.0	65.9	7.2	48.4	
Effective Green, g (s)	9.7	22.9	22.9	14.9	28.4		9.8	51.0	65.9	7.2	48.4	
Actuated g/C Ratio	0.08	0.20	0.20	0.13	0.25		0.09	0.44	0.57	0.06	0.42	
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)	289	704	306	444	860		292	1569	897	214	1437	
v/s Ratio Prot	0.05	0.09		c0.16	0.17		c0.10	0.19	c0.07	0.04	c0.49	
v/s Ratio Perm			c0.17						0.23			
v/c Ratio	0.65	0.48	0.84	1.22	0.70		1.14	0.43	0.53	0.60	1.17	
Uniform Delay, d1	51.0	40.7	44.3	50.0	39.4		52.6	22.0	15.0	52.5	33.3	
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	5.2	0.5	17.9	117.3	2.5		96.1	0.2	0.6	4.7	85.0	
Delay (s)	56.2	41.3	62.2	167.3	41.9		148.7	22.2	15.6	57.2	118.3	
Level of Service	E	D	E	F	D		F	C	B	E	F	
Approach Delay (s)		53.0			101.0			47.3			114.0	
Approach LOS		D			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	82.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	99.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	687	0	315	0	1255	591	0	1747	445
Future Volume (vph)	0	0	0	687	0	315	0	1255	591	0	1747	445
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	0.97
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	1539		5085	1543
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3433		2787		5085	1539		5085	1543
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	701	0	321	0	1281	603	0	1783	454
RTOR Reduction (vph)	0	0	0	0	0	65	0	0	0	0	0	154
Lane Group Flow (vph)	0	0	0	701	0	256	0	1281	603	0	1783	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)				31.1		31.1		79.0	110.1		79.0	79.0
Effective Green, g (s)				31.1		31.1		79.0	110.1		79.0	79.0
Actuated g/C Ratio				0.26		0.26		0.66	0.92		0.66	0.66
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)				889		722		3347	1471		3347	1015
v/s Ratio Prot				c0.20				0.25	0.11		c0.35	
v/s Ratio Perm						0.09			0.29			0.19
v/c Ratio				0.79		0.35		0.38	0.41		0.53	0.30
Uniform Delay, d1				41.4		36.3		9.4	0.7		10.8	8.7
Progression Factor				1.00		1.00		0.66	8.14		1.00	1.00
Incremental Delay, d2				4.3		0.1		0.2	0.0		0.6	0.7
Delay (s)				45.7		36.4		6.4	5.4		11.4	9.4
Level of Service				D		D		A	A		B	A
Approach Delay (s)		0.0			42.8			6.1			11.0	
Approach LOS		A			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.5	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)	9.9
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	598	10	787	0	0	0	0	1247	675	334	2100	0
Future Volume (vph)	598	10	787	0	0	0	0	1247	675	334	2100	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	0.89	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	1476	1485					5085	1553	3433	5085	
Flt Permitted	0.95	0.99	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1681	1476	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)	616	10	811	0	0	0	0	1286	696	344	2165	0
RTOR Reduction (vph)	0	3	37	0	0	0	0	0	433	0	0	0
Lane Group Flow (vph)	499	473	425	0	0	0	0	1286	263	344	2165	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)	44.0	44.0	44.0					45.3	45.3	16.6	66.1	
Effective Green, g (s)	44.0	44.0	44.0					45.3	45.3	16.6	66.1	
Actuated g/C Ratio	0.37	0.37	0.37					0.38	0.38	0.14	0.55	
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)	616	541	544					1919	586	474	2800	
v/s Ratio Prot	0.30	c0.32						0.25		0.10	c0.43	
v/s Ratio Perm			0.29						0.17			
v/c Ratio	0.81	0.88	0.78					0.67	0.45	0.73	0.77	
Uniform Delay, d1	34.2	35.4	33.7					31.1	28.0	49.5	21.1	
Progression Factor	1.00	1.00	1.00					1.00	1.00	1.13	1.15	
Incremental Delay, d2	7.9	14.7	7.2					1.9	2.5	4.7	1.8	
Delay (s)	42.2	50.1	40.9					33.0	30.5	60.5	26.1	
Level of Service	D	D	D					C	C	E	C	
Approach Delay (s)		44.4			0.0			32.1			30.8	
Approach LOS		D			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	34.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	444	610	891	298	170	283
Future Volume (vph)	444	610	891	298	170	283
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)	483	663	968	324	185	308
RTOR Reduction (vph)	0	3	0	0	0	18
Lane Group Flow (vph)	483	660	968	324	185	290
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				8
Actuated Green, G (s)	25.7	74.1	31.6	35.4	48.4	80.0
Effective Green, g (s)	25.7	74.1	31.6	35.4	48.4	80.0
Actuated g/C Ratio	0.21	0.62	0.26	0.29	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	549	713	1055
v/s Ratio Prot	c0.26	c0.27	c0.55	0.17	0.10	0.07
v/s Ratio Perm		0.15				0.11
v/c Ratio	1.21	0.68	2.08	0.59	0.26	0.28
Uniform Delay, d1	47.1	15.2	44.2	36.1	23.9	8.2
Progression Factor	1.00	1.00	1.24	1.11	1.00	1.00
Incremental Delay, d2	117.2	2.0	485.4	0.2	0.2	0.1
Delay (s)	164.3	17.1	540.0	40.1	24.1	8.3
Level of Service	F	B	F	D	C	A
Approach Delay (s)	79.2			414.7	14.2	
Approach LOS	E			F	B	

Intersection Summary			
HCM 2000 Control Delay	216.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	94.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1190	5	100	380	503	0	0	939	392
Future Volume (vph)	0	0	0	1190	5	100	380	503	0	0	939	392
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	1322	6	111	422	559	0	0	1043	436
RTOR Reduction (vph)	0	0	0	0	0	61	0	0	0	0	0	319
Lane Group Flow (vph)	0	0	0	661	667	50	422	559	0	0	1043	117
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)				49.7	49.7	49.7	16.9	50.7			29.6	29.6
Effective Green, g (s)				49.7	49.7	49.7	16.9	50.7			29.6	29.6
Actuated g/C Ratio				0.45	0.45	0.45	0.15	0.46			0.27	0.27
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)				759	761	1242	527	2343			1368	412
v/s Ratio Prot				0.39	c0.40		c0.12	0.11			c0.21	
v/s Ratio Perm						0.02						0.08
v/c Ratio				0.87	0.88	0.04	0.80	0.24			0.76	0.28
Uniform Delay, d1				27.3	27.4	16.8	44.9	18.0			37.0	31.8
Progression Factor				1.00	1.00	1.00	1.61	0.86			1.00	1.00
Incremental Delay, d2				10.7	11.1	0.0	8.0	0.2			4.1	1.7
Delay (s)				37.9	38.4	16.8	80.1	15.7			41.0	33.6
Level of Service				D	D	B	F	B			D	C
Approach Delay (s)		0.0			36.6			43.4			38.8	
Approach LOS		A			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	39.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	105.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	251	5	910	0	0	0	0	702	1090	350	2079	0
Future Volume (vph)	251	5	910	0	0	0	0	702	1090	350	2079	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	0.86	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	1453	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	1453	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)	264	5	958	0	0	0	0	739	1147	368	2188	0
RTOR Reduction (vph)	0	1	37	0	0	0	0	0	561	0	0	0
Lane Group Flow (vph)	238	499	452	0	0	0	0	739	586	368	2188	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)	43.3	43.3	43.3					39.3	39.3	13.6	57.1	
Effective Green, g (s)	43.3	43.3	43.3					39.3	39.3	13.6	57.1	
Actuated g/C Ratio	0.39	0.39	0.39					0.36	0.36	0.12	0.52	
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)	661	571	592					1816	555	424	2639	
v/s Ratio Prot	0.14	c0.34						0.15		0.11	c0.43	
v/s Ratio Perm			0.30						c0.38			
v/c Ratio	0.36	0.87	0.76					0.41	1.06	0.87	0.83	
Uniform Delay, d1	23.6	30.8	28.9					26.6	35.4	47.3	22.3	
Progression Factor	1.00	1.00	1.00					1.00	1.00	1.48	1.23	
Incremental Delay, d2	0.3	13.9	5.8					0.7	53.7	14.3	2.3	
Delay (s)	23.9	44.7	34.7					27.3	89.1	84.6	29.6	
Level of Service	C	D	C					C	F	F	C	
Approach Delay (s)		36.7			0.0			64.9			37.5	
Approach LOS		D			A			E			D	

Intersection Summary			
HCM 2000 Control Delay	46.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	105.8%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	237	610	430	160	320	809
Future Volume (vph)	237	610	430	160	320	809
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	1194	1296	
Flt Permitted	0.95	1.00	1.00	1.00	0.99	
Satd. Flow (perm)	1416	1863	1863	1194	1296	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	249	642	453	168	337	852
RTOR Reduction (vph)	0	0	0	42	0	0
Lane Group Flow (vph)	249	642	453	126	1189	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)	21.9	25.7	35.4	35.4	49.0	
Effective Green, g (s)	21.9	25.7	35.4	35.4	49.0	
Actuated g/C Ratio	0.18	0.21	0.29	0.29	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)	258	398	549	352	529	
v/s Ratio Prot	c0.18	c0.34	c0.24		c0.92	
v/s Ratio Perm				0.11		
v/c Ratio	0.97	1.61	0.83	0.36	2.25	
Uniform Delay, d1	48.7	47.1	39.4	33.3	35.5	
Progression Factor	1.26	0.83	1.00	1.00	1.00	
Incremental Delay, d2	35.5	283.3	9.8	0.6	567.5	
Delay (s)	96.7	322.3	49.2	34.0	603.0	
Level of Service	F	F	D	C	F	
Approach Delay (s)		259.3	45.1		603.0	
Approach LOS		F	D		F	

Intersection Summary			
HCM 2000 Control Delay	361.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	135.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	110	229	614	282	409	180
Future Volume (vph)	110	229	614	282	409	180
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	116	241	646	297	431	189

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	357	943	620
Volume Left (vph)	116	0	431
Volume Right (vph)	0	297	189
Hadj (s)	0.10	-0.15	-0.01
Departure Headway (s)	7.1	6.5	6.6
Degree Utilization, x	0.70	1.70	1.14
Capacity (veh/h)	499	561	549
Control Delay (s)	25.1	337.8	107.4
Approach Delay (s)	25.1	337.8	107.4
Approach LOS	D	F	F

Intersection Summary			
Delay	205.3		
Level of Service	F		
Intersection Capacity Utilization	111.4%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	0	564	1159	381	21	372	537	138	4	1224	233
Future Volume (vph)	196	0	564	1159	381	21	372	537	138	4	1224	233
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	3509		3433	3539	1583		5084	1546
Flt Permitted	0.95		1.00	0.95	1.00		0.95	1.00	1.00		0.94	1.00
Satd. Flow (perm)	1770		2787	3433	3509		3433	3539	1583		4771	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)	202	0	581	1195	393	22	384	554	142	4	1262	240
RTOR Reduction (vph)	0	0	59	0	4	0	0	0	72	0	0	86
Lane Group Flow (vph)	202	0	522	1195	411	0	384	554	70	0	1266	154
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)	15.2		33.1	49.3	28.5		17.9	58.8	58.8		35.7	35.7
Effective Green, g (s)	15.2		33.1	49.3	28.5		17.9	58.8	58.8		35.7	35.7
Actuated g/C Ratio	0.13		0.28	0.41	0.24		0.15	0.49	0.49		0.30	0.30
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)	224		768	1410	833		512	1734	775		1419	459
v/s Ratio Prot	0.11		0.10	c0.35	0.12		c0.11	0.16				
v/s Ratio Perm			0.09						0.04		c0.27	0.10
v/c Ratio	0.90		0.68	0.85	0.49		0.75	0.32	0.09		0.89	0.34
Uniform Delay, d1	51.7		38.7	32.0	39.5		48.9	18.5	16.3		40.3	32.9
Progression Factor	1.00		1.00	1.00	1.00		0.97	1.43	3.76		1.00	1.00
Incremental Delay, d2	34.7		2.5	4.9	0.5		6.0	0.5	0.2		8.9	2.0
Delay (s)	86.4		41.2	36.9	40.0		53.6	26.9	61.6		49.2	34.9
Level of Service	F		D	D	D		D	C	E		D	C
Approach Delay (s)		52.9			37.7			40.9			46.9	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	43.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.7
Intersection Capacity Utilization	90.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	0	289	0	0	0	0	826	808	183	2457	0
Future Volume (vph)	171	0	289	0	0	0	0	826	808	183	2457	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)	178	0	301	0	0	0	0	860	842	191	2559	0
RTOR Reduction (vph)	0	0	64	0	0	0	0	0	348	0	0	0
Lane Group Flow (vph)	178	0	237	0	0	0	0	860	494	191	2559	0
Confl. Peds. (#/hr)												6
Confl. Bikes (#/hr)									3			4
Turn Type	Prot		Perm					NA	Perm	Prot	NA	
Protected Phases	4							2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	20.5		20.5					70.4	70.4	12.0	87.6	
Effective Green, g (s)	20.5		20.5					70.4	70.4	12.0	87.6	
Actuated g/C Ratio	0.17		0.17					0.59	0.59	0.10	0.73	
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)	586		270					2983	1599	343	3712	
v/s Ratio Prot	0.05							0.17		0.06	c0.50	
v/s Ratio Perm			c0.15						0.18			
v/c Ratio	0.30		0.88					0.29	0.31	0.56	0.69	
Uniform Delay, d1	43.5		48.5					12.3	12.5	51.5	8.8	
Progression Factor	1.00		1.00					1.00	1.00	1.15	0.56	
Incremental Delay, d2	0.3		25.9					0.2	0.5	1.3	0.7	
Delay (s)	43.8		74.4					12.6	13.0	60.6	5.6	
Level of Service	D		E					B	B	E	A	
Approach Delay (s)		63.0			0.0			12.8			9.4	
Approach LOS		E			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.1
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	365	21	726	736	80	10	78	331	100	411	51
Future Volume (vph)	30	365	21	726	736	80	10	78	331	100	411	51
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	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.96	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	1526	1770	3539	1583	1770	3481	
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	1526	1770	3539	1583	1770	3481	
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	0.86
Adj. Flow (vph)	35	424	24	844	856	93	12	91	385	116	478	59
RTOR Reduction (vph)	0	0	19	0	0	44	0	0	328	0	6	0
Lane Group Flow (vph)	35	424	5	844	856	49	12	91	57	116	531	0
Confl. 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)	4.5	22.0	22.0	32.5	50.0	50.0	1.5	15.1	15.1	13.5	27.1	
Effective Green, g (s)	4.5	22.0	22.0	32.5	50.0	50.0	1.5	15.1	15.1	13.5	27.1	
Actuated g/C Ratio	0.04	0.22	0.22	0.32	0.49	0.49	0.01	0.15	0.15	0.13	0.27	
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)	78	765	337	1097	1739	750	26	525	235	234	927	
v/s Ratio Prot	0.02	c0.12		c0.25	0.24		0.01	0.03	0.04	c0.07	c0.15	
v/s Ratio Perm			0.00			0.03						
v/c Ratio	0.45	0.55	0.02	0.77	0.49	0.07	0.46	0.17	0.24	0.50	0.57	
Uniform Delay, d1	47.4	35.5	31.3	31.2	17.3	13.6	49.7	37.8	38.3	40.9	32.3	
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	4.1	0.9	0.0	3.3	0.2	0.0	12.4	0.2	0.5	1.7	0.9	
Delay (s)	51.5	36.4	31.4	34.5	17.6	13.6	62.1	38.0	38.8	42.6	33.2	
Level of Service	D	D	C	C	B	B	E	D	D	D	C	
Approach Delay (s)		37.2			25.3			39.2			34.8	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	101.7	Sum of lost time (s)	18.6
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	94	43	146	508	0
Future Volume (Veh/h)	0	94	43	146	508	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	107	49	166	577	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	841	577	577			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	841	577	577			
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	79	95			
cM capacity (veh/h)	318	516	996			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	107	49	166	577
Volume Left	0	49	0	0
Volume Right	107	0	0	0
cSH	516	996	1700	1700
Volume to Capacity	0.21	0.05	0.10	0.34
Queue Length 95th (ft)	19	4	0	0
Control Delay (s)	13.8	8.8	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	13.8	2.0		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	350	110	280	390	130	40	399	50	220	667	105
Future Volume (vph)	100	350	110	280	390	130	40	399	50	220	667	105
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
Frpb, 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	1555	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	1555	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)	109	380	120	304	424	141	43	434	54	239	725	114
RTOR Reduction (vph)	0	0	99	0	0	95	0	0	43	0	0	76
Lane Group Flow (vph)	109	380	21	304	424	46	43	434	11	239	725	38
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)	6.6	14.5	14.5	18.3	26.2	26.2	3.4	16.3	16.3	14.0	26.9	26.9
Effective Green, g (s)	6.6	14.5	14.5	18.3	26.2	26.2	3.4	16.3	16.3	14.0	26.9	26.9
Actuated g/C Ratio	0.08	0.18	0.18	0.23	0.32	0.32	0.04	0.20	0.20	0.17	0.33	0.33
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)	144	632	278	399	1143	511	74	711	318	305	1173	525
v/s Ratio Prot	0.06	c0.11		c0.17	0.12		0.02	0.12		c0.14	c0.20	
v/s Ratio Perm			0.01			0.03			0.01			0.02
v/c Ratio	0.76	0.60	0.08	0.76	0.37	0.09	0.58	0.61	0.03	0.78	0.62	0.07
Uniform Delay, d1	36.5	30.6	27.7	29.4	21.1	19.1	38.2	29.5	26.1	32.1	22.8	18.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	20.1	1.6	0.1	8.4	0.2	0.1	11.1	1.6	0.0	12.4	1.0	0.1
Delay (s)	56.5	32.3	27.8	37.7	21.3	19.2	49.2	31.1	26.1	44.5	23.8	18.6
Level of Service	E	C	C	D	C	B	D	C	C	D	C	B
Approach Delay (s)		35.7			26.7			32.0			27.8	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	29.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	81.1	Sum of lost time (s)	18.0
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	270	70	10	330	350	229	20	915	150	496	1179	490
Future Volume (vph)	270	70	10	330	350	229	20	915	150	496	1179	490
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	4978		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	4978		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)	293	76	11	359	380	249	22	995	163	539	1282	533
RTOR Reduction (vph)	0	0	9	0	0	181	0	18	0	0	0	276
Lane Group Flow (vph)	293	76	2	359	380	68	22	1140	0	539	1282	257
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)	12.2	17.9	17.9	25.9	31.6	31.6	1.9	32.0		19.1	49.2	49.2
Effective Green, g (s)	12.2	17.9	17.9	25.9	31.6	31.6	1.9	32.0		19.1	49.2	49.2
Actuated g/C Ratio	0.10	0.15	0.15	0.22	0.27	0.27	0.02	0.28		0.16	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)	360	783	243	394	506	430	28	1370		564	2153	670
v/s Ratio Prot	0.09	0.01		c0.20	c0.20		0.01	c0.23		c0.16	0.25	
v/s Ratio Perm			0.00			0.04						0.16
v/c Ratio	0.81	0.10	0.01	0.91	0.75	0.16	0.79	0.83		0.96	0.60	0.38
Uniform Delay, d1	50.9	42.2	41.6	44.0	38.7	32.2	56.9	39.6		48.1	25.8	23.1
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	12.5	0.1	0.0	24.4	7.0	0.3	78.1	6.0		26.7	1.2	1.7
Delay (s)	63.4	42.3	41.6	68.4	45.7	32.5	135.1	45.6		74.9	27.0	24.7
Level of Service	E	D	D	E	D	C	F	D		E	C	C
Approach Delay (s)		58.6			50.6			47.3			37.5	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	44.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	116.2	Sum of lost time (s)	21.3
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	40	290	186	195	290	40
Future Volume (vph)	40	290	186	195	290	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	315	202	212	315	43

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total (vph)	358	202	212	358
Volume Left (vph)	43	0	0	315
Volume Right (vph)	0	0	212	43
Hadj (s)	0.06	0.03	-0.67	0.14
Departure Headway (s)	5.8	6.3	5.5	6.0
Degree Utilization, x	0.58	0.35	0.33	0.60
Capacity (veh/h)	590	549	618	569
Control Delay (s)	16.6	11.4	10.0	17.4
Approach Delay (s)	16.6	10.7		17.4
Approach LOS	C	B		C

Intersection Summary			
Delay	14.7		
Level of Service	B		
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	480	352	278	347	244	350
Future Volume (vph)	480	352	278	347	244	350
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	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	0.92	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	1583	1770	1863	1697	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1770	1583	1770	1863	1697	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	511	374	296	369	260	372
RTOR Reduction (vph)	0	239	0	0	45	0
Lane Group Flow (vph)	511	135	296	369	587	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)	34.9	34.9	21.1	68.0	42.4	
Effective Green, g (s)	34.9	34.9	21.1	68.0	42.4	
Actuated g/C Ratio	0.31	0.31	0.19	0.61	0.38	
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)	552	493	333	1132	643	
v/s Ratio Prot	c0.29		c0.17	0.20	c0.35	
v/s Ratio Perm		0.09				
v/c Ratio	0.93	0.27	0.89	0.33	0.91	
Uniform Delay, d1	37.2	29.0	44.3	10.7	33.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	21.5	0.3	23.7	0.2	17.4	
Delay (s)	58.8	29.3	68.0	10.9	50.5	
Level of Service	E	C	E	B	D	
Approach Delay (s)	46.3			36.3	50.5	
Approach LOS	D			D	D	

Intersection Summary			
HCM 2000 Control Delay	44.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	111.9	Sum of lost time (s)	13.5
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	78	250	375	133	430	166
Future Volume (vph)	78	250	375	133	430	166
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	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	1543	1787		1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1543	1787		1770	1863
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	93	298	446	158	512	198
RTOR Reduction (vph)	0	259	14	0	0	0
Lane Group Flow (vph)	93	39	590	0	512	198
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)	10.3	10.3	30.0		25.0	59.5
Effective Green, g (s)	10.3	10.3	30.0		25.0	59.5
Actuated g/C Ratio	0.13	0.13	0.38		0.32	0.76
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)	231	201	680		561	1406
v/s Ratio Prot	c0.05		c0.33		c0.29	0.11
v/s Ratio Perm		0.03				
v/c Ratio	0.40	0.19	0.87		0.91	0.14
Uniform Delay, d1	31.4	30.5	22.6		25.9	2.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.2	0.5	11.3		19.3	0.0
Delay (s)	32.6	31.0	33.8		45.1	2.7
Level of Service	C	C	C		D	A
Approach Delay (s)	31.4		33.8			33.3
Approach LOS	C		C			C

Intersection Summary			
HCM 2000 Control Delay	33.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	78.8	Sum of lost time (s)	13.5
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	0	22	80	0	50	19	428	70	40	214	5
Future Volume (Veh/h)	5	0	22	80	0	50	19	428	70	40	214	5
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)	6	0	26	95	0	60	23	510	83	48	255	6
Pedestrians					1							
Lane Width (ft)					12.0							
Walking Speed (ft/s)					4.0							
Percent Blockage					0							
Right turn flare (veh)						7						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											874	
pX, platoon unblocked												
vC, conflicting volume	910	994	258	934	914	511	261			594		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	910	994	258	934	914	511	261			594		
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 %	97	100	97	58	100	89	98			95		
cM capacity (veh/h)	217	229	781	226	255	562	1303			981		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	32	155	23	510	83	48	261
Volume Left	6	95	23	0	0	48	0
Volume Right	26	60	0	0	83	0	6
cSH	524	368	1303	1700	1700	981	1700
Volume to Capacity	0.06	0.42	0.02	0.30	0.05	0.05	0.15
Queue Length 95th (ft)	5	51	1	0	0	4	0
Control Delay (s)	12.3	24.4	7.8	0.0	0.0	8.9	0.0
Lane LOS	B	C	A			A	
Approach Delay (s)	12.3	24.4	0.3			1.4	
Approach LOS	B	C					

Intersection Summary			
Average Delay	4.3		
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	417	491	118	100	273	20	115	230	160	40	150	241
Future Volume (vph)	417	491	118	100	273	20	115	230	160	40	150	241
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			0.92	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1770	3436		1770	3491			1756			1701	
Flt Permitted	0.95	1.00		0.95	1.00			0.73			0.92	
Satd. Flow (perm)	1770	3436		1770	3491			1291			1576	
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)	434	511	123	104	284	21	120	240	167	42	156	251
RTOR Reduction (vph)	0	22	0	0	6	0	0	15	0	0	43	0
Lane Group Flow (vph)	434	612	0	104	299	0	0	512	0	0	406	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)	26.0	33.0		7.2	14.2			37.2			37.2	
Effective Green, g (s)	26.0	33.0		7.2	14.2			37.2			37.2	
Actuated g/C Ratio	0.29	0.36		0.08	0.16			0.41			0.41	
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)	506	1247		140	545			528			644	
v/s Ratio Prot	c0.25	c0.18		0.06	0.09							
v/s Ratio Perm								c0.40			0.26	
v/c Ratio	0.86	0.49		0.74	0.55			0.97			0.63	
Uniform Delay, d1	30.7	22.4		40.9	35.4			26.3			21.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	13.5	0.3		19.0	1.1			31.0			2.0	
Delay (s)	44.2	22.7		60.0	36.5			57.3			23.4	
Level of Service	D	C		E	D			E			C	
Approach Delay (s)		31.4			42.5			57.3			23.4	
Approach LOS		C			D			E			C	

Intersection Summary			
HCM 2000 Control Delay	37.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	90.9	Sum of lost time (s)	13.5
Intersection Capacity Utilization	96.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	848	446	0	0	589	40	799	10	580	0	0	0
Future Volume (vph)	848	446	0	0	589	40	799	10	580	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	4.6			
Lane Util. Factor	1.00	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		1775	1563			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	1863			1863	1545		1775	1563			
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)	883	465	0	0	614	42	832	10	604	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	32	0	0	252	0	0	0
Lane Group Flow (vph)	883	465	0	0	614	10	0	842	352	0	0	0
Confl. Peds. (#/hr)						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)	27.8	56.7			24.7	24.7		33.4	33.4			
Effective Green, g (s)	27.8	56.7			24.7	24.7		33.4	33.4			
Actuated g/C Ratio	0.28	0.57			0.25	0.25		0.33	0.33			
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)	492	1056			460	381		592	522			
v/s Ratio Prot	c0.50	0.25			c0.33			c0.47				
v/s Ratio Perm						0.01			0.23			
v/c Ratio	1.79	0.44			1.33	0.03		1.42	0.67			
Uniform Delay, d1	36.1	12.5			37.6	28.5		33.3	28.6			
Progression Factor	0.93	1.97			1.00	1.00		1.00	1.00			
Incremental Delay, d2	358.4	0.1			164.9	0.1		199.8	3.4			
Delay (s)	392.0	24.7			202.6	28.7		233.1	32.1			
Level of Service	F	C			F	C		F	C			
Approach Delay (s)		265.3			191.4			149.1			0.0	
Approach LOS		F			F			F			A	

Intersection Summary			
HCM 2000 Control Delay	202.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.52		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	154.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1254	461	240	1148	0	0	0	0	40	10	490
Future Volume (vph)	0	1254	461	240	1148	0	0	0	0	40	10	490
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						0.96	1.00
Satd. Flow (prot)		1863	1583	1770	1863						1791	2787
Flt Permitted		1.00	1.00	0.95	1.00						0.96	1.00
Satd. Flow (perm)		1863	1583	1770	1863						1791	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	1363	501	261	1248	0	0	0	0	43	11	533
RTOR Reduction (vph)	0	0	145	0	0	0	0	0	0	0	0	176
Lane Group Flow (vph)	0	1363	356	261	1248	0	0	0	0	0	54	357
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		58.1	58.1	12.6	74.9						15.2	15.2
Effective Green, g (s)		58.1	58.1	12.6	74.9						15.2	15.2
Actuated g/C Ratio		0.58	0.58	0.13	0.75						0.15	0.15
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)		1082	919	223	1395						272	423
v/s Ratio Prot		c0.73		c0.15	0.67						0.03	
v/s Ratio Perm			0.22									c0.13
v/c Ratio		1.26	0.39	1.17	0.89						0.20	0.85
Uniform Delay, d1		20.9	11.3	43.7	9.5						37.1	41.3
Progression Factor		1.00	1.00	0.90	1.30						1.00	1.00
Incremental Delay, d2		124.4	1.2	81.4	1.0						0.4	14.3
Delay (s)		145.4	12.6	120.6	13.4						37.4	55.6
Level of Service		F	B	F	B						D	E
Approach Delay (s)		109.7			31.9			0.0			53.9	
Approach LOS		F			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	71.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	154.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	241	1141	30	40	738	860	40	40	40	534	27	176
Future Volume (vph)	241	1141	30	40	738	860	40	40	40	534	27	176
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	0.98			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	0.92			0.95			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.95	1.00
Satd. Flow (prot)	1770	3523		1770	3201			1739			1778	1563
Flt Permitted	0.95	1.00		0.95	1.00			0.98			0.95	1.00
Satd. Flow (perm)	1770	3523		1770	3201			1739			1778	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)	248	1176	31	41	761	887	41	41	41	551	28	181
RTOR Reduction (vph)	0	2	0	0	197	0	0	19	0	0	0	91
Lane Group Flow (vph)	248	1205	0	41	1451	0	0	104	0	0	579	90
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)	6.5	42.7		3.2	39.4			11.1			19.9	19.9
Effective Green, g (s)	6.5	42.7		3.2	39.4			11.1			19.9	19.9
Actuated g/C Ratio	0.07	0.45		0.03	0.42			0.12			0.21	0.21
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)	121	1585		59	1328			203			372	327
v/s Ratio Prot	c0.14	c0.34		0.02	c0.45			c0.06			c0.33	
v/s Ratio Perm												0.06
v/c Ratio	2.05	0.76		0.69	1.09			0.51			1.56	0.28
Uniform Delay, d1	44.2	21.8		45.4	27.8			39.3			37.5	31.5
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	499.8	2.2		29.9	54.2			2.2			263.3	2.1
Delay (s)	544.0	24.0		75.3	81.9			41.5			300.8	33.5
Level of Service	F	C		E	F			D			F	C
Approach Delay (s)		112.7			81.7			41.5			237.1	
Approach LOS		F			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	121.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	94.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	110.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1945	8	8	1094	11	13
Future Volume (Veh/h)	1945	8	8	1094	11	13
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2114	9	9	1189	12	14
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			2123		3326	2118
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2123		3326	2118
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		0	78
cM capacity (veh/h)			256		9	64

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	2123	1198	26
Volume Left	0	9	12
Volume Right	9	0	14
cSH	1700	256	17
Volume to Capacity	1.25	0.04	1.57
Queue Length 95th (ft)	0	3	94
Control Delay (s)	0.0	2.4	765.2
Lane LOS		A	F
Approach Delay (s)	0.0	2.4	765.2
Approach LOS			F

Intersection Summary			
Average Delay	6.8		
Intersection Capacity Utilization	112.9%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	312	1531	831	113	51	120
Future Volume (Veh/h)	312	1531	831	113	51	120
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)	328	1612	875	119	54	126
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	994				3202	934
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	994				3202	934
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	53				0	61
cM capacity (veh/h)	696				6	322

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	328	1612	994	180
Volume Left	328	0	0	54
Volume Right	0	0	119	126
cSH	696	1700	1700	19
Volume to Capacity	0.47	0.95	0.58	9.61
Queue Length 95th (ft)	63	0	0	Err
Control Delay (s)	14.7	0.0	0.0	Err
Lane LOS	B			F
Approach Delay (s)	2.5		0.0	Err
Approach LOS				F

Intersection Summary			
Average Delay	579.5		
Intersection Capacity Utilization	97.5%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	5	15	1533	5	10	981
Future Volume (Veh/h)	5	15	1533	5	10	981
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)	5	16	1631	5	11	1044
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	0.29	0.29			0.29	
vC, conflicting volume	2700	1634			1636	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	5589	1955			1964	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	32			87	
cM capacity (veh/h)	0	23			87	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	21	1636	1055
Volume Left	5	0	11
Volume Right	16	5	0
cSH	0	1700	87
Volume to Capacity	74.68	0.96	0.13
Queue Length 95th (ft)	Err	0	10
Control Delay (s)	Err	0.0	17.6
Lane LOS	F		C
Approach Delay (s)	Err	0.0	17.6
Approach LOS	F		

Intersection Summary			
Average Delay	84.3		
Intersection Capacity Utilization	91.0%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	25	10	50	33	10	60
Future Volume (Veh/h)	25	10	50	33	10	60
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)	33	13	67	44	13	80
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	195	89			111	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	195	89			111	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	99			99	
cM capacity (veh/h)	787	969			1479	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	46	111	93
Volume Left	33	0	13
Volume Right	13	44	0
cSH	831	1700	1479
Volume to Capacity	0.06	0.07	0.01
Queue Length 95th (ft)	4	0	1
Control Delay (s)	9.6	0.0	1.1
Lane LOS	A		A
Approach Delay (s)	9.6	0.0	1.1
Approach LOS	A		

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	20.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	61	304	131	1499	997	52
Future Volume (vph)	61	304	131	1499	997	52
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	1546
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	1863	1863	1546
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)	69	345	149	2214	1473	59
RTOR Reduction (vph)	0	122	0	0	0	9
Lane Group Flow (vph)	69	223	149	2214	1473	50
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)	17.0	17.0	7.0	68.0	57.0	57.0
Effective Green, g (s)	17.0	17.0	7.0	68.0	57.0	57.0
Actuated g/C Ratio	0.18	0.18	0.07	0.71	0.60	0.60
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)	316	282	130	1330	1115	925
v/s Ratio Prot	0.04		0.08	c1.19	0.79	
v/s Ratio Perm		c0.14				0.03
v/c Ratio	0.22	0.79	1.15	1.66	1.32	0.05
Uniform Delay, d1	33.4	37.4	44.1	13.6	19.1	7.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	13.6	123.6	302.4	150.8	0.0
Delay (s)	33.8	51.0	167.7	316.0	169.9	7.9
Level of Service	C	D	F	F	F	A
Approach Delay (s)	48.1			306.7	163.7	
Approach LOS	D			F	F	

Intersection Summary			
HCM 2000 Control Delay	231.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.56		
Actuated Cycle Length (s)	95.2	Sum of lost time (s)	14.2
Intersection Capacity Utilization	114.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	649	0	250	0	0	0	200	911	0	0	731	500
Future Volume (vph)	649	0	250	0	0	0	200	911	0	0	731	500
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)	698	0	269	0	0	0	215	980	0	0	786	538
RTOR Reduction (vph)	0	0	99	0	0	0	0	0	0	0	0	120
Lane Group Flow (vph)	0	698	170	0	0	0	215	980	0	0	786	418
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)		28.4	28.4				12.0	52.1			35.1	35.1
Effective Green, g (s)		28.4	28.4				12.0	52.1			35.1	35.1
Actuated g/C Ratio		0.32	0.32				0.13	0.58			0.39	0.39
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)		444	499				236	1078			726	601
v/s Ratio Prot							0.12	c0.53			c0.42	
v/s Ratio Perm		c0.49	0.11									0.27
v/c Ratio		1.57	0.34				0.91	0.91			1.08	0.70
Uniform Delay, d1		30.8	23.6				38.5	16.8			27.4	23.0
Progression Factor		1.00	1.00				1.00	1.00			1.00	1.00
Incremental Delay, d2		268.1	0.4				35.5	11.0			58.0	3.5
Delay (s)		298.9	24.0				73.9	27.9			85.5	26.5
Level of Service		F	C				E	C			F	C
Approach Delay (s)		222.5			0.0			36.2			61.5	
Approach LOS		F			A			D			E	

Intersection Summary			
HCM 2000 Control Delay	97.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	98.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	0	56	20	0	32	51	1038	20	13	801	23
Future Volume (vph)	18	0	56	20	0	32	51	1038	20	13	801	23
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		0.90			0.92		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99			0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1635			1677		1770	1863	1583	1770	1855	
Flt Permitted		0.99			0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1635			1677		1770	1863	1583	1770	1855	
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)	19	0	60	22	0	34	55	1116	22	14	861	25
RTOR Reduction (vph)	0	73	0	0	52	0	0	0	8	0	0	0
Lane Group Flow (vph)	0	6	0	0	4	0	55	1116	14	14	886	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)		7.1			7.1		3.9	57.1	57.1	0.7	53.9	
Effective Green, g (s)		7.1			7.1		3.9	57.1	57.1	0.7	53.9	
Actuated g/C Ratio		0.08			0.08		0.04	0.62	0.62	0.01	0.59	
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)		126			129		75	1156	982	13	1086	
v/s Ratio Prot		c0.00			c0.00		c0.03	c0.60		0.01	0.48	
v/s Ratio Perm									0.01			
v/c Ratio		0.05			0.03		0.73	0.97	0.01	1.08	0.82	
Uniform Delay, d1		39.3			39.3		43.5	16.5	6.7	45.6	15.1	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.2			0.1		30.6	18.6	0.0	276.9	4.8	
Delay (s)		39.5			39.4		74.1	35.1	6.7	322.6	19.9	
Level of Service		D			D		E	D	A	F	B	
Approach Delay (s)		39.5			39.4			36.3			24.6	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	31.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	92.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	118	64	1111	127	114	761
Future Volume (vph)	118	64	1111	127	114	761
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	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	3466		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3466		1770	3539
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	120	65	1134	130	116	777
RTOR Reduction (vph)	0	0	8	0	0	0
Lane Group Flow (vph)	120	65	1256	0	116	777
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)	11.9	11.9	38.4		8.5	52.9
Effective Green, g (s)	11.9	11.9	38.4		8.5	52.9
Actuated g/C Ratio	0.15	0.15	0.50		0.11	0.68
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)	272	243	1721		194	2421
v/s Ratio Prot	c0.07		c0.36		c0.07	0.22
v/s Ratio Perm		0.04				
v/c Ratio	0.44	0.27	0.73		0.60	0.32
Uniform Delay, d1	29.7	28.9	15.4		32.8	4.9
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.1	0.6	1.6		4.9	0.1
Delay (s)	30.8	29.4	16.9		37.7	5.0
Level of Service	C	C	B		D	A
Approach Delay (s)	30.3		16.9			9.3
Approach LOS	C		B			A

Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	77.3	Sum of lost time (s)	18.5
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	0	57	30	0	10	90	1226	30	0	866	13
Future Volume (vph)	12	0	57	30	0	10	90	1226	30	0	866	13
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	0.95			0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frt	1.00	0.85		1.00	0.85		1.00	1.00			1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1770	1561		1770	1583		1770	3523			3530	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (perm)	1770	1561		1770	1583		1770	3523			3530	
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)	13	0	63	33	0	11	100	1362	33	0	962	14
RTOR Reduction (vph)	0	57	0	0	10	0	0	1	0	0	1	0
Lane Group Flow (vph)	13	6	0	33	1	0	100	1394	0	0	975	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)	0.5	6.4		1.9	7.8		6.9	44.0			32.1	
Effective Green, g (s)	0.5	6.4		1.9	7.8		6.9	44.0			32.1	
Actuated g/C Ratio	0.01	0.10		0.03	0.12		0.10	0.65			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)	13	148		49	183		181	2303			1683	
v/s Ratio Prot	0.01	c0.00		c0.02	0.00		0.06	c0.40			0.28	
v/s Ratio Perm												
v/c Ratio	1.00	0.04		0.67	0.01		0.55	0.61			0.58	
Uniform Delay, d1	33.4	27.7		32.4	26.3		28.7	6.7			12.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	249.6	0.1		30.8	0.0		3.6	0.5			0.5	
Delay (s)	283.0	27.8		63.2	26.3		32.3	7.1			13.2	
Level of Service	F	C		E	C		C	A			B	
Approach Delay (s)		71.4			54.0			8.8			13.2	
Approach LOS		E			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	13.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	67.3	Sum of lost time (s)	20.0
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	0	60	0	0	0	50	1237	5	6	937	10
Future Volume (vph)	20	0	60	0	0	0	50	1237	5	6	937	10
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	3537		1770	3533	
Flt Permitted	0.95		1.00				0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770		1563				1770	3537		1770	3533	
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)	20	0	60	0	0	0	50	1237	5	6	937	10
RTOR Reduction (vph)	0	0	54	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	20	0	6	0	0	0	50	1242	0	6	946	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)	5.4		5.4				2.5	33.2		0.7	31.4	
Effective Green, g (s)	5.4		5.4				2.5	33.2		0.7	31.4	
Actuated g/C Ratio	0.10		0.10				0.05	0.62		0.01	0.59	
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)	179		158				83	2203		23	2081	
v/s Ratio Prot	c0.01						c0.03	c0.35		0.00	0.27	
v/s Ratio Perm			0.00									
v/c Ratio	0.11		0.04				0.60	0.56		0.26	0.45	
Uniform Delay, d1	21.8		21.6				24.9	5.8		26.0	6.1	
Progression Factor	1.00		1.00				1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3		0.1				11.7	0.3		6.0	0.2	
Delay (s)	22.0		21.7				36.6	6.2		32.0	6.3	
Level of Service	C		C				D	A		C	A	
Approach Delay (s)		21.8			0.0			7.4			6.5	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	53.3	Sum of lost time (s)	14.0
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	203	252	237	194	221	44	241	1027	304	84	788	116
Future Volume (vph)	203	252	237	194	221	44	241	1027	304	84	788	116
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	0.97		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	3259		1770	3442		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	3259		1770	3442		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)	211	262	247	202	230	46	251	1070	317	88	821	121
RTOR Reduction (vph)	0	98	0	0	9	0	0	0	84	0	0	81
Lane Group Flow (vph)	211	412	0	202	267	0	251	1070	233	88	821	40
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)	22.3	23.9		21.2	22.8		25.5	52.3	52.3	12.3	39.1	39.1
Effective Green, g (s)	22.3	23.9		21.2	22.8		25.5	52.3	52.3	12.3	39.1	39.1
Actuated g/C Ratio	0.17	0.19		0.17	0.18		0.20	0.41	0.41	0.10	0.30	0.30
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)	307	607		292	611		351	1442	635	169	1078	473
v/s Ratio Prot	c0.12	c0.13		0.11	0.08		c0.14	c0.30		0.05	0.23	
v/s Ratio Perm									0.15			0.03
v/c Ratio	0.69	0.68		0.69	0.44		0.72	0.74	0.37	0.52	0.76	0.09
Uniform Delay, d1	49.7	48.6		50.5	47.0		48.0	32.3	26.5	55.2	40.4	31.8
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	6.3	3.0		6.9	0.5		6.8	2.1	0.4	2.9	3.2	0.1
Delay (s)	56.0	51.6		57.4	47.5		54.8	34.4	26.8	58.1	43.6	31.9
Level of Service	E	D		E	D		D	C	C	E	D	C
Approach Delay (s)		52.9			51.7			36.0			43.5	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	43.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	128.3	Sum of lost time (s)	18.6
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	222	15	144	15	10	5	193	1605	30	70	1472	184
Future Volume (vph)	222	15	144	15	10	5	193	1605	30	70	1472	184
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	0.86		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	1610		1770	1756		1770	3526		1770	3472	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1610		1770	1756		1770	3526		1770	3472	
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)	231	16	150	16	10	5	201	1672	31	73	1533	192
RTOR Reduction (vph)	0	126	0	0	5	0	0	1	0	0	6	0
Lane Group Flow (vph)	231	40	0	16	10	0	201	1702	0	73	1719	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)	19.0	19.0		7.5	7.5		12.1	67.0		7.9	62.8	
Effective Green, g (s)	19.0	19.0		7.5	7.5		12.1	67.0		7.9	62.8	
Actuated g/C Ratio	0.16	0.16		0.06	0.06		0.10	0.56		0.07	0.52	
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)	280	254		110	109		178	1968		116	1817	
v/s Ratio Prot	c0.13	0.02		c0.01	0.01		c0.11	0.48		0.04	c0.50	
v/s Ratio Perm												
v/c Ratio	0.82	0.16		0.15	0.09		1.13	0.86		0.63	0.95	
Uniform Delay, d1	48.9	43.6		53.2	53.0		54.0	22.6		54.6	27.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	17.6	0.3		0.6	0.4		106.4	4.2		10.2	10.9	
Delay (s)	66.5	43.9		53.8	53.4		160.4	26.9		64.8	37.9	
Level of Service	E	D		D	D		F	C		E	D	
Approach Delay (s)		57.1			53.6			41.0			39.0	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	41.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	88.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	442	755	346	577	511	125	569	1261	464	157	1162	298
Future Volume (vph)	442	755	346	577	511	125	569	1261	464	157	1162	298
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	1538	3433	3421		3433	3539	1560	3433	3420	
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	1538	3433	3421		3433	3539	1560	3433	3420	
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)	475	812	372	620	549	134	612	1356	499	169	1249	320
RTOR Reduction (vph)	0	0	127	0	18	0	0	0	0	0	19	0
Lane Group Flow (vph)	475	812	245	620	665	0	612	1356	499	169	1550	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)	15.4	28.1	28.1	15.5	28.5		15.0	47.2	62.7	9.4	42.4	
Effective Green, g (s)	15.4	28.1	28.1	15.5	28.5		15.0	47.2	62.7	9.4	42.4	
Actuated g/C Ratio	0.13	0.23	0.23	0.13	0.24		0.12	0.39	0.52	0.08	0.35	
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)	440	828	360	443	812		429	1392	815	268	1208	
v/s Ratio Prot	0.14	c0.23		c0.18	0.19		c0.18	0.38	0.08	0.05	c0.45	
v/s Ratio Perm			0.16						0.24			
v/c Ratio	1.08	0.98	0.68	1.40	0.82		1.43	0.97	0.61	0.63	1.28	
Uniform Delay, d1	52.3	45.7	41.9	52.2	43.3		52.5	35.8	20.1	53.6	38.8	
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	65.9	26.4	5.2	193.1	6.5		205.1	18.1	1.4	4.8	133.9	
Delay (s)	118.2	72.1	47.1	245.3	49.8		257.6	53.9	21.5	58.4	172.7	
Level of Service	F	E	D	F	D		F	D	C	E	F	
Approach Delay (s)		79.7			142.8			97.9			161.6	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	117.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.8
Intersection Capacity Utilization	111.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	796	0	337	0	1970	816	0	1735	367
Future Volume (vph)	0	0	0	796	0	337	0	1970	816	0	1735	367
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	0.96		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	1515		5085	1548
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3433		2787		5085	1515		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	829	0	351	0	2052	850	0	1807	382
RTOR Reduction (vph)	0	0	0	0	0	14	0	0	0	0	0	138
Lane Group Flow (vph)	0	0	0	829	0	337	0	2052	850	0	1807	244
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)				40.6		40.6		69.5	110.1		69.5	69.5
Effective Green, g (s)				40.6		40.6		69.5	110.1		69.5	69.5
Actuated g/C Ratio				0.34		0.34		0.58	0.92		0.58	0.58
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)				1161		942		2945	1448		2945	896
v/s Ratio Prot				c0.24		0.12		c0.40	0.20		0.36	
v/s Ratio Perm									0.36			0.16
v/c Ratio				0.71		0.36		0.70	0.59		0.61	0.27
Uniform Delay, d1				34.6		29.9		17.8	0.9		16.5	12.6
Progression Factor				1.00		1.00		0.19	16.24		1.00	1.00
Incremental Delay, d2				2.1		0.2		0.1	0.1		1.0	0.7
Delay (s)				36.7		30.1		3.5	14.4		17.4	13.4
Level of Service				D		C		A	B		B	B
Approach Delay (s)		0.0			34.8			6.7			16.7	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	246	40	532	0	0	0	0	2531	1029	343	2198	0
Future Volume (vph)	246	40	532	0	0	0	0	2531	1029	343	2198	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	0.88	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	1472	1482					5085	1561	3433	5085	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1681	1472	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)	256	42	554	0	0	0	0	2636	1072	357	2290	0
RTOR Reduction (vph)	0	4	44	0	0	0	0	0	320	0	0	0
Lane Group Flow (vph)	230	313	261	0	0	0	0	2636	752	357	2290	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)	31.5	31.5	31.5					57.8	57.8	16.6	78.6	
Effective Green, g (s)	31.5	31.5	31.5					57.8	57.8	16.6	78.6	
Actuated g/C Ratio	0.26	0.26	0.26					0.48	0.48	0.14	0.65	
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)	441	386	389					2449	751	474	3330	
v/s Ratio Prot	0.14	c0.21						c0.52		0.10	c0.45	
v/s Ratio Perm			0.18						0.48			
v/c Ratio	0.52	0.81	0.67					1.08	1.00	0.75	0.69	
Uniform Delay, d1	37.8	41.4	39.6					31.1	31.1	49.7	13.0	
Progression Factor	1.00	1.00	1.00					1.00	1.00	1.08	0.66	
Incremental Delay, d2	1.1	11.9	4.5					42.7	33.1	5.4	0.9	
Delay (s)	38.9	53.3	44.2					73.8	64.2	58.9	9.5	
Level of Service	D	D	D					E	E	E	A	
Approach Delay (s)		46.1			0.0			71.0			16.2	
Approach LOS		D			A			E			B	

