

TECHNICAL APPENDICES  
**SAFARI HIGHLANDS RANCH**  
Escondido, California  
October 4, 2017

LLG Ref. 3-14-2334

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Greenspan, Engineers**

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## APPENDICES

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### APPENDIX

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## **APPENDIX A**

### **INTERSECTION & SEGMENT MANUAL COUNT SHEETS, CALTRANS FREEWAY RAMP METER RATES**





## Turn Count Summary

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



## Vehicular Count

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



**Location:** Rockwood Rd @ Cloverdale Rd

**Date of Count:** Tuesday, May 06, 2014

**Analysts:** LV/CD

**Weather:** Sunny

**AVC Proj No:** 14-0198



**Location:** Rockwood Rd @ Cloverdale Rd

	AM Period (7:00 AM - 9:00 AM)						TOTAL
	Southbound		Westbound		Northbound		
	Thru	Left	Right	Left	Right	Thru	
7:00 AM	56	0	1	56	11	6	130
7:15 AM	38	0	0	48	15	7	108
7:30 AM	27	1	1	43	24	9	105
7:45 AM	22	4	1	38	25	10	100
8:00 AM	21	23	9	62	56	5	176
8:15 AM	25	26	10	96	87	12	256
8:30 AM	26	1	3	82	23	6	141
8:45 AM	15	0	0	35	12	8	70
<b>Total</b>	<b>230</b>	<b>55</b>	<b>25</b>	<b>460</b>	<b>253</b>	<b>63</b>	<b>1,086</b>

AM Intersection Peak Hour : **7:45 AM - 8:45 AM** Intersection PHF : **0.66**

	Southbound		Westbound		Northbound		TOTAL
	Thru	Left	Right	Left	Right	Thru	
Volume	94	54	23	278	191	33	673
PHF	0.90	0.52	0.58	0.72	0.55	0.69	0.66
Movement PHF	0.73		0.71		0.57		0.66

	PM Period (4:00 PM - 6:00 PM)						TOTAL
	Southbound		Westbound		Northbound		
	Thru	Left	Right	Left	Right	Thru	
4:00 PM	13	4	4	28	36	21	106
4:15 PM	13	0	0	28	28	30	99
4:30 PM	12	0	1	36	40	25	114
4:45 PM	10	0	0	37	29	22	98
5:00 PM	14	2	1	21	29	31	98
5:15 PM	17	1	1	17	57	21	114
5:30 PM	15	2	1	23	45	31	117
5:45 PM	9	0	2	32	34	27	104
<b>Total</b>	<b>103</b>	<b>9</b>	<b>10</b>	<b>222</b>	<b>298</b>	<b>208</b>	<b>850</b>

PM Intersection Peak Hour : **5:00 PM - 6:00 PM** Intersection PHF : **0.93**

	Southbound		Westbound		Northbound		TOTAL
	Thru	Left	Right	Left	Right	Thru	
Volume	55	5	5	93	165	110	433
PHF	0.809	0.625	0.625	0.727	0.724	0.887	0.93
Movement PHF	0.83		0.72		0.88		0.93



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## Vehicular Count

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**Location:** Rockwood Road @ Old Ranch Road

**Date of Count:** Thursday, October 23, 2014

**Analysts:** LV/CD

**Weather:** Sunny

**AVC Proj No:** 14-0271



**Location:** Rockwood Road @ Old Ranch Road

	Southbound		Westbound		Eastbound		TOTAL
	Right	Left	Right	Thru	Thru	Left	
7:00 AM	50	1	0	14	2	13	80
7:15 AM	34	0	0	11	2	11	58
7:30 AM	19	1	0	13	0	14	47
7:45 AM	28	1	0	7	1	10	47
8:00 AM	51	0	0	17	7	21	96
8:15 AM	58	1	0	17	8	40	124
8:30 AM	19	0	0	6	5	25	55
8:45 AM	26	0	1	4	3	17	51
Total	285	4	1	89	28	151	558

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

Intersection PHF : 0.66

	Southbound		Westbound		Eastbound		TOTAL
	Right	Left	Right	Thru	Thru	Left	
Volume	154	1	1	44	23	103	326
PHF	0.66	0.25	0.25	0.65	0.72	0.64	0.66
Movement PHF		0.66		0.66	0.66	0.66	

	Southbound		Westbound		Eastbound		TOTAL
	Right	Left	Right	Thru	Thru	Left	
4:00 PM	21	2	0	4	3	24	54
4:15 PM	13	1	1	0	8	29	52
4:30 PM	30	1	1	6	11	22	71
4:45 PM	30	0	1	10	10	24	75
5:00 PM	27	3	1	7	4	22	64
5:15 PM	14	0	2	8	11	28	63
5:30 PM	24	2	2	6	13	31	78
5:45 PM	21	1	0	3	6	22	53
Total	180	10	8	44	66	202	510