Intersection Summary			
HCM 2000 Control Delay	47.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	100.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	662	350	371	578	500	838
Future Volume (vph)	662	350	371	578	500	838
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	1562	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1562	1770	1863	1770	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.92
Adj. Flow (vph)	690	365	386	602	521	911
RTOR Reduction (vph)	0	5	0	0	0	72
Lane Group Flow (vph)	690	360	386	602	521	839
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				8
Actuated Green, G (s)	37.7	64.1	11.6	25.7	26.4	38.0
Effective Green, g (s)	37.7	64.1	11.6	25.7	26.4	38.0
Actuated g/C Ratio	0.42	0.71	0.13	0.29	0.29	0.42
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)	780	1112	228	531	519	668
v/s Ratio Prot	c0.37	0.09	c0.22	c0.32	0.29	c0.16
v/s Ratio Perm		0.14				0.37
v/c Ratio	0.88	0.32	1.69	1.13	1.00	1.26
Uniform Delay, d1	24.1	4.8	39.2	32.1	31.8	26.0
Progression Factor	1.00	1.00	0.97	0.88	1.00	1.00
Incremental Delay, d2	11.7	0.2	313.6	62.7	40.5	127.4
Delay (s)	35.8	5.0	351.7	91.0	72.3	153.4
Level of Service	D	A	F	F	E	F
Approach Delay (s)	25.2			192.9	123.9	
Approach LOS	C			F	F	

Intersection Summary			
HCM 2000 Control Delay	113.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	95.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	670	10	330	790	1178	0	0	604	597
Future Volume (vph)	0	0	0	670	10	330	790	1178	0	0	604	597
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	1688	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	1688	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	684	10	337	806	1202	0	0	616	609
RTOR Reduction (vph)	0	0	0	0	0	106	0	0	0	0	0	349
Lane Group Flow (vph)	0	0	0	349	345	231	806	1202	0	0	616	260
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)				28.7	28.7	28.7	30.0	71.7			37.5	37.5
Effective Green, g (s)				28.7	28.7	28.7	30.0	71.7			37.5	37.5
Actuated g/C Ratio				0.26	0.26	0.26	0.27	0.65			0.34	0.34
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)				438	440	717	936	3314			1733	525
v/s Ratio Prot				c0.21	0.20		c0.23	0.24			0.12	
v/s Ratio Perm						0.08						c0.17
v/c Ratio				0.80	0.78	0.32	0.86	0.36			0.36	0.50
Uniform Delay, d1				37.9	37.8	32.8	38.0	8.7			27.2	28.8
Progression Factor				1.00	1.00	1.00	1.46	0.99			1.00	1.00
Incremental Delay, d2				9.7	8.9	0.3	6.3	0.2			0.6	3.3
Delay (s)				47.6	46.6	33.1	61.9	8.8			27.8	32.1
Level of Service				D	D	C	E	A			C	C
Approach Delay (s)		0.0			42.5			30.1			29.9	
Approach LOS		A			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	33.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	96.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	557	5	420	0	0	0	0	1611	930	250	1184	0
Future Volume (vph)	557	5	420	0	0	0	0	1611	930	250	1184	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	0.95	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	0.97	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1681	1560	1504					5085	1557	3433	5085	
Flt Permitted	0.95	0.97	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1681	1560	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)	574	5	433	0	0	0	0	1661	959	258	1221	0
RTOR Reduction (vph)	0	17	51	0	0	0	0	0	260	0	0	0
Lane Group Flow (vph)	350	325	269	0	0	0	0	1661	699	258	1221	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)	29.6	29.6	29.6					55.1	55.1	11.5	70.8	
Effective Green, g (s)	29.6	29.6	29.6					55.1	55.1	11.5	70.8	
Actuated g/C Ratio	0.27	0.27	0.27					0.50	0.50	0.10	0.64	
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)	452	419	404					2547	779	358	3272	
v/s Ratio Prot	0.21	c0.21						0.33		c0.08	0.24	
v/s Ratio Perm			0.18						c0.45			
v/c Ratio	0.77	0.78	0.67					0.65	0.90	0.72	0.37	
Uniform Delay, d1	37.1	37.1	35.8					20.3	24.9	47.7	9.2	
Progression Factor	1.00	1.00	1.00					1.00	1.00	1.46	1.43	
Incremental Delay, d2	8.1	8.7	4.1					1.3	15.3	6.8	0.3	
Delay (s)	45.2	45.9	39.9					21.7	40.2	76.4	13.4	
Level of Service	D	D	D					C	D	E	B	
Approach Delay (s)		43.8			0.0			28.4			24.4	
Approach LOS		D			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	30.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	96.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	980	670	750	390	230	329
Future Volume (vph)	980	670	750	390	230	329
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	0.97	
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)	1021	698	781	406	240	343
RTOR Reduction (vph)	0	0	0	79	0	0
Lane Group Flow (vph)	1021	698	781	327	583	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)	23.6	37.7	25.7	25.7	27.0	
Effective Green, g (s)	23.6	37.7	25.7	25.7	27.0	
Actuated g/C Ratio	0.26	0.42	0.29	0.29	0.30	
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)	371	780	531	338	391	
v/s Ratio Prot	c0.72	0.37	c0.42		c0.45	
v/s Ratio Perm				0.28		
v/c Ratio	2.75	0.89	1.47	0.97	1.49	
Uniform Delay, d1	33.2	24.3	32.1	31.7	31.5	
Progression Factor	1.09	0.89	1.00	1.00	1.00	
Incremental Delay, d2	790.9	4.8	222.0	39.6	234.2	
Delay (s)	827.2	26.4	254.1	71.4	265.7	
Level of Service	F	C	F	E	F	
Approach Delay (s)		502.1	191.6		265.7	
Approach LOS		F	F		F	

Intersection Summary			
HCM 2000 Control Delay	357.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.89		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	160.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	250	622	282	495	434	110
Future Volume (vph)	250	622	282	495	434	110
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	272	676	307	538	472	120

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	948	845	592
Volume Left (vph)	272	0	472
Volume Right (vph)	0	538	120
Hadj (s)	0.09	-0.35	0.07
Departure Headway (s)	7.1	6.6	7.1
Degree Utilization, x	1.86	1.56	1.16
Capacity (veh/h)	516	547	515
Control Delay (s)	413.3	278.0	116.7
Approach Delay (s)	413.3	278.0	116.7
Approach LOS	F	F	F

Intersection Summary			
Delay	291.7		
Level of Service	F		
Intersection Capacity Utilization	132.5%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	276	0	548	1052	343	46	435	1462	286	3	1267	230
Future Volume (vph)	276	0	548	1052	343	46	435	1462	286	3	1267	230
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	0.98		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	3477		3433	3539	1549		5085	1539
Flt Permitted	0.95		1.00	0.95	1.00		0.95	1.00	1.00		0.94	1.00
Satd. Flow (perm)	1770		2787	3433	3477		3433	3539	1549		4757	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)	291	0	577	1107	361	48	458	1539	301	3	1334	242
RTOR Reduction (vph)	0	0	56	0	9	0	0	0	106	0	0	86
Lane Group Flow (vph)	291	0	521	1107	400	0	458	1539	195	0	1337	156
Confl. Peds. (#/hr)												12
Confl. Bikes (#/hr)									2			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)	15.4		36.3	46.7	25.7		20.9	61.4	61.4		35.3	35.3
Effective Green, g (s)	15.4		36.3	46.7	25.7		20.9	61.4	61.4		35.3	35.3
Actuated g/C Ratio	0.13		0.30	0.39	0.21		0.17	0.51	0.51		0.29	0.29
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)	227		843	1336	744		597	1810	792		1399	452
v/s Ratio Prot	c0.16		0.11	c0.32	0.11		0.13	c0.43				
v/s Ratio Perm			0.08						0.13		c0.28	0.10
v/c Ratio	1.28		0.62	0.83	0.54		0.77	0.85	0.25		0.96	0.34
Uniform Delay, d1	52.3		35.9	33.0	41.9		47.2	25.3	16.4		41.6	33.3
Progression Factor	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	156.2		1.4	4.4	0.7		5.9	5.2	0.7		15.6	2.1
Delay (s)	208.5		37.2	37.4	42.6		53.1	30.6	17.1		57.2	35.3
Level of Service	F		D	D	D		D	C	B		E	D
Approach Delay (s)		94.6			38.8			33.3			53.8	
Approach LOS		F			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	48.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.7
Intersection Capacity Utilization	111.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	279	5	192	0	0	0	0	1785	1267	142	2338	0
Future Volume (vph)	279	5	192	0	0	0	0	1785	1267	142	2338	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	1590						5085	2720	3433	5085	
Flt Permitted	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	1590						5085	2720	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)	291	5	200	0	0	0	0	1859	1320	148	2435	0
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	291	196	0	0	0	0	0	1859	1320	148	2435	0
Confl. Peds. (#/hr)									1			22
Confl. Bikes (#/hr)									5			4
Turn Type	Split	NA						NA	Perm	Prot	NA	
Protected Phases	4	4						2		1	6	
Permitted Phases									2			
Actuated Green, G (s)	17.8	17.8						74.6	74.6	10.5	90.3	
Effective Green, g (s)	17.8	17.8						74.6	74.6	10.5	90.3	
Actuated g/C Ratio	0.15	0.15						0.62	0.62	0.09	0.75	
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)	509	235						3161	1690	300	3826	
v/s Ratio Prot	0.08	c0.12						0.37		0.04	c0.48	
v/s Ratio Perm									c0.49			
v/c Ratio	0.57	0.83						0.59	0.78	0.49	0.64	
Uniform Delay, d1	47.6	49.7						13.5	16.7	52.2	7.1	
Progression Factor	1.00	1.00						1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.6	21.5						0.8	3.7	1.3	0.8	
Delay (s)	49.1	71.2						14.3	20.4	53.5	7.9	
Level of Service	D	E						B	C	D	A	
Approach Delay (s)		58.2			0.0			16.8			10.5	
Approach LOS		E			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.1
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	810	60	435	649	100	50	342	710	40	254	41
Future Volume (vph)	101	810	60	435	649	100	50	342	710	40	254	41
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	
Frpb, 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	0.98	
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	1556	3433	3539	1537	1770	3539	1583	1770	3459	
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	1556	3433	3539	1537	1770	3539	1583	1770	3459	
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)	111	890	66	478	713	110	55	376	780	44	279	45
RTOR Reduction (vph)	0	0	47	0	0	74	0	0	193	0	10	0
Lane Group Flow (vph)	111	890	19	478	713	36	55	376	587	44	314	0
Confl. 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)	11.5	33.1	33.1	16.1	37.7	37.7	6.8	44.5	44.5	4.2	41.9	
Effective Green, g (s)	11.5	33.1	33.1	16.1	37.7	37.7	6.8	44.5	44.5	4.2	41.9	
Actuated g/C Ratio	0.10	0.28	0.28	0.14	0.32	0.32	0.06	0.38	0.38	0.04	0.36	
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)	174	1005	442	474	1145	497	103	1351	604	63	1244	
v/s Ratio Prot	0.06	c0.25		c0.14	0.20		c0.03	0.11	c0.37	0.02	0.09	
v/s Ratio Perm			0.01			0.02						
v/c Ratio	0.64	0.89	0.04	1.01	0.62	0.07	0.53	0.28	0.97	0.70	0.25	
Uniform Delay, d1	50.5	39.9	30.2	50.2	33.4	27.3	53.3	24.9	35.4	55.5	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	7.5	9.5	0.0	43.5	1.1	0.1	5.2	0.1	29.3	28.6	0.1	
Delay (s)	58.0	49.3	30.3	93.7	34.4	27.3	58.5	25.0	64.7	84.2	26.4	
Level of Service	E	D	C	F	C	C	E	C	E	F	C	
Approach Delay (s)		49.1			55.6			52.1			33.3	
Approach LOS		D			E			D			C	

Intersection Summary			
HCM 2000 Control Delay	50.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	116.5	Sum of lost time (s)	18.6
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	87	100	425	248	5
Future Volume (Veh/h)	5	87	100	425	248	5
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)	6	97	111	472	276	6
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	973	279	282			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	973	279	282			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	87	91			
cM capacity (veh/h)	255	760	1280			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	103	111	472	282
Volume Left	6	111	0	0
Volume Right	97	0	0	6
cSH	681	1280	1700	1700
Volume to Capacity	0.15	0.09	0.28	0.17
Queue Length 95th (ft)	13	7	0	0
Control Delay (s)	11.2	8.1	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	11.2	1.5		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	209	350	100	120	240	130	110	626	130	170	432	83
Future Volume (vph)	209	350	100	120	240	130	110	626	130	170	432	83
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)	220	368	105	126	253	137	116	659	137	179	455	87
RTOR Reduction (vph)	0	0	81	0	0	113	0	0	93	0	0	60
Lane Group Flow (vph)	220	368	24	126	253	24	116	659	44	179	455	27
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)	13.2	17.6	17.6	8.8	13.2	13.2	8.6	20.6	20.6	11.9	23.9	23.9
Effective Green, g (s)	13.2	17.6	17.6	8.8	13.2	13.2	8.6	20.6	20.6	11.9	23.9	23.9
Actuated g/C Ratio	0.17	0.23	0.23	0.11	0.17	0.17	0.11	0.27	0.27	0.15	0.31	0.31
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)	303	809	362	202	607	271	197	948	424	273	1099	491
v/s Ratio Prot	c0.12	c0.10		0.07	0.07		0.07	c0.19		c0.10	c0.13	
v/s Ratio Perm			0.02			0.01			0.03			0.02
v/c Ratio	0.73	0.45	0.07	0.62	0.42	0.09	0.59	0.70	0.10	0.66	0.41	0.06
Uniform Delay, d1	30.1	25.5	23.2	32.5	28.4	26.8	32.5	25.3	21.2	30.6	21.0	18.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.4	0.4	0.1	5.9	0.5	0.1	4.4	2.2	0.1	5.6	0.3	0.0
Delay (s)	38.5	25.9	23.3	38.4	28.9	26.9	36.9	27.6	21.3	36.1	21.2	18.6
Level of Service	D	C	C	D	C	C	D	C	C	D	C	B
Approach Delay (s)		29.5			30.7			27.8			24.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	76.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	520	330	15	290	260	323	10	1452	320	466	658	380
Future Volume (vph)	520	330	15	290	260	323	10	1452	320	466	658	380
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	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	0.86	0.86	0.97	0.91	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)	3433	5085	1583	1770	1863	1583	1770	4790	1362	3433	5085	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)	3433	5085	1583	1770	1863	1583	1770	4790	1362	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)	565	359	16	315	283	351	11	1578	348	507	715	413
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	145	0	0	0
Lane Group Flow (vph)	565	359	16	315	283	351	11	1612	168	507	715	413
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			2			Free
Actuated Green, G (s)	24.2	24.5	139.7	25.0	25.3	139.7	1.6	48.9	48.9	20.0	67.3	139.7
Effective Green, g (s)	24.2	24.5	139.7	25.0	25.3	139.7	1.6	48.9	48.9	20.0	67.3	139.7
Actuated g/C Ratio	0.17	0.18	1.00	0.18	0.18	1.00	0.01	0.35	0.35	0.14	0.48	1.00
Clearance Time (s)	5.0	5.3		5.0	5.3		5.0	6.0	6.0	5.0	6.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5		2.0	3.0	3.0	2.0	4.0	
Lane Grp Cap (vph)	594	891	1583	316	337	1583	20	1676	476	491	2449	1583
v/s Ratio Prot	0.16	0.07		c0.18	c0.15		0.01	c0.34		c0.15	0.14	
v/s Ratio Perm			0.01			0.22			0.12			c0.26
v/c Ratio	0.95	0.40	0.01	1.00	0.84	0.22	0.55	0.96	0.35	1.03	0.29	0.26
Uniform Delay, d1	57.2	51.1	0.0	57.3	55.2	0.0	68.7	44.5	33.7	59.8	21.8	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	1.00
Incremental Delay, d2	25.1	0.5	0.0	49.4	17.9	0.3	17.2	14.6	2.0	49.3	0.3	0.4
Delay (s)	82.2	51.6	0.0	106.7	73.1	0.3	85.9	59.1	35.7	109.1	22.1	0.4
Level of Service	F	D	A	F	E	A	F	E	D	F	C	A
Approach Delay (s)		69.2			57.3			55.4			43.6	
Approach LOS		E			E			E			D	

Intersection Summary			
HCM 2000 Control Delay	54.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	139.7	Sum of lost time (s)	21.3
Intersection Capacity Utilization	90.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	40	262	366	370	273	50
Future Volume (vph)	40	262	366	370	273	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	285	398	402	297	54

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total (vph)	328	398	402	351
Volume Left (vph)	43	0	0	297
Volume Right (vph)	0	0	402	54
Hadj (s)	0.06	0.03	-0.67	0.11
Departure Headway (s)	6.3	6.3	5.6	6.5
Degree Utilization, x	0.57	0.70	0.63	0.63
Capacity (veh/h)	551	559	630	533
Control Delay (s)	17.3	21.6	16.4	19.8
Approach Delay (s)	17.3	19.0		19.8
Approach LOS	C	C		C

Intersection Summary			
Delay	18.8		
Level of Service	C		
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		

APPENDIX H

PEAK HOUR ANALYSIS WORKSHEETS – SAN MARCOS HORIZON YEAR 2035

APPENDIX H-1

PEAK HOUR ANALYSIS WORKSHEETS
– SAN MARCOS HORIZON YEAR 2035 WITHOUT PROJECT

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	49	131	128	651	1714	53
Future Volume (vph)	49	131	128	651	1714	53
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	0.95	0.95	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	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	142	139	708	1863	58
RTOR Reduction (vph)	0	127	0	0	0	9
Lane Group Flow (vph)	53	15	139	708	1863	49
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	12.4	12.4	14.6	95.1	76.5	76.5
Effective Green, g (s)	12.4	12.4	14.6	95.1	76.5	76.5
Actuated g/C Ratio	0.11	0.11	0.12	0.81	0.65	0.65
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)	186	166	219	2859	2300	1028
v/s Ratio Prot	c0.03		c0.08	0.20	c0.53	
v/s Ratio Perm		0.01				0.03
v/c Ratio	0.28	0.09	0.63	0.25	0.81	0.05
Uniform Delay, d1	48.6	47.6	49.0	2.7	15.2	7.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.2	5.9	0.0	2.3	0.0
Delay (s)	49.4	47.8	54.9	2.8	17.5	7.5
Level of Service	D	D	D	A	B	A
Approach Delay (s)	48.2			11.3	17.2	
Approach LOS	D			B	B	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	117.7	Sum of lost time (s)	14.2
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	460	0	270	10	10	0	180	329	10	10	1087	698
Future Volume (vph)	460	0	270	10	10	0	180	329	10	10	1087	698
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		5.0	5.5		5.0	5.5	5.5
Lane Util. Factor	0.97		1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00		0.99		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	1.00	1.00
Frt	1.00		0.85		1.00		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95		1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433		1560		1817		1770	3524		1770	3539	1561
Flt Permitted	0.74		1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	2690		1560		1817		1770	3524		1770	3539	1561
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)	479	0	281	10	10	0	188	343	10	10	1132	727
RTOR Reduction (vph)	0	0	149	0	0	0	0	2	0	0	0	201
Lane Group Flow (vph)	479	0	132	0	20	0	188	351	0	10	1132	526
Confl. Peds. (#/hr)			2									1
Confl. Bikes (#/hr)												3
Turn Type	Perm		Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases					8		5	2		1	6	
Permitted Phases	4		4	8								6
Actuated Green, G (s)	19.8		19.8		19.8		11.5	48.8		0.9	38.2	38.2
Effective Green, g (s)	19.8		19.8		19.8		11.5	48.8		0.9	38.2	38.2
Actuated g/C Ratio	0.24		0.24		0.24		0.14	0.58		0.01	0.45	0.45
Clearance Time (s)	4.0		4.0		4.0		5.0	5.5		5.0	5.5	5.5
Vehicle Extension (s)	3.0		3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	634		367		428		242	2047		18	1609	709
v/s Ratio Prot							c0.11	0.10		0.01	0.32	
v/s Ratio Perm	c0.18		0.08		0.01							c0.34
v/c Ratio	0.76		0.36		0.05		0.78	0.17		0.56	0.70	0.74
Uniform Delay, d1	29.8		26.8		24.8		35.0	8.2		41.4	18.4	18.8
Progression Factor	1.00		1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.1		0.6		0.0		14.4	0.0		32.3	1.4	4.2
Delay (s)	35.0		27.4		24.9		49.5	8.2		73.6	19.8	23.1
Level of Service	C		C		C		D	A		E	B	C
Approach Delay (s)		32.2			24.9			22.6			21.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	24.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	84.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	10	50	240	20	46	30	364	230	62	872	8
Future Volume (vph)	17	10	50	240	20	46	30	364	230	62	872	8
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	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			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	
Frt		0.91			0.98		1.00	0.94		1.00	1.00	
Flt Protected		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1661			1756		1770	3305		1770	3535	
Flt Permitted		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1661			1756		1770	3305		1770	3535	
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)	18	10	52	250	21	48	31	379	240	65	908	8
RTOR Reduction (vph)	0	47	0	0	4	0	0	74	0	0	1	0
Lane Group Flow (vph)	0	33	0	0	315	0	31	545	0	65	915	0
Confl. Peds. (#/hr)			6						1			
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)		7.5			22.5		2.9	28.1		6.6	31.8	
Effective Green, g (s)		7.5			22.5		2.9	28.1		6.6	31.8	
Actuated g/C Ratio		0.09			0.27		0.03	0.33		0.08	0.38	
Clearance Time (s)		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	
Lane Grp Cap (vph)		147			466		60	1096		137	1327	
v/s Ratio Prot		c0.02			c0.18		0.02	0.17		c0.04	c0.26	
v/s Ratio Perm												
v/c Ratio		0.22			0.68		0.52	0.50		0.47	0.69	
Uniform Delay, d1		35.9			27.8		40.2	22.7		37.4	22.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8			3.8		7.3	0.4		2.6	1.5	
Delay (s)		36.7			31.7		47.5	23.0		40.0	23.8	
Level of Service		D			C		D	C		D	C	
Approach Delay (s)		36.7			31.7			24.2			24.9	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	26.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	84.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	220	226	578	70	71	1041
Future Volume (vph)	220	226	578	70	71	1041
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	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	3465		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1563	3465		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	246	628	76	77	1132
RTOR Reduction (vph)	0	0	10	0	0	0
Lane Group Flow (vph)	239	246	694	0	77	1132
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)	15.8	15.8	20.9		6.7	33.6
Effective Green, g (s)	15.8	15.8	20.9		6.7	33.6
Actuated g/C Ratio	0.26	0.26	0.34		0.11	0.54
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)	451	398	1169		191	1921
v/s Ratio Prot	0.14		0.20		0.04	c0.32
v/s Ratio Perm		c0.16				
v/c Ratio	0.53	0.62	0.59		0.40	0.59
Uniform Delay, d1	19.9	20.4	17.0		25.7	9.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.1	2.9	0.8		1.4	0.5
Delay (s)	21.0	23.2	17.8		27.1	10.0
Level of Service	C	C	B		C	A
Approach Delay (s)	22.1		17.8			11.1
Approach LOS	C		B			B

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	61.9	Sum of lost time (s)	18.5
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	0	70	10	0	10	40	630	20	10	1293	18
Future Volume (vph)	28	0	70	10	0	10	40	630	20	10	1293	18
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	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	1583		1770	1583		1770	3520		1770	3532	
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	3520		1770	3532	
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)	30	0	76	11	0	11	43	685	22	11	1405	20
RTOR Reduction (vph)	0	67	0	0	10	0	0	2	0	0	1	0
Lane Group Flow (vph)	30	9	0	11	1	0	43	705	0	11	1424	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)	1.1	8.3		0.5	7.7		2.0	42.5		0.5	41.0	
Effective Green, g (s)	1.1	8.3		0.5	7.7		2.0	42.5		0.5	41.0	
Actuated g/C Ratio	0.02	0.12		0.01	0.11		0.03	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)	27	184		12	170		49	2098		12	2031	
v/s Ratio Prot	c0.02	c0.01		0.01	0.00		c0.02	0.20		0.01	c0.40	
v/s Ratio Perm												
v/c Ratio	1.11	0.05		0.92	0.01		0.88	0.34		0.92	0.70	
Uniform Delay, d1	35.1	28.0		35.4	28.4		34.5	7.3		35.4	10.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	209.3	0.1		212.2	0.0		83.1	0.1		212.2	1.1	
Delay (s)	244.4	28.1		247.5	28.4		117.6	7.4		247.5	11.9	
Level of Service	F	C		F	C		F	A		F	B	
Approach Delay (s)		89.3			138.0			13.7			13.7	
Approach LOS		F			F			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	71.3	Sum of lost time (s)	19.5
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	10	50	0	0	0	50	690	10	10	1343	70
Future Volume (vph)	10	10	50	0	0	0	50	690	10	10	1343	70
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	4.0	
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	0.88					1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00					0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1608					1770	3530		1770	3508	
Flt Permitted	0.95	1.00					0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1608					1770	3530		1770	3508	
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)	11	11	54	0	0	0	54	750	11	11	1460	76
RTOR Reduction (vph)	0	49	0	0	0	0	0	1	0	0	3	0
Lane Group Flow (vph)	11	16	0	0	0	0	54	760	0	11	1533	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)	6.9	6.9					3.7	46.3		0.7	43.3	
Effective Green, g (s)	6.9	6.9					3.7	46.3		0.7	43.3	
Actuated g/C Ratio	0.10	0.10					0.05	0.68		0.01	0.64	
Clearance Time (s)	4.0	4.0					6.0	6.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0					3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	179	163					96	2407		18	2237	
v/s Ratio Prot	0.01	c0.01					c0.03	c0.22		0.01	c0.44	
v/s Ratio Perm												
v/c Ratio	0.06	0.10					0.56	0.32		0.61	0.69	
Uniform Delay, d1	27.6	27.7					31.3	4.4		33.5	7.9	
Progression Factor	1.00	1.00					1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.3					7.3	0.1		48.7	0.9	
Delay (s)	27.7	28.0					38.7	4.5		82.1	8.8	
Level of Service	C	C					D	A		F	A	
Approach Delay (s)		27.9			0.0			6.7			9.3	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	67.9	Sum of lost time (s)	14.0
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Year 2035 AM
18: Twin Oaks Valley Rd & Borden Rd

Sierra Project
03/17/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	50	270	270	110	27	100	573	60	18	1134	121
Future Volume (vph)	60	50	270	270	110	27	100	573	60	18	1134	121
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	3035		1770	3426		1770	3539	1556	1770	3539	1550
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	3035		1770	3426		1770	3539	1556	1770	3539	1550
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)	63	53	284	284	116	28	105	603	63	19	1194	127
RTOR Reduction (vph)	0	169	0	0	12	0	0	0	32	0	0	67
Lane Group Flow (vph)	63	168	0	284	132	0	105	603	31	19	1194	60
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)	8.3	17.9		28.5	38.1		13.8	68.0	68.0	3.2	57.4	57.4
Effective Green, g (s)	8.3	17.9		28.5	38.1		13.8	68.0	68.0	3.2	57.4	57.4
Actuated g/C Ratio	0.06	0.13		0.21	0.28		0.10	0.50	0.50	0.02	0.42	0.42
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)	107	398		370	958		179	1766	776	41	1491	653
v/s Ratio Prot	0.04	c0.06		c0.16	0.04		c0.06	0.17		0.01	c0.34	
v/s Ratio Perm									0.02			0.04
v/c Ratio	0.59	0.42		0.77	0.14		0.59	0.34	0.04	0.46	0.80	0.09
Uniform Delay, d1	62.3	54.4		50.7	36.7		58.5	20.6	17.4	65.7	34.4	23.7
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	8.0	0.7		9.2	0.1		4.8	0.1	0.0	8.1	3.2	0.1
Delay (s)	70.3	55.1		59.9	36.8		63.3	20.7	17.4	73.7	37.6	23.8
Level of Service	E	E		E	D		E	C	B	E	D	C
Approach Delay (s)		57.5			52.2			26.2			36.8	
Approach LOS		E			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	39.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	136.2	Sum of lost time (s)	18.6
Intersection Capacity Utilization	80.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Year 2035 AM
19: Twin Oaks Valley Rd & Richmar Road

Sierra Project
03/17/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	30	150	70	30	20	80	763	50	50	1484	280
Future Volume (vph)	210	30	150	70	30	20	80	763	50	50	1484	280
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	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	0.94		1.00	0.99		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	1611		1770	1735		1770	3498		1770	3438	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1611		1770	1735		1770	3498		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)	212	30	152	71	30	20	81	771	51	51	1499	283
RTOR Reduction (vph)	0	116	0	0	18	0	0	3	0	0	9	0
Lane Group Flow (vph)	212	66	0	71	32	0	81	819	0	51	1773	0
Confl. Peds. (#/hr)						8			4			2
Confl. Bikes (#/hr)			1						1			3
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)	18.8	22.5		9.3	13.0		8.1	78.1		7.9	77.9	
Effective Green, g (s)	18.8	22.5		9.3	13.0		8.1	78.1		7.9	77.9	
Actuated g/C Ratio	0.14	0.16		0.07	0.10		0.06	0.57		0.06	0.57	
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)	243	265		120	165		105	2002		102	1963	
v/s Ratio Prot	c0.12	c0.04		0.04	0.02		c0.05	0.23		0.03	c0.52	
v/s Ratio Perm												
v/c Ratio	0.87	0.25		0.59	0.19		0.77	0.41		0.50	0.90	
Uniform Delay, d1	57.6	49.6		61.7	56.9		63.2	16.3		62.3	25.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	27.2	0.5		7.6	0.6		28.8	0.1		3.8	6.3	
Delay (s)	84.8	50.1		69.3	57.4		92.1	16.4		66.2	32.2	
Level of Service	F	D		E	E		F	B		E	C	
Approach Delay (s)		68.8			64.4			23.2			33.1	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	35.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	136.4	Sum of lost time (s)	18.6
Intersection Capacity Utilization	90.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	236	430	480	530	720	45	430	652	530	112	1267	415
Future Volume (vph)	236	430	480	530	720	45	430	652	530	112	1267	415
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	5.3
Lane Util. Factor	0.97	0.95	0.88	0.94	0.95		0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99
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	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	2712	4990	3504		3433	3539	1565	3433	3539	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	2712	4990	3504		3433	3539	1565	3433	3539	1562
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)	241	439	490	541	735	46	439	665	541	114	1293	423
RTOR Reduction (vph)	0	0	270	0	4	0	0	0	37	0	0	145
Lane Group Flow (vph)	241	439	220	541	777	0	439	665	504	114	1293	278
Confl. Peds. (#/hr)			5			4			1			1
Confl. Bikes (#/hr)			8			3			3			
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	10.1	26.3	26.3	14.4	30.9		16.2	55.5	69.9	8.1	47.4	47.4
Effective Green, g (s)	10.1	26.3	26.3	14.4	30.9		16.2	55.5	69.9	8.1	47.4	47.4
Actuated g/C Ratio	0.08	0.21	0.21	0.12	0.25		0.13	0.45	0.57	0.07	0.38	0.38
Clearance Time (s)	4.2	5.3	5.3	4.2	5.0		4.2	5.3	4.2	4.2	5.3	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)	281	754	578	582	878		451	1592	887	225	1360	600
v/s Ratio Prot	0.07	0.12		c0.11	c0.22		c0.13	0.19	0.07	0.03	c0.37	
v/s Ratio Perm			0.08						0.26			0.18
v/c Ratio	0.86	0.58	0.38	0.93	0.89		0.97	0.42	0.57	0.51	0.95	0.46
Uniform Delay, d1	55.9	43.6	41.5	53.9	44.5		53.3	23.0	17.1	55.7	36.8	28.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.9	1.2	0.4	21.3	10.6		35.2	0.2	0.8	1.8	14.3	0.6
Delay (s)	77.8	44.7	41.9	75.2	55.1		88.6	23.1	17.9	57.5	51.1	29.0
Level of Service	E	D	D	E	E		F	C	B	E	D	C
Approach Delay (s)		50.4			63.3			38.9			46.4	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	48.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	123.3	Sum of lost time (s)	19.0
Intersection Capacity Utilization	91.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	700	0	310	0	1262	600	0	1745	652
Future Volume (vph)	0	0	0	700	0	310	0	1262	600	0	1745	652
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	0.97
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	1539		5085	1543
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3433		2787		5085	1539		5085	1543
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	714	0	316	0	1288	612	0	1781	665
RTOR Reduction (vph)	0	0	0	0	0	67	0	0	0	0	0	229
Lane Group Flow (vph)	0	0	0	714	0	249	0	1288	612	0	1781	436
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)				31.5		31.5		78.6	110.1		78.6	78.6
Effective Green, g (s)				31.5		31.5		78.6	110.1		78.6	78.6
Actuated g/C Ratio				0.26		0.26		0.65	0.92		0.65	0.65
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)				901		731		3330	1471		3330	1010
v/s Ratio Prot				c0.21				0.25	0.11		c0.35	
v/s Ratio Perm						0.09			0.29			0.28
v/c Ratio				0.79		0.34		0.39	0.42		0.53	0.43
Uniform Delay, d1				41.2		35.8		9.6	0.7		11.0	10.0
Progression Factor				1.00		1.00		0.45	9.15		1.00	1.00
Incremental Delay, d2				4.5		0.1		0.2	0.0		0.6	1.3
Delay (s)				45.7		35.9		4.5	6.1		11.6	11.3
Level of Service				D		D		A	A		B	B
Approach Delay (s)		0.0			42.7			5.0			11.5	
Approach LOS		A			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	666	10	850	0	0	0	0	1246	760	370	2025	0
Future Volume (vph)	666	10	850	0	0	0	0	1246	760	370	2025	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	0.89	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	1482	1485					5085	1553	3433	5085	
Flt Permitted	0.95	0.99	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1681	1482	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)	687	10	876	0	0	0	0	1285	784	381	2088	0
RTOR Reduction (vph)	0	2	36	0	0	0	0	0	510	0	0	0
Lane Group Flow (vph)	543	520	472	0	0	0	0	1285	274	381	2088	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)	47.7	47.7	47.7					41.9	41.9	16.3	62.4	
Effective Green, g (s)	47.7	47.7	47.7					41.9	41.9	16.3	62.4	
Actuated g/C Ratio	0.40	0.40	0.40					0.35	0.35	0.14	0.52	
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)	668	589	590					1775	542	466	2644	
v/s Ratio Prot	0.32	c0.35						0.25		0.11	c0.41	
v/s Ratio Perm			0.32						0.18			
v/c Ratio	0.81	0.88	0.80					0.72	0.51	0.82	0.79	
Uniform Delay, d1	32.2	33.6	32.0					34.0	30.9	50.4	23.5	
Progression Factor	1.00	1.00	1.00					1.00	1.00	1.14	1.19	
Incremental Delay, d2	7.5	14.6	7.7					2.6	3.3	9.1	2.1	
Delay (s)	39.7	48.2	39.6					36.6	34.2	66.5	30.0	
Level of Service	D	D	D					D	C	E	C	
Approach Delay (s)		42.5			0.0			35.7			35.6	
Approach LOS		D			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	37.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	97.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	0	620	1200	430	20	410	491	150	0	1104	250
Future Volume (vph)	210	0	620	1200	430	20	410	491	150	0	1104	250
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	3513		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	3513		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)	216	0	639	1237	443	21	423	506	155	0	1138	258
RTOR Reduction (vph)	0	0	57	0	3	0	0	0	81	0	0	90
Lane Group Flow (vph)	216	0	582	1237	461	0	423	506	74	0	1138	168
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)	16.2		34.9	51.0	29.2		18.7	57.1	57.1		33.2	33.2
Effective Green, g (s)	16.2		34.9	51.0	29.2		18.7	57.1	57.1		33.2	33.2
Actuated g/C Ratio	0.13		0.29	0.42	0.24		0.16	0.48	0.48		0.28	0.28
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)	238		810	1459	854		534	1683	753		1406	427
v/s Ratio Prot	0.12		0.11	c0.36	0.13		c0.12	0.14			c0.22	
v/s Ratio Perm			0.10						0.05			0.11
v/c Ratio	0.91		0.72	0.85	0.54		0.79	0.30	0.10		0.81	0.39
Uniform Delay, d1	51.2		38.1	31.0	39.5		48.8	19.2	17.3		40.5	35.2
Progression Factor	1.00		1.00	1.00	1.00		1.01	1.34	3.69		1.00	1.00
Incremental Delay, d2	34.2		3.1	4.8	0.7		7.8	0.5	0.3		5.1	2.7
Delay (s)	85.4		41.2	35.8	40.2		56.9	26.3	64.0		45.6	38.0
Level of Service	F		D	D	D		E	C	E		D	D
Approach Delay (s)		52.4			37.0			43.6			44.2	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	43.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.7
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	0	260	0	0	0	0	820	850	190	2420	0
Future Volume (vph)	171	0	260	0	0	0	0	820	850	190	2420	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)	178	0	271	0	0	0	0	854	885	198	2521	0
RTOR Reduction (vph)	0	0	64	0	0	0	0	0	369	0	0	0
Lane Group Flow (vph)	178	0	207	0	0	0	0	854	516	198	2521	0
Confl. Peds. (#/hr)												6
Confl. Bikes (#/hr)									3			4
Turn Type	Prot		Perm					NA	Perm	Prot	NA	
Protected Phases	4							2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	20.7		20.7					70.0	70.0	12.2	87.4	
Effective Green, g (s)	20.7		20.7					70.0	70.0	12.2	87.4	
Actuated g/C Ratio	0.17		0.17					0.58	0.58	0.10	0.73	
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)	592		273					2966	1590	349	3703	
v/s Ratio Prot	0.05							0.17		0.06	c0.50	
v/s Ratio Perm			c0.13						0.19			
v/c Ratio	0.30		0.76					0.29	0.32	0.57	0.68	
Uniform Delay, d1	43.3		47.3					12.5	12.9	51.4	8.8	
Progression Factor	1.00		1.00					1.00	1.00	1.10	0.70	
Incremental Delay, d2	0.3		11.5					0.2	0.5	1.8	0.9	
Delay (s)	43.6		58.7					12.8	13.4	58.4	7.0	
Level of Service	D		E					B	B	E	A	
Approach Delay (s)		52.8			0.0			13.1			10.7	
Approach LOS		D			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.1
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	300	20	735	510	70	10	70	322	90	390	40
Future Volume (vph)	20	300	20	735	510	70	10	70	322	90	390	40
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	
Frpb, 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	0.99	
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	1530	1770	3539	1583	1770	3490	
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	1530	1770	3539	1583	1770	3490	
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)	22	326	22	799	554	76	11	76	350	98	424	43
RTOR Reduction (vph)	0	0	17	0	0	39	0	0	296	0	4	0
Lane Group Flow (vph)	22	326	5	799	554	37	11	76	54	98	463	0
Confl. 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)	2.5	18.8	18.8	28.6	44.9	44.9	0.8	14.2	14.2	11.7	25.1	
Effective Green, g (s)	2.5	18.8	18.8	28.6	44.9	44.9	0.8	14.2	14.2	11.7	25.1	
Actuated g/C Ratio	0.03	0.20	0.20	0.31	0.49	0.49	0.01	0.15	0.15	0.13	0.27	
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)	48	723	319	1068	1729	747	15	546	244	225	953	
v/s Ratio Prot	0.01	c0.09		c0.23	0.16		0.01	0.02	0.03	c0.06	c0.13	
v/s Ratio Perm			0.00			0.02						
v/c Ratio	0.46	0.45	0.01	0.75	0.32	0.05	0.73	0.14	0.22	0.44	0.49	
Uniform Delay, d1	44.0	32.0	29.2	28.4	14.2	12.3	45.4	33.6	34.0	37.0	28.0	
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	6.8	0.4	0.0	2.9	0.1	0.0	103.2	0.1	0.5	1.4	0.4	
Delay (s)	50.8	32.5	29.2	31.3	14.4	12.3	148.7	33.7	34.5	38.4	28.4	
Level of Service	D	C	C	C	B	B	F	C	C	D	C	
Approach Delay (s)		33.4			23.7			37.2			30.1	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	28.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	91.9	Sum of lost time (s)	18.6
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	100	10	380	490	261	30	935	170	554	1191	690
Future Volume (vph)	380	100	10	380	490	261	30	935	170	554	1191	690
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	4968		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	4968		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)	413	109	11	413	533	284	33	1016	185	602	1295	750
RTOR Reduction (vph)	0	0	9	0	0	142	0	17	0	0	0	244
Lane Group Flow (vph)	413	109	2	413	533	142	33	1184	0	602	1295	506
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)	19.0	28.8	28.8	35.0	44.8	44.8	4.0	39.2		26.0	61.2	61.2
Effective Green, g (s)	19.0	28.8	28.8	35.0	44.8	44.8	4.0	39.2		26.0	61.2	61.2
Actuated g/C Ratio	0.13	0.19	0.19	0.23	0.30	0.30	0.03	0.26		0.17	0.41	0.41
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)	433	974	303	412	555	471	47	1295		593	2070	644
v/s Ratio Prot	0.12	0.02		c0.23	c0.29		0.02	c0.24		c0.18	0.25	
v/s Ratio Perm			0.00			0.09						0.32
v/c Ratio	0.95	0.11	0.01	1.00	0.96	0.30	0.70	0.91		1.02	0.63	0.79
Uniform Delay, d1	65.2	50.2	49.2	57.7	51.9	40.7	72.6	53.9		62.2	35.4	38.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	31.2	0.1	0.0	44.9	28.7	0.6	32.1	10.1		40.8	0.7	6.6
Delay (s)	96.4	50.3	49.2	102.6	80.6	41.3	104.6	64.0		103.0	36.1	45.4
Level of Service	F	D	D	F	F	D	F	E		F	D	D
Approach Delay (s)		86.0			78.9			65.1			54.0	
Approach LOS		F			E			E			D	

Intersection Summary			
HCM 2000 Control Delay	64.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	150.3	Sum of lost time (s)	21.3
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Intersection Sign configuration not allowed in HCM analysis.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	59	356	149	1571	1123	48
Future Volume (vph)	59	356	149	1571	1123	48
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	0.95	0.95	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	3539	3539	1547
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1547
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	387	162	1708	1221	52
RTOR Reduction (vph)	0	254	0	0	0	20
Lane Group Flow (vph)	64	133	162	1708	1221	32
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)	11.6	11.6	12.3	51.4	35.1	35.1
Effective Green, g (s)	11.6	11.6	12.3	51.4	35.1	35.1
Actuated g/C Ratio	0.16	0.16	0.17	0.70	0.48	0.48
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)	280	250	297	2485	1696	741
v/s Ratio Prot	0.04		0.09	c0.48	0.34	
v/s Ratio Perm		c0.08				0.02
v/c Ratio	0.23	0.53	0.55	0.69	0.72	0.04
Uniform Delay, d1	26.9	28.3	27.9	6.3	15.1	10.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	2.2	2.0	0.8	1.5	0.0
Delay (s)	27.3	30.5	29.9	7.1	16.6	10.2
Level of Service	C	C	C	A	B	B
Approach Delay (s)	30.0			9.1	16.4	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	73.2	Sum of lost time (s)	14.2
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	761	0	310	10	0	0	280	849	0	10	759	620
Future Volume (vph)	761	0	310	10	0	0	280	849	0	10	759	620
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		5.0	5.5		4.5	5.5	5.5
Lane Util. Factor	0.97		1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	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
Frt	1.00		0.85		1.00		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95		1.00		0.95		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433		1583		1770		1770	3539		1770	3539	1558
Flt Permitted	0.75		1.00		0.95		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	2712		1583		1770		1770	3539		1770	3539	1558
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)	818	0	333	11	0	0	301	913	0	11	816	667
RTOR Reduction (vph)	0	0	226	0	0	0	0	0	0	0	0	270
Lane Group Flow (vph)	818	0	107	0	11	0	301	913	0	11	816	397
Confl. Peds. (#/hr)												1
Confl. Bikes (#/hr)												5
Turn Type	Perm		Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases					8		5	2		1	6	
Permitted Phases	4		4	8								6
Actuated Green, G (s)	28.2		28.2		28.2		16.1	47.0		0.8	31.2	31.2
Effective Green, g (s)	28.2		28.2		28.2		16.1	47.0		0.8	31.2	31.2
Actuated g/C Ratio	0.31		0.31		0.31		0.18	0.52		0.01	0.35	0.35
Clearance Time (s)	4.0		4.0		4.0		5.0	5.5		4.5	5.5	5.5
Vehicle Extension (s)	3.0		3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	849		496		554		316	1848		15	1226	540
v/s Ratio Prot							c0.17	0.26		0.01	0.23	
v/s Ratio Perm	c0.30		0.07		0.01							c0.25
v/c Ratio	0.96		0.22		0.02		0.95	0.49		0.73	0.67	0.73
Uniform Delay, d1	30.4		22.8		21.4		36.6	13.8		44.5	25.0	25.8
Progression Factor	1.00		1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	22.2		0.2		0.0		37.9	0.2		103.2	1.4	5.1
Delay (s)	52.6		23.0		21.4		74.5	14.1		147.7	26.3	30.9
Level of Service	D		C		C		E	B		F	C	C
Approach Delay (s)		44.1			21.4			29.0			29.3	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	33.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	0	60	20	10	18	50	862	20	12	749	17
Future Volume (vph)	17	0	60	20	10	18	50	862	20	12	749	17
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	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.89			0.95		1.00	1.00		1.00	1.00	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1631			1734		1770	3527		1770	3528	
Flt Permitted		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1631			1734		1770	3527		1770	3528	
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)	18	0	65	22	11	19	54	927	22	13	805	18
RTOR Reduction (vph)	0	75	0	0	17	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	8	0	0	35	0	54	948	0	13	822	0
Confl. Peds. (#/hr)			1									
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)		6.5			5.6		4.2	37.3		0.5	33.6	
Effective Green, g (s)		6.5			5.6		4.2	37.3		0.5	33.6	
Actuated g/C Ratio		0.09			0.08		0.06	0.53		0.01	0.48	
Clearance Time (s)		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	
Lane Grp Cap (vph)		151			138		106	1882		12	1695	
v/s Ratio Prot		c0.00			c0.02		c0.03	c0.27		0.01	0.23	
v/s Ratio Perm												
v/c Ratio		0.05			0.25		0.51	0.50		1.08	0.48	
Uniform Delay, d1		28.9			30.2		31.9	10.4		34.7	12.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1			1.0		3.8	0.2		289.8	0.2	
Delay (s)		29.0			31.1		35.7	10.6		324.5	12.5	
Level of Service		C			C		D	B		F	B	
Approach Delay (s)		29.0			31.1			12.0			17.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	69.9	Sum of lost time (s)	20.0
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	120	56	966	140	106	723
Future Volume (vph)	120	56	966	140	106	723
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	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	3450		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3450		1770	3539
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	122	57	986	143	108	738
RTOR Reduction (vph)	0	0	11	0	0	0
Lane Group Flow (vph)	122	57	1118	0	108	738
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)	9.3	9.3	35.9		7.6	49.5
Effective Green, g (s)	9.3	9.3	35.9		7.6	49.5
Actuated g/C Ratio	0.13	0.13	0.50		0.11	0.69
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	1737		188	2456
v/s Ratio Prot	c0.07		c0.32		c0.06	0.21
v/s Ratio Perm		0.04				
v/c Ratio	0.53	0.28	0.64		0.57	0.30
Uniform Delay, d1	29.0	28.0	13.0		30.3	4.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.3	0.7	0.8		4.2	0.1
Delay (s)	31.3	28.7	13.8		34.5	4.3
Level of Service	C	C	B		C	A
Approach Delay (s)	30.5		13.8			8.1
Approach LOS	C		B			A

Intersection Summary			
HCM 2000 Control Delay	13.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	71.3	Sum of lost time (s)	18.5
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	0	60	30	0	10	90	988	30	20	756	17
Future Volume (vph)	8	0	60	30	0	10	90	988	30	20	756	17
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	1561		1770	1583		1770	3518		1770	3526	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1561		1770	1583		1770	3518		1770	3526	
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)	9	0	65	33	0	11	98	1074	33	22	822	18
RTOR Reduction (vph)	0	59	0	0	10	0	0	2	0	0	2	0
Lane Group Flow (vph)	9	6	0	33	1	0	98	1105	0	22	838	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	6.0		1.2	6.8		6.9	35.3		1.2	29.6	
Effective Green, g (s)	0.4	6.0		1.2	6.8		6.9	35.3		1.2	29.6	
Actuated g/C Ratio	0.01	0.09		0.02	0.11		0.11	0.55		0.02	0.46	
Clearance Time (s)	5.0	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	3.0	
Lane Grp Cap (vph)	11	147		33	168		191	1949		33	1638	
v/s Ratio Prot	0.01	c0.00		c0.02	0.00		c0.06	c0.31		0.01	0.24	
v/s Ratio Perm												
v/c Ratio	0.82	0.04		1.00	0.01		0.51	0.57		0.67	0.51	
Uniform Delay, d1	31.6	26.2		31.2	25.4		26.8	9.2		31.1	12.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	167.9	0.1		156.7	0.0		2.3	0.4		40.8	0.3	
Delay (s)	199.5	26.4		187.9	25.4		29.1	9.6		71.9	12.2	
Level of Service	F	C		F	C		C	A		E	B	
Approach Delay (s)		47.4			147.3			11.2			13.8	
Approach LOS		D			F			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	63.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	0	60	0	0	0	50	1028	10	10	846	10
Future Volume (vph)	20	0	60	0	0	0	50	1028	10	10	846	10
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	3533		1770	3532	
Flt Permitted	0.95	1.00					0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1563					1770	3533		1770	3532	
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)	20	0	60	0	0	0	50	1028	10	10	846	10
RTOR Reduction (vph)	0	54	0	0	0	0	0	1	0	0	1	0
Lane Group Flow (vph)	20	6	0	0	0	0	50	1037	0	10	855	0
Confl. Peds. (#/hr)			1			2			1			4
Confl. Bikes (#/hr)						2			2			5
Turn Type	Split	NA					Prot	NA		Prot	NA	
Protected Phases	4	4					5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	5.3	5.3					2.2	30.9		0.6	29.3	
Effective Green, g (s)	5.3	5.3					2.2	30.9		0.6	29.3	
Actuated g/C Ratio	0.10	0.10					0.04	0.61		0.01	0.58	
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)	184	163					76	2149		20	2037	
v/s Ratio Prot	c0.01	0.00					c0.03	c0.29		0.01	0.24	
v/s Ratio Perm												
v/c Ratio	0.11	0.04					0.66	0.48		0.50	0.42	
Uniform Delay, d1	20.6	20.5					23.9	5.5		25.0	6.0	
Progression Factor	1.00	1.00					1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.1					18.7	0.2		18.3	0.1	
Delay (s)	20.9	20.6					42.6	5.7		43.3	6.1	
Level of Service	C	C					D	A		D	A	
Approach Delay (s)		20.6			0.0			7.4			6.6	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	50.8	Sum of lost time (s)	14.0
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	184	250	260	180	220	47	270	987	280	87	825	114
Future Volume (vph)	184	250	260	180	220	47	270	987	280	87	825	114
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	0.92		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	3245		1770	3436		1770	3539	1560	1770	3539	1556
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	3245		1770	3436		1770	3539	1560	1770	3539	1556
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)	192	260	271	188	229	49	281	1028	292	91	859	119
RTOR Reduction (vph)	0	192	0	0	18	0	0	0	115	0	0	82
Lane Group Flow (vph)	192	339	0	188	260	0	281	1028	177	91	859	37
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)	12.0	16.1		12.0	16.1		17.1	39.4	39.4	6.7	29.0	29.0
Effective Green, g (s)	12.0	16.1		12.0	16.1		17.1	39.4	39.4	6.7	29.0	29.0
Actuated g/C Ratio	0.13	0.17		0.13	0.17		0.18	0.42	0.42	0.07	0.31	0.31
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)	228	562		228	596		326	1502	662	127	1105	486
v/s Ratio Prot	c0.11	c0.10		0.11	0.08		c0.16	0.29		0.05	c0.24	
v/s Ratio Perm									0.11			0.02
v/c Ratio	0.84	0.60		0.82	0.44		0.86	0.68	0.27	0.72	0.78	0.08
Uniform Delay, d1	39.5	35.4		39.4	34.3		36.7	21.7	17.3	42.1	29.0	22.5
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	23.5	1.8		20.9	0.5		20.2	1.3	0.2	17.5	3.5	0.1
Delay (s)	63.0	37.2		60.3	34.8		56.9	23.0	17.5	59.6	32.5	22.5
Level of Service	E	D		E	C		E	C	B	E	C	C
Approach Delay (s)		44.1			45.1			27.9			33.7	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	34.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	92.8	Sum of lost time (s)	18.6
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	40	160	50	30	20	210	1477	70	100	1445	210
Future Volume (vph)	230	40	160	50	30	20	210	1477	70	100	1445	210
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	0.88		1.00	0.94		1.00	0.99		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	1639		1770	1732		1770	3506		1770	3462	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1639		1770	1732		1770	3506		1770	3462	
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)	240	42	167	52	31	21	219	1539	73	104	1505	219
RTOR Reduction (vph)	0	90	0	0	18	0	0	2	0	0	7	0
Lane Group Flow (vph)	240	119	0	52	34	0	219	1610	0	104	1717	0
Confl. Peds. (#/hr)						9			7			
Confl. Bikes (#/hr)									8			3
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)	19.3	24.3		8.1	13.1		17.2	74.9		10.2	67.9	
Effective Green, g (s)	19.3	24.3		8.1	13.1		17.2	74.9		10.2	67.9	
Actuated g/C Ratio	0.14	0.18		0.06	0.10		0.13	0.55		0.07	0.50	
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)	250	292		105	166		223	1929		132	1727	
v/s Ratio Prot	c0.14	c0.07		0.03	0.02		c0.12	0.46		0.06	c0.50	
v/s Ratio Perm												
v/c Ratio	0.96	0.41		0.50	0.20		0.98	0.83		0.79	0.99	
Uniform Delay, d1	58.0	49.5		62.0	56.7		59.3	25.5		61.9	33.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	45.2	0.9		3.6	0.6		54.9	3.3		26.0	20.2	
Delay (s)	103.3	50.5		65.7	57.3		114.2	28.7		87.8	54.1	
Level of Service	F	D		E	E		F	C		F	D	
Approach Delay (s)		78.7			61.5			39.0			56.0	
Approach LOS		E			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	51.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	136.1	Sum of lost time (s)	18.6
Intersection Capacity Utilization	95.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	516	1020	460	580	690	108	770	1203	460	152	1158	345
Future Volume (vph)	516	1020	460	580	690	108	770	1203	460	152	1158	345
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	5.3
Lane Util. Factor	0.97	0.95	0.88	0.94	0.95		0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	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	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	2701	4990	3457		3433	3539	1557	3433	3539	1557
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	2701	4990	3457		3433	3539	1557	3433	3539	1557
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)	555	1097	495	624	742	116	828	1294	495	163	1245	371
RTOR Reduction (vph)	0	0	235	0	8	0	0	0	25	0	0	155
Lane Group Flow (vph)	555	1097	260	624	850	0	828	1294	470	163	1245	216
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	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	18.8	37.7	37.7	14.8	34.0		26.8	64.7	79.5	8.0	46.7	46.7
Effective Green, g (s)	18.8	37.7	37.7	14.8	34.0		26.8	64.7	79.5	8.0	46.7	46.7
Actuated g/C Ratio	0.13	0.26	0.26	0.10	0.23		0.18	0.45	0.55	0.06	0.32	0.32
Clearance Time (s)	4.2	5.3	5.3	4.2	5.0		4.2	5.3	4.2	5.0	5.3	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)	445	920	702	509	810		634	1579	853	189	1139	501
v/s Ratio Prot	c0.16	c0.31		0.13	0.25		c0.24	0.37	0.06	0.05	c0.35	
v/s Ratio Perm			0.10						0.25			0.14
v/c Ratio	1.25	1.19	0.37	1.23	1.05		1.31	0.82	0.55	0.86	1.09	0.43
Uniform Delay, d1	63.1	53.6	43.9	65.1	55.5		59.1	35.1	21.2	68.0	49.1	38.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	128.9	97.4	0.3	118.2	45.2		148.9	3.5	0.8	30.9	55.8	0.6
Delay (s)	192.0	151.0	44.3	183.3	100.7		208.0	38.5	22.0	98.9	105.0	39.3
Level of Service	F	F	D	F	F		F	D	C	F	F	D
Approach Delay (s)		137.0			135.5			89.0			90.7	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	110.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	19.8
Intersection Capacity Utilization	109.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	820	0	330	0	1913	830	0	1756	532
Future Volume (vph)	0	0	0	820	0	330	0	1913	830	0	1756	532
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	0.96		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	1515		5085	1548
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3433		2787		5085	1515		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	854	0	344	0	1993	865	0	1829	554
RTOR Reduction (vph)	0	0	0	0	0	14	0	0	0	0	0	234
Lane Group Flow (vph)	0	0	0	854	0	330	0	1993	865	0	1829	320
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)				40.8		40.8		69.3	110.1		69.3	69.3
Effective Green, g (s)				40.8		40.8		69.3	110.1		69.3	69.3
Actuated g/C Ratio				0.34		0.34		0.58	0.92		0.58	0.58
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)				1167		947		2936	1448		2936	893
v/s Ratio Prot				c0.25		0.12		c0.39	0.20		0.36	
v/s Ratio Perm									0.37			0.21
v/c Ratio				0.73		0.35		0.68	0.60		0.62	0.36
Uniform Delay, d1				34.8		29.7		17.6	0.9		16.7	13.5
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				2.4		0.2		1.3	0.7		1.0	1.1
Delay (s)				37.2		29.9		18.9	1.6		17.7	14.6
Level of Service				D		C		B	A		B	B
Approach Delay (s)		0.0			35.1			13.7			17.0	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	248	40	590	0	0	0	0	2455	1150	390	2136	0
Future Volume (vph)	248	40	590	0	0	0	0	2455	1150	390	2136	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	0.98					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	0.88	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	1467	1481					5085	1561	3433	5085	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1681	1467	1481					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)	258	42	615	0	0	0	0	2557	1198	406	2225	0
RTOR Reduction (vph)	0	10	36	0	0	0	0	0	266	0	0	0
Lane Group Flow (vph)	232	335	302	0	0	0	0	2557	932	406	2225	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)	36.1	36.1	36.1					81.7	81.7	18.1	104.0	
Effective Green, g (s)	36.1	36.1	36.1					81.7	81.7	18.1	104.0	
Actuated g/C Ratio	0.24	0.24	0.24					0.54	0.54	0.12	0.69	
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)	404	353	356					2769	850	414	3525	
v/s Ratio Prot	0.14	c0.23						0.50		c0.12	0.44	
v/s Ratio Perm			0.20						c0.60			
v/c Ratio	0.57	0.95	0.85					0.92	1.10	0.98	0.63	
Uniform Delay, d1	50.2	56.1	54.4					31.3	34.1	65.8	12.5	
Progression Factor	1.00	1.00	1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.0	34.4	16.9					6.6	60.7	39.0	0.9	
Delay (s)	52.2	90.5	71.3					37.9	94.8	104.7	13.4	
Level of Service	D	F	E					D	F	F	B	
Approach Delay (s)		73.7			0.0			56.0			27.5	
Approach LOS		E			A			E			C	

Intersection Summary			
HCM 2000 Control Delay	48.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	109.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	300	0	600	1090	380	50	470	1307	300	0	1134	250
Future Volume (vph)	300	0	600	1090	380	50	470	1307	300	0	1134	250
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	0.98		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	3477		3433	3539	1549		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	3477		3433	3539	1549		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)	316	0	632	1147	400	53	495	1376	316	0	1194	263
RTOR Reduction (vph)	0	0	52	0	10	0	0	0	123	0	0	92
Lane Group Flow (vph)	316	0	580	1147	443	0	495	1376	193	0	1194	171
Confl. Peds. (#/hr)												12
Confl. Bikes (#/hr)									2			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)	18.4		43.4	48.4	24.4		25.0	59.7	59.7		29.5	29.5
Effective Green, g (s)	18.4		43.4	48.4	24.4		25.0	59.7	59.7		29.5	29.5
Actuated g/C Ratio	0.15		0.36	0.40	0.20		0.21	0.50	0.50		0.25	0.25
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)	271		1007	1384	706		715	1760	770		1250	378
v/s Ratio Prot	c0.18		0.12	c0.33	0.13		0.14	c0.39			c0.23	
v/s Ratio Perm			0.09						0.12			0.11
v/c Ratio	1.17		0.58	0.83	0.63		0.69	0.78	0.25		0.96	0.45
Uniform Delay, d1	50.8		30.9	32.1	43.7		43.9	24.8	17.3		44.6	38.4
Progression Factor	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	107.2		0.8	4.2	1.8		2.9	3.5	0.8		16.8	3.9
Delay (s)	158.0		31.7	36.3	45.4		46.8	28.3	18.1		61.4	42.3
Level of Service	F		C	D	D		D	C	B		E	D
Approach Delay (s)		73.8			38.9			31.0			57.9	
Approach LOS		E			D			C			E	

Intersection Summary			
HCM 2000 Control Delay	45.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.7
Intersection Capacity Utilization	89.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	247	0	170	0	0	0	0	1760	1330	150	2290	0
Future Volume (vph)	247	0	170	0	0	0	0	1760	1330	150	2290	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)	257	0	177	0	0	0	0	1833	1385	156	2385	0
RTOR Reduction (vph)	0	0	68	0	0	0	0	0	446	0	0	0
Lane Group Flow (vph)	257	0	109	0	0	0	0	1833	939	156	2385	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)	14.8		14.8					77.3	77.3	10.8	93.3	
Effective Green, g (s)	14.8		14.8					77.3	77.3	10.8	93.3	
Actuated g/C Ratio	0.12		0.12					0.64	0.64	0.09	0.78	
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)	423		195					3275	1752	308	3953	
v/s Ratio Prot	c0.07							0.36		0.05	c0.47	
v/s Ratio Perm			0.07						0.35			
v/c Ratio	0.61		0.56					0.56	0.54	0.51	0.60	
Uniform Delay, d1	49.8		49.5					11.9	11.6	52.1	5.6	
Progression Factor	1.00		1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.5		3.7					0.7	1.2	1.3	0.7	
Delay (s)	52.3		53.2					12.6	12.8	53.4	6.3	
Level of Service	D		D					B	B	D	A	
Approach Delay (s)		52.7			0.0			12.7			9.2	
Approach LOS		D			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	14.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.1
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	560	60	418	450	90	40	330	712	30	260	100
Future Volume (vph)	160	560	60	418	450	90	40	330	712	30	260	100
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	
Frpb, 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	0.96	
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	3379	
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	3379	
Peak-hour factor, PHF	0.92	0.92	1.00	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	609	60	454	489	98	43	359	774	33	283	109
RTOR Reduction (vph)	0	0	46	0	0	73	0	0	281	0	37	0
Lane Group Flow (vph)	174	609	14	454	489	25	43	359	493	33	355	0
Confl. 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)	14.4	21.7	21.7	17.5	24.8	24.8	3.6	35.5	35.5	2.3	34.2	
Effective Green, g (s)	14.4	21.7	21.7	17.5	24.8	24.8	3.6	35.5	35.5	2.3	34.2	
Actuated g/C Ratio	0.15	0.23	0.23	0.18	0.26	0.26	0.04	0.37	0.37	0.02	0.36	
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)	266	803	353	628	918	400	66	1314	587	42	1208	
v/s Ratio Prot	0.10	c0.17		c0.13	c0.14		c0.02	0.10	c0.31	0.02	0.11	
v/s Ratio Perm			0.01			0.02						
v/c Ratio	0.65	0.76	0.04	0.72	0.53	0.06	0.65	0.27	0.84	0.79	0.29	
Uniform Delay, d1	38.3	34.5	28.8	36.8	30.4	26.7	45.4	21.0	27.5	46.4	22.0	
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	5.7	4.1	0.0	4.1	0.6	0.1	20.7	0.1	10.2	62.3	0.1	
Delay (s)	43.9	38.6	28.9	40.9	31.0	26.7	66.1	21.1	37.7	108.7	22.2	
Level of Service	D	D	C	D	C	C	E	C	D	F	C	
Approach Delay (s)		39.0			34.9			33.7			28.9	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	34.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	95.6	Sum of lost time (s)	18.6
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	740	460	10	330	360	337	10	1468	370	554	662	540
Future Volume (vph)	740	460	10	330	360	337	10	1468	370	554	662	540
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	4932		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	4932		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)	804	500	11	359	391	366	11	1596	402	602	720	587
RTOR Reduction (vph)	0	0	0	0	0	0	0	30	0	0	0	0
Lane Group Flow (vph)	804	500	11	359	391	366	11	1968	0	602	720	587
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)	26.0	30.7	148.0	23.0	27.7	148.0	1.6	53.0		20.0	71.4	148.0
Effective Green, g (s)	26.0	30.7	148.0	23.0	27.7	148.0	1.6	53.0		20.0	71.4	148.0
Actuated g/C Ratio	0.18	0.21	1.00	0.16	0.19	1.00	0.01	0.36		0.14	0.48	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)	603	1054	1583	275	348	1583	19	1766		463	2453	1583
v/s Ratio Prot	c0.23	0.10		0.20	c0.21		0.01	c0.40		c0.18	0.14	
v/s Ratio Perm			0.01			0.23						c0.37
v/c Ratio	1.33	0.47	0.01	1.31	1.12	0.23	0.58	1.11		1.30	0.29	0.37
Uniform Delay, d1	61.0	51.6	0.0	62.5	60.1	0.0	72.9	47.5		64.0	23.1	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	161.1	0.6	0.0	161.3	86.0	0.3	23.8	60.1		150.2	0.3	0.7
Delay (s)	222.1	52.1	0.0	223.8	146.2	0.3	96.7	107.6		214.2	23.4	0.7
Level of Service	F	D	A	F	F	A	F	F		F	C	A
Approach Delay (s)		155.6			123.3			107.5			76.6	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	111.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	148.0	Sum of lost time (s)	21.3
Intersection Capacity Utilization	110.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Intersection Sign configuration not allowed in HCM analysis.

APPENDIX H-2

PEAK HOUR ANALYSIS WORKSHEETS
– SAN MARCOS HORIZON YEAR 2035 WITH PROJECT

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	60	140	130	830	2100	60
Future Volume (vph)	60	140	130	830	2100	60
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	0.95	0.95	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	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	152	141	902	2283	65
RTOR Reduction (vph)	0	137	0	0	0	8
Lane Group Flow (vph)	65	15	141	902	2283	57
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	13.5	13.5	15.1	115.3	96.2	96.2
Effective Green, g (s)	13.5	13.5	15.1	115.3	96.2	96.2
Actuated g/C Ratio	0.10	0.10	0.11	0.83	0.69	0.69
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)	171	153	192	2935	2449	1095
v/s Ratio Prot	c0.04		c0.08	0.25	c0.65	
v/s Ratio Perm		0.01				0.04
v/c Ratio	0.38	0.10	0.73	0.31	0.93	0.05
Uniform Delay, d1	58.8	57.2	60.0	2.7	18.6	6.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.3	13.5	0.1	7.3	0.0
Delay (s)	60.2	57.5	73.6	2.8	25.8	6.9
Level of Service	E	E	E	A	C	A
Approach Delay (s)	58.3			12.3	25.3	
Approach LOS	E			B	C	

Intersection Summary			
HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	139.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	560	0	270	10	10	0	180	410	10	10	1300	880
Future Volume (vph)	560	0	270	10	10	0	180	410	10	10	1300	880
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		5.0	5.5		5.0	5.5	5.5
Lane Util. Factor	0.97		1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00		0.99		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	1.00	1.00
Frt	1.00		0.85		1.00		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95		1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433		1561		1817		1770	3527		1770	3539	1561
Flt Permitted	0.74		1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	2690		1561		1817		1770	3527		1770	3539	1561
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)	583	0	281	10	10	0	188	427	10	10	1354	917
RTOR Reduction (vph)	0	0	136	0	0	0	0	2	0	0	0	209
Lane Group Flow (vph)	583	0	145	0	20	0	188	435	0	10	1354	708
Confl. Peds. (#/hr)			2									1
Confl. Bikes (#/hr)												3
Turn Type	Perm		Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases					8		5	2		1	6	
Permitted Phases	4		4	8								6
Actuated Green, G (s)	22.9		22.9		22.9		11.5	52.2		1.0	41.7	41.7
Effective Green, g (s)	22.9		22.9		22.9		11.5	52.2		1.0	41.7	41.7
Actuated g/C Ratio	0.25		0.25		0.25		0.13	0.58		0.01	0.46	0.46
Clearance Time (s)	4.0		4.0		4.0		5.0	5.5		5.0	5.5	5.5
Vehicle Extension (s)	3.0		3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	679		394		459		224	2032		19	1628	718
v/s Ratio Prot							c0.11	0.12		0.01	0.38	
v/s Ratio Perm	c0.22		0.09		0.01							c0.45
v/c Ratio	0.86		0.37		0.04		0.84	0.21		0.53	0.83	0.99
Uniform Delay, d1	32.3		27.9		25.6		38.6	9.3		44.6	21.4	24.2
Progression Factor	1.00		1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	10.5		0.6		0.0		23.1	0.1		23.9	3.8	29.7
Delay (s)	42.8		28.5		25.6		61.8	9.3		68.4	25.2	53.9
Level of Service	D		C		C		E	A		E	C	D
Approach Delay (s)		38.1			25.6			25.1			36.9	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	35.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	90.6	Sum of lost time (s)	14.5
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	10	50	240	20	50	30	430	230	80	1060	10
Future Volume (vph)	20	10	50	240	20	50	30	430	230	80	1060	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	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			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	
Frt		0.92			0.98		1.00	0.95		1.00	1.00	
Flt Protected		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1664			1754		1770	3328		1770	3534	
Flt Permitted		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1664			1754		1770	3328		1770	3534	
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)	21	10	52	250	21	52	31	448	240	83	1104	10
RTOR Reduction (vph)	0	48	0	0	5	0	0	49	0	0	1	0
Lane Group Flow (vph)	0	35	0	0	318	0	31	639	0	83	1113	0
Confl. Peds. (#/hr)			6						1			
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)		7.9			24.1		2.9	35.0		7.1	39.2	
Effective Green, g (s)		7.9			24.1		2.9	35.0		7.1	39.2	
Actuated g/C Ratio		0.08			0.26		0.03	0.37		0.08	0.42	
Clearance Time (s)		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	
Lane Grp Cap (vph)		139			449		54	1237		133	1472	
v/s Ratio Prot		c0.02			c0.18		0.02	0.19		c0.05	c0.32	
v/s Ratio Perm												
v/c Ratio		0.25			0.71		0.57	0.52		0.62	0.76	
Uniform Delay, d1		40.3			31.8		45.0	23.0		42.2	23.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.0			5.0		13.9	0.4		8.8	2.3	
Delay (s)		41.3			36.9		58.9	23.3		51.0	25.7	
Level of Service		D			D		E	C		D	C	
Approach Delay (s)		41.3			36.9			24.9			27.4	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	94.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	220	240	630	70	80	1220
Future Volume (vph)	220	240	630	70	80	1220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	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	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1563	3470		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1563	3470		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	261	685	76	87	1326
RTOR Reduction (vph)	0	0	8	0	0	0
Lane Group Flow (vph)	239	261	753	0	87	1326
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)	17.3	17.3	23.7		7.1	36.8
Effective Green, g (s)	17.3	17.3	23.7		7.1	36.8
Actuated g/C Ratio	0.26	0.26	0.36		0.11	0.55
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)	459	406	1234		188	1955
v/s Ratio Prot	0.14		0.22		0.05	c0.37
v/s Ratio Perm		c0.17				
v/c Ratio	0.52	0.64	0.61		0.46	0.68
Uniform Delay, d1	21.1	21.9	17.6		28.0	10.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.1	3.5	0.9		1.8	0.9
Delay (s)	22.2	25.4	18.5		29.8	11.6
Level of Service	C	C	B		C	B
Approach Delay (s)	23.8		18.5			12.7
Approach LOS	C		B			B

Intersection Summary			
HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	66.6	Sum of lost time (s)	18.5
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	0	70	10	0	10	40	680	20	10	1470	20
Future Volume (vph)	30	0	70	10	0	10	40	680	20	10	1470	20
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	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	1583		1770	1583		1770	3521		1770	3532	
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	3521		1770	3532	
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)	33	0	76	11	0	11	43	739	22	11	1598	22
RTOR Reduction (vph)	0	67	0	0	10	0	0	1	0	0	1	0
Lane Group Flow (vph)	33	9	0	11	1	0	43	760	0	11	1619	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)	1.2	8.9		0.5	8.2		2.2	49.5		0.6	47.9	
Effective Green, g (s)	1.2	8.9		0.5	8.2		2.2	49.5		0.6	47.9	
Actuated g/C Ratio	0.02	0.11		0.01	0.10		0.03	0.63		0.01	0.61	
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)	26	178		11	164		49	2206		13	2141	
v/s Ratio Prot	c0.02	c0.01		0.01	0.00		c0.02	0.22		0.01	c0.46	
v/s Ratio Perm												
v/c Ratio	1.27	0.05		1.00	0.01		0.88	0.34		0.85	0.76	
Uniform Delay, d1	38.9	31.3		39.2	31.7		38.3	7.0		39.2	11.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	268.4	0.1		271.4	0.0		83.1	0.1		166.4	1.6	
Delay (s)	307.3	31.4		310.6	31.8		121.4	7.1		205.6	12.9	
Level of Service	F	C		F	C		F	A		F	B	
Approach Delay (s)		114.9			171.2			13.2			14.2	
Approach LOS		F			F			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	79.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	10	50	0	0	0	50	740	10	10	1520	70
Future Volume (vph)	10	10	50	0	0	0	50	740	10	10	1520	70
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	4.0	
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	0.88					1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00					0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1608					1770	3530		1770	3512	
Flt Permitted	0.95	1.00					0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1608					1770	3530		1770	3512	
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)	11	11	54	0	0	0	54	804	11	11	1652	76
RTOR Reduction (vph)	0	49	0	0	0	0	0	1	0	0	3	0
Lane Group Flow (vph)	11	16	0	0	0	0	54	814	0	11	1725	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)	7.1	7.1					3.6	52.5		0.7	49.6	
Effective Green, g (s)	7.1	7.1					3.6	52.5		0.7	49.6	
Actuated g/C Ratio	0.10	0.10					0.05	0.71		0.01	0.67	
Clearance Time (s)	4.0	4.0					6.0	6.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0					3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	169	153					85	2494		16	2344	
v/s Ratio Prot	0.01	c0.01					c0.03	c0.23		0.01	c0.49	
v/s Ratio Perm												
v/c Ratio	0.07	0.11					0.64	0.33		0.69	0.74	
Uniform Delay, d1	30.6	30.7					34.7	4.2		36.7	8.1	
Progression Factor	1.00	1.00					1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.3					14.5	0.1		80.1	1.2	
Delay (s)	30.7	31.0					49.2	4.2		116.8	9.3	
Level of Service	C	C					D	A		F	A	
Approach Delay (s)		31.0			0.0			7.0			10.0	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	74.3	Sum of lost time (s)	14.0
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	50	270	270	110	30	100	610	60	20	1280	150
Future Volume (vph)	70	50	270	270	110	30	100	610	60	20	1280	150
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	3033		1770	3413		1770	3539	1556	1770	3539	1550
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	3033		1770	3413		1770	3539	1556	1770	3539	1550
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)	74	53	284	284	116	32	105	642	63	21	1347	158
RTOR Reduction (vph)	0	167	0	0	15	0	0	0	30	0	0	64
Lane Group Flow (vph)	74	170	0	284	133	0	105	642	33	21	1347	94
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)	10.9	16.9		29.5	35.5		14.0	75.7	75.7	3.2	64.9	64.9
Effective Green, g (s)	10.9	16.9		29.5	35.5		14.0	75.7	75.7	3.2	64.9	64.9
Actuated g/C Ratio	0.08	0.12		0.21	0.25		0.10	0.53	0.53	0.02	0.45	0.45
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)	134	356		362	841		172	1861	818	39	1596	699
v/s Ratio Prot	0.04	c0.06		c0.16	0.04		c0.06	0.18		0.01	c0.38	
v/s Ratio Perm									0.02			0.06
v/c Ratio	0.55	0.48		0.78	0.16		0.61	0.34	0.04	0.54	0.84	0.13
Uniform Delay, d1	64.1	59.4		54.2	42.5		62.3	19.7	16.5	69.6	35.0	23.1
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	4.9	1.0		10.6	0.1		6.3	0.1	0.0	13.5	4.3	0.1
Delay (s)	69.0	60.4		64.8	42.6		68.6	19.9	16.5	83.2	39.3	23.2
Level of Service	E	E		E	D		E	B	B	F	D	C
Approach Delay (s)		61.9			57.2			25.9			38.2	
Approach LOS		E			E			C			D	

Intersection Summary			
HCM 2000 Control Delay	40.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	143.9	Sum of lost time (s)	18.6
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	30	150	70	30	20	80	800	70	50	1630	280
Future Volume (vph)	210	30	150	70	30	20	80	800	70	50	1630	280
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	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	0.94		1.00	0.99		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	1611		1770	1735		1770	3485		1770	3446	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1611		1770	1735		1770	3485		1770	3446	
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)	212	30	152	71	30	20	81	808	71	51	1646	283
RTOR Reduction (vph)	0	116	0	0	18	0	0	4	0	0	8	0
Lane Group Flow (vph)	212	66	0	71	32	0	81	875	0	51	1921	0
Confl. Peds. (#/hr)						8			4			2
Confl. Bikes (#/hr)			1						1			3
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)	18.3	22.0		9.3	13.0		7.7	79.8		7.1	79.2	
Effective Green, g (s)	18.3	22.0		9.3	13.0		7.7	79.8		7.1	79.2	
Actuated g/C Ratio	0.13	0.16		0.07	0.10		0.06	0.58		0.05	0.58	
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)	236	259		120	164		99	2032		91	1995	
v/s Ratio Prot	c0.12	c0.04		0.04	0.02		c0.05	0.25		0.03	c0.56	
v/s Ratio Perm												
v/c Ratio	0.90	0.26		0.59	0.19		0.82	0.43		0.56	0.96	
Uniform Delay, d1	58.3	50.2		61.9	57.1		63.9	15.9		63.3	27.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	32.5	0.5		7.6	0.6		38.7	0.1		7.7	12.5	
Delay (s)	90.8	50.8		69.5	57.7		102.5	16.0		71.0	39.9	
Level of Service	F	D		E	E		F	B		E	D	
Approach Delay (s)		72.3			64.6			23.3			40.7	
Approach LOS		E			E			C			D	

Intersection Summary			
HCM 2000 Control Delay	40.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	136.8	Sum of lost time (s)	18.6
Intersection Capacity Utilization	94.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	250	430	480	530	720	50	430	670	530	130	1340	470
Future Volume (vph)	250	430	480	530	720	50	430	670	530	130	1340	470
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	5.3
Lane Util. Factor	0.97	0.95	0.88	0.94	0.95		0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99
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	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	2712	4990	3500		3433	3539	1565	3433	3539	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	2712	4990	3500		3433	3539	1565	3433	3539	1562
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)	255	439	490	541	735	51	439	684	541	133	1367	480
RTOR Reduction (vph)	0	0	267	0	4	0	0	0	33	0	0	145
Lane Group Flow (vph)	255	439	223	541	782	0	439	684	508	133	1367	335
Confl. Peds. (#/hr)			5			4			1			1
Confl. Bikes (#/hr)			8			3			3			
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	10.1	26.4	26.4	14.4	31.0		16.2	55.4	69.8	8.3	47.5	47.5
Effective Green, g (s)	10.1	26.4	26.4	14.4	31.0		16.2	55.4	69.8	8.3	47.5	47.5
Actuated g/C Ratio	0.08	0.21	0.21	0.12	0.25		0.13	0.45	0.57	0.07	0.38	0.38
Clearance Time (s)	4.2	5.3	5.3	4.2	5.0		4.2	5.3	4.2	4.2	5.3	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)	280	756	579	581	878		450	1587	884	230	1361	600
v/s Ratio Prot	0.07	0.12		c0.11	c0.22		c0.13	0.19	0.07	0.04	c0.39	
v/s Ratio Perm			0.08						0.26			0.21
v/c Ratio	0.91	0.58	0.38	0.93	0.89		0.98	0.43	0.57	0.58	1.00	0.56
Uniform Delay, d1	56.3	43.6	41.6	54.1	44.6		53.5	23.3	17.3	55.9	38.0	29.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	31.5	1.1	0.4	21.8	11.2		35.8	0.2	0.9	3.5	25.5	1.1
Delay (s)	87.7	44.7	42.0	75.9	55.9		89.2	23.5	18.2	59.4	63.5	30.9
Level of Service	F	D	D	E	E		F	C	B	E	E	C
Approach Delay (s)		52.9			64.0			39.1			55.3	
Approach LOS		D			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	52.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	123.5	Sum of lost time (s)	19.0
Intersection Capacity Utilization	93.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	700	0	310	0	1280	600	0	1800	670
Future Volume (vph)	0	0	0	700	0	310	0	1280	600	0	1800	670
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	0.97
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	1539		5085	1543
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3433		2787		5085	1539		5085	1543
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	714	0	316	0	1306	612	0	1837	684
RTOR Reduction (vph)	0	0	0	0	0	64	0	0	0	0	0	236
Lane Group Flow (vph)	0	0	0	714	0	252	0	1306	612	0	1837	448
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)				31.5		31.5		78.6	110.1		78.6	78.6
Effective Green, g (s)				31.5		31.5		78.6	110.1		78.6	78.6
Actuated g/C Ratio				0.26		0.26		0.65	0.92		0.65	0.65
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)				901		731		3330	1471		3330	1010
v/s Ratio Prot				c0.21				0.26	0.11		c0.36	
v/s Ratio Perm						0.09			0.29			0.29
v/c Ratio				0.79		0.34		0.39	0.42		0.55	0.44
Uniform Delay, d1				41.2		35.9		9.6	0.7		11.2	10.1
Progression Factor				1.00		1.00		0.45	8.97		1.00	1.00
Incremental Delay, d2				4.5		0.1		0.2	0.0		0.7	1.4
Delay (s)				45.7		36.0		4.5	6.0		11.8	11.5
Level of Service				D		D		A	A		B	B
Approach Delay (s)		0.0			42.7			5.0			11.7	
Approach LOS		A			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.2	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)	9.9
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	670	10	850	0	0	0	0	1260	760	370	2080	0
Future Volume (vph)	670	10	850	0	0	0	0	1260	760	370	2080	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	0.89	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	1482	1485					5085	1553	3433	5085	
Flt Permitted	0.95	0.99	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1681	1482	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)	691	10	876	0	0	0	0	1299	784	381	2144	0
RTOR Reduction (vph)	0	2	36	0	0	0	0	0	510	0	0	0
Lane Group Flow (vph)	546	521	472	0	0	0	0	1299	274	381	2144	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)	47.7	47.7	47.7					41.9	41.9	16.3	62.4	
Effective Green, g (s)	47.7	47.7	47.7					41.9	41.9	16.3	62.4	
Actuated g/C Ratio	0.40	0.40	0.40					0.35	0.35	0.14	0.52	
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)	668	589	590					1775	542	466	2644	
v/s Ratio Prot	0.32	c0.35						0.26		0.11	c0.42	
v/s Ratio Perm			0.32						0.18			
v/c Ratio	0.82	0.88	0.80					0.73	0.51	0.82	0.81	
Uniform Delay, d1	32.3	33.6	32.0					34.1	30.9	50.4	23.9	
Progression Factor	1.00	1.00	1.00					1.00	1.00	1.13	1.20	
Incremental Delay, d2	7.7	14.8	7.7					2.7	3.3	9.0	2.4	
Delay (s)	39.9	48.4	39.6					36.8	34.2	65.9	31.1	
Level of Service	D	D	D					D	C	E	C	
Approach Delay (s)		42.6			0.0			35.8			36.4	
Approach LOS		D			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	37.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	97.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	0	620	1200	430	20	410	500	150	0	1140	250
Future Volume (vph)	210	0	620	1200	430	20	410	500	150	0	1140	250
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	3513		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	3513		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)	216	0	639	1237	443	21	423	515	155	0	1175	258
RTOR Reduction (vph)	0	0	57	0	3	0	0	0	81	0	0	88
Lane Group Flow (vph)	216	0	582	1237	461	0	423	515	74	0	1175	170
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)	16.2		34.9	51.0	29.2		18.7	57.1	57.1		33.2	33.2
Effective Green, g (s)	16.2		34.9	51.0	29.2		18.7	57.1	57.1		33.2	33.2
Actuated g/C Ratio	0.13		0.29	0.42	0.24		0.16	0.48	0.48		0.28	0.28
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)	238		810	1459	854		534	1683	753		1406	427
v/s Ratio Prot	0.12		0.11	c0.36	0.13		c0.12	0.15			c0.23	
v/s Ratio Perm			0.10						0.05			0.11
v/c Ratio	0.91		0.72	0.85	0.54		0.79	0.31	0.10		0.84	0.40
Uniform Delay, d1	51.2		38.1	31.0	39.5		48.8	19.3	17.3		40.8	35.3
Progression Factor	1.00		1.00	1.00	1.00		1.00	1.33	3.60		1.00	1.00
Incremental Delay, d2	34.2		3.1	4.8	0.7		7.8	0.5	0.3		6.0	2.8
Delay (s)	85.4		41.2	35.8	40.2		56.5	26.0	62.5		46.9	38.0
Level of Service	F		D	D	D		E	C	E		D	D
Approach Delay (s)		52.4			37.0			43.0			45.3	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	43.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.7
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	0	260	0	0	0	0	820	850	190	2420	0
Future Volume (vph)	180	0	260	0	0	0	0	820	850	190	2420	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)	188	0	271	0	0	0	0	854	885	198	2521	0
RTOR Reduction (vph)	0	0	64	0	0	0	0	0	369	0	0	0
Lane Group Flow (vph)	188	0	207	0	0	0	0	854	516	198	2521	0
Confl. Peds. (#/hr)												6
Confl. Bikes (#/hr)									3			4
Turn Type	Prot		Perm					NA	Perm	Prot	NA	
Protected Phases	4							2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	20.7		20.7					70.0	70.0	12.2	87.4	
Effective Green, g (s)	20.7		20.7					70.0	70.0	12.2	87.4	
Actuated g/C Ratio	0.17		0.17					0.58	0.58	0.10	0.73	
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)	592		273					2966	1590	349	3703	
v/s Ratio Prot	0.05							0.17		0.06	c0.50	
v/s Ratio Perm			c0.13						0.19			
v/c Ratio	0.32		0.76					0.29	0.32	0.57	0.68	
Uniform Delay, d1	43.5		47.3					12.5	12.9	51.4	8.8	
Progression Factor	1.00		1.00					1.00	1.00	1.11	0.69	
Incremental Delay, d2	0.3		11.5					0.2	0.5	1.7	0.8	
Delay (s)	43.8		58.7					12.8	13.4	58.5	6.9	
Level of Service	D		E					B	B	E	A	
Approach Delay (s)		52.6			0.0			13.1			10.7	
Approach LOS		D			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.1
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	300	20	740	510	70	10	70	340	90	390	40
Future Volume (vph)	20	300	20	740	510	70	10	70	340	90	390	40
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	
Frpb, 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	0.99	
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	1530	1770	3539	1583	1770	3490	
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	1530	1770	3539	1583	1770	3490	
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)	22	326	22	804	554	76	11	76	370	98	424	43
RTOR Reduction (vph)	0	0	18	0	0	39	0	0	313	0	4	0
Lane Group Flow (vph)	22	326	4	804	554	37	11	76	57	98	463	0
Confl. 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)	2.5	18.8	18.8	28.8	45.1	45.1	0.8	14.3	14.3	11.7	25.2	
Effective Green, g (s)	2.5	18.8	18.8	28.8	45.1	45.1	0.8	14.3	14.3	11.7	25.2	
Actuated g/C Ratio	0.03	0.20	0.20	0.31	0.49	0.49	0.01	0.16	0.16	0.13	0.27	
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)	47	721	318	1072	1731	748	15	548	245	224	953	
v/s Ratio Prot	0.01	c0.09		c0.23	0.16		0.01	0.02	0.04	c0.06	c0.13	
v/s Ratio Perm			0.00			0.02						
v/c Ratio	0.47	0.45	0.01	0.75	0.32	0.05	0.73	0.14	0.23	0.44	0.49	
Uniform Delay, d1	44.2	32.2	29.3	28.5	14.3	12.3	45.6	33.6	34.1	37.2	28.1	
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	7.2	0.5	0.0	3.0	0.1	0.0	103.2	0.1	0.5	1.4	0.4	
Delay (s)	51.4	32.6	29.3	31.5	14.4	12.4	148.8	33.7	34.6	38.6	28.5	
Level of Service	D	C	C	C	B	B	F	C	C	D	C	
Approach Delay (s)		33.6			23.8			37.2			30.2	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	92.2	Sum of lost time (s)	18.6
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	100	10	380	490	270	30	940	170	590	1210	690
Future Volume (vph)	380	100	10	380	490	270	30	940	170	590	1210	690
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	4968		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	4968		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)	413	109	11	413	533	293	33	1022	185	641	1315	750
RTOR Reduction (vph)	0	0	9	0	0	146	0	17	0	0	0	244
Lane Group Flow (vph)	413	109	2	413	533	147	33	1190	0	641	1315	506
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)	19.0	28.1	28.1	35.8	44.9	44.9	4.0	38.4		27.0	61.4	61.4
Effective Green, g (s)	19.0	28.1	28.1	35.8	44.9	44.9	4.0	38.4		27.0	61.4	61.4
Actuated g/C Ratio	0.13	0.19	0.19	0.24	0.30	0.30	0.03	0.25		0.18	0.41	0.41
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)	433	948	295	420	555	471	47	1266		615	2073	645
v/s Ratio Prot	0.12	0.02		c0.23	c0.29		0.02	c0.24		c0.19	0.26	
v/s Ratio Perm			0.00			0.09						0.32
v/c Ratio	0.95	0.11	0.01	0.98	0.96	0.31	0.70	0.94		1.04	0.63	0.78
Uniform Delay, d1	65.4	50.9	49.9	57.1	52.0	40.9	72.7	55.0		61.8	35.6	38.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	31.2	0.1	0.0	39.2	28.7	0.7	32.1	13.2		47.8	0.7	6.6
Delay (s)	96.6	51.0	49.9	96.3	80.7	41.6	104.8	68.2		109.6	36.4	45.4
Level of Service	F	D	D	F	F	D	F	E		F	D	D
Approach Delay (s)		86.3			76.6			69.2			56.2	
Approach LOS		F			E			E			E	