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

Intersection PHF : 0.90

	Southbound		Westbound		Eastbound		TOTAL
	Right	Left	Right	Thru	Thru	Left	
Volume	95	5	6	31	38	105	280
PHF	0.79	0.417	0.75	0.775	0.731	0.847	0.90
Movement PHF		0.83		0.84	0.81	0.90	



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## Vehicular Count

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**Location:** Felicita Avenue @ Centre City Parkway

**Date of Count:** Tuesday, May 20, 2014

**Analysts:** LV/CD

**Weather:** Sunny

**AVC Proj No:** 14-0205



**Location:** Felicita Avenue @ Centre City Parkway

	AM Period (7:00 AM - 9:00 AM)												
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	22	169	57	44	85	108	21	59	12	5	64	17	663
7:15 AM	22	163	54	51	114	101	30	67	21	7	54	18	702
7:30 AM	39	167	58	44	121	91	38	86	22	6	82	25	779
7:45 AM	38	131	64	49	116	104	34	125	19	5	89	43	817
8:00 AM	18	113	65	47	107	87	25	98	17	6	101	35	719
8:15 AM	31	104	50	51	83	93	27	83	20	11	65	27	645
8:30 AM	19	103	43	48	83	73	25	94	18	5	73	29	613
8:45 AM	16	91	52	54	65	68	35	108	14	10	72	29	614
Total	205	1,041	443	388	774	725	235	720	143	55	600	223	5,552

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	117	574	241	191	458	383	127	376	79	24	326	121	3,017
PHF	0.75	0.86	0.93	0.94	0.95	0.92	0.84	0.75	0.90	0.86	0.81	0.70	0.92
Movement PHF	0.88			0.96			0.82			0.83			0.92

	PM Period (4:00 PM - 6:00 PM)												
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	23	141	102	39	75	60	52	146	47	16	133	50	884
4:15 PM	45	118	89	59	66	66	66	164	42	9	108	54	886
4:30 PM	16	95	109	39	73	68	70	156	46	7	123	39	841
4:45 PM	21	125	92	37	75	58	89	182	38	4	123	47	891
5:00 PM	24	118	106	49	86	74	70	150	29	11	117	48	882
5:15 PM	20	136	99	23	74	75	95	176	44	17	107	47	913
5:30 PM	23	109	100	37	67	70	73	145	46	16	152	47	885
5:45 PM	13	96	96	35	78	61	69	174	50	9	115	37	833
Total	185	938	793	318	594	532	584	1,293	342	89	978	369	7,015

PM Intersection Peak Hour : **4:45 PM - 5:45 PM** Intersection PHF : **0.98**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	88	488	397	146	302	277	327	653	157	48	499	189	3,571
PHF	0.92	0.897	0.936	0.745	0.878	0.923	0.861	0.897	0.853	0.706	0.821	0.984	0.98
Movement PHF	0.95			0.87			0.90			0.86			0.98



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## Vehicular Count

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**Location:** Felicitia Ave @ Escondido Blvd

**Date of Count:** Wednesday, January 11, 2017

**Analysts:** LVCD

**Weather:** Sunny

**AVC Proj No:** 17-0614



**Location:** Felicitia Ave @ Escondido Blvd

	AM Period (7:00 AM - 9:00 AM)												TOTAL
	Southbound			Westbound			Northbound			Eastbound			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	37	117	12	2	161	25	14	49	20	44	73	21	575
7:15 AM	70	86	21	3	208	26	10	55	30	28	96	12	645
7:30 AM	58	86	18	7	208	26	18	60	33	37	111	21	683
7:45 AM	76	71	16	8	188	29	14	79	32	48	112	25	698
8:00 AM	67	65	14	11	185	19	12	79	40	32	124	25	673
8:15 AM	38	49	14	12	205	28	10	62	24	23	115	19	599
8:30 AM	32	38	6	5	175	36	18	38	32	16	94	27	517
8:45 AM	19	40	12	7	164	28	16	24	26	25	105	18	484
<b>Total</b>	<b>397</b>	<b>552</b>	<b>113</b>	<b>55</b>	<b>1,494</b>	<b>217</b>	<b>112</b>	<b>446</b>	<b>237</b>	<b>253</b>	<b>830</b>	<b>168</b>	<b>4,874</b>