Intersection Summary			
HCM 2000 Control Delay	66.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	150.6	Sum of lost time (s)	21.3
Intersection Capacity Utilization	93.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	70	360	160	2050	1370	60
Future Volume (vph)	70	360	160	2050	1370	60
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	0.95	0.95	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	3539	3539	1546
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1546
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	80	409	182	2330	1557	68
RTOR Reduction (vph)	0	243	0	0	0	18
Lane Group Flow (vph)	80	166	182	2330	1557	50
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)	13.7	13.7	13.3	65.4	48.1	48.1
Effective Green, g (s)	13.7	13.7	13.3	65.4	48.1	48.1
Actuated g/C Ratio	0.15	0.15	0.15	0.73	0.54	0.54
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)	271	242	263	2591	1906	832
v/s Ratio Prot	0.05		0.10	c0.66	0.44	
v/s Ratio Perm		c0.10				0.03
v/c Ratio	0.30	0.69	0.69	0.90	0.82	0.06
Uniform Delay, d1	33.5	35.8	36.1	9.4	17.0	9.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	7.8	7.6	4.6	2.8	0.0
Delay (s)	34.1	43.6	43.7	14.0	19.8	9.9
Level of Service	C	D	D	B	B	A
Approach Delay (s)	42.0			16.2	19.4	
Approach LOS	D			B	B	

Intersection Summary			
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	89.3	Sum of lost time (s)	14.2
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	990	0	310	10	0	0	280	1110	0	10	880	750
Future Volume (vph)	990	0	310	10	0	0	280	1110	0	10	880	750
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		5.0	5.5		4.5	5.5	5.5
Lane Util. Factor	0.97		1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	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
Frt	1.00		0.85		1.00		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95		1.00		0.95		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433		1583		1770		1770	3539		1770	3539	1558
Flt Permitted	0.75		1.00		0.95		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	2712		1583		1770		1770	3539		1770	3539	1558
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)	1065	0	333	11	0	0	301	1194	0	11	946	806
RTOR Reduction (vph)	0	0	175	0	0	0	0	0	0	0	0	307
Lane Group Flow (vph)	1065	0	158	0	11	0	301	1194	0	11	946	499
Confl. Peds. (#/hr)												1
Confl. Bikes (#/hr)												5
Turn Type	Perm		Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases					8		5	2		1	6	
Permitted Phases	4		4	8								6
Actuated Green, G (s)	29.6		29.6		29.6		12.0	39.2		0.8	27.5	27.5
Effective Green, g (s)	29.6		29.6		29.6		12.0	39.2		0.8	27.5	27.5
Actuated g/C Ratio	0.35		0.35		0.35		0.14	0.47		0.01	0.33	0.33
Clearance Time (s)	4.0		4.0		4.0		5.0	5.5		4.5	5.5	5.5
Vehicle Extension (s)	3.0		3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	960		560		626		254	1659		16	1164	512
v/s Ratio Prot							c0.17	0.34		0.01	0.27	
v/s Ratio Perm	c0.39		0.10		0.01							c0.32
v/c Ratio	1.11		0.28		0.02		1.19	0.72		0.69	0.81	0.98
Uniform Delay, d1	27.0		19.4		17.5		35.8	17.8		41.3	25.7	27.7
Progression Factor	1.00		1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	63.9		0.3		0.0		115.9	1.5		80.1	4.4	33.2
Delay (s)	90.9		19.7		17.6		151.7	19.3		121.4	30.1	60.9
Level of Service	F		B		B		F	B		F	C	E
Approach Delay (s)		73.9			17.6			46.0			44.8	
Approach LOS		E			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	53.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	83.6	Sum of lost time (s)	14.5
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	0	60	20	10	40	50	1090	20	20	850	20
Future Volume (vph)	20	0	60	20	10	40	50	1090	20	20	850	20
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	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.90			0.92		1.00	1.00		1.00	1.00	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1638			1696		1770	3529		1770	3527	
Flt Permitted		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1638			1696		1770	3529		1770	3527	
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)	22	0	65	22	11	43	54	1172	22	22	914	22
RTOR Reduction (vph)	0	79	0	0	39	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	8	0	0	37	0	54	1193	0	22	935	0
Confl. Peds. (#/hr)			1									
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)		6.6			7.4		4.3	37.7		1.5	34.9	
Effective Green, g (s)		6.6			7.4		4.3	37.7		1.5	34.9	
Actuated g/C Ratio		0.09			0.10		0.06	0.52		0.02	0.48	
Clearance Time (s)		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	
Lane Grp Cap (vph)		147			171		103	1817		36	1681	
v/s Ratio Prot		c0.00			c0.02		c0.03	c0.34		0.01	0.27	
v/s Ratio Perm												
v/c Ratio		0.05			0.22		0.52	0.66		0.61	0.56	
Uniform Delay, d1		30.4			30.2		33.5	13.0		35.6	13.6	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			0.6		4.7	0.9		27.0	0.4	
Delay (s)		30.6			30.9		38.2	13.9		62.5	14.0	
Level of Service		C			C		D	B		E	B	
Approach Delay (s)		30.6			30.9			14.9			15.2	
Approach LOS		C			C			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)	73.2	Sum of lost time (s)	20.0
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	120	70	1180	140	120	810
Future Volume (vph)	120	70	1180	140	120	810
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	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)	122	71	1204	143	122	827
RTOR Reduction (vph)	0	0	9	0	0	0
Lane Group Flow (vph)	122	71	1338	0	122	827
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)	12.1	12.1	40.7		10.2	56.9
Effective Green, g (s)	12.1	12.1	40.7		10.2	56.9
Actuated g/C Ratio	0.15	0.15	0.50		0.13	0.70
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)	262	235	1729		221	2470
v/s Ratio Prot	c0.07		c0.39		c0.07	0.23
v/s Ratio Perm		0.04				
v/c Ratio	0.47	0.30	0.77		0.55	0.33
Uniform Delay, d1	31.7	30.9	16.6		33.5	4.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	0.7	2.2		3.0	0.1
Delay (s)	33.1	31.7	18.9		36.5	4.9
Level of Service	C	C	B		D	A
Approach Delay (s)	32.5		18.9			9.0
Approach LOS	C		B			A

Intersection Summary			
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	81.5	Sum of lost time (s)	18.5
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	0	60	30	0	10	90	1200	30	20	840	20
Future Volume (vph)	10	0	60	30	0	10	90	1200	30	20	840	20
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	3522		1770	3525	
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	3522		1770	3525	
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)	11	0	67	33	0	11	100	1333	33	22	933	22
RTOR Reduction (vph)	0	61	0	0	10	0	0	1	0	0	2	0
Lane Group Flow (vph)	11	6	0	33	1	0	100	1365	0	22	953	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)	0.5	6.2		1.2	6.9		7.1	39.2		1.2	33.3	
Effective Green, g (s)	0.5	6.2		1.2	6.9		7.1	39.2		1.2	33.3	
Actuated g/C Ratio	0.01	0.09		0.02	0.10		0.10	0.58		0.02	0.49	
Clearance Time (s)	5.0	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	3.0	
Lane Grp Cap (vph)	13	142		31	161		185	2036		31	1731	
v/s Ratio Prot	0.01	c0.00		c0.02	0.00		c0.06	c0.39		0.01	0.27	
v/s Ratio Perm												
v/c Ratio	0.85	0.04		1.06	0.01		0.54	0.67		0.71	0.55	
Uniform Delay, d1	33.6	28.1		33.3	27.4		28.8	9.8		33.1	12.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	166.4	0.1		181.9	0.0		3.2	0.9		54.2	0.4	
Delay (s)	200.1	28.2		215.2	27.4		32.0	10.7		87.3	12.4	
Level of Service	F	C		F	C		C	B		F	B	
Approach Delay (s)		52.5			168.3			12.2			14.1	
Approach LOS		D			F			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	67.8	Sum of lost time (s)	20.0
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	0	60	0	0	0	50	1240	10	10	930	10
Future Volume (vph)	20	0	60	0	0	0	50	1240	10	10	930	10
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	3534		1770	3533	
Flt Permitted	0.95	1.00					0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1563					1770	3534		1770	3533	
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)	20	0	60	0	0	0	50	1240	10	10	930	10
RTOR Reduction (vph)	0	54	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	20	6	0	0	0	0	50	1250	0	10	939	0
Confl. Peds. (#/hr)			1			2			1			4
Confl. Bikes (#/hr)						2			2			5
Turn Type	Split	NA					Prot	NA		Prot	NA	
Protected Phases	4	4					5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	5.4	5.4					2.2	32.8		0.6	31.2	
Effective Green, g (s)	5.4	5.4					2.2	32.8		0.6	31.2	
Actuated g/C Ratio	0.10	0.10					0.04	0.62		0.01	0.59	
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)	181	159					73	2195		20	2087	
v/s Ratio Prot	c0.01	0.00					c0.03	c0.35		0.01	0.27	
v/s Ratio Perm												
v/c Ratio	0.11	0.04					0.68	0.57		0.50	0.45	
Uniform Delay, d1	21.5	21.4					25.0	5.9		26.0	6.0	
Progression Factor	1.00	1.00					1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.1					23.4	0.3		18.3	0.2	
Delay (s)	21.8	21.5					48.3	6.2		44.3	6.2	
Level of Service	C	C					D	A		D	A	
Approach Delay (s)		21.5			0.0			7.8			6.6	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	52.8	Sum of lost time (s)	14.0
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	250	260	180	220	50	270	1160	280	90	890	130
Future Volume (vph)	220	250	260	180	220	50	270	1160	280	90	890	130
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	0.92		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	3245		1770	3431		1770	3539	1560	1770	3539	1556
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	3245		1770	3431		1770	3539	1560	1770	3539	1556
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)	229	260	271	188	229	52	281	1208	292	94	927	135
RTOR Reduction (vph)	0	192	0	0	20	0	0	0	99	0	0	91
Lane Group Flow (vph)	229	339	0	188	261	0	281	1208	193	94	927	44
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)	11.9	16.3		11.9	16.3		17.0	39.2	39.2	8.4	30.6	30.6
Effective Green, g (s)	11.9	16.3		11.9	16.3		17.0	39.2	39.2	8.4	30.6	30.6
Actuated g/C Ratio	0.13	0.17		0.13	0.17		0.18	0.42	0.42	0.09	0.32	0.32
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)	223	560		223	592		318	1469	647	157	1147	504
v/s Ratio Prot	c0.13	c0.10		0.11	0.08		c0.16	c0.34		0.05	0.26	
v/s Ratio Perm									0.12			0.03
v/c Ratio	1.03	0.61		0.84	0.44		0.88	0.82	0.30	0.60	0.81	0.09
Uniform Delay, d1	41.2	36.1		40.3	35.0		37.7	24.5	18.4	41.4	29.2	22.2
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	67.4	1.9		24.1	0.5		23.9	3.9	0.3	6.0	4.3	0.1
Delay (s)	108.7	37.9		64.4	35.5		61.6	28.4	18.7	47.4	33.5	22.3
Level of Service	F	D		E	D		E	C	B	D	C	C
Approach Delay (s)		59.3			47.1			32.0			33.3	
Approach LOS		E			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	39.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	94.4	Sum of lost time (s)	18.6
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	40	160	50	30	20	210	1650	70	100	1510	210
Future Volume (vph)	230	40	160	50	30	20	210	1650	70	100	1510	210
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	0.88		1.00	0.94		1.00	0.99		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	1639		1770	1732		1770	3509		1770	3465	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1639		1770	1732		1770	3509		1770	3465	
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)	240	42	167	52	31	21	219	1719	73	104	1573	219
RTOR Reduction (vph)	0	84	0	0	16	0	0	2	0	0	6	0
Lane Group Flow (vph)	240	125	0	52	36	0	219	1790	0	104	1786	0
Confl. Peds. (#/hr)						9			7			
Confl. Bikes (#/hr)									8			3
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)	20.3	25.3		8.3	13.3		18.1	82.9		11.1	75.9	
Effective Green, g (s)	20.3	25.3		8.3	13.3		18.1	82.9		11.1	75.9	
Actuated g/C Ratio	0.14	0.17		0.06	0.09		0.12	0.57		0.08	0.52	
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)	245	283		100	157		219	1989		134	1798	
v/s Ratio Prot	c0.14	c0.08		0.03	0.02		c0.12	0.51		0.06	c0.52	
v/s Ratio Perm												
v/c Ratio	0.98	0.44		0.52	0.23		1.00	0.90		0.78	0.99	
Uniform Delay, d1	62.7	54.1		67.0	61.7		64.0	28.0		66.3	34.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	51.1	1.1		4.8	0.7		60.8	6.0		24.0	19.5	
Delay (s)	113.9	55.2		71.8	62.4		124.9	34.0		90.3	54.4	
Level of Service	F	E		E	E		F	C		F	D	
Approach Delay (s)		86.6			67.1			43.9			56.4	
Approach LOS		F			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	54.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	146.2	Sum of lost time (s)	18.6
Intersection Capacity Utilization	97.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	580	1020	460	580	690	130	770	1290	460	160	1190	370
Future Volume (vph)	580	1020	460	580	690	130	770	1290	460	160	1190	370
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	5.3
Lane Util. Factor	0.97	0.95	0.88	0.94	0.95		0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	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	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	2701	4990	3443		3433	3539	1558	3433	3539	1557
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	2701	4990	3443		3433	3539	1558	3433	3539	1557
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)	624	1097	495	624	742	140	828	1387	495	172	1280	398
RTOR Reduction (vph)	0	0	235	0	11	0	0	0	40	0	0	161
Lane Group Flow (vph)	624	1097	260	624	871	0	828	1387	455	172	1280	237
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	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	22.8	38.7	38.7	16.8	33.0		26.8	61.3	78.1	8.4	43.7	43.7
Effective Green, g (s)	22.8	38.7	38.7	16.8	33.0		26.8	61.3	78.1	8.4	43.7	43.7
Actuated g/C Ratio	0.16	0.27	0.27	0.12	0.23		0.18	0.42	0.54	0.06	0.30	0.30
Clearance Time (s)	4.2	5.3	5.3	4.2	5.0		4.2	5.3	4.2	5.0	5.3	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)	539	944	720	578	783		634	1496	839	198	1066	469
v/s Ratio Prot	c0.18	c0.31		0.13	0.25		c0.24	0.39	0.06	0.05	c0.36	
v/s Ratio Perm			0.10						0.23			0.15
v/c Ratio	1.16	1.16	0.36	1.08	1.11		1.31	0.93	0.54	0.87	1.20	0.50
Uniform Delay, d1	61.1	53.1	43.1	64.1	56.0		59.1	39.7	21.8	67.8	50.6	41.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	90.2	84.7	0.3	60.7	67.7		148.9	10.2	0.7	30.7	99.5	0.9
Delay (s)	151.3	137.9	43.4	124.8	123.7		208.0	49.9	22.5	98.5	150.2	42.6
Level of Service	F	F	D	F	F		F	D	C	F	F	D
Approach Delay (s)		120.6			124.2			93.2			122.2	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	112.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	19.8
Intersection Capacity Utilization	110.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	820	0	330	0	2000	830	0	1780	540
Future Volume (vph)	0	0	0	820	0	330	0	2000	830	0	1780	540
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	0.96		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	1515		5085	1548
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3433		2787		5085	1515		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	854	0	344	0	2083	865	0	1854	562
RTOR Reduction (vph)	0	0	0	0	0	14	0	0	0	0	0	238
Lane Group Flow (vph)	0	0	0	854	0	330	0	2083	865	0	1854	325
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)				40.8		40.8		69.3	110.1		69.3	69.3
Effective Green, g (s)				40.8		40.8		69.3	110.1		69.3	69.3
Actuated g/C Ratio				0.34		0.34		0.58	0.92		0.58	0.58
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)				1167		947		2936	1448		2936	893
v/s Ratio Prot				c0.25		0.12		c0.41	0.20		0.36	
v/s Ratio Perm									0.37			0.21
v/c Ratio				0.73		0.35		0.71	0.60		0.63	0.36
Uniform Delay, d1				34.8		29.7		18.1	0.9		16.9	13.6
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				2.4		0.2		1.5	0.7		1.0	1.1
Delay (s)				37.2		29.9		19.6	1.6		17.9	14.7
Level of Service				D		C		B	A		B	B
Approach Delay (s)		0.0			35.1			14.3			17.2	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	270	40	590	0	0	0	0	2520	1150	390	2160	0
Future Volume (vph)	270	40	590	0	0	0	0	2520	1150	390	2160	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	0.98					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	0.88	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	1468	1481					5085	1561	3433	5085	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1681	1468	1481					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)	281	42	615	0	0	0	0	2625	1198	406	2250	0
RTOR Reduction (vph)	0	9	36	0	0	0	0	0	266	0	0	0
Lane Group Flow (vph)	253	338	302	0	0	0	0	2625	932	406	2250	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)	36.3	36.3	36.3					81.7	81.7	17.9	103.8	
Effective Green, g (s)	36.3	36.3	36.3					81.7	81.7	17.9	103.8	
Actuated g/C Ratio	0.24	0.24	0.24					0.54	0.54	0.12	0.69	
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)	406	355	358					2769	850	409	3518	
v/s Ratio Prot	0.15	c0.23						0.52		c0.12	0.44	
v/s Ratio Perm			0.20						c0.60			
v/c Ratio	0.62	0.95	0.84					0.95	1.10	0.99	0.64	
Uniform Delay, d1	50.7	56.0	54.2					32.2	34.1	66.0	12.8	
Progression Factor	1.00	1.00	1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.0	35.2	16.5					8.7	60.7	42.4	0.9	
Delay (s)	53.7	91.1	70.6					40.8	94.8	108.3	13.7	
Level of Service	D	F	E					D	F	F	B	
Approach Delay (s)		73.7			0.0			57.7			28.1	
Approach LOS		E			A			E			C	

Intersection Summary			
HCM 2000 Control Delay	49.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	110.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	300	0	600	1090	380	50	470	1350	300	0	1150	250
Future Volume (vph)	300	0	600	1090	380	50	470	1350	300	0	1150	250
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	0.98		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	3477		3433	3539	1549		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	3477		3433	3539	1549		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)	316	0	632	1147	400	53	495	1421	316	0	1211	263
RTOR Reduction (vph)	0	0	52	0	10	0	0	0	119	0	0	92
Lane Group Flow (vph)	316	0	580	1147	443	0	495	1421	197	0	1211	171
Confl. Peds. (#/hr)												12
Confl. Bikes (#/hr)									2			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)	18.4		43.4	48.4	24.4		25.0	59.7	59.7		29.5	29.5
Effective Green, g (s)	18.4		43.4	48.4	24.4		25.0	59.7	59.7		29.5	29.5
Actuated g/C Ratio	0.15		0.36	0.40	0.20		0.21	0.50	0.50		0.25	0.25
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)	271		1007	1384	706		715	1760	770		1250	378
v/s Ratio Prot	c0.18		0.12	c0.33	0.13		0.14	c0.40			c0.24	
v/s Ratio Perm			0.09						0.13			0.11
v/c Ratio	1.17		0.58	0.83	0.63		0.69	0.81	0.26		0.97	0.45
Uniform Delay, d1	50.8		30.9	32.1	43.7		43.9	25.3	17.4		44.8	38.4
Progression Factor	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	107.2		0.8	4.2	1.8		2.9	4.1	0.8		19.0	3.9
Delay (s)	158.0		31.7	36.3	45.4		46.8	29.4	18.2		63.8	42.3
Level of Service	F		C	D	D		D	C	B		E	D
Approach Delay (s)		73.8			38.9			31.7			60.0	
Approach LOS		E			D			C			E	

Intersection Summary			
HCM 2000 Control Delay	46.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.7
Intersection Capacity Utilization	89.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	290	0	170	0	0	0	0	1760	1330	150	2290	0
Future Volume (vph)	290	0	170	0	0	0	0	1760	1330	150	2290	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)	302	0	177	0	0	0	0	1833	1385	156	2385	0
RTOR Reduction (vph)	0	0	67	0	0	0	0	0	457	0	0	0
Lane Group Flow (vph)	302	0	110	0	0	0	0	1833	928	156	2385	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)	15.9		15.9					76.2	76.2	10.8	92.2	
Effective Green, g (s)	15.9		15.9					76.2	76.2	10.8	92.2	
Actuated g/C Ratio	0.13		0.13					0.64	0.64	0.09	0.77	
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)	454		209					3228	1727	308	3906	
v/s Ratio Prot	c0.09							0.36		0.05	c0.47	
v/s Ratio Perm			0.07						0.34			
v/c Ratio	0.67		0.53					0.57	0.54	0.51	0.61	
Uniform Delay, d1	49.5		48.5					12.5	12.1	52.1	6.1	
Progression Factor	1.00		1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.7		2.4					0.7	1.2	1.3	0.7	
Delay (s)	53.2		50.9					13.2	13.3	53.4	6.8	
Level of Service	D		D					B	B	D	A	
Approach Delay (s)		52.4			0.0			13.3			9.6	
Approach LOS		D			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.1
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	560	60	440	450	90	40	330	720	30	260	100
Future Volume (vph)	160	560	60	440	450	90	40	330	720	30	260	100
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	
Frpb, 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	0.96	
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	1557	3433	3539	1541	1770	3539	1583	1770	3379	
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	1557	3433	3539	1541	1770	3539	1583	1770	3379	
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)	176	615	66	484	495	99	44	363	791	33	286	110
RTOR Reduction (vph)	0	0	51	0	0	73	0	0	277	0	36	0
Lane Group Flow (vph)	176	615	15	484	495	26	44	363	514	33	360	0
Confl. 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)	14.6	22.0	22.0	18.2	25.6	25.6	3.6	37.2	37.2	2.3	35.9	
Effective Green, g (s)	14.6	22.0	22.0	18.2	25.6	25.6	3.6	37.2	37.2	2.3	35.9	
Actuated g/C Ratio	0.15	0.22	0.22	0.19	0.26	0.26	0.04	0.38	0.38	0.02	0.37	
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)	262	792	348	635	921	401	64	1339	599	41	1234	
v/s Ratio Prot	0.10	c0.17		c0.14	c0.14		c0.02	0.10	c0.32	0.02	0.11	
v/s Ratio Perm			0.01			0.02						
v/c Ratio	0.67	0.78	0.04	0.76	0.54	0.06	0.69	0.27	0.86	0.80	0.29	
Uniform Delay, d1	39.6	35.8	29.9	38.0	31.3	27.3	46.8	21.2	28.1	47.8	22.2	
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	6.6	4.8	0.1	5.4	0.6	0.1	26.5	0.1	11.6	69.0	0.1	
Delay (s)	46.2	40.6	29.9	43.4	31.9	27.4	73.2	21.3	39.8	116.7	22.3	
Level of Service	D	D	C	D	C	C	E	C	D	F	C	
Approach Delay (s)		41.0			36.6			35.4			29.6	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	36.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	98.3	Sum of lost time (s)	18.6
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	740	460	10	330	360	380	10	1490	370	570	670	540
Future Volume (vph)	740	460	10	330	360	380	10	1490	370	570	670	540
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	4934		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	4934		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)	804	500	11	359	391	413	11	1620	402	620	728	587
RTOR Reduction (vph)	0	0	0	0	0	0	0	29	0	0	0	0
Lane Group Flow (vph)	804	500	11	359	391	413	11	1993	0	620	728	587
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)	27.0	30.7	148.0	24.0	27.7	148.0	1.6	52.0		20.0	70.4	148.0
Effective Green, g (s)	27.0	30.7	148.0	24.0	27.7	148.0	1.6	52.0		20.0	70.4	148.0
Actuated g/C Ratio	0.18	0.21	1.00	0.16	0.19	1.00	0.01	0.35		0.14	0.48	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)	626	1054	1583	287	348	1583	19	1733		463	2418	1583
v/s Ratio Prot	c0.23	0.10		0.20	c0.21		0.01	c0.40		c0.18	0.14	
v/s Ratio Perm			0.01			0.26						c0.37
v/c Ratio	1.28	0.47	0.01	1.25	1.12	0.26	0.58	1.15		1.34	0.30	0.37
Uniform Delay, d1	60.5	51.6	0.0	62.0	60.1	0.0	72.9	48.0		64.0	23.7	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	139.8	0.6	0.0	138.4	86.0	0.4	23.8	74.8		166.6	0.1	0.7
Delay (s)	200.3	52.1	0.0	200.4	146.2	0.4	96.7	122.8		230.6	23.8	0.7
Level of Service	F	D	A	F	F	A	F	F		F	C	A
Approach Delay (s)		142.3			111.1			122.7			83.1	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	112.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	148.0	Sum of lost time (s)	21.3
Intersection Capacity Utilization	111.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Intersection Sign configuration not allowed in HCM analysis.

APPENDIX I

PEAK HOUR ANALYSIS WORKSHEETS
– SAN MARCOS ALTERNATE HORIZON YEAR 2035

APPENDIX I-1

PEAK HOUR ANALYSIS WORKSHEETS
– SAN MARCOS ALTERNATE HORIZON YEAR 2035 WITHOUT PROJECT

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	59	141	138	481	1354	53
Future Volume (vph)	59	141	138	481	1354	53
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	0.95	0.95	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	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	153	150	523	1472	58
RTOR Reduction (vph)	0	135	0	0	0	13
Lane Group Flow (vph)	64	18	150	523	1472	45
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	10.6	10.6	14.6	71.6	53.0	53.0
Effective Green, g (s)	10.6	10.6	14.6	71.6	53.0	53.0
Actuated g/C Ratio	0.11	0.11	0.16	0.77	0.57	0.57
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)	203	181	279	2742	2029	907
v/s Ratio Prot	c0.04		c0.08	0.15	c0.42	
v/s Ratio Perm		0.01				0.03
v/c Ratio	0.32	0.10	0.54	0.19	0.73	0.05
Uniform Delay, d1	37.6	36.6	35.8	2.7	14.4	8.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.2	2.0	0.0	1.3	0.0
Delay (s)	38.5	36.9	37.8	2.8	15.7	8.7
Level of Service	D	D	D	A	B	A
Approach Delay (s)	37.3			10.6	15.4	
Approach LOS	D			B	B	

Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	92.4	Sum of lost time (s)	14.2
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	280	0	240	10	0	0	150	329	10	10	1087	418
Future Volume (vph)	280	0	240	10	0	0	150	329	10	10	1087	418
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		5.0	5.5		5.0	5.5	5.5
Lane Util. Factor	0.97		1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00		0.98		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	1.00	1.00
Frt	1.00		0.85		1.00		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95		1.00		0.95		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433		1559		1770		1770	3524		1770	3539	1561
Flt Permitted	0.75		1.00		0.95		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	2714		1559		1770		1770	3524		1770	3539	1561
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)	292	0	250	10	0	0	156	343	10	10	1132	435
RTOR Reduction (vph)	0	0	174	0	0	0	0	2	0	0	0	115
Lane Group Flow (vph)	292	0	76	0	10	0	156	351	0	10	1132	320
Confl. Peds. (#/hr)			2									1
Confl. Bikes (#/hr)												3
Turn Type	Perm		Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases					8		5	2		1	6	
Permitted Phases	4		4	8								6
Actuated Green, G (s)	14.5		14.5		14.5		11.0	45.5		0.8	35.3	35.3
Effective Green, g (s)	14.5		14.5		14.5		11.0	45.5		0.8	35.3	35.3
Actuated g/C Ratio	0.19		0.19		0.19		0.15	0.60		0.01	0.47	0.47
Clearance Time (s)	4.0		4.0		4.0		5.0	5.5		5.0	5.5	5.5
Vehicle Extension (s)	3.0		3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	522		300		340		258	2129		18	1659	731
v/s Ratio Prot							c0.09	0.10		0.01	c0.32	
v/s Ratio Perm	c0.11		0.05		0.01							0.21
v/c Ratio	0.56		0.25		0.03		0.60	0.17		0.56	0.68	0.44
Uniform Delay, d1	27.5		25.8		24.7		30.1	6.5		37.1	15.6	13.4
Progression Factor	1.00		1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.3		0.4		0.0		4.0	0.0		32.3	1.2	0.4
Delay (s)	28.8		26.2		24.7		34.1	6.6		69.4	16.8	13.8
Level of Service	C		C		C		C	A		E	B	B
Approach Delay (s)		27.6			24.7			15.0			16.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	75.3	Sum of lost time (s)	14.5
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	10	50	240	20	46	30	454	240	72	1082	8
Future Volume (vph)	17	10	50	240	20	46	30	454	240	72	1082	8
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	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			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	
Frt		0.91			0.98		1.00	0.95		1.00	1.00	
Flt Protected		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1660			1756		1770	3330		1770	3535	
Flt Permitted		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1660			1756		1770	3330		1770	3535	
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)	18	10	52	250	21	48	31	473	250	75	1127	8
RTOR Reduction (vph)	0	48	0	0	4	0	0	49	0	0	1	0
Lane Group Flow (vph)	0	32	0	0	315	0	31	674	0	75	1134	0
Confl. Peds. (#/hr)			6						1			
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)		7.7			23.6		2.4	33.7		7.5	38.8	
Effective Green, g (s)		7.7			23.6		2.4	33.7		7.5	38.8	
Actuated g/C Ratio		0.08			0.26		0.03	0.36		0.08	0.42	
Clearance Time (s)		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	
Lane Grp Cap (vph)		138			448		45	1213		143	1482	
v/s Ratio Prot		c0.02			c0.18		0.02	0.20		c0.04	c0.32	
v/s Ratio Perm												
v/c Ratio		0.23			0.70		0.69	0.56		0.52	0.77	
Uniform Delay, d1		39.6			31.3		44.7	23.4		40.8	23.0	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.9			4.9		35.8	0.6		3.4	2.4	
Delay (s)		40.5			36.2		80.5	24.0		44.2	25.4	
Level of Service		D			D		F	C		D	C	
Approach Delay (s)		40.5			36.2			26.3			26.5	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	92.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	220	236	728	70	71	1311
Future Volume (vph)	220	236	728	70	71	1311
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	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	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1563	3478		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1563	3478		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	257	791	76	77	1425
RTOR Reduction (vph)	0	0	8	0	0	0
Lane Group Flow (vph)	239	257	859	0	77	1425
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)	17.5	17.5	27.6		6.6	40.2
Effective Green, g (s)	17.5	17.5	27.6		6.6	40.2
Actuated g/C Ratio	0.25	0.25	0.39		0.09	0.57
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)	441	389	1367		166	2026
v/s Ratio Prot	0.14		0.25		0.04	c0.40
v/s Ratio Perm		c0.16				
v/c Ratio	0.54	0.66	0.63		0.46	0.70
Uniform Delay, d1	22.9	23.7	17.2		30.1	10.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.4	4.2	0.9		2.0	1.1
Delay (s)	24.2	27.9	18.1		32.2	11.9
Level of Service	C	C	B		C	B
Approach Delay (s)	26.1		18.1			12.9
Approach LOS	C		B			B

Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	70.2	Sum of lost time (s)	18.5
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	0	70	10	0	10	40	790	20	10	1643	18
Future Volume (vph)	28	0	70	10	0	10	40	790	20	10	1643	18
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	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	1583		1770	1583		1770	3524		1770	3533	
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	3524		1770	3533	
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)	30	0	76	11	0	11	43	859	22	11	1786	20
RTOR Reduction (vph)	0	67	0	0	10	0	0	1	0	0	1	0
Lane Group Flow (vph)	30	9	0	11	1	0	43	880	0	11	1805	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)	1.2	8.9		0.5	8.2		2.0	49.6		0.5	48.1	
Effective Green, g (s)	1.2	8.9		0.5	8.2		2.0	49.6		0.5	48.1	
Actuated g/C Ratio	0.02	0.11		0.01	0.10		0.03	0.63		0.01	0.61	
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)	26	178		11	164		44	2212		11	2151	
v/s Ratio Prot	c0.02	c0.01		0.01	0.00		c0.02	0.25		0.01	c0.51	
v/s Ratio Perm												
v/c Ratio	1.15	0.05		1.00	0.01		0.98	0.40		1.00	0.84	
Uniform Delay, d1	38.9	31.3		39.2	31.7		38.5	7.3		39.2	12.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	227.3	0.1		271.4	0.0		125.9	0.1		271.4	3.1	
Delay (s)	266.2	31.4		310.6	31.8		164.3	7.4		310.6	15.4	
Level of Service	F	C		F	C		F	A		F	B	
Approach Delay (s)		97.9			171.2			14.7			17.2	
Approach LOS		F			F			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	79.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	10	50	0	0	0	50	810	10	10	1643	70
Future Volume (vph)	10	10	50	0	0	0	50	810	10	10	1643	70
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	4.0	
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	0.88					1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00					0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1607					1770	3531		1770	3514	
Flt Permitted	0.95	1.00					0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1607					1770	3531		1770	3514	
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)	11	11	54	0	0	0	54	880	11	11	1786	76
RTOR Reduction (vph)	0	49	0	0	0	0	0	1	0	0	2	0
Lane Group Flow (vph)	11	16	0	0	0	0	54	890	0	11	1860	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)	7.6	7.6					3.1	57.4		0.8	55.1	
Effective Green, g (s)	7.6	7.6					3.1	57.4		0.8	55.1	
Actuated g/C Ratio	0.10	0.10					0.04	0.72		0.01	0.69	
Clearance Time (s)	4.0	4.0					6.0	6.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0					3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	168	153					68	2539		17	2426	
v/s Ratio Prot	0.01	c0.01					c0.03	c0.25		0.01	c0.53	
v/s Ratio Perm												
v/c Ratio	0.07	0.11					0.79	0.35		0.65	0.77	
Uniform Delay, d1	32.9	33.0					38.0	4.2		39.4	8.1	
Progression Factor	1.00	1.00					1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.3					45.6	0.1		62.0	1.5	
Delay (s)	33.0	33.3					83.6	4.3		101.4	9.6	
Level of Service	C	C					F	A		F	A	
Approach Delay (s)		33.3			0.0			8.8			10.2	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	79.8	Sum of lost time (s)	14.0
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	50	280	300	120	37	110	623	70	18	1324	131
Future Volume (vph)	60	50	280	300	120	37	110	623	70	18	1324	131
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	0.96		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	3029		1770	3401		1770	3539	1555	1770	3539	1549
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	3029		1770	3401		1770	3539	1555	1770	3539	1549
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)	63	53	295	316	126	39	116	656	74	19	1394	138
RTOR Reduction (vph)	0	132	0	0	17	0	0	0	35	0	0	64
Lane Group Flow (vph)	63	216	0	316	148	0	116	656	39	19	1394	74
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)	8.6	20.0		32.4	43.8		14.3	81.3	81.3	3.3	70.3	70.3
Effective Green, g (s)	8.6	20.0		32.4	43.8		14.3	81.3	81.3	3.3	70.3	70.3
Actuated g/C Ratio	0.06	0.13		0.21	0.28		0.09	0.52	0.52	0.02	0.45	0.45
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)	97	389		368	957		162	1849	812	37	1598	699
v/s Ratio Prot	0.04	c0.07		c0.18	0.04		c0.07	0.19		0.01	c0.39	
v/s Ratio Perm									0.02			0.05
v/c Ratio	0.65	0.91dr		0.86	0.16		0.72	0.35	0.05	0.51	0.87	0.11
Uniform Delay, d1	72.0	63.6		59.4	42.0		68.7	21.8	18.2	75.4	38.6	24.6
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	14.0	1.7		17.7	0.1		14.0	0.1	0.0	11.5	5.6	0.1
Delay (s)	86.0	65.3		77.1	42.1		82.7	21.9	18.2	86.9	44.1	24.6
Level of Service	F	E		E	D		F	C	B	F	D	C
Approach Delay (s)		68.5			65.1			29.9			42.9	
Approach LOS		E			E			C			D	

Intersection Summary			
HCM 2000 Control Delay	46.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	155.6	Sum of lost time (s)	18.6
Intersection Capacity Utilization	88.2%	ICU Level of Service	E
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	240	10	170	20	10	10	90	813	20	30	1584	320
Future Volume (vph)	240	10	170	20	10	10	90	813	20	30	1584	320
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	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		1.00	1.00	
Frt	1.00	0.86		1.00	0.93		1.00	1.00		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1578		1770	1704		1770	3524		1770	3433	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1578		1770	1704		1770	3524		1770	3433	
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)	242	10	172	20	10	10	91	821	20	30	1600	323
RTOR Reduction (vph)	0	148	0	0	9	0	0	1	0	0	10	0
Lane Group Flow (vph)	242	34	0	20	11	0	91	840	0	30	1913	0
Confl. Peds. (#/hr)						8			4			2
Confl. Bikes (#/hr)			1						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)	17.3	17.3		7.6	7.6		7.1	75.0		3.8	71.7	
Effective Green, g (s)	17.3	17.3		7.6	7.6		7.1	75.0		3.8	71.7	
Actuated g/C Ratio	0.14	0.14		0.06	0.06		0.06	0.61		0.03	0.59	
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)	250	223		109	105		102	2161		54	2012	
v/s Ratio Prot	c0.14	0.02		c0.01	0.01		c0.05	c0.24		0.02	c0.56	
v/s Ratio Perm												
v/c Ratio	0.97	0.15		0.18	0.10		0.89	0.39		0.56	0.95	
Uniform Delay, d1	52.2	46.1		54.4	54.1		57.2	12.0		58.4	23.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	47.5	0.3		0.8	0.4		55.9	0.1		11.8	10.7	
Delay (s)	99.7	46.4		55.2	54.6		113.1	12.1		70.2	34.4	
Level of Service	F	D		E	D		F	B		E	C	
Approach Delay (s)		76.8			54.9			22.0			34.9	
Approach LOS		E			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	36.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	122.3	Sum of lost time (s)	18.6
Intersection Capacity Utilization	91.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	226	420	450	560	700	45	410	652	560	122	1267	385
Future Volume (vph)	226	420	450	560	700	45	410	652	560	122	1267	385
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	5.3
Lane Util. Factor	0.97	0.95	0.88	0.94	0.95		0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99
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	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	2712	4990	3503		3433	3539	1565	3433	3539	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	2712	4990	3503		3433	3539	1565	3433	3539	1562
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)	231	429	459	571	714	46	418	665	571	124	1293	393
RTOR Reduction (vph)	0	0	252	0	4	0	0	0	38	0	0	160
Lane Group Flow (vph)	231	429	207	571	756	0	418	665	533	124	1293	233
Confl. Peds. (#/hr)			5			4			1			1
Confl. Bikes (#/hr)			8			3			3			
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	11.1	25.9	25.9	15.0	30.1		15.4	54.3	69.3	8.5	47.4	47.4
Effective Green, g (s)	11.1	25.9	25.9	15.0	30.1		15.4	54.3	69.3	8.5	47.4	47.4
Actuated g/C Ratio	0.09	0.21	0.21	0.12	0.25		0.13	0.44	0.56	0.07	0.39	0.39
Clearance Time (s)	4.2	5.3	5.3	4.2	5.0		4.2	5.3	4.2	4.2	5.3	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)	310	747	572	610	859		430	1566	883	237	1367	603
v/s Ratio Prot	0.07	0.12		c0.11	c0.22		c0.12	0.19	0.07	0.04	c0.37	
v/s Ratio Perm			0.08						0.27			0.15
v/c Ratio	0.75	0.57	0.36	0.94	0.88		0.97	0.42	0.60	0.52	0.95	0.39
Uniform Delay, d1	54.4	43.5	41.3	53.4	44.6		53.4	23.5	17.6	55.1	36.4	27.2
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	9.4	1.1	0.4	21.8	10.4		35.9	0.2	1.2	2.1	13.4	0.4
Delay (s)	63.8	44.5	41.7	75.2	55.0		89.4	23.7	18.8	57.2	49.8	27.6
Level of Service	E	D	D	E	E		F	C	B	E	D	C
Approach Delay (s)		47.4			63.7			38.6			45.5	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	48.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	122.7	Sum of lost time (s)	19.0
Intersection Capacity Utilization	89.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	720	0	320	0	1302	620	0	1765	662
Future Volume (vph)	0	0	0	720	0	320	0	1302	620	0	1765	662
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	0.97
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	1539		5085	1543
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3433		2787		5085	1539		5085	1543
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	735	0	327	0	1329	633	0	1801	676
RTOR Reduction (vph)	0	0	0	0	0	57	0	0	0	0	0	237
Lane Group Flow (vph)	0	0	0	735	0	270	0	1329	633	0	1801	439
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)				32.2		32.2		77.9	110.1		77.9	77.9
Effective Green, g (s)				32.2		32.2		77.9	110.1		77.9	77.9
Actuated g/C Ratio				0.27		0.27		0.65	0.92		0.65	0.65
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)				921		747		3301	1471		3301	1001
v/s Ratio Prot				c0.21				0.26	0.12		c0.35	
v/s Ratio Perm						0.10			0.30			0.28
v/c Ratio				0.80		0.36		0.40	0.43		0.55	0.44
Uniform Delay, d1				40.9		35.6		10.0	0.7		11.4	10.3
Progression Factor				1.00		1.00		0.45	9.83		1.00	1.00
Incremental Delay, d2				4.6		0.1		0.2	0.0		0.7	1.4
Delay (s)				45.4		35.7		4.7	6.7		12.1	11.7
Level of Service				D		D		A	A		B	B
Approach Delay (s)		0.0			42.4			5.3			12.0	
Approach LOS		A			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.5	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)	9.9
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	676	10	900	0	0	0	0	1256	740	370	2115	0
Future Volume (vph)	676	10	900	0	0	0	0	1256	740	370	2115	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	0.89	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	1475	1485					5085	1553	3433	5085	
Flt Permitted	0.95	0.99	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1681	1475	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)	697	10	928	0	0	0	0	1295	763	381	2180	0
RTOR Reduction (vph)	0	1	35	0	0	0	0	0	509	0	0	0
Lane Group Flow (vph)	565	540	494	0	0	0	0	1295	254	381	2180	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)	49.6	49.6	49.6					40.0	40.0	16.3	60.5	
Effective Green, g (s)	49.6	49.6	49.6					40.0	40.0	16.3	60.5	
Actuated g/C Ratio	0.41	0.41	0.41					0.33	0.33	0.14	0.50	
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)	694	609	613					1695	517	466	2563	
v/s Ratio Prot	0.34	c0.37						0.25		0.11	c0.43	
v/s Ratio Perm			0.33						0.16			
v/c Ratio	0.81	0.89	0.81					0.76	0.49	0.82	0.85	
Uniform Delay, d1	31.1	32.6	31.0					35.8	31.9	50.4	25.8	
Progression Factor	1.00	1.00	1.00					1.00	1.00	1.14	1.20	
Incremental Delay, d2	7.3	14.5	7.7					3.3	3.3	9.1	3.2	
Delay (s)	38.4	47.1	38.6					39.1	35.2	66.8	34.3	
Level of Service	D	D	D					D	D	E	C	
Approach Delay (s)		41.4			0.0			37.7			39.1	
Approach LOS		D			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	39.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	96.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	0	580	1130	410	20	380	461	140	0	1044	240
Future Volume (vph)	200	0	580	1130	410	20	380	461	140	0	1044	240
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	3512		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	3512		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)	206	0	598	1165	423	21	392	475	144	0	1076	247
RTOR Reduction (vph)	0	0	58	0	3	0	0	0	73	0	0	88
Lane Group Flow (vph)	206	0	540	1165	441	0	392	475	71	0	1076	159
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)	15.9		34.1	48.8	27.3		18.2	59.3	59.3		35.9	35.9
Effective Green, g (s)	15.9		34.1	48.8	27.3		18.2	59.3	59.3		35.9	35.9
Actuated g/C Ratio	0.13		0.28	0.41	0.23		0.15	0.49	0.49		0.30	0.30
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)	234		791	1396	798		520	1748	782		1521	462
v/s Ratio Prot	0.12		0.10	c0.34	0.13		c0.11	0.13			c0.21	
v/s Ratio Perm			0.09						0.04			0.10
v/c Ratio	0.88		0.68	0.83	0.55		0.75	0.27	0.09		0.71	0.34
Uniform Delay, d1	51.1		38.1	32.0	41.0		48.8	17.7	16.1		37.4	32.8
Progression Factor	1.00		1.00	1.00	1.00		0.93	1.62	4.85		1.00	1.00
Incremental Delay, d2	29.5		2.4	4.5	0.8		6.0	0.4	0.2		2.8	2.0
Delay (s)	80.6		40.6	36.4	41.8		51.1	29.2	78.3		40.2	34.9
Level of Service	F		D	D	D		D	C	E		D	C
Approach Delay (s)		50.9			37.9			44.7			39.2	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	41.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.7
Intersection Capacity Utilization	90.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	0	260	0	0	0	0	830	840	190	2450	0
Future Volume (vph)	171	0	260	0	0	0	0	830	840	190	2450	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)	178	0	271	0	0	0	0	865	875	198	2552	0
RTOR Reduction (vph)	0	0	64	0	0	0	0	0	359	0	0	0
Lane Group Flow (vph)	178	0	207	0	0	0	0	865	516	198	2552	0
Confl. Peds. (#/hr)												6
Confl. Bikes (#/hr)									3			4
Turn Type	Prot		Perm					NA	Perm	Prot	NA	
Protected Phases	4							2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	20.6		20.6					70.7	70.7	11.6	87.5	
Effective Green, g (s)	20.6		20.6					70.7	70.7	11.6	87.5	
Actuated g/C Ratio	0.17		0.17					0.59	0.59	0.10	0.73	
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)	589		271					2995	1606	331	3707	
v/s Ratio Prot	0.05							0.17		0.06	c0.50	
v/s Ratio Perm			c0.13						0.19			
v/c Ratio	0.30		0.76					0.29	0.32	0.60	0.69	
Uniform Delay, d1	43.4		47.4					12.2	12.5	52.0	8.8	
Progression Factor	1.00		1.00					1.00	1.00	1.15	0.52	
Incremental Delay, d2	0.3		12.1					0.2	0.5	2.5	0.9	
Delay (s)	43.7		59.5					12.4	13.0	62.1	5.6	
Level of Service	D		E					B	B	E	A	
Approach Delay (s)		53.2			0.0			12.7			9.6	
Approach LOS		D			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.1
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	320	20	735	540	80	10	80	322	100	450	50
Future Volume (vph)	30	320	20	735	540	80	10	80	322	100	450	50
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	
Frpb, 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	0.99	
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	1530	1770	3539	1583	1770	3486	
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	1530	1770	3539	1583	1770	3486	
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)	33	348	22	799	587	87	11	87	350	109	489	54
RTOR Reduction (vph)	0	0	18	0	0	47	0	0	296	0	5	0
Lane Group Flow (vph)	33	348	4	799	587	40	11	87	54	109	538	0
Confl. 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)	4.7	18.6	18.6	29.2	43.1	43.1	0.9	14.4	14.4	12.5	26.0	
Effective Green, g (s)	4.7	18.6	18.6	29.2	43.1	43.1	0.9	14.4	14.4	12.5	26.0	
Actuated g/C Ratio	0.05	0.20	0.20	0.31	0.46	0.46	0.01	0.15	0.15	0.13	0.28	
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)	89	705	311	1074	1634	706	17	546	244	237	971	
v/s Ratio Prot	0.02	c0.10		c0.23	0.17		0.01	0.02	0.03	c0.06	c0.15	
v/s Ratio Perm			0.00			0.03						
v/c Ratio	0.37	0.49	0.01	0.74	0.36	0.06	0.65	0.16	0.22	0.46	0.55	
Uniform Delay, d1	42.9	33.2	30.0	28.7	16.2	13.9	46.0	34.2	34.5	37.3	28.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.6	0.5	0.0	2.8	0.1	0.0	62.0	0.1	0.5	1.4	0.7	
Delay (s)	45.5	33.7	30.0	31.5	16.3	13.9	108.0	34.3	35.0	38.7	29.4	
Level of Service	D	C	C	C	B	B	F	C	D	D	C	
Approach Delay (s)		34.5			24.4			36.7			30.9	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	29.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	93.3	Sum of lost time (s)	18.6
Intersection Capacity Utilization	56.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	390	100	10	390	500	261	30	945	170	564	1201	700
Future Volume (vph)	390	100	10	390	500	261	30	945	170	564	1201	700
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	4969		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	4969		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)	424	109	11	424	543	284	33	1027	185	613	1305	761
RTOR Reduction (vph)	0	0	9	0	0	139	0	17	0	0	0	244
Lane Group Flow (vph)	424	109	2	424	543	145	33	1195	0	613	1305	517
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)	19.0	28.0	28.0	36.7	45.7	45.7	4.0	37.6		27.0	60.6	60.6
Effective Green, g (s)	19.0	28.0	28.0	36.7	45.7	45.7	4.0	37.6		27.0	60.6	60.6
Actuated g/C Ratio	0.13	0.19	0.19	0.24	0.30	0.30	0.03	0.25		0.18	0.40	0.40
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)	433	945	294	431	565	480	47	1240		615	2046	636
v/s Ratio Prot	0.12	0.02		c0.24	c0.29		0.02	c0.24		c0.18	0.26	
v/s Ratio Perm			0.00			0.09						0.33
v/c Ratio	0.98	0.12	0.01	0.98	0.96	0.30	0.70	0.96		1.00	0.64	0.81
Uniform Delay, d1	65.6	51.0	50.0	56.7	51.6	40.2	72.7	55.8		61.8	36.2	40.0
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	37.2	0.1	0.0	38.7	28.5	0.6	32.1	17.4		35.2	0.7	8.2
Delay (s)	102.8	51.1	50.0	95.4	80.1	40.8	104.8	73.2		96.9	36.9	48.2
Level of Service	F	D	D	F	F	D	F	E		F	D	D
Approach Delay (s)		91.4			76.4			74.1			53.9	
Approach LOS		F			E			E			D	

Intersection Summary			
HCM 2000 Control Delay	66.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	150.6	Sum of lost time (s)	21.3
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	69	386	159	1141	833	58
Future Volume (vph)	69	386	159	1141	833	58
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	0.95	0.95	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	3539	3539	1547
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1547
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	75	420	173	1240	905	63
RTOR Reduction (vph)	0	323	0	0	0	33
Lane Group Flow (vph)	75	98	173	1240	905	30
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)	10.3	10.3	12.2	41.3	25.1	25.1
Effective Green, g (s)	10.3	10.3	12.2	41.3	25.1	25.1
Actuated g/C Ratio	0.17	0.17	0.20	0.67	0.41	0.41
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)	295	263	349	2365	1437	628
v/s Ratio Prot	0.04		0.10	c0.35	c0.26	
v/s Ratio Perm		c0.06				0.02
v/c Ratio	0.25	0.37	0.50	0.52	0.63	0.05
Uniform Delay, d1	22.4	22.9	22.1	5.2	14.6	11.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.9	1.1	0.2	0.9	0.0
Delay (s)	22.9	23.8	23.2	5.4	15.5	11.1
Level of Service	C	C	C	A	B	B
Approach Delay (s)	23.6			7.6	15.2	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	61.8	Sum of lost time (s)	14.2
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	451	0	280	10	0	0	230	849	0	10	759	380
Future Volume (vph)	451	0	280	10	0	0	230	849	0	10	759	380
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		5.0	5.5		4.5	5.5	5.5
Lane Util. Factor	0.97		1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	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
Frt	1.00		0.85		1.00		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95		1.00		0.95		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433		1583		1770		1770	3539		1770	3539	1558
Flt Permitted	0.75		1.00		0.95		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	2712		1583		1770		1770	3539		1770	3539	1558
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)	485	0	301	11	0	0	247	913	0	11	816	409
RTOR Reduction (vph)	0	0	227	0	0	0	0	0	0	0	0	158
Lane Group Flow (vph)	485	0	74	0	11	0	247	913	0	11	816	251
Confl. Peds. (#/hr)												1
Confl. Bikes (#/hr)												5
Turn Type	Perm		Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases					8		5	2		1	6	
Permitted Phases	4		4	8								6
Actuated Green, G (s)	19.1		19.1		19.1		15.3	43.6		0.7	28.5	28.5
Effective Green, g (s)	19.1		19.1		19.1		15.3	43.6		0.7	28.5	28.5
Actuated g/C Ratio	0.25		0.25		0.25		0.20	0.56		0.01	0.37	0.37
Clearance Time (s)	4.0		4.0		4.0		5.0	5.5		4.5	5.5	5.5
Vehicle Extension (s)	3.0		3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	669		390		436		349	1993		16	1303	573
v/s Ratio Prot							c0.14	0.26		0.01	c0.23	
v/s Ratio Perm	c0.18		0.05		0.01							0.16
v/c Ratio	0.72		0.19		0.03		0.71	0.46		0.69	0.63	0.44
Uniform Delay, d1	26.7		23.0		22.1		29.0	9.9		38.2	20.1	18.4
Progression Factor	1.00		1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.9		0.2		0.0		6.4	0.2		80.1	0.9	0.5
Delay (s)	30.6		23.3		22.1		35.4	10.1		118.3	21.0	19.0
Level of Service	C		C		C		D	B		F	C	B
Approach Delay (s)		27.8			22.1			15.5			21.2	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	20.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	77.4	Sum of lost time (s)	14.5
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	0	60	20	10	18	50	1092	20	12	919	17
Future Volume (vph)	17	0	60	20	10	18	50	1092	20	12	919	17
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	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.89			0.95		1.00	1.00		1.00	1.00	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1631			1734		1770	3529		1770	3530	
Flt Permitted		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1631			1734		1770	3529		1770	3530	
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)	18	0	65	22	11	19	54	1174	22	13	988	18
RTOR Reduction (vph)	0	76	0	0	17	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	7	0	0	35	0	54	1195	0	13	1005	0
Confl. Peds. (#/hr)			1									
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)		6.5			5.8		4.8	40.5		0.6	36.3	
Effective Green, g (s)		6.5			5.8		4.8	40.5		0.6	36.3	
Actuated g/C Ratio		0.09			0.08		0.07	0.55		0.01	0.49	
Clearance Time (s)		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	
Lane Grp Cap (vph)		144			137		115	1947		14	1745	
v/s Ratio Prot		c0.00			c0.02		c0.03	c0.34		0.01	0.28	
v/s Ratio Perm												
v/c Ratio		0.05			0.25		0.47	0.61		0.93	0.58	
Uniform Delay, d1		30.6			31.8		33.1	11.1		36.4	13.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1			1.0		3.0	0.6		201.0	0.5	
Delay (s)		30.8			32.7		36.1	11.7		237.3	13.6	
Level of Service		C			C		D	B		F	B	
Approach Delay (s)		30.8			32.7			12.8			16.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	73.4	Sum of lost time (s)	20.0
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	130	56	1226	140	106	903
Future Volume (vph)	130	56	1226	140	106	903
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	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	3466		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3466		1770	3539
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	133	57	1251	143	108	921
RTOR Reduction (vph)	0	0	8	0	0	0
Lane Group Flow (vph)	133	57	1386	0	108	921
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)	12.5	12.5	42.8		7.4	56.2
Effective Green, g (s)	12.5	12.5	42.8		7.4	56.2
Actuated g/C Ratio	0.15	0.15	0.53		0.09	0.69
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)	272	243	1826		161	2449
v/s Ratio Prot	c0.08		c0.40		c0.06	0.26
v/s Ratio Perm		0.04				
v/c Ratio	0.49	0.23	0.76		0.67	0.38
Uniform Delay, d1	31.4	30.2	15.1		35.7	5.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.4	0.5	1.9		10.5	0.1
Delay (s)	32.8	30.6	17.0		46.2	5.3
Level of Service	C	C	B		D	A
Approach Delay (s)	32.2		17.0			9.6
Approach LOS	C		B			A

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	81.2	Sum of lost time (s)	18.5
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	0	60	30	0	10	90	1268	30	20	956	17
Future Volume (vph)	8	0	60	30	0	10	90	1268	30	20	956	17
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	3523		1770	3529	
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	3523		1770	3529	
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)	9	0	65	33	0	11	98	1378	33	22	1039	18
RTOR Reduction (vph)	0	59	0	0	10	0	0	1	0	0	1	0
Lane Group Flow (vph)	9	6	0	33	1	0	98	1410	0	22	1056	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)	0.5	6.3		1.1	6.9		6.3	40.4		1.1	35.2	
Effective Green, g (s)	0.5	6.3		1.1	6.9		6.3	40.4		1.1	35.2	
Actuated g/C Ratio	0.01	0.09		0.02	0.10		0.09	0.59		0.02	0.51	
Clearance Time (s)	5.0	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	3.0	
Lane Grp Cap (vph)	12	142		28	158		161	2065		28	1802	
v/s Ratio Prot	0.01	c0.00		c0.02	0.00		c0.06	c0.40		0.01	0.30	
v/s Ratio Perm												
v/c Ratio	0.75	0.04		1.18	0.01		0.61	0.68		0.79	0.59	
Uniform Delay, d1	34.1	28.5		33.9	27.9		30.1	9.8		33.8	11.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	128.3	0.1		229.1	0.0		6.4	0.9		82.7	0.5	
Delay (s)	162.4	28.7		263.0	27.9		36.5	10.8		116.5	12.3	
Level of Service	F	C		F	C		D	B		F	B	
Approach Delay (s)		44.9			204.3			12.4			14.4	
Approach LOS		D			F			B			B	

Intersection Summary			
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	68.9	Sum of lost time (s)	20.0
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	0	60	0	0	0	50	1308	10	10	1056	10
Future Volume (vph)	20	0	60	0	0	0	50	1308	10	10	1056	10
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	3535		1770	3533	
Flt Permitted	0.95	1.00					0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1563					1770	3535		1770	3533	
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)	20	0	60	0	0	0	50	1308	10	10	1056	10
RTOR Reduction (vph)	0	54	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	20	6	0	0	0	0	50	1318	0	10	1066	0
Confl. Peds. (#/hr)			1			2			1			4
Confl. Bikes (#/hr)						2			2			5
Turn Type	Split	NA					Prot	NA		Prot	NA	
Protected Phases	4	4					5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	5.4	5.4					2.1	34.1		0.6	32.6	
Effective Green, g (s)	5.4	5.4					2.1	34.1		0.6	32.6	
Actuated g/C Ratio	0.10	0.10					0.04	0.63		0.01	0.60	
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)	176	156					68	2228		19	2128	
v/s Ratio Prot	c0.01	0.00					c0.03	c0.37		0.01	0.30	
v/s Ratio Perm												
v/c Ratio	0.11	0.04					0.74	0.59		0.53	0.50	
Uniform Delay, d1	22.2	22.0					25.7	5.9		26.6	6.1	
Progression Factor	1.00	1.00					1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.1					33.4	0.4		23.9	0.2	
Delay (s)	22.5	22.1					59.1	6.3		50.5	6.3	
Level of Service	C	C					E	A		D	A	
Approach Delay (s)		22.2			0.0			8.2			6.7	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	54.1	Sum of lost time (s)	14.0
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	260	280	200	230	57	280	1197	310	97	995	124
Future Volume (vph)	194	260	280	200	230	57	280	1197	310	97	995	124
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	0.92		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	3240		1770	3424		1770	3539	1560	1770	3539	1556
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	3240		1770	3424		1770	3539	1560	1770	3539	1556
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)	202	271	292	208	240	59	292	1247	323	101	1036	129
RTOR Reduction (vph)	0	197	0	0	22	0	0	0	105	0	0	86
Lane Group Flow (vph)	202	366	0	208	277	0	292	1247	218	101	1036	43
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)	11.9	17.5		11.9	17.5		16.9	42.4	42.4	7.3	32.8	32.8
Effective Green, g (s)	11.9	17.5		11.9	17.5		16.9	42.4	42.4	7.3	32.8	32.8
Actuated g/C Ratio	0.12	0.18		0.12	0.18		0.17	0.43	0.43	0.07	0.34	0.34
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)	215	580		215	613		306	1535	677	132	1188	522
v/s Ratio Prot	0.11	c0.11		c0.12	0.08		c0.17	c0.35		0.06	0.29	
v/s Ratio Perm									0.14			0.03
v/c Ratio	0.94	0.63		0.97	0.45		0.95	0.81	0.32	0.77	0.87	0.08
Uniform Delay, d1	42.5	37.1		42.7	35.8		40.0	24.2	18.2	44.4	30.5	22.2
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	44.1	2.2		51.5	0.5		39.0	3.4	0.3	22.8	7.3	0.1
Delay (s)	86.6	39.4		94.2	36.3		79.0	27.6	18.5	67.2	37.7	22.2
Level of Service	F	D		F	D		E	C	B	E	D	C
Approach Delay (s)		51.8			60.1			34.1			38.5	
Approach LOS		D			E			C			D	

Intersection Summary			
HCM 2000 Control Delay	41.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	97.7	Sum of lost time (s)	18.6
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	270	20	180	20	10	10	220	1567	30	80	1520	240
Future Volume (vph)	270	20	180	20	10	10	220	1567	30	80	1520	240
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	0.93		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	1611		1770	1703		1770	3526		1770	3456	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1611		1770	1703		1770	3526		1770	3456	
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)	281	21	188	21	10	10	229	1632	31	83	1583	250
RTOR Reduction (vph)	0	157	0	0	9	0	0	1	0	0	8	0
Lane Group Flow (vph)	281	52	0	21	11	0	229	1662	0	83	1825	0
Confl. Peds. (#/hr)						9			7			
Confl. Bikes (#/hr)									8			3
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)	20.3	20.1		7.6	7.4		15.1	66.4		7.6	58.9	
Effective Green, g (s)	20.3	20.1		7.6	7.4		15.1	66.4		7.6	58.9	
Actuated g/C Ratio	0.17	0.17		0.06	0.06		0.13	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	269		111	104		222	1946		111	1692	
v/s Ratio Prot	c0.16	c0.03		0.01	0.01		c0.13	0.47		0.05	c0.53	
v/s Ratio Perm												
v/c Ratio	0.94	0.19		0.19	0.10		1.03	0.85		0.75	1.08	
Uniform Delay, d1	49.4	43.1		53.4	53.3		52.6	22.8		55.4	30.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	37.0	0.4		0.8	0.4		68.9	3.9		23.7	46.6	
Delay (s)	86.4	43.5		54.3	53.7		121.5	26.7		79.1	77.3	
Level of Service	F	D		D	D		F	C		E	E	
Approach Delay (s)		68.1			54.0			38.2			77.3	
Approach LOS		E			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	59.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	120.3	Sum of lost time (s)	18.6
Intersection Capacity Utilization	95.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	476	990	430	620	670	118	720	1203	500	162	1158	325
Future Volume (vph)	476	990	430	620	670	118	720	1203	500	162	1158	325
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	5.3
Lane Util. Factor	0.97	0.95	0.88	0.94	0.95		0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	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	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	2701	4990	3448		3433	3539	1557	3433	3539	1557
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	2701	4990	3448		3433	3539	1557	3433	3539	1557
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)	512	1065	462	667	720	127	774	1294	538	174	1245	349
RTOR Reduction (vph)	0	0	225	0	10	0	0	0	39	0	0	146
Lane Group Flow (vph)	512	1065	237	667	837	0	774	1294	499	174	1245	203
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	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	20.8	37.7	37.7	14.8	32.0		26.8	64.7	79.5	8.0	46.7	46.7
Effective Green, g (s)	20.8	37.7	37.7	14.8	32.0		26.8	64.7	79.5	8.0	46.7	46.7
Actuated g/C Ratio	0.14	0.26	0.26	0.10	0.22		0.18	0.45	0.55	0.06	0.32	0.32
Clearance Time (s)	4.2	5.3	5.3	4.2	5.0		4.2	5.3	4.2	5.0	5.3	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)	492	920	702	509	760		634	1579	853	189	1139	501
v/s Ratio Prot	c0.15	c0.30		c0.13	0.24		c0.23	0.37	0.06	0.05	c0.35	
v/s Ratio Perm			0.09						0.26			0.13
v/c Ratio	1.04	1.16	0.34	1.31	1.10		1.22	0.82	0.58	0.92	1.09	0.41
Uniform Delay, d1	62.1	53.6	43.5	65.1	56.5		59.1	35.1	21.8	68.2	49.1	38.3
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	51.5	83.2	0.3	153.3	63.9		113.2	3.5	1.0	43.5	55.8	0.5
Delay (s)	113.6	136.8	43.8	218.4	120.4		172.3	38.5	22.8	111.6	105.0	38.9
Level of Service	F	F	D	F	F		F	D	C	F	F	D
Approach Delay (s)		109.9			163.6			75.0			92.6	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	104.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	19.8
Intersection Capacity Utilization	107.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	840	0	350	0	1943	850	0	1776	532
Future Volume (vph)	0	0	0	840	0	350	0	1943	850	0	1776	532
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	0.96		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	1516		5085	1548
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3433		2787		5085	1516		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	875	0	365	0	2024	885	0	1850	554
RTOR Reduction (vph)	0	0	0	0	0	14	0	0	0	0	0	237
Lane Group Flow (vph)	0	0	0	875	0	351	0	2024	885	0	1850	317
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)				41.4		41.4		68.7	110.1		68.7	68.7
Effective Green, g (s)				41.4		41.4		68.7	110.1		68.7	68.7
Actuated g/C Ratio				0.34		0.34		0.57	0.92		0.57	0.57
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)				1184		961		2911	1449		2911	886
v/s Ratio Prot				c0.25		0.13		c0.40	0.21		0.36	
v/s Ratio Perm									0.37			0.20
v/c Ratio				0.74		0.37		0.70	0.61		0.64	0.36
Uniform Delay, d1				34.6		29.5		18.2	0.9		17.2	13.8
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				2.5		0.2		1.4	0.8		1.1	1.1
Delay (s)				37.0		29.7		19.6	1.7		18.3	14.9
Level of Service				D		C		B	A		B	B
Approach Delay (s)		0.0			34.9			14.2			17.5	
Approach LOS		A			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	248	40	600	0	0	0	0	2515	1120	380	2196	0
Future Volume (vph)	248	40	600	0	0	0	0	2515	1120	380	2196	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	0.98					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	0.88	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	1466	1481					5085	1561	3433	5085	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1681	1466	1481					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)	258	42	625	0	0	0	0	2620	1167	396	2288	0
RTOR Reduction (vph)	0	8	36	0	0	0	0	0	267	0	0	0
Lane Group Flow (vph)	232	341	308	0	0	0	0	2620	900	396	2288	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)	36.4	36.4	36.4					82.1	82.1	17.4	103.7	
Effective Green, g (s)	36.4	36.4	36.4					82.1	82.1	17.4	103.7	
Actuated g/C Ratio	0.24	0.24	0.24					0.55	0.55	0.12	0.69	
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)	407	355	359					2783	854	398	3515	
v/s Ratio Prot	0.14	c0.23						0.52		c0.12	0.45	
v/s Ratio Perm			0.21						c0.58			
v/c Ratio	0.57	0.96	0.86					0.94	1.05	0.99	0.65	
Uniform Delay, d1	49.9	56.1	54.3					31.7	34.0	66.3	13.0	
Progression Factor	1.00	1.00	1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.9	36.7	18.1					8.0	46.1	43.5	0.9	
Delay (s)	51.8	92.8	72.4					39.7	80.1	109.8	13.9	
Level of Service	D	F	E					D	F	F	B	
Approach Delay (s)		74.9			0.0			52.1			28.1	
Approach LOS		E			A			D			C	

Intersection Summary			
HCM 2000 Control Delay	46.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	107.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	280	0	560	1020	360	50	440	1307	280	0	1074	230
Future Volume (vph)	280	0	560	1020	360	50	440	1307	280	0	1074	230
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	0.98		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	3474		3433	3539	1549		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	3474		3433	3539	1549		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)	295	0	589	1074	379	53	463	1376	295	0	1131	242
RTOR Reduction (vph)	0	0	52	0	11	0	0	0	111	0	0	89
Lane Group Flow (vph)	295	0	537	1074	421	0	463	1376	184	0	1131	153
Confl. Peds. (#/hr)												12
Confl. Bikes (#/hr)									2			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)	18.4		42.5	46.3	22.3		24.1	61.8	61.8		32.5	32.5
Effective Green, g (s)	18.4		42.5	46.3	22.3		24.1	61.8	61.8		32.5	32.5
Actuated g/C Ratio	0.15		0.35	0.39	0.19		0.20	0.51	0.51		0.27	0.27
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)	271		987	1324	645		689	1822	797		1377	416
v/s Ratio Prot	c0.17		0.11	c0.31	0.12		0.13	c0.39			c0.22	
v/s Ratio Perm			0.08						0.12			0.10
v/c Ratio	1.09		0.54	0.81	0.65		0.67	0.76	0.23		0.82	0.37
Uniform Delay, d1	50.8		31.0	32.9	45.3		44.3	23.1	16.0		41.0	35.4
Progression Factor	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	80.3		0.6	3.9	2.4		2.6	3.0	0.7		5.6	2.5
Delay (s)	131.1		31.6	36.8	47.7		46.9	26.1	16.7		46.6	37.9
Level of Service	F		C	D	D		D	C	B		D	D
Approach Delay (s)		64.8			39.9			29.3			45.1	
Approach LOS		E			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	41.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.7
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	247	0	180	0	0	0	0	1780	1320	150	2320	0
Future Volume (vph)	247	0	180	0	0	0	0	1780	1320	150	2320	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)	257	0	188	0	0	0	0	1854	1375	156	2417	0
RTOR Reduction (vph)	0	0	67	0	0	0	0	0	478	0	0	0
Lane Group Flow (vph)	257	0	121	0	0	0	0	1854	897	156	2417	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)	15.2		15.2					77.2	77.2	10.5	92.9	
Effective Green, g (s)	15.2		15.2					77.2	77.2	10.5	92.9	
Actuated g/C Ratio	0.13		0.13					0.64	0.64	0.09	0.77	
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)	434		200					3271	1750	300	3936	
v/s Ratio Prot	0.07							0.36		0.05	c0.48	
v/s Ratio Perm			c0.08						0.33			
v/c Ratio	0.59		0.60					0.57	0.51	0.52	0.61	
Uniform Delay, d1	49.5		49.6					12.0	11.4	52.3	5.8	
Progression Factor	1.00		1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.2		5.1					0.7	1.1	1.6	0.7	
Delay (s)	51.6		54.6					12.7	12.5	54.0	6.6	
Level of Service	D		D					B	B	D	A	
Approach Delay (s)		52.9			0.0			12.6			9.4	
Approach LOS		D			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.1
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	590	60	418	470	100	40	380	722	40	300	120
Future Volume (vph)	190	590	60	418	470	100	40	380	722	40	300	120
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	
Frpb, 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	0.96	
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	1557	3433	3539	1541	1770	3539	1583	1770	3375	
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	1557	3433	3539	1541	1770	3539	1583	1770	3375	
Peak-hour factor, PHF	0.92	0.92	1.00	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	641	60	454	511	109	43	413	785	43	326	130
RTOR Reduction (vph)	0	0	46	0	0	83	0	0	281	0	37	0
Lane Group Flow (vph)	207	641	14	454	511	26	43	413	504	43	419	0
Confl. 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)	16.3	22.9	22.9	17.7	24.3	24.3	3.7	38.0	38.0	3.8	38.1	
Effective Green, g (s)	16.3	22.9	22.9	17.7	24.3	24.3	3.7	38.0	38.0	3.8	38.1	
Actuated g/C Ratio	0.16	0.23	0.23	0.18	0.24	0.24	0.04	0.38	0.38	0.04	0.38	
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)	285	802	353	601	851	370	64	1331	595	66	1273	
v/s Ratio Prot	0.12	c0.18		c0.13	0.14		c0.02	0.12	c0.32	0.02	0.12	
v/s Ratio Perm			0.01			0.02						
v/c Ratio	0.73	0.80	0.04	0.76	0.60	0.07	0.67	0.31	0.85	0.65	0.33	
Uniform Delay, d1	40.2	36.9	30.5	39.6	34.0	29.6	48.1	22.2	28.8	47.9	22.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.9	5.6	0.0	5.4	1.2	0.1	24.3	0.1	10.8	20.7	0.2	
Delay (s)	49.1	42.5	30.5	45.0	35.2	29.7	72.4	22.4	39.7	68.7	22.5	
Level of Service	D	D	C	D	D	C	E	C	D	E	C	
Approach Delay (s)		43.2			38.8			35.0			26.5	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	37.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	101.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	76.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	740	470	10	340	370	347	10	1478	370	564	672	540
Future Volume (vph)	740	470	10	340	370	347	10	1478	370	564	672	540
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	4933		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	4933		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)	804	511	11	370	402	377	11	1607	402	613	730	587
RTOR Reduction (vph)	0	0	0	0	0	0	0	29	0	0	0	0
Lane Group Flow (vph)	804	511	11	370	402	377	11	1980	0	613	730	587
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)	25.0	29.7	148.0	23.0	27.7	148.0	1.6	54.0		20.0	72.4	148.0
Effective Green, g (s)	25.0	29.7	148.0	23.0	27.7	148.0	1.6	54.0		20.0	72.4	148.0
Actuated g/C Ratio	0.17	0.20	1.00	0.16	0.19	1.00	0.01	0.36		0.14	0.49	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)	579	1020	1583	275	348	1583	19	1799		463	2487	1583
v/s Ratio Prot	c0.23	0.10		0.21	c0.22		0.01	c0.40		c0.18	0.14	
v/s Ratio Perm			0.01			0.24						c0.37
v/c Ratio	1.39	0.50	0.01	1.35	1.16	0.24	0.58	1.10		1.32	0.29	0.37
Uniform Delay, d1	61.5	52.6	0.0	62.5	60.1	0.0	72.9	47.0		64.0	22.5	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	185.4	0.7	0.0	177.7	97.4	0.4	23.8	54.3		160.2	0.3	0.7
Delay (s)	246.9	53.2	0.0	240.2	157.6	0.4	96.7	101.3		224.2	22.8	0.7
Level of Service	F	D	A	F	F	A	F	F		F	C	A
Approach Delay (s)		170.2			132.6			101.3			80.1	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	114.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	148.0	Sum of lost time (s)	21.3
Intersection Capacity Utilization	111.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX I-2

PEAK HOUR ANALYSIS WORKSHEETS
– SAN MARCOS ALTERNATE HORIZON YEAR 2035 WITH PROJECT

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	70	150	140	660	1740	60
Future Volume (vph)	70	150	140	660	1740	60
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	0.95	0.95	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	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	163	152	717	1891	65
RTOR Reduction (vph)	0	145	0	0	0	10
Lane Group Flow (vph)	76	18	152	717	1891	55
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	13.5	13.5	16.2	97.3	77.1	77.1
Effective Green, g (s)	13.5	13.5	16.2	97.3	77.1	77.1
Actuated g/C Ratio	0.11	0.11	0.13	0.80	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)	197	176	236	2845	2255	1008
v/s Ratio Prot	c0.04		c0.09	0.20	c0.53	
v/s Ratio Perm		0.01				0.03
v/c Ratio	0.39	0.10	0.64	0.25	0.84	0.05
Uniform Delay, d1	49.9	48.3	49.7	2.9	17.1	8.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.3	5.9	0.0	2.9	0.0
Delay (s)	51.2	48.6	55.6	3.0	20.0	8.3
Level of Service	D	D	E	A	C	A
Approach Delay (s)	49.4			12.2	19.6	
Approach LOS	D			B	B	

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	121.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	0	240	10	0	0	150	410	10	10	1300	600
Future Volume (vph)	380	0	240	10	0	0	150	410	10	10	1300	600
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		5.0	5.5		5.0	5.5	5.5
Lane Util. Factor	0.97		1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00		0.99		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	1.00	1.00
Frt	1.00		0.85		1.00		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95		1.00		0.95		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433		1560		1770		1770	3527		1770	3539	1561
Flt Permitted	0.75		1.00		0.95		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	2714		1560		1770		1770	3527		1770	3539	1561
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)	396	0	250	10	0	0	156	427	10	10	1354	625
RTOR Reduction (vph)	0	0	162	0	0	0	0	2	0	0	0	135
Lane Group Flow (vph)	396	0	88	0	10	0	156	435	0	10	1354	490
Confl. Peds. (#/hr)			2									1
Confl. Bikes (#/hr)												3
Turn Type	Perm		Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases					8		5	2		1	6	
Permitted Phases	4		4	8								6
Actuated Green, G (s)	17.4		17.4		17.4		11.1	50.1		0.9	39.9	39.9
Effective Green, g (s)	17.4		17.4		17.4		11.1	50.1		0.9	39.9	39.9
Actuated g/C Ratio	0.21		0.21		0.21		0.13	0.60		0.01	0.48	0.48
Clearance Time (s)	4.0		4.0		4.0		5.0	5.5		5.0	5.5	5.5
Vehicle Extension (s)	3.0		3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	569		327		371		236	2131		19	1703	751
v/s Ratio Prot							c0.09	0.12		0.01	c0.38	
v/s Ratio Perm	c0.15		0.06		0.01							0.31
v/c Ratio	0.70		0.27		0.03		0.66	0.20		0.53	0.80	0.65
Uniform Delay, d1	30.3		27.4		26.0		34.1	7.4		40.8	18.1	16.3
Progression Factor	1.00		1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.7		0.4		0.0		6.8	0.0		23.9	2.7	2.0
Delay (s)	34.0		27.9		26.1		40.9	7.5		64.6	20.7	18.3
Level of Service	C		C		C		D	A		E	C	B
Approach Delay (s)		31.6			26.1			16.2			20.2	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	82.9	Sum of lost time (s)	14.5
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	10	50	240	20	50	30	520	240	90	1270	10
Future Volume (vph)	20	10	50	240	20	50	30	520	240	90	1270	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	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			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	
Frt		0.92			0.98		1.00	0.95		1.00	1.00	
Flt Protected		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1664			1754		1770	3348		1770	3535	
Flt Permitted		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1664			1754		1770	3348		1770	3535	
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)	21	10	52	250	21	52	31	542	250	94	1323	10
RTOR Reduction (vph)	0	48	0	0	5	0	0	37	0	0	1	0
Lane Group Flow (vph)	0	35	0	0	318	0	31	755	0	94	1332	0
Confl. Peds. (#/hr)			6						1			
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)		8.2			24.6		2.5	39.9		10.6	48.0	
Effective Green, g (s)		8.2			24.6		2.5	39.9		10.6	48.0	
Actuated g/C Ratio		0.08			0.24		0.02	0.39		0.10	0.46	
Clearance Time (s)		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	
Lane Grp Cap (vph)		132			417		42	1293		181	1642	
v/s Ratio Prot		c0.02			c0.18		0.02	0.23		c0.05	c0.38	
v/s Ratio Perm												
v/c Ratio		0.27			0.76		0.74	0.58		0.52	0.81	
Uniform Delay, d1		44.7			36.6		50.1	25.1		43.9	23.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.1			8.0		49.5	0.7		2.5	3.2	
Delay (s)		45.8			44.6		99.6	25.8		46.4	26.9	
Level of Service		D			D		F	C		D	C	
Approach Delay (s)		45.8			44.6			28.6			28.2	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	30.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	103.3	Sum of lost time (s)	20.0
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	220	250	780	70	80	1490
Future Volume (vph)	220	250	780	70	80	1490
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	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	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1563	3481		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1563	3481		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	272	848	76	87	1620
RTOR Reduction (vph)	0	0	7	0	0	0
Lane Group Flow (vph)	239	272	917	0	87	1620
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)	19.4	19.4	32.5		7.0	45.5
Effective Green, g (s)	19.4	19.4	32.5		7.0	45.5
Actuated g/C Ratio	0.25	0.25	0.42		0.09	0.59
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)	443	391	1461		160	2080
v/s Ratio Prot	0.14		0.26		0.05	c0.46
v/s Ratio Perm		c0.17				
v/c Ratio	0.54	0.70	0.63		0.54	0.78
Uniform Delay, d1	25.1	26.3	17.7		33.7	12.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	5.3	0.9		3.7	1.9
Delay (s)	26.4	31.6	18.5		37.4	14.0
Level of Service	C	C	B		D	B
Approach Delay (s)	29.2		18.5			15.2
Approach LOS	C		B			B

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	77.4	Sum of lost time (s)	18.5
Intersection Capacity Utilization	64.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	0	70	10	0	10	40	840	20	10	1820	20
Future Volume (vph)	30	0	70	10	0	10	40	840	20	10	1820	20
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	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	1583		1770	1583		1770	3525		1770	3533	
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	3525		1770	3533	
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)	33	0	76	11	0	11	43	913	22	11	1978	22
RTOR Reduction (vph)	0	67	0	0	10	0	0	1	0	0	0	0
Lane Group Flow (vph)	33	9	0	11	1	0	43	934	0	11	2000	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)	1.2	8.9		0.5	8.2		2.0	49.6		0.5	48.1	
Effective Green, g (s)	1.2	8.9		0.5	8.2		2.0	49.6		0.5	48.1	
Actuated g/C Ratio	0.02	0.11		0.01	0.10		0.03	0.63		0.01	0.61	
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)	26	178		11	164		44	2213		11	2151	
v/s Ratio Prot	c0.02	c0.01		0.01	0.00		c0.02	0.26		0.01	c0.57	
v/s Ratio Perm												
v/c Ratio	1.27	0.05		1.00	0.01		0.98	0.42		1.00	0.93	
Uniform Delay, d1	38.9	31.3		39.2	31.7		38.5	7.4		39.2	13.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	268.4	0.1		271.4	0.0		125.9	0.1		271.4	7.7	
Delay (s)	307.3	31.4		310.6	31.8		164.3	7.6		310.6	21.7	
Level of Service	F	C		F	C		F	A		F	C	
Approach Delay (s)		114.9			171.2			14.5			23.2	
Approach LOS		F			F			B			C	

Intersection Summary			
HCM 2000 Control Delay	24.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	79.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	10	50	0	0	0	50	860	10	10	1820	70
Future Volume (vph)	10	10	50	0	0	0	50	860	10	10	1820	70
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	4.0	
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	0.88					1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00					0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1607					1770	3532		1770	3516	
Flt Permitted	0.95	1.00					0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1607					1770	3532		1770	3516	
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)	11	11	54	0	0	0	54	935	11	11	1978	76
RTOR Reduction (vph)	0	49	0	0	0	0	0	1	0	0	2	0
Lane Group Flow (vph)	11	16	0	0	0	0	54	945	0	11	2052	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)	8.0	8.0					3.0	61.7		0.8	59.5	
Effective Green, g (s)	8.0	8.0					3.0	61.7		0.8	59.5	
Actuated g/C Ratio	0.09	0.09					0.04	0.73		0.01	0.70	
Clearance Time (s)	4.0	4.0					6.0	6.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0					3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	167	152					62	2578		16	2475	
v/s Ratio Prot	0.01	c0.01					c0.03	c0.27		0.01	c0.58	
v/s Ratio Perm												
v/c Ratio	0.07	0.11					0.87	0.37		0.69	0.83	
Uniform Delay, d1	34.8	35.0					40.6	4.2		41.7	8.9	
Progression Factor	1.00	1.00					1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.3					70.2	0.1		80.1	2.4	
Delay (s)	35.0	35.3					110.8	4.3		121.8	11.3	
Level of Service	D	D					F	A		F	B	
Approach Delay (s)		35.2			0.0			10.0			11.9	
Approach LOS		D			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	84.5	Sum of lost time (s)	14.0
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Year 2035 ALT + Proj AM
18: Twin Oaks Valley Rd & Borden Rd

Sierra Project
03/17/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	50	280	300	120	40	110	660	70	20	1470	160
Future Volume (vph)	70	50	280	300	120	40	110	660	70	20	1470	160
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	0.96		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	3027		1770	3393		1770	3539	1555	1770	3539	1548
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	3027		1770	3393		1770	3539	1555	1770	3539	1548
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)	74	53	295	316	126	42	116	695	74	21	1547	168
RTOR Reduction (vph)	0	131	0	0	20	0	0	0	33	0	0	60
Lane Group Flow (vph)	74	217	0	316	148	0	116	695	41	21	1547	108
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)	11.1	19.2		32.9	41.0		14.3	90.8	90.8	3.5	80.0	80.0
Effective Green, g (s)	11.1	19.2		32.9	41.0		14.3	90.8	90.8	3.5	80.0	80.0
Actuated g/C Ratio	0.07	0.12		0.20	0.25		0.09	0.55	0.55	0.02	0.48	0.48
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)	119	352		352	843		153	1947	855	37	1715	750
v/s Ratio Prot	0.04	c0.07		c0.18	0.04		c0.07	0.20		0.01	c0.44	
v/s Ratio Perm									0.03			0.07
v/c Ratio	0.62	0.94dr		0.90	0.18		0.76	0.36	0.05	0.57	0.90	0.14
Uniform Delay, d1	74.9	69.4		64.4	48.7		73.7	20.8	17.1	80.0	38.9	23.5
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	9.7	3.2		24.2	0.1		19.1	0.1	0.0	18.4	7.0	0.1
Delay (s)	84.6	72.6		88.6	48.8		92.8	20.9	17.2	98.4	45.9	23.6
Level of Service	F	E		F	D		F	C	B	F	D	C
Approach Delay (s)		74.7			74.8			30.0			44.4	
Approach LOS		E			E			C			D	

Intersection Summary			
HCM 2000 Control Delay	48.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	165.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	92.2%	ICU Level of Service	F
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Year 2035 ALT + Proj AM
19: Twin Oaks Valley Rd & Richmar Ave