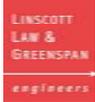
AM Intersection Peak Hour : **7:15 AM - 8:15 AM** Intersection PHF : **0.97**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	271	308	69	29	789	100	54	273	135	145	443	83	2,699
PHF	0.89	0.90	0.82	0.66	0.95	0.86	0.75	0.86	0.84	0.76	0.89	0.83	0.97
Movement PHF	0.92			0.95			0.88			0.91			0.97

	PM Period (4:00 PM - 6:00 PM)												TOTAL
	Southbound			Westbound			Northbound			Eastbound			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	42	51	14	7	137	24	29	78	33	28	220	43	706
4:15 PM	35	49	16	7	138	24	33	75	23	31	197	46	674
4:30 PM	45	45	35	9	138	27	37	82	25	35	225	48	751
4:45 PM	46	60	16	9	140	19	27	72	21	26	242	56	734
5:00 PM	23	53	21	12	149	21	44	70	30	33	218	36	710
5:15 PM	22	45	21	13	131	22	31	75	23	32	260	50	725
5:30 PM	46	42	18	10	121	16	37	56	23	35	225	29	658
5:45 PM	28	40	23	4	144	15	47	57	25	25	226	35	669
<b>Total</b>	<b>287</b>	<b>385</b>	<b>164</b>	<b>71</b>	<b>1,098</b>	<b>168</b>	<b>285</b>	<b>565</b>	<b>203</b>	<b>245</b>	<b>1,813</b>	<b>343</b>	<b>5,627</b>

PM Intersection Peak Hour : **4:30 PM - 5:30 PM** Intersection PHF : **0.97**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	136	203	93	43	558	89	139	299	99	126	945	190	2920
PHF	0.74	0.846	0.664	0.827	0.936	0.824	0.79	0.912	0.825	0.9	0.909	0.848	0.97
Movement PHF	0.86			0.95			0.93			0.92			0.97



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## Vehicular Count

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**Location:** Felicity Avenue @ Juniper Street

**Date of Count:** Tuesday, January 24, 2017

**Analysts:** LVCD

**Weather:** Sunny

**AVC Proj No:** 17-0618



**Location:** Felicity Avenue @ Juniper Street

	AM Period (7:00 AM - 9:00 AM)												TOTAL
	Southbound			Westbound			Northbound			Eastbound			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	56	113	4	7	123	9	2	41	11	20	47	22	455
7:15 AM	59	100	6	14	140	8	2	94	13	22	88	23	569
7:30 AM	61	158	3	10	139	10	2	102	10	44	91	35	665
7:45 AM	58	111	4	7	155	13	2	120	20	41	79	40	650
8:00 AM	41	85	6	14	145	11	6	114	29	24	74	43	592
8:15 AM	59	40	6	25	133	9	0	68	17	13	78	34	482
8:30 AM	61	28	8	10	111	1	1	38	14	5	68	30	375
8:45 AM	55	34	11	9	117	3	1	31	15	14	99	35	424
Total	450	669	48	96	1,063	64	16	608	129	183	624	262	4,212

AM Intersection Peak Hour : **7:15 AM - 8:15 AM** Intersection PHF : **0.93**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	219	454	19	45	579	42	12	430	72	131	332	141	2,476
PHF	0.90	0.72	0.79	0.80	0.93	0.81	0.50	0.90	0.62	0.74	0.91	0.82	0.93
Movement PHF	0.78			0.95			0.86			0.89			0.93

	PM Period (4:00 PM - 6:00 PM)												TOTAL
	Southbound			Westbound			Northbound			Eastbound			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	55	31	6	9	95	0	4	43	13	15	156	62	489
4:15 PM	33	29	10	8	102	2	3	46	13	25	176	66	513
4:30 PM	55	32	22	8	110	2	2	49	10	15	182	71	558
4:45 PM	48	32	11	6	78	3	5	44	13	19	151	63	473
5:00 PM	48	41	18	3	82	5	5	38	14	12	177	62	505
5:15 PM	47	41	15	11	103	1	2	36	9	20	203	79	567
5:30 PM	46	40	14	9	91	3	5	36	12	19	185	70	530
5:45 PM	50	49	9	6	96	1	2	35	15	26	177	62	528
Total	382	295	105	60	757	17	28	327	99	151	1,407	535	4,163

PM Intersection Peak Hour : **5:00 PM - 6:00 PM** Intersection PHF : **0.94**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	191	171	56	29	372	10	14	145	50	77	742	273	2130
PHF	0.96	0.872	0.778	0.659	0.903	0.5	0.7	0.954	0.833	0.74	0.914	0.864	0.94
Movement PHF	0.97			0.89			0.92			0.90			0.94