Sierra Project
03/17/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	240	10	170	20	10	10	90	850	20	30	1730	320
Future Volume (vph)	240	10	170	20	10	10	90	850	20	30	1730	320
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	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	0.86		1.00	0.93		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	1578		1770	1704		1770	3524		1770	3440	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1578		1770	1704		1770	3524		1770	3440	
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)	242	10	172	20	10	10	91	859	20	30	1747	323
RTOR Reduction (vph)	0	148	0	0	9	0	0	1	0	0	9	0
Lane Group Flow (vph)	242	34	0	20	11	0	91	878	0	30	2061	0
Confl. Peds. (#/hr)						8			4			2
Confl. Bikes (#/hr)			1						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)	17.3	17.3		7.6	7.6		7.1	75.0		3.8	71.7	
Effective Green, g (s)	17.3	17.3		7.6	7.6		7.1	75.0		3.8	71.7	
Actuated g/C Ratio	0.14	0.14		0.06	0.06		0.06	0.61		0.03	0.59	
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)	250	223		109	105		102	2161		54	2016	
v/s Ratio Prot	c0.14	0.02		c0.01	0.01		c0.05	c0.25		0.02	c0.60	
v/s Ratio Perm												
v/c Ratio	0.97	0.15		0.18	0.10		0.89	0.41		0.56	1.02	
Uniform Delay, d1	52.2	46.1		54.4	54.1		57.2	12.2		58.4	25.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	47.5	0.3		0.8	0.4		55.9	0.1		11.8	25.9	
Delay (s)	99.7	46.4		55.2	54.6		113.1	12.3		70.2	51.2	
Level of Service	F	D		E	D		F	B		E	D	
Approach Delay (s)		76.8			54.9			21.8			51.5	
Approach LOS		E			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	46.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	122.3	Sum of lost time (s)	18.6
Intersection Capacity Utilization	95.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	240	420	450	560	700	50	410	670	560	140	1340	440
Future Volume (vph)	240	420	450	560	700	50	410	670	560	140	1340	440
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	5.3
Lane Util. Factor	0.97	0.95	0.88	0.94	0.95		0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99
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	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	2712	4990	3499		3433	3539	1565	3433	3539	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	2712	4990	3499		3433	3539	1565	3433	3539	1562
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)	245	429	459	571	714	51	418	684	571	143	1367	449
RTOR Reduction (vph)	0	0	249	0	5	0	0	0	34	0	0	160
Lane Group Flow (vph)	245	429	210	571	760	0	418	684	537	143	1367	289
Confl. Peds. (#/hr)			5			4			1			1
Confl. Bikes (#/hr)			8			3			3			
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	11.2	26.1	26.1	15.0	30.2		15.4	54.4	69.4	8.6	47.6	47.6
Effective Green, g (s)	11.2	26.1	26.1	15.0	30.2		15.4	54.4	69.4	8.6	47.6	47.6
Actuated g/C Ratio	0.09	0.21	0.21	0.12	0.25		0.13	0.44	0.56	0.07	0.39	0.39
Clearance Time (s)	4.2	5.3	5.3	4.2	5.0		4.2	5.3	4.2	4.2	5.3	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)	312	750	575	608	858		429	1563	882	239	1368	603
v/s Ratio Prot	0.07	0.12		c0.11	c0.22		c0.12	0.19	0.07	0.04	c0.39	
v/s Ratio Perm			0.08						0.27			0.18
v/c Ratio	0.79	0.57	0.37	0.94	0.89		0.97	0.44	0.61	0.60	1.00	0.48
Uniform Delay, d1	54.8	43.5	41.4	53.6	44.8		53.7	23.8	17.8	55.6	37.7	28.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.2	1.1	0.4	22.3	10.9		36.5	0.2	1.2	4.0	24.0	0.6
Delay (s)	67.0	44.6	41.8	75.9	55.7		90.1	24.0	19.0	59.6	61.7	29.0
Level of Service	E	D	D	E	E		F	C	B	E	E	C
Approach Delay (s)		48.3			64.3			38.8			54.1	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	51.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	123.1	Sum of lost time (s)	19.0
Intersection Capacity Utilization	92.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	720	0	320	0	1320	620	0	1820	680
Future Volume (vph)	0	0	0	720	0	320	0	1320	620	0	1820	680
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	0.97
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	1539		5085	1543
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3433		2787		5085	1539		5085	1543
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	735	0	327	0	1347	633	0	1857	694
RTOR Reduction (vph)	0	0	0	0	0	54	0	0	0	0	0	243
Lane Group Flow (vph)	0	0	0	735	0	273	0	1347	633	0	1857	451
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)				32.2		32.2		77.9	110.1		77.9	77.9
Effective Green, g (s)				32.2		32.2		77.9	110.1		77.9	77.9
Actuated g/C Ratio				0.27		0.27		0.65	0.92		0.65	0.65
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)				921		747		3301	1471		3301	1001
v/s Ratio Prot				c0.21				0.26	0.12		c0.37	
v/s Ratio Perm						0.10			0.30			0.29
v/c Ratio				0.80		0.37		0.41	0.43		0.56	0.45
Uniform Delay, d1				40.9		35.6		10.0	0.7		11.6	10.4
Progression Factor				1.00		1.00		0.45	9.63		1.00	1.00
Incremental Delay, d2				4.6		0.1		0.2	0.0		0.7	1.5
Delay (s)				45.4		35.7		4.7	6.5		12.3	11.9
Level of Service				D		D		A	A		B	B
Approach Delay (s)		0.0			42.4			5.3			12.2	
Approach LOS		A			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	680	10	900	0	0	0	0	1270	740	370	2170	0
Future Volume (vph)	680	10	900	0	0	0	0	1270	740	370	2170	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	0.89	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	1475	1485					5085	1553	3433	5085	
Flt Permitted	0.95	0.99	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1681	1475	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)	701	10	928	0	0	0	0	1309	763	381	2237	0
RTOR Reduction (vph)	0	1	35	0	0	0	0	0	509	0	0	0
Lane Group Flow (vph)	568	541	494	0	0	0	0	1309	254	381	2237	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)	49.6	49.6	49.6					40.0	40.0	16.3	60.5	
Effective Green, g (s)	49.6	49.6	49.6					40.0	40.0	16.3	60.5	
Actuated g/C Ratio	0.41	0.41	0.41					0.33	0.33	0.14	0.50	
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)	694	609	613					1695	517	466	2563	
v/s Ratio Prot	0.34	c0.37						0.26		0.11	c0.44	
v/s Ratio Perm			0.33						0.16			
v/c Ratio	0.82	0.89	0.81					0.77	0.49	0.82	0.87	
Uniform Delay, d1	31.2	32.6	31.0					35.9	31.9	50.4	26.3	
Progression Factor	1.00	1.00	1.00					1.00	1.00	1.13	1.21	
Incremental Delay, d2	7.5	14.7	7.7					3.5	3.3	9.0	3.7	
Delay (s)	38.7	47.3	38.6					39.4	35.2	66.2	35.7	
Level of Service	D	D	D					D	D	E	D	
Approach Delay (s)		41.5			0.0			37.9			40.2	
Approach LOS		D			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	39.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	96.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	0	580	1130	410	20	380	470	140	0	1080	240
Future Volume (vph)	200	0	580	1130	410	20	380	470	140	0	1080	240
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	3512		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	3512		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)	206	0	598	1165	423	21	392	485	144	0	1113	247
RTOR Reduction (vph)	0	0	58	0	3	0	0	0	73	0	0	86
Lane Group Flow (vph)	206	0	540	1165	441	0	392	485	71	0	1113	161
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)	15.9		34.1	48.8	27.3		18.2	59.3	59.3		35.9	35.9
Effective Green, g (s)	15.9		34.1	48.8	27.3		18.2	59.3	59.3		35.9	35.9
Actuated g/C Ratio	0.13		0.28	0.41	0.23		0.15	0.49	0.49		0.30	0.30
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)	234		791	1396	798		520	1748	782		1521	462
v/s Ratio Prot	0.12		0.10	c0.34	0.13		c0.11	0.14			c0.22	
v/s Ratio Perm			0.09						0.04			0.10
v/c Ratio	0.88		0.68	0.83	0.55		0.75	0.28	0.09		0.73	0.35
Uniform Delay, d1	51.1		38.1	32.0	41.0		48.8	17.8	16.1		37.7	32.9
Progression Factor	1.00		1.00	1.00	1.00		0.94	1.60	4.74		1.00	1.00
Incremental Delay, d2	29.5		2.4	4.5	0.8		6.0	0.4	0.2		3.1	2.1
Delay (s)	80.6		40.6	36.4	41.8		51.6	28.9	76.4		40.9	35.0
Level of Service	F		D	D	D		D	C	E		D	C
Approach Delay (s)		50.9			37.9			44.3			39.8	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	42.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.7
Intersection Capacity Utilization	90.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	0	260	0	0	0	0	830	840	190	2450	0
Future Volume (vph)	180	0	260	0	0	0	0	830	840	190	2450	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)	188	0	271	0	0	0	0	865	875	198	2552	0
RTOR Reduction (vph)	0	0	64	0	0	0	0	0	359	0	0	0
Lane Group Flow (vph)	188	0	207	0	0	0	0	865	516	198	2552	0
Confl. Peds. (#/hr)												6
Confl. Bikes (#/hr)									3			4
Turn Type	Prot		Perm					NA	Perm	Prot	NA	
Protected Phases	4							2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	20.6		20.6					70.7	70.7	11.6	87.5	
Effective Green, g (s)	20.6		20.6					70.7	70.7	11.6	87.5	
Actuated g/C Ratio	0.17		0.17					0.59	0.59	0.10	0.73	
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)	589		271					2995	1606	331	3707	
v/s Ratio Prot	0.05							0.17		0.06	c0.50	
v/s Ratio Perm			c0.13						0.19			
v/c Ratio	0.32		0.76					0.29	0.32	0.60	0.69	
Uniform Delay, d1	43.6		47.4					12.2	12.5	52.0	8.8	
Progression Factor	1.00		1.00					1.00	1.00	1.15	0.52	
Incremental Delay, d2	0.3		12.1					0.2	0.5	2.5	0.9	
Delay (s)	43.9		59.5					12.4	13.0	62.4	5.5	
Level of Service	D		E					B	B	E	A	
Approach Delay (s)		53.1			0.0			12.7			9.6	
Approach LOS		D			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.1
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	320	20	740	540	80	10	80	340	100	450	50
Future Volume (vph)	30	320	20	740	540	80	10	80	340	100	450	50
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	
Frpb, 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	0.99	
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	1529	1770	3539	1583	1770	3486	
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	1529	1770	3539	1583	1770	3486	
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)	33	348	22	804	587	87	11	87	370	109	489	54
RTOR Reduction (vph)	0	0	18	0	0	47	0	0	313	0	5	0
Lane Group Flow (vph)	33	348	4	804	587	40	11	87	57	109	538	0
Confl. 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)	4.7	18.7	18.7	29.4	43.4	43.4	0.9	14.4	14.4	12.5	26.0	
Effective Green, g (s)	4.7	18.7	18.7	29.4	43.4	43.4	0.9	14.4	14.4	12.5	26.0	
Actuated g/C Ratio	0.05	0.20	0.20	0.31	0.46	0.46	0.01	0.15	0.15	0.13	0.28	
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)	88	707	311	1078	1640	708	17	544	243	236	968	
v/s Ratio Prot	0.02	c0.10		c0.23	0.17		0.01	0.02	0.04	c0.06	c0.15	
v/s Ratio Perm			0.00			0.03						
v/c Ratio	0.38	0.49	0.01	0.75	0.36	0.06	0.65	0.16	0.23	0.46	0.56	
Uniform Delay, d1	43.0	33.2	30.1	28.8	16.1	13.8	46.2	34.4	34.8	37.4	28.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.7	0.5	0.0	2.8	0.1	0.0	62.0	0.1	0.5	1.4	0.7	
Delay (s)	45.7	33.8	30.1	31.6	16.3	13.9	108.2	34.5	35.3	38.9	29.6	
Level of Service	D	C	C	C	B	B	F	C	D	D	C	
Approach Delay (s)		34.6			24.5			36.8			31.1	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	29.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	93.6	Sum of lost time (s)	18.6
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	390	100	10	390	500	270	30	950	170	600	1220	700
Future Volume (vph)	390	100	10	390	500	270	30	950	170	600	1220	700
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	4969		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	4969		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)	424	109	11	424	543	293	33	1033	185	652	1326	761
RTOR Reduction (vph)	0	0	9	0	0	143	0	17	0	0	0	242
Lane Group Flow (vph)	424	109	2	424	543	150	33	1201	0	652	1326	519
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)	19.0	27.5	27.5	36.8	45.3	45.3	4.0	37.6		28.0	61.6	61.6
Effective Green, g (s)	19.0	27.5	27.5	36.8	45.3	45.3	4.0	37.6		28.0	61.6	61.6
Actuated g/C Ratio	0.13	0.18	0.18	0.24	0.30	0.30	0.03	0.25		0.19	0.41	0.41
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)	431	924	287	430	558	474	46	1235		635	2071	644
v/s Ratio Prot	0.12	0.02		c0.24	c0.29		0.02	c0.24		c0.19	0.26	
v/s Ratio Perm			0.00			0.09						0.33
v/c Ratio	0.98	0.12	0.01	0.99	0.97	0.32	0.72	0.97		1.03	0.64	0.81
Uniform Delay, d1	65.9	51.7	50.7	56.9	52.3	41.0	73.0	56.3		61.6	35.9	39.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	38.7	0.1	0.0	39.3	31.3	0.7	35.7	19.2		42.7	0.8	7.7
Delay (s)	104.7	51.8	50.7	96.2	83.7	41.6	108.7	75.5		104.3	36.7	47.2
Level of Service	F	D	D	F	F	D	F	E		F	D	D
Approach Delay (s)		93.0			78.1			76.3			55.7	
Approach LOS		F			E			E			E	

Intersection Summary			
HCM 2000 Control Delay	68.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	151.2	Sum of lost time (s)	21.3
Intersection Capacity Utilization	94.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	80	390	170	1620	1080	70
Future Volume (vph)	80	390	170	1620	1080	70
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	0.95	0.95	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	3539	3539	1547
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1547
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	424	185	1761	1174	76
RTOR Reduction (vph)	0	309	0	0	0	28
Lane Group Flow (vph)	87	115	185	1761	1174	48
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)	11.2	11.2	13.2	50.0	32.8	32.8
Effective Green, g (s)	11.2	11.2	13.2	50.0	32.8	32.8
Actuated g/C Ratio	0.16	0.16	0.18	0.70	0.46	0.46
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)	277	248	327	2478	1625	710
v/s Ratio Prot	0.05		0.10	c0.50	0.33	
v/s Ratio Perm		c0.07				0.03
v/c Ratio	0.31	0.47	0.57	0.71	0.72	0.07
Uniform Delay, d1	26.7	27.4	26.5	6.4	15.6	10.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	1.4	2.2	1.0	1.6	0.0
Delay (s)	27.3	28.8	28.7	7.4	17.2	10.8
Level of Service	C	C	C	A	B	B
Approach Delay (s)	28.5			9.4	16.8	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	14.2
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	680	0	280	10	0	0	230	1110	0	10	880	510
Future Volume (vph)	680	0	280	10	0	0	230	1110	0	10	880	510
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		5.0	5.5		4.5	5.5	5.5
Lane Util. Factor	0.97		1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	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
Frt	1.00		0.85		1.00		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95		1.00		0.95		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433		1583		1770		1770	3539		1770	3539	1558
Flt Permitted	0.75		1.00		0.95		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	2712		1583		1770		1770	3539		1770	3539	1558
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)	731	0	301	11	0	0	247	1194	0	11	946	548
RTOR Reduction (vph)	0	0	215	0	0	0	0	0	0	0	0	184
Lane Group Flow (vph)	731	0	86	0	11	0	247	1194	0	11	946	364
Confl. Peds. (#/hr)												1
Confl. Bikes (#/hr)												5
Turn Type	Perm		Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases					8		5	2		1	6	
Permitted Phases	4		4	8								6
Actuated Green, G (s)	25.0		25.0		25.0		16.1	47.3		0.7	31.4	31.4
Effective Green, g (s)	25.0		25.0		25.0		16.1	47.3		0.7	31.4	31.4
Actuated g/C Ratio	0.29		0.29		0.29		0.19	0.54		0.01	0.36	0.36
Clearance Time (s)	4.0		4.0		4.0		5.0	5.5		4.5	5.5	5.5
Vehicle Extension (s)	3.0		3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	779		454		508		327	1924		14	1277	562
v/s Ratio Prot							c0.14	0.34		0.01	c0.27	
v/s Ratio Perm	c0.27		0.05		0.01							0.23
v/c Ratio	0.94		0.19		0.02		0.76	0.62		0.79	0.74	0.65
Uniform Delay, d1	30.2		23.4		22.2		33.6	13.7		43.1	24.3	23.2
Progression Factor	1.00		1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	18.7		0.2		0.0		9.5	0.6		130.6	2.4	2.6
Delay (s)	48.9		23.6		22.2		43.1	14.3		173.6	26.6	25.8
Level of Service	D		C		C		D	B		F	C	C
Approach Delay (s)		41.5			22.2			19.2			27.4	
Approach LOS		D			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	28.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	87.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Year 2035 ALT + Proj PM
14: Twin Oaks Valley Rd & Cassou Rd

Sierra Project
03/17/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	0	60	20	10	40	50	1320	20	20	1020	20
Future Volume (vph)	20	0	60	20	10	40	50	1320	20	20	1020	20
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	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.90			0.92		1.00	1.00		1.00	1.00	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1638			1696		1770	3531		1770	3529	
Flt Permitted		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1638			1696		1770	3531		1770	3529	
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)	22	0	65	22	11	43	54	1419	22	22	1097	22
RTOR Reduction (vph)	0	80	0	0	39	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	7	0	0	37	0	54	1441	0	22	1118	0
Confl. Peds. (#/hr)			1									
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)		7.1			8.0		4.8	50.9		1.7	47.8	
Effective Green, g (s)		7.1			8.0		4.8	50.9		1.7	47.8	
Actuated g/C Ratio		0.08			0.09		0.05	0.58		0.02	0.55	
Clearance Time (s)		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	
Lane Grp Cap (vph)		132			154		96	2049		34	1923	
v/s Ratio Prot		c0.00			c0.02		c0.03	c0.41		0.01	0.32	
v/s Ratio Perm												
v/c Ratio		0.05			0.24		0.56	0.70		0.65	0.58	
Uniform Delay, d1		37.2			37.0		40.4	13.0		42.7	13.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			0.8		7.3	1.1		35.3	0.5	
Delay (s)		37.4			37.8		47.8	14.2		78.0	13.7	
Level of Service		D			D		D	B		E	B	
Approach Delay (s)		37.4			37.8			15.4			15.0	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	87.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Year 2035 ALT + Proj PM
15: Twin Oaks Valley Rd & La Cienega

Sierra Project
03/17/2017

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	130	70	1440	140	120	990
Future Volume (vph)	130	70	1440	140	120	990
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	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	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3475		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3475		1770	3539
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	133	71	1469	143	122	1010
RTOR Reduction (vph)	0	0	6	0	0	0
Lane Group Flow (vph)	133	71	1606	0	122	1010
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)	12.8	12.8	48.1		9.5	63.6
Effective Green, g (s)	12.8	12.8	48.1		9.5	63.6
Actuated g/C Ratio	0.14	0.14	0.54		0.11	0.72
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)	254	227	1880		189	2531
v/s Ratio Prot	c0.08		c0.46		c0.07	0.29
v/s Ratio Perm		0.04				
v/c Ratio	0.52	0.31	0.85		0.65	0.40
Uniform Delay, d1	35.2	34.1	17.4		38.1	5.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.9	0.8	4.0		7.4	0.1
Delay (s)	37.2	34.9	21.4		45.4	5.1
Level of Service	D	C	C		D	A
Approach Delay (s)	36.4		21.4			9.5
Approach LOS	D		C			A

Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	88.9	Sum of lost time (s)	18.5
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	0	60	30	0	10	90	1480	30	20	1040	20
Future Volume (vph)	10	0	60	30	0	10	90	1480	30	20	1040	20
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	3525		1770	3527	
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	3525		1770	3527	
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)	11	0	65	33	0	11	98	1609	33	22	1130	22
RTOR Reduction (vph)	0	59	0	0	10	0	0	1	0	0	1	0
Lane Group Flow (vph)	11	6	0	33	1	0	98	1641	0	22	1151	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)	0.5	6.8		1.2	7.5		6.6	45.4		1.2	40.0	
Effective Green, g (s)	0.5	6.8		1.2	7.5		6.6	45.4		1.2	40.0	
Actuated g/C Ratio	0.01	0.09		0.02	0.10		0.09	0.61		0.02	0.54	
Clearance Time (s)	5.0	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	3.0	
Lane Grp Cap (vph)	11	142		28	159		156	2145		28	1891	
v/s Ratio Prot	0.01	c0.00		c0.02	0.00		c0.06	c0.47		0.01	0.33	
v/s Ratio Perm												
v/c Ratio	1.00	0.04		1.18	0.01		0.63	0.76		0.79	0.61	
Uniform Delay, d1	37.0	30.9		36.7	30.2		32.8	10.7		36.6	11.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	271.4	0.1		229.1	0.0		7.7	1.7		82.7	0.6	
Delay (s)	308.4	31.0		265.8	30.2		40.5	12.4		119.3	12.5	
Level of Service	F	C		F	C		D	B		F	B	
Approach Delay (s)		71.2			206.9			14.0			14.5	
Approach LOS		E			F			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	74.6	Sum of lost time (s)	20.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	0	60	0	0	0	50	1520	10	10	1140	10
Future Volume (vph)	20	0	60	0	0	0	50	1520	10	10	1140	10
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	3535		1770	3534	
Flt Permitted	0.95	1.00					0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1563					1770	3535		1770	3534	
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)	20	0	60	0	0	0	50	1520	10	10	1140	10
RTOR Reduction (vph)	0	54	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	20	6	0	0	0	0	50	1530	0	10	1150	0
Confl. Peds. (#/hr)			1			2			1			4
Confl. Bikes (#/hr)						2			2			5
Turn Type	Split	NA					Prot	NA		Prot	NA	
Protected Phases	4	4					5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	5.6	5.6					3.6	37.4		0.6	34.4	
Effective Green, g (s)	5.6	5.6					3.6	37.4		0.6	34.4	
Actuated g/C Ratio	0.10	0.10					0.06	0.65		0.01	0.60	
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)	172	151					110	2295		18	2110	
v/s Ratio Prot	c0.01	0.00					c0.03	c0.43		0.01	0.33	
v/s Ratio Perm												
v/c Ratio	0.12	0.04					0.45	0.67		0.56	0.54	
Uniform Delay, d1	23.7	23.6					26.1	6.2		28.4	6.9	
Progression Factor	1.00	1.00					1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.1					3.0	0.7		32.3	0.3	
Delay (s)	24.0	23.7					29.0	7.0		60.7	7.2	
Level of Service	C	C					C	A		E	A	
Approach Delay (s)		23.8			0.0			7.7			7.7	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	57.6	Sum of lost time (s)	14.0
Intersection Capacity Utilization	55.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	260	280	200	230	60	280	1370	310	100	1060	140
Future Volume (vph)	230	260	280	200	230	60	280	1370	310	100	1060	140
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	0.92		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	3240		1770	3418		1770	3539	1560	1770	3539	1556
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	3240		1770	3418		1770	3539	1560	1770	3539	1556
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)	240	271	292	208	240	62	292	1427	323	104	1104	146
RTOR Reduction (vph)	0	197	0	0	24	0	0	0	91	0	0	96
Lane Group Flow (vph)	240	366	0	208	279	0	292	1427	232	104	1104	50
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)	11.8	17.6		11.8	17.6		16.9	43.5	43.5	7.3	33.9	33.9
Effective Green, g (s)	11.8	17.6		11.8	17.6		16.9	43.5	43.5	7.3	33.9	33.9
Actuated g/C Ratio	0.12	0.18		0.12	0.18		0.17	0.44	0.44	0.07	0.34	0.34
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)	211	577		211	608		302	1558	686	130	1214	533
v/s Ratio Prot	c0.14	c0.11		0.12	0.08		c0.17	c0.40		0.06	0.31	
v/s Ratio Perm									0.15			0.03
v/c Ratio	1.14	0.63		0.99	0.46		0.97	0.92	0.34	0.80	0.91	0.09
Uniform Delay, d1	43.5	37.6		43.4	36.3		40.7	25.9	18.2	45.0	31.0	22.0
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	103.9	2.3		57.4	0.6		42.4	8.7	0.3	28.6	10.0	0.1
Delay (s)	147.4	39.9		100.8	36.9		83.0	34.7	18.5	73.6	41.0	22.1
Level of Service	F	D		F	D		F	C	B	E	D	C
Approach Delay (s)		72.0			62.9			39.0			41.5	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	48.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	98.8	Sum of lost time (s)	18.6
Intersection Capacity Utilization	88.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	270	20	180	20	10	10	220	1740	30	80	1585	240
Future Volume (vph)	270	20	180	20	10	10	220	1740	30	80	1585	240
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	0.93		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	1611		1770	1703		1770	3527		1770	3459	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1611		1770	1703		1770	3527		1770	3459	
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)	281	21	188	21	10	10	229	1812	31	83	1651	250
RTOR Reduction (vph)	0	156	0	0	9	0	0	1	0	0	8	0
Lane Group Flow (vph)	281	53	0	21	11	0	229	1843	0	83	1893	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)	20.3	20.3		7.6	7.6		14.1	67.9		6.1	59.9	
Effective Green, g (s)	20.3	20.3		7.6	7.6		14.1	67.9		6.1	59.9	
Actuated g/C Ratio	0.17	0.17		0.06	0.06		0.12	0.56		0.05	0.50	
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	271		111	107		207	1987		89	1719	
v/s Ratio Prot	c0.16	0.03		c0.01	0.01		c0.13	0.52		0.05	c0.55	
v/s Ratio Perm												
v/c Ratio	0.94	0.19		0.19	0.10		1.11	0.93		0.93	1.10	
Uniform Delay, d1	49.5	43.1		53.5	53.2		53.2	24.1		57.0	30.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	37.0	0.4		0.8	0.4		93.9	8.1		73.0	55.1	
Delay (s)	86.5	43.4		54.4	53.6		147.1	32.2		130.0	85.4	
Level of Service	F	D		D	D		F	C		F	F	
Approach Delay (s)		68.1			54.0			44.9			87.3	
Approach LOS		E			D			D			F	

Intersection Summary			
HCM 2000 Control Delay	65.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	120.5	Sum of lost time (s)	18.6
Intersection Capacity Utilization	97.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	540	990	430	620	670	140	720	1290	500	170	1190	350
Future Volume (vph)	540	990	430	620	670	140	720	1290	500	170	1190	350
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	5.3
Lane Util. Factor	0.97	0.95	0.88	0.94	0.95		0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	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	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	2701	4990	3434		3433	3539	1558	3433	3539	1557
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	2701	4990	3434		3433	3539	1558	3433	3539	1557
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)	581	1065	462	667	720	151	774	1387	538	183	1280	376
RTOR Reduction (vph)	0	0	225	0	12	0	0	0	25	0	0	152
Lane Group Flow (vph)	581	1065	237	667	859	0	774	1387	513	183	1280	224
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	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	20.8	38.7	38.7	17.8	36.0		25.8	60.3	78.1	8.4	43.7	43.7
Effective Green, g (s)	20.8	38.7	38.7	17.8	36.0		25.8	60.3	78.1	8.4	43.7	43.7
Actuated g/C Ratio	0.14	0.27	0.27	0.12	0.25		0.18	0.42	0.54	0.06	0.30	0.30
Clearance Time (s)	4.2	5.3	5.3	4.2	5.0		4.2	5.3	4.2	5.0	5.3	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)	492	944	720	612	852		610	1471	839	198	1066	469
v/s Ratio Prot	c0.17	c0.30		0.13	0.25		c0.23	0.39	0.07	0.05	c0.36	
v/s Ratio Perm			0.09						0.25			0.14
v/c Ratio	1.18	1.13	0.33	1.09	1.01		1.27	0.94	0.61	0.92	1.20	0.48
Uniform Delay, d1	62.1	53.1	42.7	63.6	54.5		59.6	40.7	23.0	68.0	50.6	41.3
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	100.7	71.3	0.3	63.2	32.9		133.6	12.3	1.3	42.9	99.5	0.8
Delay (s)	162.8	124.4	43.0	126.8	87.4		193.2	53.0	24.3	110.8	150.2	42.1
Level of Service	F	F	D	F	F		F	D	C	F	F	D
Approach Delay (s)		117.1			104.5			87.5			124.1	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	106.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	19.8
Intersection Capacity Utilization	108.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	840	0	350	0	2030	850	0	1800	540
Future Volume (vph)	0	0	0	840	0	350	0	2030	850	0	1800	540
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	0.96		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	1516		5085	1548
Flt Permitted				0.95		1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				3433		2787		5085	1516		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	875	0	365	0	2115	885	0	1875	562
RTOR Reduction (vph)	0	0	0	0	0	14	0	0	0	0	0	241
Lane Group Flow (vph)	0	0	0	875	0	351	0	2115	885	0	1875	322
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)				41.4		41.4		68.7	110.1		68.7	68.7
Effective Green, g (s)				41.4		41.4		68.7	110.1		68.7	68.7
Actuated g/C Ratio				0.34		0.34		0.57	0.92		0.57	0.57
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)				1184		961		2911	1449		2911	886
v/s Ratio Prot				c0.25		0.13		c0.42	0.21		0.37	
v/s Ratio Perm									0.37			0.21
v/c Ratio				0.74		0.37		0.73	0.61		0.64	0.36
Uniform Delay, d1				34.6		29.5		18.8	0.9		17.4	13.8
Progression Factor				1.00		1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2				2.5		0.2		1.6	0.8		1.1	1.2
Delay (s)				37.0		29.7		20.4	1.7		18.5	15.0
Level of Service				D		C		C	A		B	B
Approach Delay (s)		0.0			34.9			14.9			17.7	
Approach LOS		A			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

22: Twin Oaks Valley Rd & SR 78 EB Ramps

03/17/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	270	40	600	0	0	0	0	2580	1120	380	2220	0
Future Volume (vph)	270	40	600	0	0	0	0	2580	1120	380	2220	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	0.98					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	0.88	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	1467	1481					5085	1561	3433	5085	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1681	1467	1481					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)	281	42	625	0	0	0	0	2688	1167	396	2312	0
RTOR Reduction (vph)	0	8	36	0	0	0	0	0	266	0	0	0
Lane Group Flow (vph)	253	343	308	0	0	0	0	2688	901	396	2313	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)	36.5	36.5	36.5					82.1	82.1	17.3	103.6	
Effective Green, g (s)	36.5	36.5	36.5					82.1	82.1	17.3	103.6	
Actuated g/C Ratio	0.24	0.24	0.24					0.55	0.55	0.12	0.69	
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)	409	356	360					2783	854	395	3512	
v/s Ratio Prot	0.15	c0.23						0.53		c0.12	0.45	
v/s Ratio Perm			0.21						c0.58			
v/c Ratio	0.62	0.96	0.86					0.97	1.05	1.00	0.66	
Uniform Delay, d1	50.5	56.1	54.3					32.6	34.0	66.3	13.2	
Progression Factor	1.00	1.00	1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.8	37.6	17.8					10.8	46.3	45.9	1.0	
Delay (s)	53.3	93.7	72.1					43.4	80.2	112.3	14.1	
Level of Service	D	F	E					D	F	F	B	
Approach Delay (s)		75.1			0.0			54.5			28.5	
Approach LOS		E			A			D			C	

Intersection Summary			
HCM 2000 Control Delay	47.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	108.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

28: San Marcos Blvd & Knoll Rd/SR 78 WB Ramps

03/17/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	280	0	560	1020	360	50	440	1350	280	0	1090	230
Future Volume (vph)	280	0	560	1020	360	50	440	1350	280	0	1090	230
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	0.98		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	3474		3433	3539	1549		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	3474		3433	3539	1549		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)	295	0	589	1074	379	53	463	1421	295	0	1147	242
RTOR Reduction (vph)	0	0	52	0	11	0	0	0	107	0	0	89
Lane Group Flow (vph)	295	0	537	1074	421	0	463	1421	188	0	1147	153
Confl. Peds. (#/hr)												12
Confl. Bikes (#/hr)									2			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)	18.4		42.5	46.3	22.3		24.1	61.8	61.8		32.5	32.5
Effective Green, g (s)	18.4		42.5	46.3	22.3		24.1	61.8	61.8		32.5	32.5
Actuated g/C Ratio	0.15		0.35	0.39	0.19		0.20	0.51	0.51		0.27	0.27
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)	271		987	1324	645		689	1822	797		1377	416
v/s Ratio Prot	c0.17		0.11	c0.31	0.12		0.13	c0.40			0.23	
v/s Ratio Perm			0.08						0.12			0.10
v/c Ratio	1.09		0.54	0.81	0.65		0.67	0.78	0.24		0.83	0.37
Uniform Delay, d1	50.8		31.0	32.9	45.3		44.3	23.6	16.1		41.2	35.4
Progression Factor	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	80.3		0.6	3.9	2.4		2.6	3.4	0.7		6.0	2.5
Delay (s)	131.1		31.6	36.8	47.7		46.9	27.0	16.8		47.2	37.9
Level of Service	F		C	D	D		D	C	B		D	D
Approach Delay (s)		64.8			39.9			29.8			45.6	
Approach LOS		E			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	41.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.7
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	290	0	180	0	0	0	0	1780	1320	150	2320	0
Future Volume (vph)	290	0	180	0	0	0	0	1780	1320	150	2320	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)	302	0	188	0	0	0	0	1854	1375	156	2417	0
RTOR Reduction (vph)	0	0	67	0	0	0	0	0	488	0	0	0
Lane Group Flow (vph)	302	0	121	0	0	0	0	1854	887	156	2417	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)	16.1		16.1					76.3	76.3	10.5	92.0	
Effective Green, g (s)	16.1		16.1					76.3	76.3	10.5	92.0	
Actuated g/C Ratio	0.13		0.13					0.64	0.64	0.09	0.77	
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)	460		212					3233	1730	300	3898	
v/s Ratio Prot	c0.09							0.36		0.05	c0.48	
v/s Ratio Perm			0.08						0.33			
v/c Ratio	0.66		0.57					0.57	0.51	0.52	0.62	
Uniform Delay, d1	49.3		48.7					12.5	11.8	52.3	6.2	
Progression Factor	1.00		1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.4		3.7					0.7	1.1	1.6	0.8	
Delay (s)	52.7		52.4					13.3	12.9	54.0	7.0	
Level of Service	D		D					B	B	D	A	
Approach Delay (s)		52.6			0.0			13.1			9.8	
Approach LOS		D			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.1
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	590	60	440	470	100	40	380	730	40	300	120
Future Volume (vph)	190	590	60	440	470	100	40	380	730	40	300	120
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	
Frpb, 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	0.96	
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	1557	3433	3539	1540	1770	3539	1583	1770	3375	
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	1557	3433	3539	1540	1770	3539	1583	1770	3375	
Peak-hour factor, PHF	0.92	0.92	1.00	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	641	60	478	511	109	43	413	793	43	326	130
RTOR Reduction (vph)	0	0	47	0	0	83	0	0	279	0	37	0
Lane Group Flow (vph)	207	641	13	478	511	26	43	413	514	43	419	0
Confl. 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)	16.3	23.0	23.0	18.1	24.8	24.8	3.7	38.9	38.9	3.8	39.0	
Effective Green, g (s)	16.3	23.0	23.0	18.1	24.8	24.8	3.7	38.9	38.9	3.8	39.0	
Actuated g/C Ratio	0.16	0.22	0.22	0.18	0.24	0.24	0.04	0.38	0.38	0.04	0.38	
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)	281	794	349	606	857	372	63	1344	601	65	1285	
v/s Ratio Prot	0.12	c0.18		c0.14	0.14		c0.02	0.12	c0.32	0.02	0.12	
v/s Ratio Perm			0.01			0.02						
v/c Ratio	0.74	0.81	0.04	0.79	0.60	0.07	0.68	0.31	0.86	0.66	0.33	
Uniform Delay, d1	41.0	37.6	31.1	40.3	34.4	29.9	48.8	22.3	29.2	48.7	22.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.6	6.0	0.0	6.8	1.1	0.1	26.3	0.1	11.4	22.5	0.1	
Delay (s)	50.6	43.6	31.1	47.1	35.5	30.0	75.1	22.4	40.6	71.1	22.6	
Level of Service	D	D	C	D	D	C	E	C	D	E	C	
Approach Delay (s)		44.4			40.0			35.8			26.7	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	37.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	102.4	Sum of lost time (s)	18.6
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	740	470	10	340	370	390	10	1500	370	580	680	540
Future Volume (vph)	740	470	10	340	370	390	10	1500	370	580	680	540
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	4934		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	4934		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)	804	511	11	370	402	424	11	1630	402	630	739	587
RTOR Reduction (vph)	0	0	0	0	0	0	0	29	0	0	0	0
Lane Group Flow (vph)	804	511	11	370	402	424	11	2003	0	630	739	587
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)	26.0	30.7	148.0	22.0	26.7	148.0	1.6	53.0		21.0	72.4	148.0
Effective Green, g (s)	26.0	30.7	148.0	22.0	26.7	148.0	1.6	53.0		21.0	72.4	148.0
Actuated g/C Ratio	0.18	0.21	1.00	0.15	0.18	1.00	0.01	0.36		0.14	0.49	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)	603	1054	1583	263	336	1583	19	1766		487	2487	1583
v/s Ratio Prot	c0.23	0.10		0.21	c0.22		0.01	c0.41		c0.18	0.15	
v/s Ratio Perm			0.01			0.27						c0.37
v/c Ratio	1.33	0.48	0.01	1.41	1.20	0.27	0.58	1.13		1.29	0.30	0.37
Uniform Delay, d1	61.0	51.7	0.0	63.0	60.6	0.0	72.9	47.5		63.5	22.6	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	161.1	0.6	0.0	204.3	113.7	0.4	23.8	68.1		146.8	0.3	0.7
Delay (s)	222.1	52.3	0.0	267.3	174.4	0.4	96.7	115.6		210.3	22.9	0.7
Level of Service	F	D	A	F	F	A	F	F		F	C	A
Approach Delay (s)		154.8			141.5			115.5			76.6	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	116.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	148.0	Sum of lost time (s)	21.3
Intersection Capacity Utilization	112.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX J

INTERNAL PROJECT INTERSECTION ANALYSIS WORKSHEETS

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	19	8	16	31	0
Future Volume (Veh/h)	0	19	8	16	31	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	21	9	17	34	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	69	34	34			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	69	34	34			
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	98	99			
cM capacity (veh/h)	930	1039	1578			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	21	26	34
Volume Left	0	9	0
Volume Right	21	0	0
cSH	1039	1578	1700
Volume to Capacity	0.02	0.01	0.02
Queue Length 95th (ft)	2	0	0
Control Delay (s)	8.5	2.6	0.0
Lane LOS	A	A	
Approach Delay (s)	8.5	2.6	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	17.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	59	0	24	32	0	50
Future Volume (Veh/h)	59	0	24	32	0	50
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	64	0	26	35	0	54
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	98	44			61	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	98	44			61	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	100			100	
cM capacity (veh/h)	902	1027			1542	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	64	61	54
Volume Left	64	0	0
Volume Right	0	35	0
cSH	902	1700	1542
Volume to Capacity	0.07	0.04	0.00
Queue Length 95th (ft)	6	0	0
Control Delay (s)	9.3	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.3	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	74	40	56	109	0
Future Volume (Veh/h)	0	74	40	56	109	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	80	43	61	118	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	265	118	118			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	265	118	118			
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	91	97			
cM capacity (veh/h)	703	934	1470			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	80	104	118
Volume Left	0	43	0
Volume Right	80	0	0
cSH	934	1470	1700
Volume to Capacity	0.09	0.03	0.07
Queue Length 95th (ft)	7	2	0
Control Delay (s)	9.2	3.2	0.0
Lane LOS	A	A	
Approach Delay (s)	9.2	3.2	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	23.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	62	26	96	183	0
Future Volume (Veh/h)	0	62	26	96	183	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	67	28	104	199	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	359	199	199			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	359	199	199			
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	92	98			
cM capacity (veh/h)	627	842	1373			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	67	132	199
Volume Left	0	28	0
Volume Right	67	0	0
cSH	842	1373	1700
Volume to Capacity	0.08	0.02	0.12
Queue Length 95th (ft)	6	2	0
Control Delay (s)	9.6	1.8	0.0
Lane LOS	A	A	
Approach Delay (s)	9.6	1.8	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	30.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	48	0	122	13	0	245
Future Volume (Veh/h)	48	0	122	13	0	245
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	52	0	133	14	0	266
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	406	140			147	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	406	140			147	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	100			100	
cM capacity (veh/h)	601	908			1435	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	52	147	266
Volume Left	52	0	0
Volume Right	0	14	0
cSH	601	1700	1435
Volume to Capacity	0.09	0.09	0.00
Queue Length 95th (ft)	7	0	0
Control Delay (s)	11.6	0.0	0.0
Lane LOS	B		
Approach Delay (s)	11.6	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	22.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	6	174	67	122	241	15
Future Volume (vph)	6	174	67	122	241	15
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	189	73	133	262	16

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	196	206	278
Volume Left (vph)	7	73	0
Volume Right (vph)	189	0	16
Hadj (s)	-0.54	0.10	0.00
Departure Headway (s)	4.5	4.8	4.6
Degree Utilization, x	0.25	0.28	0.36
Capacity (veh/h)	731	712	741
Control Delay (s)	9.0	9.6	10.2
Approach Delay (s)	9.0	9.6	10.2
Approach LOS	A	A	B

Intersection Summary			
Delay	9.7		
Level of Service	A		
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	24	29	9	147	296	8
Future Volume (Veh/h)	24	29	9	147	296	8
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	32	10	160	322	9
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	506	326	331			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	506	326	331			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	96	99			
cM capacity (veh/h)	521	715	1228			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	58	10	160	331
Volume Left	26	10	0	0
Volume Right	32	0	0	9
cSH	613	1228	1700	1700
Volume to Capacity	0.09	0.01	0.09	0.19
Queue Length 95th (ft)	8	1	0	0
Control Delay (s)	11.5	8.0	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	11.5	0.5		0.0
Approach LOS	B			

Intersection Summary				
Average Delay		1.3		
Intersection Capacity Utilization		26.1%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	0	29	29	0	24	10	70	10	0	283	34
Future Volume (Veh/h)	62	0	29	29	0	24	10	70	10	0	283	34
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	67	0	32	32	0	26	11	76	11	0	308	37
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	450	436	326	444	448	82	345			87		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	450	436	326	444	448	82	345			87		
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 %	87	100	96	94	100	97	99			100		
cM capacity (veh/h)	502	509	715	498	501	978	1214			1509		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	99	58	11	87	0	345
Volume Left	67	32	11	0	0	0
Volume Right	32	26	0	11	0	37
cSH	555	638	1214	1700	1700	1700
Volume to Capacity	0.18	0.09	0.01	0.05	0.00	0.20
Queue Length 95th (ft)	16	7	1	0	0	0
Control Delay (s)	12.9	11.2	8.0	0.0	0.0	0.0
Lane LOS	B	B	A			
Approach Delay (s)	12.9	11.2	0.9		0.0	
Approach LOS	B	B				

Intersection Summary				
Average Delay		3.4		
Intersection Capacity Utilization		30.6%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	0	29	29	0	23	9	43	10	0	326	8
Future Volume (Veh/h)	24	0	29	29	0	23	9	43	10	0	326	8
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	0	32	32	0	25	10	47	11	0	354	9
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	450	436	358	458	436	52	363			58		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	450	436	358	458	436	52	363			58		
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 %	95	100	95	93	100	98	99			100		
cM capacity (veh/h)	503	509	686	486	510	1015	1196			1546		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	58	57	10	58	0	363
Volume Left	26	32	10	0	0	0
Volume Right	32	25	0	11	0	9
cSH	590	630	1196	1700	1700	1700
Volume to Capacity	0.10	0.09	0.01	0.03	0.00	0.21
Queue Length 95th (ft)	8	7	1	0	0	0
Control Delay (s)	11.8	11.3	8.0	0.0	0.0	0.0
Lane LOS	B	B	A			
Approach Delay (s)	11.8	11.3	1.2		0.0	
Approach LOS	B	B				

Intersection Summary				
Average Delay		2.6		
Intersection Capacity Utilization	28.5%	ICU Level of Service		A
Analysis Period (min)		15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	30	25	173	15	12	361
Future Volume (Veh/h)	30	25	173	15	12	361
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	27	188	16	13	392
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	614	196			204	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	614	196			204	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	97			99	
cM capacity (veh/h)	451	845			1368	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	60	204	13	392
Volume Left	33	0	13	0
Volume Right	27	16	0	0
cSH	571	1700	1368	1700
Volume to Capacity	0.11	0.12	0.01	0.23
Queue Length 95th (ft)	9	0	1	0
Control Delay (s)	12.0	0.0	7.7	0.0
Lane LOS	B		A	
Approach Delay (s)	12.0	0.0	0.2	
Approach LOS	B			

Intersection Summary				
Average Delay		1.2		
Intersection Capacity Utilization	29.0%	ICU Level of Service		A
Analysis Period (min)		15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	86	16	172	39	5	386
Future Volume (Veh/h)	86	16	172	39	5	386
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	93	17	187	42	5	420
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	638	208			229	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	638	208			229	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	79	98			100	
cM capacity (veh/h)	439	832			1339	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	110	229	5	420
Volume Left	93	0	5	0
Volume Right	17	42	0	0
cSH	474	1700	1339	1700
Volume to Capacity	0.23	0.13	0.00	0.25
Queue Length 95th (ft)	22	0	0	0
Control Delay (s)	14.9	0.0	7.7	0.0
Lane LOS	B		A	
Approach Delay (s)	14.9	0.0	0.1	
Approach LOS	B			

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	32.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	71	18	211	472	0
Future Volume (Veh/h)	0	71	18	211	472	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	77	20	229	513	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	782	513	513			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	782	513	513			
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	86	98			
cM capacity (veh/h)	356	561	1052			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	77	20	229	513
Volume Left	0	20	0	0
Volume Right	77	0	0	0
cSH	561	1052	1700	1700
Volume to Capacity	0.14	0.02	0.13	0.30
Queue Length 95th (ft)	12	1	0	0
Control Delay (s)	12.4	8.5	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	12.4	0.7		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	35.9%	ICU Level of Service	A
Analysis Period (min)	15		

13: Mesa Rock Road & Street T-1 S

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	204	68	229	543	0
Future Volume (Veh/h)	0	204	68	229	543	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	222	74	249	590	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)				1062		
pX, platoon unblocked						
vC, conflicting volume	987	590	590			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	987	590	590			
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	56	92			
cM capacity (veh/h)	254	508	985			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	222	74	249	590
Volume Left	0	74	0	0
Volume Right	222	0	0	0
cSH	508	985	1700	1700
Volume to Capacity	0.44	0.08	0.15	0.35
Queue Length 95th (ft)	55	6	0	0
Control Delay (s)	17.5	8.9	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	17.5	2.1		0.0
Approach LOS	C			

Intersection Summary				
Average Delay	4.0			
Intersection Capacity Utilization	55.0%	ICU Level of Service	A	
Analysis Period (min)	15			

14: Mesa Rock Road & Street TC-3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	49	86	270	52	128	709
Future Volume (Veh/h)	49	86	270	52	128	709
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	53	93	293	57	139	771
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			520			
pX, platoon unblocked	0.95	0.95			0.95	
vC, conflicting volume	985	322			350	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	960	265			294	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	75	87			88	
cM capacity (veh/h)	215	700			1206	

Direction, Lane #	WB 1	WB 2	NB 1	SB 1	SB 2	SB 3
Volume Total	53	93	350	139	386	386
Volume Left	53	0	0	139	0	0
Volume Right	0	93	57	0	0	0
cSH	215	700	1700	1206	1700	1700
Volume to Capacity	0.25	0.13	0.21	0.12	0.23	0.23
Queue Length 95th (ft)	23	11	0	10	0	0
Control Delay (s)	27.2	10.9	0.0	8.4	0.0	0.0
Lane LOS	D	B		A		
Approach Delay (s)	16.8		0.0	1.3		
Approach LOS	C					

Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	37.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	132	20	275	70	30	731
Future Volume (vph)	132	20	275	70	30	731
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5	4.5
Lane Util. Factor	0.97		0.95		1.00	0.95
Frt	0.98		0.97		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	3394		3432		1770	3539
Flt Permitted	0.96		1.00		0.95	1.00
Satd. Flow (perm)	3394		3432		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	143	22	299	76	33	795
RTOR Reduction (vph)	17	0	14	0	0	0
Lane Group Flow (vph)	148	0	361	0	33	795
Turn Type	Prot		NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases						
Actuated Green, G (s)	8.7		55.7		3.4	63.6
Effective Green, g (s)	8.7		55.7		3.4	63.6
Actuated g/C Ratio	0.11		0.69		0.04	0.78
Clearance Time (s)	4.5		4.5		4.5	4.5
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	363		2351		74	2768
v/s Ratio Prot	c0.04		0.11		0.02	c0.22
v/s Ratio Perm						
v/c Ratio	0.41		0.15		0.45	0.29
Uniform Delay, d1	33.9		4.5		38.0	2.5
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	0.7		0.1		4.2	0.3
Delay (s)	34.6		4.6		42.3	2.7
Level of Service	C		A		D	A
Approach Delay (s)	34.6		4.6			4.3
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	81.3	Sum of lost time (s)	13.5
Intersection Capacity Utilization	32.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	177	51	342	110	84	762
Future Volume (vph)	177	51	342	110	84	762
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5	4.5
Lane Util. Factor	0.97		0.95		1.00	0.95
Frt	0.97		0.96		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	3362		3410		1770	3539
Flt Permitted	0.96		1.00		0.95	1.00
Satd. Flow (perm)	3362		3410		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	192	55	372	120	91	828
RTOR Reduction (vph)	37	0	23	0	0	0
Lane Group Flow (vph)	210	0	469	0	91	828
Turn Type	Prot		NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases						
Actuated Green, G (s)	10.0		46.2		8.1	58.8
Effective Green, g (s)	10.0		46.2		8.1	58.8
Actuated g/C Ratio	0.13		0.59		0.10	0.76
Clearance Time (s)	4.5		4.5		4.5	4.5
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	432		2024		184	2674
v/s Ratio Prot	c0.06		0.14		c0.05	c0.23
v/s Ratio Perm						
v/c Ratio	0.49		0.23		0.49	0.31
Uniform Delay, d1	31.5		7.4		32.9	3.0
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	0.9		0.3		2.1	0.3
Delay (s)	32.4		7.7		35.0	3.3
Level of Service	C		A		D	A
Approach Delay (s)	32.4		7.7			6.5
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	77.8	Sum of lost time (s)	13.5
Intersection Capacity Utilization	35.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	35	375	175	0	764
Future Volume (Veh/h)	0	35	375	175	0	764
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	38	408	190	0	830
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						530
pX, platoon unblocked	0.97					
vC, conflicting volume	823	204			598	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	757	204			598	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	95			100	
cM capacity (veh/h)	334	803			975	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	38	204	204	190	415	415
Volume Left	0	0	0	0	0	0
Volume Right	38	0	0	190	0	0
cSH	803	1700	1700	1700	1700	1700
Volume to Capacity	0.05	0.12	0.12	0.11	0.24	0.24
Queue Length 95th (ft)	4	0	0	0	0	0
Control Delay (s)	9.7	0.0	0.0	0.0	0.0	0.0
Lane LOS	A					
Approach Delay (s)	9.7	0.0			0.0	
Approach LOS	A					

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	24.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	11	23	37	16	0
Future Volume (Veh/h)	0	11	23	37	16	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	12	25	40	17	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	107	17	17			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	107	17	17			
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	99	98			
cM capacity (veh/h)	877	1062	1600			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	12	65	17
Volume Left	0	25	0
Volume Right	12	0	0
cSH	1062	1600	1700
Volume to Capacity	0.01	0.02	0.01
Queue Length 95th (ft)	1	1	0
Control Delay (s)	8.4	2.9	0.0
Lane LOS	A	A	
Approach Delay (s)	8.4	2.9	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	19.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	40	0	60	71	0	27
Future Volume (Veh/h)	40	0	60	71	0	27
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	0	65	77	0	29
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	132	104			142	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	132	104			142	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	100			100	
cM capacity (veh/h)	861	951			1441	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	43	142	29
Volume Left	43	0	0
Volume Right	0	77	0
cSH	861	1700	1441
Volume to Capacity	0.05	0.08	0.00
Queue Length 95th (ft)	4	0	0
Control Delay (s)	9.4	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.4	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	17.5%	ICU Level of Service	A
Analysis Period (min)	15		

3: Street K-9 & Mesa Rock Road

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	61	94	131	67	0
Future Volume (Veh/h)	0	61	94	131	67	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	66	102	142	73	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	419	73	73			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	419	73	73			
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	93	93			
cM capacity (veh/h)	551	989	1527			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	66	244	73
Volume Left	0	102	0
Volume Right	66	0	0
cSH	989	1527	1700
Volume to Capacity	0.07	0.07	0.04
Queue Length 95th (ft)	5	5	0
Control Delay (s)	8.9	3.5	0.0
Lane LOS	A	A	
Approach Delay (s)	8.9	3.5	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	29.2%	ICU Level of Service	A
Analysis Period (min)	15		

4: Mesa Rock Road & Street K-1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	33	77	225	128	0
Future Volume (Veh/h)	0	33	77	225	128	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	36	84	245	139	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	552	139	139			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	552	139	139			
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	94			
cM capacity (veh/h)	466	909	1445			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	36	329	139
Volume Left	0	84	0
Volume Right	36	0	0
cSH	909	1445	1700
Volume to Capacity	0.04	0.06	0.08
Queue Length 95th (ft)	3	5	0
Control Delay (s)	9.1	2.3	0.0
Lane LOS	A	A	
Approach Delay (s)	9.1	2.3	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	36.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	33	0	302	32	0	161
Future Volume (Veh/h)	33	0	302	32	0	161
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	36	0	328	35	0	175
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	520	346			363	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	520	346			363	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	100			100	
cM capacity (veh/h)	516	697			1196	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	36	363	175
Volume Left	36	0	0
Volume Right	0	35	0
cSH	516	1700	1196
Volume to Capacity	0.07	0.21	0.00
Queue Length 95th (ft)	6	0	0
Control Delay (s)	12.5	0.0	0.0
Lane LOS	B		
Approach Delay (s)	12.5	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	27.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	18	155	70	326	167	8
Future Volume (vph)	18	155	70	326	167	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	168	76	354	182	9

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total (vph)	188	430	191
Volume Left (vph)	20	76	0
Volume Right (vph)	168	0	9
Hadj (s)	-0.48	0.07	0.01
Departure Headway (s)	4.9	4.7	4.9
Degree Utilization, x	0.26	0.56	0.26
Capacity (veh/h)	664	743	690
Control Delay (s)	9.6	13.6	9.7
Approach Delay (s)	9.6	13.6	9.7
Approach LOS	A	B	A

Intersection Summary			
Delay	11.7		
Level of Service	B		
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	14	34	139	265	28
Future Volume (Veh/h)	12	14	34	139	265	28
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	15	37	151	288	30
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	528	303	318			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	528	303	318			
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	98	97			
cM capacity (veh/h)	496	737	1242			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	28	37	151	318
Volume Left	13	37	0	0
Volume Right	15	0	0	30
cSH	601	1242	1700	1700
Volume to Capacity	0.05	0.03	0.09	0.19
Queue Length 95th (ft)	4	2	0	0
Control Delay (s)	11.3	8.0	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	11.3	1.6		0.0
Approach LOS	B			

Intersection Summary				
Average Delay		1.1		
Intersection Capacity Utilization		32.3%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	0	15	15	0	12	34	103	34	0	175	76
Future Volume (Veh/h)	58	0	15	15	0	12	34	103	34	0	175	76
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	63	0	16	16	0	13	37	112	37	0	190	83
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	430	454	232	410	478	130	273			149		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	430	454	232	410	478	130	273			149		
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 %	88	100	98	97	100	99	97			100		
cM capacity (veh/h)	516	487	808	529	473	919	1290			1432		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	79	29	37	149	0	273
Volume Left	63	16	37	0	0	0
Volume Right	16	13	0	37	0	83
cSH	557	653	1290	1700	1700	1700
Volume to Capacity	0.14	0.04	0.03	0.09	0.00	0.16
Queue Length 95th (ft)	12	3	2	0	0	0
Control Delay (s)	12.5	10.8	7.9	0.0	0.0	0.0
Lane LOS	B	B	A			
Approach Delay (s)	12.5	10.8	1.6		0.0	
Approach LOS	B	B				

Intersection Summary				
Average Delay		2.8		
Intersection Capacity Utilization		33.1%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	0	14	14	0	11	33	147	9	0	150	28
Future Volume (Veh/h)	12	0	14	14	0	11	33	147	9	0	150	28
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	0	15	15	0	12	36	160	10	0	163	30
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	422	420	178	415	430	165	193			170		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	422	420	178	415	430	165	193			170		
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 %	98	100	98	97	100	99	97			100		
cM capacity (veh/h)	524	511	865	528	504	879	1380			1407		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	28	27	36	170	0	193
Volume Left	13	15	36	0	0	0
Volume Right	15	12	0	10	0	30
cSH	664	642	1380	1700	1700	1700
Volume to Capacity	0.04	0.04	0.03	0.10	0.00	0.11
Queue Length 95th (ft)	3	3	2	0	0	0
Control Delay (s)	10.7	10.9	7.7	0.0	0.0	0.0
Lane LOS	B	B	A			
Approach Delay (s)	10.7	10.9	1.3		0.0	
Approach LOS	B	B				

Intersection Summary				
Average Delay		1.9		
Intersection Capacity Utilization	26.3%	ICU Level of Service	A	
Analysis Period (min)		15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	15	15	409	48	30	277
Future Volume (Veh/h)	15	15	409	48	30	277
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	16	445	52	33	301
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	838	471			497	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	838	471			497	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	97			97	
cM capacity (veh/h)	326	593			1067	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	32	497	33	301
Volume Left	16	0	33	0
Volume Right	16	52	0	0
cSH	421	1700	1067	1700
Volume to Capacity	0.08	0.29	0.03	0.18
Queue Length 95th (ft)	6	0	2	0
Control Delay (s)	14.3	0.0	8.5	0.0
Lane LOS	B		A	
Approach Delay (s)	14.3	0.0	0.8	
Approach LOS	B			

Intersection Summary				
Average Delay		0.9		
Intersection Capacity Utilization	34.9%	ICU Level of Service	A	
Analysis Period (min)		15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	60	7	450	96	20	272
Future Volume (Veh/h)	60	7	450	96	20	272
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	65	8	489	104	22	296
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	881	541			593	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	881	541			593	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	79	99			98	
cM capacity (veh/h)	310	541			983	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	73	593	22	296
Volume Left	65	0	22	0
Volume Right	8	104	0	0
cSH	325	1700	983	1700
Volume to Capacity	0.22	0.35	0.02	0.17
Queue Length 95th (ft)	21	0	2	0
Control Delay (s)	19.2	0.0	8.7	0.0
Lane LOS	C		A	
Approach Delay (s)	19.2	0.0	0.6	
Approach LOS	C			

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	39.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	33	78	546	304	0
Future Volume (Veh/h)	0	33	78	546	304	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	36	85	593	330	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	1093	330	330			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1093	330	330			
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	93			
cM capacity (veh/h)	221	712	1229			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	36	85	593	330
Volume Left	0	85	0	0
Volume Right	36	0	0	0
cSH	712	1229	1700	1700
Volume to Capacity	0.05	0.07	0.35	0.19
Queue Length 95th (ft)	4	6	0	0
Control Delay (s)	10.3	8.1	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	10.3	1.0		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		

13: Mesa Rock Road & Street T-1 S

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	125	229	624	337	0
Future Volume (Veh/h)	0	125	229	624	337	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	136	249	678	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)				1062		
pX, platoon unblocked	0.81					
vC, conflicting volume	1542	366	366			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1552	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	80	79			
cM capacity (veh/h)	80	679	1193			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	136	249	678	366
Volume Left	0	249	0	0
Volume Right	136	0	0	0
cSH	679	1193	1700	1700
Volume to Capacity	0.20	0.21	0.40	0.22
Queue Length 95th (ft)	19	20	0	0
Control Delay (s)	11.6	8.8	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	11.6	2.4		0.0
Approach LOS	B			

Intersection Summary				
Average Delay		2.6		
Intersection Capacity Utilization		48.2%	ICU Level of Service	A
Analysis Period (min)		15		

14: Mesa Rock Road & Street TC-3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	21	36	805	46	24	415
Future Volume (Veh/h)	21	36	805	46	24	415
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	39	875	50	26	451
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			520			
pX, platoon unblocked	0.73	0.73			0.73	
vC, conflicting volume	1178	900			925	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1061	683			717	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	85	86			96	
cM capacity (veh/h)	154	288			646	

Direction, Lane #	WB 1	WB 2	NB 1	SB 1	SB 2	SB 3
Volume Total	23	39	925	26	226	226
Volume Left	23	0	0	26	0	0
Volume Right	0	39	50	0	0	0
cSH	154	288	1700	646	1700	1700
Volume to Capacity	0.15	0.14	0.54	0.04	0.13	0.13
Queue Length 95th (ft)	13	12	0	3	0	0
Control Delay (s)	32.4	19.5	0.0	10.8	0.0	0.0
Lane LOS	D	C		B		
Approach Delay (s)	24.3		0.0	0.6		
Approach LOS	C					

Intersection Summary				
Average Delay		1.2		
Intersection Capacity Utilization		55.2%	ICU Level of Service	B
Analysis Period (min)		15		

15: Mesa Rock Road & Street TC-2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	269	44	826	176	47	454
Future Volume (vph)	269	44	826	176	47	454
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5	4.5
Lane Util. Factor	0.97		0.95		1.00	0.95
Frt	0.98		0.97		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	3392		3446		1770	3539
Flt Permitted	0.96		1.00		0.95	1.00
Satd. Flow (perm)	3392		3446		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	292	48	898	191	51	493
RTOR Reduction (vph)	17	0	16	0	0	0
Lane Group Flow (vph)	323	0	1073	0	51	493
Turn Type	Prot		NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases						
Actuated Green, G (s)	13.0		53.3		4.8	62.6
Effective Green, g (s)	13.0		53.3		4.8	62.6
Actuated g/C Ratio	0.15		0.63		0.06	0.74
Clearance Time (s)	4.5		4.5		4.5	4.5
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	521		2171		100	2618
v/s Ratio Prot	c0.10		c0.31		c0.03	0.14
v/s Ratio Perm						
v/c Ratio	0.62		0.49		0.51	0.19
Uniform Delay, d1	33.5		8.4		38.8	3.3
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	2.3		0.8		4.3	0.2
Delay (s)	35.8		9.2		43.1	3.5
Level of Service	D		A		D	A
Approach Delay (s)	35.8		9.2			7.2
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	84.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

16: Mesa Rock Road & Street TC-1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	406	84	915	216	93	498
Future Volume (vph)	406	84	915	216	93	498
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5	4.5
Lane Util. Factor	0.97		0.95		1.00	0.95
Frt	0.97		0.97		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	3381		3438		1770	3539
Flt Permitted	0.96		1.00		0.95	1.00
Satd. Flow (perm)	3381		3438		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	441	91	995	235	101	541
RTOR Reduction (vph)	21	0	20	0	0	0
Lane Group Flow (vph)	511	0	1210	0	101	541
Turn Type	Prot		NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases						
Actuated Green, G (s)	17.6		47.9		8.4	60.8
Effective Green, g (s)	17.6		47.9		8.4	60.8
Actuated g/C Ratio	0.20		0.55		0.10	0.70
Clearance Time (s)	4.5		4.5		4.5	4.5
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	680		1884		170	2461
v/s Ratio Prot	c0.15		c0.35		c0.06	0.15
v/s Ratio Perm						
v/c Ratio	0.75		0.64		0.59	0.22
Uniform Delay, d1	32.8		13.8		37.9	4.8
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	4.7		1.7		5.5	0.2
Delay (s)	37.5		15.5		43.3	5.0
Level of Service	D		B		D	A
Approach Delay (s)	37.5		15.5			11.0
Approach LOS	D		B			B

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	87.4	Sum of lost time (s)	13.5
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	64	944	228	0	529
Future Volume (Veh/h)	0	64	944	228	0	529
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	70	1026	248	0	575
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						530
pX, platoon unblocked						
vC, conflicting volume	1314	513			1274	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1314	513			1274	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	86			100	
cM capacity (veh/h)	150	506			541	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	70	513	513	248	288	288
Volume Left	0	0	0	0	0	0
Volume Right	70	0	0	248	0	0
cSH	506	1700	1700	1700	1700	1700
Volume to Capacity	0.14	0.30	0.30	0.15	0.17	0.17
Queue Length 95th (ft)	12	0	0	0	0	0
Control Delay (s)	13.2	0.0	0.0	0.0	0.0	0.0
Lane LOS	B					
Approach Delay (s)	13.2	0.0			0.0	
Approach LOS	B					

Intersection Summary				
Average Delay		0.5		
Intersection Capacity Utilization		36.7%	ICU Level of Service	A
Analysis Period (min)		15		

APPENDIX K

CONSTRUCTION SCHEDULE

Newland Sierra Project

Phase 1

Workdays per week 6

	Weeks	Start Date	End Date
Phase 1 - Total Construction Duration/Schedule	359.7	1/10/2018	12/2/2024

Note: Assumes 2 one-way trips per each worker, haul truck, and vendor truck

Phase	Weeks Per Activity	Start Date	End Date	# of Workers per day	Total Haul Trucks	Vendor Trucks per day	Equipment Type	No. of Equip Units
Site Preparation*	5.0	1/10/2018	2/14/2018	24	360	8	Crawler Tractors	4
							Loaders	2
							Grinder	1
Grading	148.1	1/29/2018	12/1/2020	150	290,071	36	Crawler Tractors	11
Phase 1 Grading Acres =	565						Excavators	5
Phase 1 Soil Hauling =	2,320,570	cubic yards of on-site soil movement					Graders	4
Average on-site haul distance =	0.4	mile (one-way)					Tractors/Loaders/Backhoes	2
Haul truck capacity =	16	cubic yards					Drill Rigs	15
							Water Trucks	14
							Off Hwy. Trucks	2
							Scrapers	5
Building Construction	246.0	3/16/2020	12/2/2024	800	0	40	Cranes	8
							Forklifts	8
							Generator Sets	8
							Tractors/Loaders/Backhoes	4
Trenching (for utilities)	131.1	10/28/2018	5/3/2021	78	0	32	Excavators	2
							Tractors/Loaders/Backhoes	8
							Water Truck	8
Architectural Coating (painting and finishing)	228.9	7/14/2020	12/2/2024	160	0	8	Air Compressors	20
Paving	140.0	7/17/2019	3/23/2022	36	0	20	Pavers	1
							Paving Eqpmnt. (Oiler, Sweeper)	2
							Loader	2
							Water Trucks	4
							Rollers	3
							Scrapers	2
Brush Management/Landscaping	108.9	5/1/2019	6/1/2021	192	0	28	Loader	8
							Dumpruck	4
							Water Truck	8
							Trencher	4
Reservoirs (2 Steel Tanks)	26.9	12/27/2018	7/3/2019	44	0	4	Excavators	1
							Tractors/Loaders/Backhoes	4
							Generator Sets	3
							Aerial Lifts	4

Source: Fuscoe, August 2016

* Site prep hauling activity would include distribution of mulched vegetation, grubbed material, and biological fencing supplies to staging locations within the work area.

Newland Sierra Project

Phase 2

Workdays per week 6

	Weeks	Start Date	End Date
Phase 2 - Total Construction Duration/Schedule	362.1	12/21/2020	11/30/2027

Note: Assumes 2 one-way trips per each worker, haul truck, and vendor truck

Phase	Weeks Per Activity	Start Date	End Date	# of Workers per day	Total Haul Trucks	Vendor Trucks per day	Equipment Type	No. of Equip Units
Site Preparation*	4.0	12/21/2020	1/18/2021	36	288	8	Crawler Tractors	3
							Loaders	2
							Grinder	1
Grading	95.6	1/18/2021	11/18/2022	96	12,893	28	Crawler Tractors	7
							Excavators	2
Phase 1 Grading Acres =	11.2						Graders	2
Phase 2 Soil Hauling =	103,140	cubic yards of on-site soil movement					Tractors/Loaders/Backhoes	2
Average on-site haul distance =	0.8	mile (one-way)					Drill Rigs	6
Haul truck capacity =	16	cubic yards					Water Trucks	10
							Off Hwy. Trucks	2
							Scrapers	5
Building Construction	147.1	2/3/2025	11/30/2027	400	0	32	Cranes	4
							Forklifts	8
							Generator Sets	20
							Tractors/Loaders/Backhoes	4
Trenching (for utilities)	116.0	1/3/2022	3/25/2024	44	0	24	Excavators	4
							Tractors/Loaders/Backhoes	4
							Water Truck	8
Architectural Coating (painting and finishing)	121.6	8/1/2025	11/30/2027	80	0	8	Air Compressors	10
Paving	143.4	8/1/2022	5/1/2025	24	0	16	Pavers	1
							Paving Eqpmnt. (Oiler, Sweeper)	2
							Loader	2
							Water Trucks	4
							Rollers	3
							Scrapers	2
Brush Management/Landscaping	82.3	11/1/2021	5/31/2023	96	0	16	Loader	4
							Dumpruck	2
							Water Truck	4
							Trencher	2

Source: Fuscoe, August 2016

* Site prep hauling activity would include distribution of mulched vegetation, grubbed material, and biological fencing supplies to staging locations within the work area.

APPENDIX L

INTERSECTION AND ARTERIAL MITIGATION ANALYSIS WORKSHEETS – EXISTING + PROJECT AND EXISTING + PROJECT + CUMULATIVE PROJECTS

APPENDIX L–1

INTERSECTION ANALYSIS WORKSHEETS – EXISTING + PROJECT

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	76	484	1081	23	99	256
Future Volume (vph)	76	484	1081	23	99	256
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.95	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)	3433	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	79	504	1126	24	103	267
RTOR Reduction (vph)	0	0	0	10	0	121
Lane Group Flow (vph)	79	504	1126	14	103	146
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	6.1	49.0	38.9	38.9	38.0	38.0
Effective Green, g (s)	6.1	49.0	38.9	38.9	38.0	38.0
Actuated g/C Ratio	0.06	0.52	0.41	0.41	0.40	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	220	1825	1449	648	708	633
v/s Ratio Prot	c0.02	0.14	c0.32		0.06	
v/s Ratio Perm				0.01		c0.09
v/c Ratio	0.36	0.28	0.78	0.02	0.15	0.23
Uniform Delay, d1	42.6	13.0	24.3	16.7	18.2	18.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.1	2.7	0.0	0.4	0.8
Delay (s)	43.6	13.1	27.0	16.7	18.6	19.7
Level of Service	D	B	C	B	B	B
Approach Delay (s)		17.2	26.8		19.4	
Approach LOS		B	C		B	

Intersection Summary			
HCM 2000 Control Delay	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	44	97	88	538	1406	35
Future Volume (vph)	44	97	88	538	1406	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	0.95	0.95	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	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	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)	48	107	97	769	2009	38
RTOR Reduction (vph)	0	97	0	0	0	6
Lane Group Flow (vph)	48	10	97	769	2009	32
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	8.1	84.3	72.2	72.2
Effective Green, g (s)	10.1	10.1	8.1	84.3	72.2	72.2
Actuated g/C Ratio	0.10	0.10	0.08	0.81	0.69	0.69
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)	170	152	137	2852	2442	1092
v/s Ratio Prot	c0.03		c0.05	0.22	c0.57	
v/s Ratio Perm		0.01				0.02
v/c Ratio	0.28	0.07	0.71	0.27	0.82	0.03
Uniform Delay, d1	43.9	43.0	47.1	2.5	11.6	5.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.2	15.4	0.1	2.4	0.0
Delay (s)	44.8	43.2	62.5	2.6	14.0	5.1
Level of Service	D	D	E	A	B	A
Approach Delay (s)	43.7			9.3	13.8	
Approach LOS	D			A	B	

Intersection Summary			
HCM 2000 Control Delay	14.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	104.6	Sum of lost time (s)	14.2
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	311	0	172	0	0	0	113	314	0	0	1005	496
Future Volume (vph)	311	0	172	0	0	0	113	314	0	0	1005	496
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	0.97		1.00				1.00	0.95			0.95	1.00
Frpb, ped/bikes	1.00		0.99				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)	3433		1562				1770	3539			3539	1546
Flt Permitted	0.76		1.00				0.95	1.00			1.00	1.00
Satd. Flow (perm)	2736		1562				1770	3539			3539	1546
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)	324	0	179	0	0	0	118	327	0	0	1047	517
RTOR Reduction (vph)	0	0	136	0	0	0	0	0	0	0	0	192
Lane Group Flow (vph)	324	0	43	0	0	0	118	327	0	0	1047	325
Confl. Peds. (#/hr)			2									1
Confl. Bikes (#/hr)												3
Turn Type	Perm		Perm				Prot	NA		Prot	NA	Perm
Protected Phases					8		5	2		1	6	
Permitted Phases	4		4	8								6
Actuated Green, G (s)	13.4		13.4				5.1	33.2			23.1	23.1
Effective Green, g (s)	13.4		13.4				5.1	33.2			23.1	23.1
Actuated g/C Ratio	0.24		0.24				0.09	0.59			0.41	0.41
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)	653		373				160	2094			1457	636
v/s Ratio Prot							c0.07	0.09			c0.30	
v/s Ratio Perm	c0.12		0.03									0.21
v/c Ratio	0.50		0.11				0.74	0.16			0.72	0.51
Uniform Delay, d1	18.4		16.7				24.8	5.1			13.8	12.3
Progression Factor	1.00		1.00				1.00	1.00			1.00	1.00
Incremental Delay, d2	0.6		0.1				16.2	0.0			1.7	0.7
Delay (s)	19.0		16.8				41.0	5.2			15.5	13.0
Level of Service	B		B				D	A			B	B
Approach Delay (s)		18.3			0.0			14.7			14.7	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	56.1	Sum of lost time (s)	14.5
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	161	383	269	83	170	548
Future Volume (vph)	161	383	269	83	170	548
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	5.3	5.3	5.3	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.94	1.00	0.97
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	1495	1770	1533
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	1863	1495	1770	1533
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	169	403	283	87	179	577
RTOR Reduction (vph)	0	0	0	32	0	0
Lane Group Flow (vph)	169	403	283	55	179	577
Confl. Peds. (#/hr)				12		4
Confl. Bikes (#/hr)				3		
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases				6		4
Actuated Green, G (s)	16.3	25.7	41.1	41.1	46.2	46.2
Effective Green, g (s)	16.3	25.7	41.1	41.1	46.2	46.2
Actuated g/C Ratio	0.14	0.22	0.35	0.35	0.39	0.39
Clearance Time (s)	4.4	5.3	5.3	5.3	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	245	408	652	523	697	603
v/s Ratio Prot	c0.10	c0.22	c0.15		0.10	
v/s Ratio Perm				0.04		c0.38
v/c Ratio	0.69	0.99	0.43	0.10	0.26	0.96
Uniform Delay, d1	48.1	45.6	29.2	25.7	24.0	34.6
Progression Factor	1.28	0.66	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.2	35.7	0.5	0.1	0.2	26.0
Delay (s)	67.5	66.1	29.7	25.8	24.2	60.6
Level of Service	E	E	C	C	C	E
Approach Delay (s)		66.5	28.7		52.0	
Approach LOS		E	C		D	

Intersection Summary			
HCM 2000 Control Delay	51.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	117.3	Sum of lost time (s)	14.3
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	88	181	474	234	334	148
Future Volume (vph)	88	181	474	234	334	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	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	1.00	1.00	0.85	0.96	
Flt Protected	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (prot)	1770	1863	1863	1583	1713	
Flt Permitted	0.37	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	693	1863	1863	1583	1713	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	93	191	499	246	352	156
RTOR Reduction (vph)	0	0	0	0	21	0
Lane Group Flow (vph)	93	191	499	246	487	0
Confl. Peds. (#/hr)						2
Turn Type	Perm	NA	NA	pm+ov	Prot	
Protected Phases		4	8	6	6	
Permitted Phases	4			8		
Actuated Green, G (s)	40.5	40.5	40.5	66.8	26.3	
Effective Green, g (s)	40.5	40.5	40.5	66.8	26.3	
Actuated g/C Ratio	0.54	0.54	0.54	0.89	0.35	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	375	1008	1008	1583	602	
v/s Ratio Prot		0.10	c0.27	0.05	c0.28	
v/s Ratio Perm	0.13			0.10		
v/c Ratio	0.25	0.19	0.50	0.16	0.81	
Uniform Delay, d1	9.1	8.8	10.7	0.5	22.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.6	0.4	1.7	0.0	7.9	
Delay (s)	10.7	9.2	12.5	0.5	29.8	
Level of Service	B	A	B	A	C	
Approach Delay (s)		9.7	8.5		29.8	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	74.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	305	1300	715	109	45	114
Future Volume (vph)	305	1300	715	109	45	114
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	0.97	0.95	0.95	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)	3433	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	321	1368	753	115	47	120
RTOR Reduction (vph)	0	0	0	75	0	80
Lane Group Flow (vph)	321	1368	753	40	47	40
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	12.6	40.8	23.7	23.7	24.8	24.8
Effective Green, g (s)	12.6	40.8	23.7	23.7	24.8	24.8
Actuated g/C Ratio	0.17	0.55	0.32	0.32	0.33	0.33
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)	579	1935	1124	502	588	526
v/s Ratio Prot	0.09	c0.39	0.21		c0.03	
v/s Ratio Perm				0.03		0.03
v/c Ratio	0.55	0.71	0.67	0.08	0.08	0.08
Uniform Delay, d1	28.4	12.5	22.1	17.8	17.1	17.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	1.2	1.5	0.1	0.3	0.3
Delay (s)	29.6	13.7	23.6	17.9	17.3	17.3
Level of Service	C	B	C	B	B	B
Approach Delay (s)		16.7	22.8		17.3	
Approach LOS		B	C		B	

Intersection Summary			
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	74.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	48	240	105	1333	872	47
Future Volume (vph)	48	240	105	1333	872	47
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	0.95	0.95	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	3539	3539	1547
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	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)	55	273	119	1969	1288	53
RTOR Reduction (vph)	0	217	0	0	0	17
Lane Group Flow (vph)	55	56	119	1969	1288	36
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)	9.9	9.9	9.2	54.9	41.7	41.7
Effective Green, g (s)	9.9	9.9	9.2	54.9	41.7	41.7
Actuated g/C Ratio	0.13	0.13	0.12	0.73	0.56	0.56
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)	233	208	217	2590	1967	860
v/s Ratio Prot	0.03		0.07	c0.56	0.36	
v/s Ratio Perm		c0.04				0.02
v/c Ratio	0.24	0.27	0.55	0.76	0.65	0.04
Uniform Delay, d1	29.2	29.3	30.9	6.1	11.6	7.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.7	2.8	1.4	0.8	0.0
Delay (s)	29.7	30.0	33.8	7.4	12.4	7.6
Level of Service	C	C	C	A	B	A
Approach Delay (s)	29.9			8.9	12.2	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	14.2
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	565	0	210	0	0	0	167	861	0	0	683	421
Future Volume (vph)	565	0	210	0	0	0	167	861	0	0	683	421
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	0.97		1.00				1.00	0.95			0.95	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)	3433		1583				1770	3539			3539	1539
Flt Permitted	0.76		1.00				0.95	1.00			1.00	1.00
Satd. Flow (perm)	2736		1583				1770	3539			3539	1539
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)	608	0	226	0	0	0	180	926	0	0	734	453
RTOR Reduction (vph)	0	0	152	0	0	0	0	0	0	0	0	276
Lane Group Flow (vph)	608	0	74	0	0	0	180	926	0	0	734	177
Confl. Peds. (#/hr)												1
Confl. Bikes (#/hr)												5
Turn Type	Perm		Perm				Prot	NA		Prot	NA	Perm
Protected Phases					8		5	2		1	6	
Permitted Phases	4		4	8								6
Actuated Green, G (s)	18.2		18.2				7.1	28.6			16.5	16.5
Effective Green, g (s)	18.2		18.2				7.1	28.6			16.5	16.5
Actuated g/C Ratio	0.32		0.32				0.13	0.51			0.29	0.29
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)	884		511				223	1797			1037	451
v/s Ratio Prot							c0.10	0.26			c0.21	
v/s Ratio Perm	c0.22		0.05									0.11
v/c Ratio	0.69		0.14				0.81	0.52			0.71	0.39
Uniform Delay, d1	16.6		13.5				23.9	9.2			17.7	15.9
Progression Factor	1.00		1.00				1.00	1.00			1.00	1.00
Incremental Delay, d2	2.2		0.1				18.9	0.3			2.2	0.6
Delay (s)	18.8		13.7				42.8	9.5			20.0	16.5
Level of Service	B		B				D	A			B	B
Approach Delay (s)		17.4			0.0			14.9			18.6	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	56.3	Sum of lost time (s)	14.5
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	663	421	467	209	123	225
Future Volume (vph)	663	421	467	209	123	225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	5.3	5.3	5.3	4.0	7.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.93	1.00	0.95
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	1473	1770	1503
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	1863	1473	1770	1503
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	691	439	486	218	128	234
RTOR Reduction (vph)	0	0	0	61	0	0
Lane Group Flow (vph)	691	439	486	157	128	234
Confl. Peds. (#/hr)				19		12
Confl. Bikes (#/hr)				4		
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases				6		4
Actuated Green, G (s)	37.6	45.1	26.1	26.1	22.6	22.6
Effective Green, g (s)	37.6	45.1	26.1	26.1	22.6	19.6
Actuated g/C Ratio	0.38	0.45	0.26	0.26	0.23	0.20
Clearance Time (s)	4.4	5.3	5.3	5.3	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	665	840	486	384	400	294
v/s Ratio Prot	c0.39	0.24	c0.26		0.07	
v/s Ratio Perm				0.11		c0.16
v/c Ratio	1.04	0.52	1.00	0.41	0.32	0.80
Uniform Delay, d1	31.2	19.7	37.0	30.6	32.3	38.3
Progression Factor	1.10	0.83	1.00	1.00	1.00	1.00
Incremental Delay, d2	40.3	0.4	40.8	0.7	0.5	13.8
Delay (s)	74.5	16.8	77.8	31.3	32.8	52.1
Level of Service	E	B	E	C	C	D
Approach Delay (s)		52.0	63.4		45.3	
Approach LOS		D	E		D	

Intersection Summary			
HCM 2000 Control Delay	54.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	205	492	226	410	363	93
Future Volume (vph)	205	492	226	410	363	93
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	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.97	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	1770	1863	1863	1583	1734	
Flt Permitted	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	1770	1863	1863	1583	1734	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	223	535	246	446	395	101
RTOR Reduction (vph)	0	0	0	308	12	0
Lane Group Flow (vph)	223	535	246	138	484	0
Confl. Bikes (#/hr)						3
Turn Type	Prot	NA	NA	Perm	Prot	
Protected Phases	7	4	8		6	
Permitted Phases				8		
Actuated Green, G (s)	14.1	42.9	24.3	24.3	26.5	
Effective Green, g (s)	14.1	42.9	24.3	24.3	26.5	
Actuated g/C Ratio	0.18	0.55	0.31	0.31	0.34	
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)	318	1019	577	490	586	
v/s Ratio Prot	c0.13	c0.29	0.13		c0.28	
v/s Ratio Perm				0.09		
v/c Ratio	0.70	0.53	0.43	0.28	0.83	
Uniform Delay, d1	30.2	11.3	21.5	20.5	23.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.8	1.9	2.3	1.4	9.3	
Delay (s)	37.0	13.2	23.8	21.9	33.1	
Level of Service	D	B	C	C	C	
Approach Delay (s)		20.2	22.6		33.1	
Approach LOS		C	C		C	

Intersection Summary			
HCM 2000 Control Delay	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	78.4	Sum of lost time (s)	13.5
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

APPENDIX L–2

INTERSECTION ANALYSIS WORKSHEETS
– EXISTING + PROJECT + CUMULATIVE PROJECTS

Mitigated Existing + Proj + Sce B Cuml AM
7: Deer Springs Rd & Mesa Rock Road

Sierra Project
03/27/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	581	30	20	1253	383	20	18	30	668	44	180
Future Volume (vph)	151	581	30	20	1253	383	20	18	30	668	44	180
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
Lane Util. Factor	0.97	0.95		1.00	0.91	0.91	1.00	1.00		0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.91		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3509		1770	3374	1422	1770	1689		3433	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3509		1770	3374	1422	1770	1689		3433	1863	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)	168	646	33	22	1392	426	22	20	33	742	49	200
RTOR Reduction (vph)	0	3	0	0	2	184	0	30	0	0	0	150
Lane Group Flow (vph)	168	676	0	22	1433	199	22	23	0	742	49	50
Confl. Bikes (#/hr)			9			2						
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8						6
Actuated Green, G (s)	5.5	42.0		2.1	38.6	38.6	7.2	7.2		23.2	23.2	23.2
Effective Green, g (s)	5.5	42.0		2.1	38.6	38.6	7.2	7.2		23.2	23.2	23.2
Actuated g/C Ratio	0.06	0.45		0.02	0.42	0.42	0.08	0.08		0.25	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
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)	204	1593		40	1407	593	137	131		861	467	397
v/s Ratio Prot	c0.05	c0.19		0.01	c0.42		0.01	c0.01		c0.22	0.03	
v/s Ratio Perm						0.14						0.03
v/c Ratio	0.82	0.42		0.55	1.02	0.34	0.16	0.17		0.86	0.10	0.13
Uniform Delay, d1	43.0	17.1		44.7	26.9	18.3	39.8	39.9		33.1	26.7	26.8
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	22.8	0.2		15.3	28.8	0.3	0.6	0.6		11.1	0.5	0.7
Delay (s)	65.8	17.3		60.1	55.7	18.6	40.4	40.5		44.2	27.1	27.5
Level of Service	E	B		E	E	B	D	D		D	C	C
Approach Delay (s)		26.9			48.0			40.5			40.0	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	41.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	92.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Mitigated Existing + Proj + Sce B Cuml AM
9: Deer Springs Rd & Sarver Lane

Sierra Project
03/27/2018

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	77	581	1340	23	101	256
Future Volume (vph)	77	581	1340	23	101	256
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	0.95	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)	3433	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	80	605	1396	24	105	267
RTOR Reduction (vph)	0	0	0	8	0	99
Lane Group Flow (vph)	80	605	1396	16	105	168
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	5.8	60.4	50.6	50.6	35.0	35.0
Effective Green, g (s)	5.8	60.4	50.6	50.6	35.0	35.0
Actuated g/C Ratio	0.06	0.58	0.49	0.49	0.34	0.34
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	192	2067	1731	774	599	535
v/s Ratio Prot	c0.02	0.17	c0.39		0.06	
v/s Ratio Perm				0.01		c0.11
v/c Ratio	0.42	0.29	0.81	0.02	0.18	0.31
Uniform Delay, d1	47.2	10.8	22.3	13.6	24.1	25.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.1	2.9	0.0	0.6	1.5
Delay (s)	48.6	10.9	25.1	13.6	24.7	26.8
Level of Service	D	B	C	B	C	C
Approach Delay (s)		15.3	24.9		26.2	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	103.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	40	20	663	190	80	1696
Future Volume (vph)	40	20	663	190	80	1696
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
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	1583	3421		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3421		1770	3539
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	45	22	745	213	90	1906
RTOR Reduction (vph)	0	21	20	0	0	0
Lane Group Flow (vph)	45	1	938	0	90	1906
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8				
Actuated Green, G (s)	5.2	5.2	61.3		7.6	72.9
Effective Green, g (s)	5.2	5.2	61.3		7.6	72.9
Actuated g/C Ratio	0.06	0.06	0.71		0.09	0.85
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	106	95	2435		156	2996
v/s Ratio Prot	c0.03		0.27		0.05	c0.54
v/s Ratio Perm		0.00				
v/c Ratio	0.42	0.01	0.39		0.58	0.64
Uniform Delay, d1	39.0	38.0	4.9		37.7	2.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.7	0.1	0.5		5.1	1.0
Delay (s)	41.7	38.1	5.4		42.8	3.2
Level of Service	D	D	A		D	A
Approach Delay (s)	40.5		5.4			5.0
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay	5.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	86.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	51	119	112	619	1646	47
Future Volume (vph)	51	119	112	619	1646	47
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	0.95	0.95	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	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	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)	56	131	123	884	2351	52
RTOR Reduction (vph)	0	99	0	0	0	7
Lane Group Flow (vph)	56	32	123	884	2351	45
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	10.6	10.6	8.0	89.9	77.9	77.9
Effective Green, g (s)	10.6	10.6	8.0	89.9	77.9	77.9
Actuated g/C Ratio	0.10	0.10	0.07	0.81	0.70	0.70
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)	169	151	127	2874	2490	1113
v/s Ratio Prot	c0.03		c0.07	0.25	c0.66	
v/s Ratio Perm		0.02				0.03
v/c Ratio	0.33	0.21	0.97	0.31	0.94	0.04
Uniform Delay, d1	46.7	46.2	51.2	2.6	14.5	5.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.7	69.3	0.1	8.3	0.0
Delay (s)	47.9	46.9	120.5	2.7	22.8	5.0
Level of Service	D	D	F	A	C	A
Approach Delay (s)	47.2			17.1	22.4	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	110.7	Sum of lost time (s)	14.2
Intersection Capacity Utilization	80.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	0	220	5	5	0	140	341	5	5	1093	592
Future Volume (vph)	380	0	220	5	5	0	140	341	5	5	1093	592
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		4.0		5.0	5.5		5.0	5.5	5.5
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97		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		1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1681	1543		1817		1770	3532		1770	3539	1561
Flt Permitted	0.95	0.95	1.00		0.74		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1681	1543		1373		1770	3532		1770	3539	1561
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)	396	0	229	5	5	0	146	355	5	5	1139	617
RTOR Reduction (vph)	0	0	190	0	0	0	0	0	0	0	0	120
Lane Group Flow (vph)	198	198	39	0	10	0	146	360	0	5	1139	497
Confl. Peds. (#/hr)			2									1
Confl. Bikes (#/hr)												3
Turn Type	Split	NA	Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4			8		5	2		1	6	
Permitted Phases			4	8								6
Actuated Green, G (s)	16.1	16.1	16.1		5.0		11.5	53.5		0.7	42.7	42.7
Effective Green, g (s)	16.1	16.1	16.1		5.0		11.5	53.5		0.7	42.7	42.7
Actuated g/C Ratio	0.17	0.17	0.17		0.05		0.12	0.57		0.01	0.46	0.46
Clearance Time (s)	4.0	4.0	4.0		4.0		5.0	5.5		5.0	5.5	5.5
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)	288	288	264		73		217	2014		13	1611	710
v/s Ratio Prot	c0.12	0.12					c0.08	0.10		0.00	c0.32	
v/s Ratio Perm			0.03		c0.01							0.32
v/c Ratio	0.69	0.69	0.15		0.14		0.67	0.18		0.38	0.71	0.70
Uniform Delay, d1	36.5	36.5	33.0		42.3		39.4	9.6		46.3	20.5	20.4
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	6.7	6.7	0.3		0.9		8.0	0.0		17.9	1.4	3.1
Delay (s)	43.2	43.2	33.3		43.2		47.3	9.7		64.2	22.0	23.6
Level of Service	D	D	C		D		D	A		E	C	C
Approach Delay (s)		39.5			43.2			20.5			22.6	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	26.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	93.8	Sum of lost time (s)	18.5
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	348	358	560	580	54	326	662	562	136	1317	358
Future Volume (vph)	193	348	358	560	580	54	326	662	562	136	1317	358
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	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	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99
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	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1540	3433	3488		3433	3539	1567	3433	3539	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1540	3433	3488		3433	3539	1567	3433	3539	1562
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)	197	355	365	571	592	55	333	676	573	139	1344	365
RTOR Reduction (vph)	0	0	132	0	6	0	0	0	57	0	0	165
Lane Group Flow (vph)	197	355	233	571	641	0	333	676	516	139	1344	200
Confl. Peds. (#/hr)			5			4			1			1
Confl. Bikes (#/hr)			8			3			3			
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	11.0	21.5	21.5	19.1	29.9		11.4	45.2	64.3	9.0	42.8	42.8
Effective Green, g (s)	11.0	21.5	21.5	19.1	29.9		11.4	45.2	64.3	9.0	42.8	42.8
Actuated g/C Ratio	0.10	0.19	0.19	0.17	0.26		0.10	0.40	0.57	0.08	0.38	0.38
Clearance Time (s)	4.2	5.3	5.3	4.2	5.0		4.2	5.3	4.2	4.2	5.3	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)	331	668	290	576	916		343	1405	885	271	1331	587
v/s Ratio Prot	0.06	0.10		c0.17	0.18		c0.10	0.19	0.10	0.04	c0.38	
v/s Ratio Perm			c0.15						0.23			0.13
v/c Ratio	0.60	0.53	0.80	0.99	0.70		0.97	0.48	0.58	0.51	1.01	0.34
Uniform Delay, d1	49.3	41.6	44.1	47.3	37.9		51.0	25.6	16.0	50.3	35.5	25.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.9	0.8	14.7	35.1	2.4		40.6	0.3	1.0	1.6	27.1	0.3
Delay (s)	52.1	42.4	58.9	82.4	40.3		91.7	25.8	17.0	51.9	62.6	25.8
Level of Service	D	D	E	F	D		F	C	B	D	E	C
Approach Delay (s)		51.0			60.0			36.5			54.5	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	50.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	113.8	Sum of lost time (s)	19.0
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	247	610	430	160	320	819
Future Volume (vph)	247	610	430	160	320	819
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	5.3	5.3	5.3	4.0	4.0
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	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
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)	3433	3539	3539	1530	1770	1553
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3539	1530	1770	1553
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	260	642	453	168	337	862
RTOR Reduction (vph)	0	0	0	79	0	0
Lane Group Flow (vph)	260	642	453	89	337	862
Confl. Peds. (#/hr)				12		4
Confl. Bikes (#/hr)				3		
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases				6		4
Actuated Green, G (s)	13.7	24.4	42.3	42.3	50.0	50.0
Effective Green, g (s)	13.7	24.4	42.3	42.3	50.0	50.0
Actuated g/C Ratio	0.11	0.20	0.35	0.35	0.42	0.42
Clearance Time (s)	4.4	5.3	5.3	5.3	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	392	721	1250	540	739	648
v/s Ratio Prot	c0.08	c0.18	c0.13		0.19	
v/s Ratio Perm				0.06		c0.56
v/c Ratio	0.66	0.89	0.36	0.17	0.46	1.33
Uniform Delay, d1	50.8	46.3	28.7	26.6	25.1	34.9
Progression Factor	1.17	0.66	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.1	13.0	0.2	0.1	0.4	159.1
Delay (s)	63.7	43.5	28.9	26.7	25.5	193.9
Level of Service	E	D	C	C	C	F
Approach Delay (s)		49.3	28.3		146.6	
Approach LOS		D	C		F	

Intersection Summary			
HCM 2000 Control Delay	87.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	119.7	Sum of lost time (s)	14.3
Intersection Capacity Utilization	72.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	110	229	604	272	399	180
Future Volume (vph)	110	229	604	272	399	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	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	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	3539	3539	1583	1770	1560
Flt Permitted	0.26	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	486	3539	3539	1583	1770	1560
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	116	241	636	286	420	189
RTOR Reduction (vph)	0	0	0	0	0	74
Lane Group Flow (vph)	116	241	636	286	420	115
Confl. Peds. (#/hr)						2
Turn Type	Perm	NA	NA	pm+ov	Prot	Perm
Protected Phases		4	8	6	6	
Permitted Phases	4			8		6
Actuated Green, G (s)	19.3	19.3	19.3	59.6	40.3	40.3
Effective Green, g (s)	19.3	19.3	19.3	59.6	40.3	40.3
Actuated g/C Ratio	0.29	0.29	0.29	0.88	0.60	0.60
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	138	1010	1010	1583	1055	930
v/s Ratio Prot		0.07	0.18	0.11	c0.24	
v/s Ratio Perm	c0.24			0.07		0.07
v/c Ratio	0.84	0.24	0.63	0.18	0.40	0.12
Uniform Delay, d1	22.7	18.5	21.0	0.6	7.2	6.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	34.5	0.1	1.2	0.1	1.1	0.3
Delay (s)	57.2	18.6	22.3	0.6	8.4	6.2
Level of Service	E	B	C	A	A	A
Approach Delay (s)		31.2	15.6		7.7	
Approach LOS		C	B		A	

Intersection Summary			
HCM 2000 Control Delay	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	67.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	241	1221	30	40	748	860	40	40	50	534	27	176
Future Volume (vph)	241	1221	30	40	748	860	40	40	50	534	27	176
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
Lane Util. Factor	0.97	0.95		1.00	0.91	0.91	1.00	1.00		0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99	0.98	1.00	0.99		1.00	1.00	0.99
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		1.00	0.95	0.85	1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3524		1770	3205	1414	1770	1688		3433	1863	1563
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3524		1770	3205	1414	1770	1688		3433	1863	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)	248	1259	31	41	771	887	41	41	52	551	28	181
RTOR Reduction (vph)	0	2	0	0	48	332	0	48	0	0	0	137
Lane Group Flow (vph)	248	1288	0	41	1096	182	41	45	0	551	28	44
Confl. Bikes (#/hr)			16			11			3			1
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8						6
Actuated Green, G (s)	10.8	40.4		2.7	32.3	32.3	7.8	7.8		22.2	22.2	22.2
Effective Green, g (s)	10.8	40.4		2.7	32.3	32.3	7.8	7.8		22.2	22.2	22.2
Actuated g/C Ratio	0.12	0.44		0.03	0.35	0.35	0.09	0.09		0.24	0.24	0.24
Clearance Time (s)	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
Lane Grp Cap (vph)	406	1562		52	1136	501	151	144		836	453	380
v/s Ratio Prot	c0.07	c0.37		0.02	c0.34		0.02	c0.03		c0.16	0.02	
v/s Ratio Perm						0.13						0.03
v/c Ratio	0.61	0.82		0.79	0.96	0.36	0.27	0.32		0.66	0.06	0.12
Uniform Delay, d1	38.2	22.2		43.9	28.8	21.8	39.0	39.1		31.0	26.5	26.8
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	2.7	3.7		53.8	18.6	0.5	1.0	1.3		4.1	0.3	0.6
Delay (s)	40.9	25.9		97.7	47.4	22.2	40.0	40.4		35.1	26.7	27.4
Level of Service	D	C		F	D	C	D	D		D	C	C
Approach Delay (s)		28.3			41.0			40.3			33.0	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	34.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	91.1	Sum of lost time (s)	18.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	307	1611	871	113	46	115
Future Volume (vph)	307	1611	871	113	46	115
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	0.97	0.95	0.95	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)	3433	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	323	1696	917	119	48	121
RTOR Reduction (vph)	0	0	0	65	0	87
Lane Group Flow (vph)	323	1696	917	54	48	34
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	12.8	46.7	29.4	29.4	21.9	21.9
Effective Green, g (s)	12.8	46.7	29.4	29.4	21.9	21.9
Actuated g/C Ratio	0.16	0.60	0.38	0.38	0.28	0.28
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)	566	2129	1340	599	499	446
v/s Ratio Prot	0.09	c0.48	0.26		c0.03	
v/s Ratio Perm				0.03		0.02
v/c Ratio	0.57	0.80	0.68	0.09	0.10	0.08
Uniform Delay, d1	29.9	11.8	20.2	15.5	20.5	20.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	2.2	1.5	0.1	0.4	0.3
Delay (s)	31.3	14.0	21.7	15.6	20.9	20.8
Level of Service	C	B	C	B	C	C
Approach Delay (s)		16.7	21.0		20.8	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	77.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	30	20	1583	10	10	1021
Future Volume (vph)	30	20	1583	10	10	1021
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	0.95		1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3535		1770	3539
Flt Permitted	0.95	1.00	1.00		0.12	1.00
Satd. Flow (perm)	1770	1583	3535		231	3539
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	32	21	1684	11	11	1086
RTOR Reduction (vph)	0	20	0	0	0	0
Lane Group Flow (vph)	32	1	1695	0	11	1086
Confl. Bikes (#/hr)				2		
Turn Type	Prot	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Actuated Green, G (s)	5.9	5.9	78.6		78.6	78.6
Effective Green, g (s)	5.9	5.9	78.6		78.6	78.6
Actuated g/C Ratio	0.06	0.06	0.84		0.84	0.84
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)	111	99	2971		194	2975
v/s Ratio Prot	c0.02		c0.48			0.31
v/s Ratio Perm		0.00			0.05	
v/c Ratio	0.29	0.01	0.57		0.06	0.37
Uniform Delay, d1	41.8	41.1	2.3		1.2	1.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.4	0.1	0.8		0.6	0.3
Delay (s)	43.2	41.1	3.1		1.8	2.1
Level of Service	D	D	A		A	A
Approach Delay (s)	42.4		3.1			2.1
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay	3.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	93.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	61	304	131	1529	1017	52
Future Volume (vph)	61	304	131	1529	1017	52
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	0.95	0.95	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	3539	3539	1546
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	3539	3539	1546
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)	69	345	149	2259	1502	59
RTOR Reduction (vph)	0	178	0	0	0	16
Lane Group Flow (vph)	69	167	149	2259	1502	43
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)	14.9	14.9	12.8	71.5	54.7	54.7
Effective Green, g (s)	14.9	14.9	12.8	71.5	54.7	54.7
Actuated g/C Ratio	0.15	0.15	0.13	0.74	0.57	0.57
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)	273	244	234	2619	2003	875
v/s Ratio Prot	0.04		0.08	c0.64	0.42	
v/s Ratio Perm		c0.11				0.03
v/c Ratio	0.25	0.69	0.64	0.86	0.75	0.05
Uniform Delay, d1	36.0	38.6	39.7	9.0	15.8	9.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	7.8	5.6	3.2	1.6	0.0
Delay (s)	36.4	46.4	45.3	12.2	17.4	9.4
Level of Service	D	D	D	B	B	A
Approach Delay (s)	44.7			14.2	17.1	
Approach LOS	D			B	B	

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	96.6	Sum of lost time (s)	14.2
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	669	0	260	5	0	0	210	931	0	5	741	510
Future Volume (vph)	669	0	260	5	0	0	210	931	0	5	741	510
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		4.0		5.0	5.5		4.5	5.5	5.5
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95		1.00	0.95	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	1.00	0.85		1.00		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.95		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1681	1583		1770		1770	3539		1770	3539	1558
Flt Permitted	0.95	0.95	1.00		0.75		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1681	1681	1583		1406		1770	3539		1770	3539	1558
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)	719	0	280	5	0	0	226	1001	0	5	797	548
RTOR Reduction (vph)	0	0	204	0	0	0	0	0	0	0	0	154
Lane Group Flow (vph)	359	360	76	0	5	0	226	1001	0	5	797	394
Confl. Peds. (#/hr)												1
Confl. Bikes (#/hr)												5
Turn Type	Split	NA	Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4			8		5	2		1	6	
Permitted Phases			4	8								6
Actuated Green, G (s)	26.3	26.3	26.3		5.3		15.5	49.2		0.6	33.8	33.8
Effective Green, g (s)	26.3	26.3	26.3		5.3		15.5	49.2		0.6	33.8	33.8
Actuated g/C Ratio	0.26	0.26	0.26		0.05		0.16	0.49		0.01	0.34	0.34
Clearance Time (s)	4.0	4.0	4.0		4.0		5.0	5.5		4.5	5.5	5.5
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)	444	444	418		74		276	1751		10	1203	529
v/s Ratio Prot	0.21	c0.21					c0.13	0.28		0.00	0.23	
v/s Ratio Perm			0.05		c0.00							c0.25
v/c Ratio	0.81	0.81	0.18		0.07		0.82	0.57		0.50	0.66	0.74
Uniform Delay, d1	34.2	34.2	28.2		44.7		40.6	17.7		49.3	27.9	29.0
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	10.4	10.7	0.2		0.4		17.0	0.5		34.4	1.4	5.6
Delay (s)	44.6	45.0	28.5		45.1		57.6	18.1		83.6	29.3	34.6
Level of Service	D	D	C		D		E	B		F	C	C
Approach Delay (s)		40.2			45.1			25.4			31.7	
Approach LOS		D			D			C			C	

Intersection Summary				
HCM 2000 Control Delay	31.9	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	99.4	Sum of lost time (s)	18.5	
Intersection Capacity Utilization	61.6%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	444	815	346	617	551	135	579	1266	494	167	1172	285
Future Volume (vph)	444	815	346	617	551	135	579	1266	494	167	1172	285
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	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	1.00
Frpb, ped/bikes	1.00	1.00	0.97	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	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1538	3433	3421		3433	3539	1561	3433	3539	1558
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1538	3433	3421		3433	3539	1561	3433	3539	1558
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)	477	876	372	663	592	145	623	1361	531	180	1260	306
RTOR Reduction (vph)	0	0	149	0	18	0	0	0	30	0	0	152
Lane Group Flow (vph)	477	876	223	663	719	0	623	1361	501	180	1260	154
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	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	17.1	28.0	28.0	17.8	29.0		16.8	47.4	65.2	7.0	38.4	38.4
Effective Green, g (s)	17.1	28.0	28.0	17.8	29.0		16.8	47.4	65.2	7.0	38.4	38.4
Actuated g/C Ratio	0.14	0.23	0.23	0.15	0.24		0.14	0.39	0.54	0.06	0.32	0.32
Clearance Time (s)	4.2	5.3	5.3	4.2	5.0		4.2	5.3	4.2	5.0	5.3	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)	489	825	358	509	826		480	1397	848	200	1132	498
v/s Ratio Prot	0.14	c0.25		c0.19	0.21		c0.18	0.38	0.09	0.05	c0.36	
v/s Ratio Perm			0.15						0.23			0.10
v/c Ratio	0.98	1.06	0.62	1.30	0.87		1.30	0.97	0.59	0.90	1.11	0.31
Uniform Delay, d1	51.2	46.0	41.3	51.1	43.7		51.6	35.7	18.4	56.2	40.8	30.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	34.1	49.1	3.4	150.0	9.9		148.8	18.1	1.1	37.2	63.4	0.4
Delay (s)	85.3	95.1	44.6	201.1	53.6		200.4	53.8	19.5	93.4	104.2	31.1
Level of Service	F	F	D	F	D		F	D	B	F	F	C
Approach Delay (s)		81.5			123.4			82.9			90.3	
Approach LOS		F			F			F			F	

Intersection Summary				
HCM 2000 Control Delay	92.0	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	1.17			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.8	
Intersection Capacity Utilization	105.1%	ICU Level of Service	G	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	990	680	750	400	230	329
Future Volume (vph)	990	680	750	400	230	329
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	5.3	5.3	5.3	4.0	7.0
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	0.97
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)	3433	3539	3539	1522	1770	1538
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3539	1522	1770	1538
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1031	708	781	417	240	343
RTOR Reduction (vph)	0	0	0	153	0	0
Lane Group Flow (vph)	1031	708	781	264	240	343
Confl. Peds. (#/hr)				19		12
Confl. Bikes (#/hr)				4		
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases				6		4
Actuated Green, G (s)	28.2	32.8	22.6	22.6	23.7	23.7
Effective Green, g (s)	28.2	32.8	22.6	22.6	23.7	20.7
Actuated g/C Ratio	0.32	0.37	0.26	0.26	0.27	0.23
Clearance Time (s)	4.4	5.3	5.3	5.3	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1097	1316	906	389	475	360
v/s Ratio Prot	c0.30	0.20	c0.22		0.14	
v/s Ratio Perm				0.17		c0.22
v/c Ratio	0.94	0.54	0.86	0.68	0.51	0.95
Uniform Delay, d1	29.2	21.8	31.3	29.5	27.3	33.3
Progression Factor	1.16	0.85	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.1	0.4	8.5	4.6	0.8	35.0
Delay (s)	48.1	18.8	39.8	34.2	28.1	68.3
Level of Service	D	B	D	C	C	E
Approach Delay (s)		36.2	37.8		51.8	
Approach LOS		D	D		D	

Intersection Summary			
HCM 2000 Control Delay	39.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	88.2	Sum of lost time (s)	14.3
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	250	612	282	485	424	110
Future Volume (vph)	250	612	282	485	424	110
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	0.95	0.95	1.00	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	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	3539	3539	1583	1770	1562
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1562
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	665	307	527	461	120
RTOR Reduction (vph)	0	0	0	432	0	66
Lane Group Flow (vph)	272	665	307	95	461	54
Confl. Bikes (#/hr)						3
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	16.3	35.3	14.5	14.5	35.8	35.8
Effective Green, g (s)	16.3	35.3	14.5	14.5	35.8	35.8
Actuated g/C Ratio	0.20	0.44	0.18	0.18	0.45	0.45
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)	360	1559	640	286	791	698
v/s Ratio Prot	c0.15	c0.19	0.09		c0.26	
v/s Ratio Perm				0.06		0.03
v/c Ratio	0.76	0.43	0.48	0.33	0.58	0.08
Uniform Delay, d1	30.0	15.4	29.4	28.6	16.6	12.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.7	0.2	0.6	0.7	3.1	0.2
Delay (s)	38.8	15.6	30.0	29.3	19.7	12.9
Level of Service	D	B	C	C	B	B
Approach Delay (s)		22.3	29.5		18.3	
Approach LOS		C	C		B	

Intersection Summary			
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	80.1	Sum of lost time (s)	13.5
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX L–3

ARTERIAL ANALYSIS WORKSHEETS – EXISTING + PROJECT

Arterial Level of Service: EB S. Santa Fe Ave

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Robelini Dr	II	40	21.8	72.3	94.1	0.19	7.2	F
Buena Creek Rd	II	40	9.4	74.4	83.8	0.08	3.5	F
Total	II		31.2	146.7	177.9	0.27	5.5	F

Arterial Level of Service: WB S. Santa Fe Ave

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Buena Creek Rd	II	40	21.8	35.0	56.8	0.19	12.0	F
Robelini Dr	II	40	9.4	33.4	42.8	0.08	6.9	F
Total	II		31.2	68.4	99.6	0.27	9.8	F

Arterial Level of Service: NB Twin Oaks Valley Rd #1

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Richmar Ave	I	45	22.7	12.8	35.5	0.22	22.1	D
Borden Rd	I	45	42.2	17.7	59.9	0.46	27.9	C
Windy Wy	I	45	13.0	3.6	16.6	0.13	27.1	C
Del Roy Dr	I	50	80.0	6.8	86.8	1.11	46.1	A
La Cienega	I	50	29.9	17.3	47.2	0.33	25.0	D
Cassou Rd	I	45	39.2	21.1	60.3	0.42	24.9	D
Buena Creek Rd	I	45	12.8	6.8	19.6	0.12	22.6	D
Twin Oaks Valley Rd	I	45	19.1	3.8	22.9	0.18	28.9	C
Total	I		258.9	89.9	348.8	2.97	30.6	C

Arterial Level of Service: SB Twin Oaks Valley Rd #1

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Buena Creek Rd	I	45	19.1	32.6	51.7	0.18	12.8	F
Cassou Rd	I	45	12.8	31.3	44.1	0.12	10.0	F
La Cienega	I	45	39.2	10.9	50.1	0.42	29.9	C
Del Roy Dr	I	50	29.9	10.6	40.5	0.33	29.2	C
Windy Wy	I	50	80.0	10.3	90.3	1.11	44.3	A
Borden Rd	I	45	13.0	28.9	41.9	0.13	10.8	F
Richmar Ave	I	45	42.2	24.6	66.8	0.46	25.0	D
San Marcos Blvd	I	45	22.7	35.4	58.1	0.22	13.5	F
Total	I		258.9	184.6	443.5	2.97	24.1	D

Arterial Level of Service: EB S. Santa Fe Ave

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Robelini Dr	II	40	21.8	23.6	45.4	0.19	15.0	E
Buena Creek Rd	II	40	9.4	16.5	25.9	0.08	11.3	F
Total	II		31.2	40.1	71.3	0.27	13.7	E

Arterial Level of Service: WB S. Santa Fe Ave

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Buena Creek Rd	II	40	21.8	64.5	86.3	0.19	7.9	F
Robelini Dr	II	40	9.4	34.9	44.3	0.08	6.6	F
Total	II		31.2	99.4	130.6	0.27	7.5	F

Arterial Level of Service: NB Twin Oaks Valley Rd #1

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Richmar Ave	I	45	22.7	21.5	44.2	0.22	17.7	E
Borden Rd	I	45	42.2	25.3	67.5	0.46	24.7	D
Windy Wy	I	45	13.0	7.1	20.1	0.13	22.4	D
Del Roy Dr	I	50	80.0	7.0	87.0	1.11	45.9	A
La Cienega	I	50	29.9	16.4	46.3	0.33	25.5	D
Cassou Rd	I	45	39.2	16.4	55.6	0.42	27.0	D
Buena Creek Rd	I	45	12.8	14.4	27.2	0.12	16.3	E
Twin Oaks Valley Rd	I	45	19.1	18.8	37.9	0.18	17.5	E
Total	I		258.9	126.9	385.8	2.97	27.7	C

Arterial Level of Service: SB Twin Oaks Valley Rd #1

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Buena Creek Rd	I	45	19.1	38.3	57.4	0.18	11.5	F
Cassou Rd	I	45	12.8	19.5	32.3	0.12	13.7	F
La Cienega	I	45	39.2	5.4	44.6	0.42	33.6	C
Del Roy Dr	I	50	29.9	13.0	42.9	0.33	27.5	C
Windy Wy	I	50	80.0	9.0	89.0	1.11	44.9	A
Borden Rd	I	45	13.0	35.2	48.2	0.13	9.4	F
Richmar Ave	I	45	42.2	30.5	72.7	0.46	23.0	D
San Marcos Blvd	I	45	22.7	57.7	80.4	0.22	9.8	F
Total	I		258.9	208.6	467.5	2.97	22.9	D

Arterial Level of Service: Buena Creek Road - S. Santa Fe Ave to Monte Vista Dr

Scenario	Peak Hour	Direction	Class	Flow Speed	Running Time	Signal Delay	Travel Time	Distance	Speed	LOS
Existing	**AM**	EB	2	40	108	14.8	122.8	1.20	35.2	A
		WB	2	40	108	150.3	258.3	1.20	16.7	E
	PM	EB	2	40	108	100.3	208.3	1.20	20.7	D
		WB	2	40	108	74.9	182.9	1.20	23.6	C

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Arterial Level of Service: Buena Creek Road - Monte Vista Dr to Twin Oaks Valley Rd

Scenario	Peak Hour	Direction	Flow Speed	Running Time	Signal Delay	Travel Time	Distance	Speed	LOS
Existing	**AM**	EB	40	243	41.1	284.1	2.70	34.2	B
		WB	40	243	44.0	287	2.70	33.9	B
	PM	EB	40	243	47.8	290.8	2.70	33.4	B
		WB	40	243	63.2	306.2	2.70	31.7	B

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Arterial Level of Service - Monte Vista Drive: Foothill Dr to Buena Creek Rd

Scenario	Class	Peak Hour	Direction	Flow Speed	Running Time	Signal Delay	Travel Time	Distance	Speed	LOS
Existing	2	**AM**	NB	45	44.8	12.7	57.5	0.56	35.1	A
	2		SB	45	44.8	31.8	76.6	0.56	26.3	C
	2	**PM**	NB	45	44.8	13.9	58.7	0.56	34.3	B
	2		SB	45	44.8	38.7	83.5	0.56	24.1	C

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Arterial Level of Service: EB S. Santa Fe Ave

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Robelini Dr	II	40	21.8	73.9	95.7	0.19	7.1	F
Buena Creek Rd	II	40	9.4	75.8	85.2	0.08	3.4	F
Total	II		31.2	149.7	180.9	0.27	5.4	F

Arterial Level of Service: WB S. Santa Fe Ave

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Buena Creek Rd	II	40	21.8	36.4	58.2	0.19	11.7	F
Robelini Dr	II	40	9.4	36.4	45.8	0.08	6.4	F
Total	II		31.2	72.8	104.0	0.27	9.4	F

Arterial Level of Service: NB Twin Oaks Valley Rd #1

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Richmar Ave	I	45	22.7	12.3	35.0	0.22	22.4	D
Borden Rd	I	45	42.2	16.7	58.9	0.46	28.4	C
Windy Wy	I	45	13.0	3.5	16.5	0.13	27.3	C
Del Roy Dr	I	50	80.0	6.7	86.7	1.11	46.1	A
La Cienega	I	50	29.9	17.9	47.8	0.33	24.7	D
Cassou Rd	I	45	39.2	23.7	62.9	0.42	23.8	D
Buena Creek Rd	I	45	12.8	9.1	21.9	0.12	20.2	E
Twin Oaks Valley Rd	I	45	19.1	5.2	24.3	0.18	27.2	C
Total	I		258.9	95.1	354.0	2.97	30.2	C

Arterial Level of Service: SB Twin Oaks Valley Rd #1

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Buena Creek Rd	I	45	19.1	91.1	110.2	0.18	6.0	F
Cassou Rd	I	45	12.8	46.2	59.0	0.12	7.5	F
La Cienega	I	45	39.2	12.3	51.5	0.42	29.1	C
Del Roy Dr	I	50	29.9	11.4	41.3	0.33	28.6	C
Windy Wy	I	50	80.0	11.1	91.1	1.11	43.9	A
Borden Rd	I	45	13.0	30.7	43.7	0.13	10.3	F
Richmar Ave	I	45	42.2	24.5	66.7	0.46	25.0	D
San Marcos Blvd	I	45	22.7	41.4	64.1	0.22	12.2	F
Total	I		258.9	268.7	527.6	2.97	20.3	E

Arterial Level of Service: EB S. Santa Fe Ave

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Robelini Dr	II	40	21.8	25.1	46.9	0.19	14.5	E
Buena Creek Rd	II	40	9.4	17.7	27.1	0.08	10.8	F
Total	II		31.2	42.8	74.0	0.27	13.2	E

Arterial Level of Service: WB S. Santa Fe Ave

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Buena Creek Rd	II	40	21.8	65.0	86.8	0.19	7.9	F
Robelini Dr	II	40	9.4	31.9	41.3	0.08	7.1	F
Total	II		31.2	96.9	128.1	0.27	7.6	F

Arterial Level of Service: NB Twin Oaks Valley Rd #1

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Richmar Ave	I	45	22.7	23.3	46.0	0.22	17.0	E
Borden Rd	I	45	42.2	28.6	70.8	0.46	23.6	D
Windy Wy	I	45	13.0	7.1	20.1	0.13	22.4	D
Del Roy Dr	I	50	80.0	7.7	87.7	1.11	45.6	A
La Cienega	I	50	29.9	17.3	47.2	0.33	25.0	D
Cassou Rd	I	45	39.2	22.9	62.1	0.42	24.2	D
Buena Creek Rd	I	45	12.8	26.4	39.2	0.12	11.3	F
Twin Oaks Valley Rd	I	45	19.1	206.7	225.8	0.18	2.9	F
Total	I		258.9	340.0	598.9	2.97	17.8	E

Arterial Level of Service: SB Twin Oaks Valley Rd #1

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Buena Creek Rd	I	45	19.1	63.8	82.9	0.18	8.0	F
Cassou Rd	I	45	12.8	23.5	36.3	0.12	12.2	F
La Cienega	I	45	39.2	5.2	44.4	0.42	33.8	C
Del Roy Dr	I	50	29.9	13.3	43.2	0.33	27.3	C
Windy Wy	I	50	80.0	8.6	88.6	1.11	45.1	A
Borden Rd	I	45	13.0	37.3	50.3	0.13	9.0	F
Richmar Ave	I	45	42.2	30.5	72.7	0.46	23.0	D
San Marcos Blvd	I	45	22.7	60.6	83.3	0.22	9.4	F
Total	I		258.9	242.8	501.7	2.97	21.3	D

Arterial Level of Service: Buena Creek Road - S. Santa Fe Ave to Monte Vista Dr

Scenario	Peak Hour	Direction	Class	Flow Speed	Running Time	Signal Delay	Travel Time	Distance	Speed	LOS
Existing + Project	**AM**	EB	2	40	108	17.8	125.8	1.20	34.3	B
		WB	2	40	108	248.7	356.7	1.20	12.1	F
	PM	EB	2	40	108	247.3	355.3	1.20	12.2	F
		WB	2	40	108	118.2	226.2	1.20	19.1	D

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Arterial Level of Service: Buena Creek Road - Monte Vista Dr to Twin Oaks Valley Rd

Scenario	Peak Hour	Direction	Flow Speed	Running Time	Signal Delay	Travel Time	Distance	Speed	LOS
Existing + Project	**AM**	EB	40	243	51.1	294.1	2.70	33.0	B
		WB	40	243	157.8	400.8	2.70	24.3	C
	PM	EB	40	243	205.0	448	2.70	21.7	D
		WB	40	243	155.9	398.9	2.70	24.4	C

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Arterial Level of Service - Monte Vista Drive: Foothill Dr to Buena Creek Rd

Scenario	Class	Peak Hour	Direction	Flow Speed	Running Time	Signal Delay	Travel Time	Distance	Speed	LOS
Existing + Project	2	**AM**	NB	45	44.8	12.7	57.5	0.56	35.1	A
	2		SB	45	44.8	43.6	88.4	0.56	22.8	C
	2	**PM**	NB	45	44.8	13.9	58.7	0.56	34.3	B
	2		SB	45	44.8	59.7	104.5	0.56	19.3	D

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Arterial Level of Service: EB S. Santa Fe Ave

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Robelini Dr	II	40	21.8	69.4	91.2	0.19	7.5	F
Buena Creek Rd	II	40	9.4	69.5	78.9	0.08	3.7	F
Total	II		31.2	138.9	170.1	0.27	5.7	F

Arterial Level of Service: WB S. Santa Fe Ave

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Buena Creek Rd	II	40	21.8	33.8	55.6	0.19	12.3	F
Robelini Dr	II	40	9.4	36.4	45.8	0.08	6.4	F
Total	II		31.2	70.2	101.4	0.27	9.6	F

Arterial Level of Service: NB Twin Oaks Valley Rd #1

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Richmar Road	I	45	22.7	12.3	35.0	0.22	22.4	D
Borden Rd	I	45	42.2	16.7	58.9	0.46	28.4	C
Windy Wy	I	45	13.0	3.6	16.6	0.13	27.1	C
Del Roy Dr	I	50	80.0	6.7	86.7	1.11	46.1	A
La Cienega	I	50	29.9	17.9	47.8	0.33	24.7	D
Cassou Rd	I	45	39.2	24.4	63.6	0.42	23.6	D
Buena Creek Rd	I	45	12.8	6.5	19.3	0.12	23.0	D
Twin Oaks Valley Rd	I	45	19.1	3.2	22.3	0.18	29.7	C
Total	I		258.9	91.3	350.2	2.97	30.5	C

Arterial Level of Service: SB Twin Oaks Valley Rd #1

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Buena Creek Rd	I	45	19.1	18.9	38.0	0.18	17.4	E
Cassou Rd	I	45	12.8	20.7	33.5	0.12	13.2	F
La Cienega	I	45	39.2	12.3	51.5	0.42	29.1	C
Del Roy Dr	I	50	29.9	11.3	41.2	0.33	28.7	C
Windy Wy	I	50	80.0	10.0	90.0	1.11	44.4	A
Borden Rd	I	45	13.0	30.7	43.7	0.13	10.3	F
Richmar Road	I	45	42.2	24.5	66.7	0.46	25.0	D
San Marcos Blvd	I	45	22.7	32.3	55.0	0.22	14.3	F
Total	I		258.9	160.7	419.6	2.97	25.5	D

Arterial Level of Service: EB S. Santa Fe Ave

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Robelini Dr	II	40	21.8	22.2	44.0	0.19	15.5	E
Buena Creek Rd	II	40	9.4	16.5	25.9	0.08	11.3	F
Total	II		31.2	38.7	69.9	0.27	13.9	E

Arterial Level of Service: WB S. Santa Fe Ave

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Buena Creek Rd	II	40	21.8	79.2	101.0	0.19	6.8	F
Robelini Dr	II	40	9.4	48.4	57.8	0.08	5.1	F
Total	II		31.2	127.6	158.8	0.27	6.1	F

Arterial Level of Service: NB Twin Oaks Valley Rd #1

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Richmar Road	I	45	22.7	23.3	46.0	0.22	17.0	E
Borden Rd	I	45	42.2	28.6	70.8	0.46	23.6	D
Windy Wy	I	45	13.0	8.8	21.8	0.13	20.7	E
Del Roy Dr	I	50	80.0	7.0	87.0	1.11	45.9	A
La Cienega	I	50	29.9	17.3	47.2	0.33	25.0	D
Cassou Rd	I	45	39.2	23.0	62.2	0.42	24.1	D
Buena Creek Rd	I	45	12.8	11.5	24.3	0.12	18.2	E
Twin Oaks Valley Rd	I	45	19.1	9.4	28.5	0.18	23.2	D
Total	I		258.9	128.9	387.8	2.97	27.6	C

Arterial Level of Service: SB Twin Oaks Valley Rd #1

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Buena Creek Rd	I	45	19.1	23.6	42.7	0.18	15.5	F
Cassou Rd	I	45	12.8	15.8	28.6	0.12	15.5	F
La Cienega	I	45	39.2	5.2	44.4	0.42	33.8	C
Del Roy Dr	I	50	29.9	12.5	42.4	0.33	27.9	C
Windy Wy	I	50	80.0	9.6	89.6	1.11	44.6	A
Borden Rd	I	45	13.0	37.3	50.3	0.13	9.0	F
Richmar Road	I	45	42.2	30.5	72.7	0.46	23.0	D
San Marcos Blvd	I	45	22.7	45.0	67.7	0.22	11.6	F
Total	I		258.9	179.5	438.4	2.97	24.4	D

Arterial Level of Service: Buena Creek Road - S. Santa Fe Ave to Monte Vista Dr

Scenario	Peak Hour	Direction	Class	Flow Speed	Running Time	Signal Delay	Travel Time	Distance	Speed	LOS
Existing + Project *Mitigated*	**AM**	EB	2	40	108	11.4	119.4	1.20	36.2	A
		WB	2	40	108	24.9	132.9	1.20	32.5	B
	PM	EB	2	40	108	15.4	123.4	1.20	35.0	A
		WB	2	40	108	50.7	158.7	1.20	27.2	C

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Arterial Level of Service: Buena Creek Road - Monte Vista Dr to Twin Oaks Valley Rd

Scenario	Peak Hour	Direction	Flow Speed	Running Time	Signal Delay	Travel Time	Distance	Speed	LOS
Existing + Project *Mitigated*	**AM**	EB	40	243	21.2	264.2	2.70	36.8	A
		WB	40	243	14.9	257.9	2.70	37.7	A
	PM	EB	40	243	21.1	264.1	2.70	36.8	A
		WB	40	243	27.7	270.7	2.70	35.9	A

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Arterial Level of Service - Monte Vista Drive: Foothill Dr to Buena Creek Rd

Scenario	Class	Peak Hour	Direction	Flow Speed	Running Time	Signal Delay	Travel Time	Distance	Speed	LOS
Existing + Project *(Mitigated)*	2	**AM**	NB	45	44.8	12.7	57.5	0.56	35.1	A
	2		SB	45	44.8	31.4	76.2	0.56	26.5	C
	2	**PM**	NB	45	44.8	13.9	58.7	0.56	34.3	B
	2		SB	45	44.8	35.5	80.3	0.56	25.1	C

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APPENDIX L–4

ARTERIAL ANALYSIS WORKSHEETS
– EXISTING + PROJECT + CUMULATIVE PROJECTS

Arterial Level of Service: NB Twin Oaks Valley Rd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Richmar Ave	I	45	22.7	13.8	36.5	0.22	21.5	D
Borden Rd	I	45	42.2	22.9	65.1	0.46	25.7	D
Windy Wy	I	45	13.0	4.9	17.9	0.13	25.2	D
Del Roy Dr	I	50	80.0	7.1	87.1	1.11	45.9	A
La Cienega	I	50	29.9	20.9	50.8	0.33	23.2	D
Cassou Rd	I	45	39.2	24.2	63.4	0.42	23.7	D
Buena Creek Rd	I	45	12.8	11.5	24.3	0.12	18.2	E
Deer Springs Rd	I	45	19.1	6.3	25.4	0.18	26.0	D
Total	I		258.9	111.6	370.5	2.97	28.8	C

Arterial Level of Service: SB Twin Oaks Valley Rd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Buena Creek Rd	I	45	19.1	166.3	185.4	0.18	3.6	F
Cassou Rd	I	45	12.8	59.0	71.8	0.12	6.2	F
La Cienega	I	45	39.2	13.2	52.4	0.42	28.6	C
Del Roy Dr	I	50	29.9	14.4	44.3	0.33	26.7	D
Windy Wy	I	50	80.0	12.2	92.2	1.11	43.4	A
Borden Rd	I	45	13.0	41.6	54.6	0.13	8.3	F
Richmar Ave	I	45	42.2	31.0	73.2	0.46	22.8	D
San Marcos Blvd	I	45	22.7	116.6	139.3	0.22	5.6	F
Total	I		258.9	454.3	713.2	2.97	15.0	F

Arterial Level of Service: NB Twin Oaks Valley Rd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Richmar Ave	I	45	22.7	27.9	50.6	0.22	15.5	F
Borden Rd	I	45	42.2	37.7	79.9	0.46	20.9	E
Windy Wy	I	45	13.0	7.6	20.6	0.13	21.9	D
Del Roy Dr	I	50	80.0	11.6	91.6	1.11	43.6	A
La Cienega	I	50	29.9	19.9	49.8	0.33	23.7	D
Cassou Rd	I	45	39.2	29.2	68.4	0.42	21.9	D
Buena Creek Rd	I	45	12.8	40.8	53.6	0.12	8.3	F
Deer Springs Rd	I	45	19.1	337.5	356.6	0.18	1.9	F
Total	I		258.9	512.2	771.1	2.97	13.9	F

Arterial Level of Service: SB Twin Oaks Valley Rd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Buena Creek Rd	I	45	19.1	91.8	110.9	0.18	6.0	F
Cassou Rd	I	45	12.8	27.7	40.5	0.12	10.9	F
La Cienega	I	45	39.2	5.9	45.1	0.42	33.3	C
Del Roy Dr	I	50	29.9	16.0	45.9	0.33	25.7	D
Windy Wy	I	50	80.0	8.8	88.8	1.11	45.0	A
Borden Rd	I	45	13.0	47.8	60.8	0.13	7.4	F
Richmar Ave	I	45	42.2	36.3	78.5	0.46	21.3	D
San Marcos Blvd	I	45	22.7	163.8	186.5	0.22	4.2	F
Total	I		258.9	398.1	657.0	2.97	16.3	E

Arterial Level of Service: Buena Creek Road - S. Santa Fe Ave to Monte Vista Dr

Scenario	Peak Hour	Direction	Class	Flow Speed	Running Time	Signal Delay	Travel Time	Distance	Speed	LOS
Existing + Project + Cumulative	**AM**	EB	2	40	108	25.1	133.1	1.20	32.5	B
		WB	2	40	108	609.1	717.1	1.20	6.0	F
	PM	EB	2	40	108	403.8	511.8	1.20	8.4	F
		WB	2	40	108	387.4	495.4	1.20	8.7	F

Arterial Level of Service: Buena Creek Road - Monte Vista Dr to Twin Oaks Valley Rd

Scenario	Peak Hour	Direction	Flow Speed	Running Time	Signal Delay	Travel Time	Distance	Speed	LOS
Existing + Project + Cumulative	**AM**	EB	40	243	74.1	317.1	2.70	30.7	B
		WB	40	243	321.6	564.6	2.70	17.2	D
	PM	EB	40	243	229.6	472.6	2.70	20.6	D
		WB	40	243	269.6	512.6	2.70	19.0	D

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Arterial Level of Service - Monte Vista Drive: Foothill Dr to Buena Creek Rd

Scenario	Class	Peak Hour	Direction	Flow Speed	Running Time	Signal Delay	Travel Time	Distance	Speed	LOS
Existing + Project + Cumulative	2	**AM**	NB	45	44.8	12.7	57.5	0.56	35.1	A
	2		SB	45	44.8	100.1	144.9	0.56	13.9	E
	2	**PM**	NB	45	44.8	13.9	58.7	0.56	34.3	B
	2		SB	45	44.8	108.8	153.6	0.56	13.1	E

Arterial Level of Service: NB Twin Oaks Valley Rd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Richmar Ave	I	45	22.7	13.8	36.5	0.22	21.5	D
Borden Rd	I	45	42.2	22.9	65.1	0.46	25.7	D
Windy Wy	I	45	13.0	4.9	17.9	0.13	25.2	D
Del Roy Dr	I	50	80.0	7.1	87.1	1.11	45.9	A
La Cienega	I	50	29.9	20.9	50.8	0.33	23.2	D
Cassou Rd	I	45	39.2	23.3	62.5	0.42	24.0	D
Buena Creek Rd	I	45	12.8	10.6	23.4	0.12	18.9	E
Deer Springs Rd	I	45	19.1	3.4	22.5	0.18	29.4	C
Total	I		258.9	106.9	365.8	2.97	29.2	C

Arterial Level of Service: SB Twin Oaks Valley Rd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Buena Creek Rd	I	45	19.1	25.6	44.7	0.18	14.8	F
Cassou Rd	I	45	12.8	64.2	77.0	0.12	5.8	F
La Cienega	I	45	39.2	13.2	52.4	0.42	28.6	C
Del Roy Dr	I	50	29.9	14.3	44.2	0.33	26.7	D
Windy Wy	I	50	80.0	12.0	92.0	1.11	43.5	A
Borden Rd	I	45	13.0	41.6	54.6	0.13	8.3	F
Richmar Ave	I	45	42.2	31.0	73.2	0.46	22.8	D
San Marcos Blvd	I	45	22.7	47.6	70.3	0.22	11.2	F
Total	I		258.9	249.5	508.4	2.97	21.0	D

Arterial Level of Service: NB Twin Oaks Valley Rd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Richmar Ave	I	45	22.7	27.9	50.6	0.22	15.5	F
Borden Rd	I	45	42.2	37.7	79.9	0.46	20.9	E
Windy Wy	I	45	13.0	9.9	22.9	0.13	19.7	E
Del Roy Dr	I	50	80.0	10.8	90.8	1.11	44.0	A
La Cienega	I	50	29.9	19.9	49.8	0.33	23.7	D
Cassou Rd	I	45	39.2	29.2	68.4	0.42	21.9	D
Buena Creek Rd	I	45	12.8	19.4	32.2	0.12	13.8	F
Deer Springs Rd	I	45	19.1	14.7	33.8	0.18	19.6	E
Total	I		258.9	169.5	428.4	2.97	24.9	D

Arterial Level of Service: SB Twin Oaks Valley Rd

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Buena Creek Rd	I	45	19.1	33.8	52.9	0.18	12.5	F
Cassou Rd	I	45	12.8	27.7	40.5	0.12	10.9	F
La Cienega	I	45	39.2	5.9	45.1	0.42	33.3	C
Del Roy Dr	I	50	29.9	15.2	45.1	0.33	26.2	D
Windy Wy	I	50	80.0	10.3	90.3	1.11	44.3	A
Borden Rd	I	45	13.0	47.8	60.8	0.13	7.4	F
Richmar Ave	I	45	42.2	36.3	78.5	0.46	21.3	D
San Marcos Blvd	I	45	22.7	58.4	81.1	0.22	9.7	F
Total	I		258.9	235.4	494.3	2.97	21.6	D

Arterial Level of Service: Buena Creek Road - S. Santa Fe Ave to Monte Vista Dr

Scenario	Peak Hour	Direction	Class	Flow Speed	Running Time	Signal Delay	Travel Time	Distance	Speed	LOS
Existing + Project + Cumulative *Mitigated*	**AM**	EB	2	40	108	9.6	117.6	1.20	36.7	A
		WB	2	40	108	27.6	135.6	1.20	31.9	B
	PM	EB	2	40	108	11.2	119.2	1.20	36.2	A
		WB	2	40	108	31.7	139.7	1.20	30.9	B

Arterial Level of Service: Buena Creek Road - Monte Vista Dr to Twin Oaks Valley Rd

Scenario	Peak Hour	Direction	Flow Speed	Running Time	Signal Delay	Travel Time	Distance	Speed	LOS
Existing + Project + Cumulative *Mitigated*	**AM**	EB	40	243	33.7	276.7	2.70	35.1	A
		WB	40	243	11.5	254.5	2.70	38.2	A
	PM	EB	40	243	34.0	277	2.70	35.1	A
		WB	40	243	26.6	269.6	2.70	36.1	A

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Arterial Level of Service - Monte Vista Drive: Foothill Dr to Buena Creek Rd

Scenario	Class	Peak Hour	Direction	Flow Speed	Running Time	Signal Delay	Travel Time	Distance	Speed	LOS
Existing + Project + Cumulative *(Mitigated)*	2	**AM**	NB	45	44.8	12.7	57.5	0.56	35.1	A
	2		SB	45	44.8	13.9	58.7	0.56	34.3	B
	2	**PM**	NB	45	44.8	13.9	58.7	0.56	34.3	B
	2		SB	45	44.8	29.1	73.9	0.56	27.3	C