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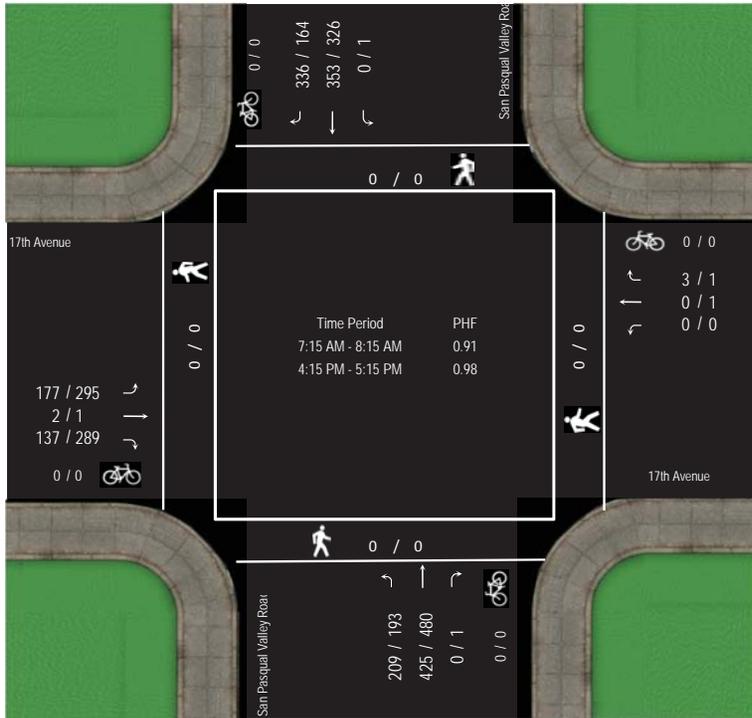
**Location:** 17th Avenue @ San Pasqual Valley Road (SR 78)

**Date of Count:** Tuesday, May 20, 2014

**Analysts:** LV/CD

**Weather:** Sunny

**AVC Proj No:** 14-0205



**Location:** 17th Avenue @ San Pasqual Valley Road (SR 78)

	AM Period (7:00 AM - 9:00 AM)												TOTAL
	Southbound			Westbound			Northbound			Eastbound			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	72	92	0	0	4	0	0	73	37	19	0	33	330
7:15 AM	77	77	0	0	0	0	0	96	50	30	1	40	371
7:30 AM	79	88	0	2	0	0	0	112	46	41	1	59	428
7:45 AM	113	92	0	1	0	0	0	107	60	32	0	48	453
8:00 AM	67	96	0	0	0	0	0	110	53	34	0	30	390
8:15 AM	52	77	0	1	0	0	0	114	47	26	0	36	353
8:30 AM	57	77	0	0	0	0	0	87	59	31	0	36	347
8:45 AM	49	72	0	0	0	0	0	84	43	23	1	29	301
<b>Total</b>	<b>566</b>	<b>671</b>	<b>0</b>	<b>4</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>783</b>	<b>395</b>	<b>236</b>	<b>3</b>	<b>311</b>	<b>2,973</b>

AM Intersection Peak Hour : **7:15 AM - 8:15 AM** Intersection PHF : **0.91**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	336	353	0	3	0	0	0	425	209	137	2	177	1,642
PHF	0.74	0.92	#####	0.38	#####	#####	#####	0.95	0.87	0.84	0.50	0.75	0.91
Movement PHF	0.84			0.38			0.95			0.78			0.91

	PM Period (4:00 PM - 6:00 PM)												TOTAL
	Southbound			Westbound			Northbound			Eastbound			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	40	86	1	0	1	0	0	87	40	61	0	78	394
4:15 PM	47	93	1	1	0	0	0	130	47	54	0	66	439
4:30 PM	35	66	0	0	1	0	1	111	52	81	0	77	424
4:45 PM	40	80	0	0	0	0	0	118	47	78	1	76	440
5:00 PM	42	87	0	0	0	0	0	121	47	76	0	76	449
5:15 PM	42	83	2	0	0	0	0	115	52	69	1	64	428
5:30 PM	32	102	0	0	0	1	0	91	35	64	0	91	416
5:45 PM	43	71	1	0	0	0	0	86	42	78	0	80	401
<b>Total</b>	<b>321</b>	<b>668</b>	<b>5</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>859</b>	<b>362</b>	<b>561</b>	<b>2</b>	<b>608</b>	<b>3,391</b>

PM Intersection Peak Hour : **4:15 PM - 5:15 PM** Intersection PHF : **0.98**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	164	326	1	1	1	0	1	480	193	289	1	295	1752
PHF	0.87	0.876	0.25	0.25	0.25	#####	0.25	0.923	0.928	0.892	0.25	0.958	0.98
Movement PHF	0.87			0.50			0.95			0.93			0.98



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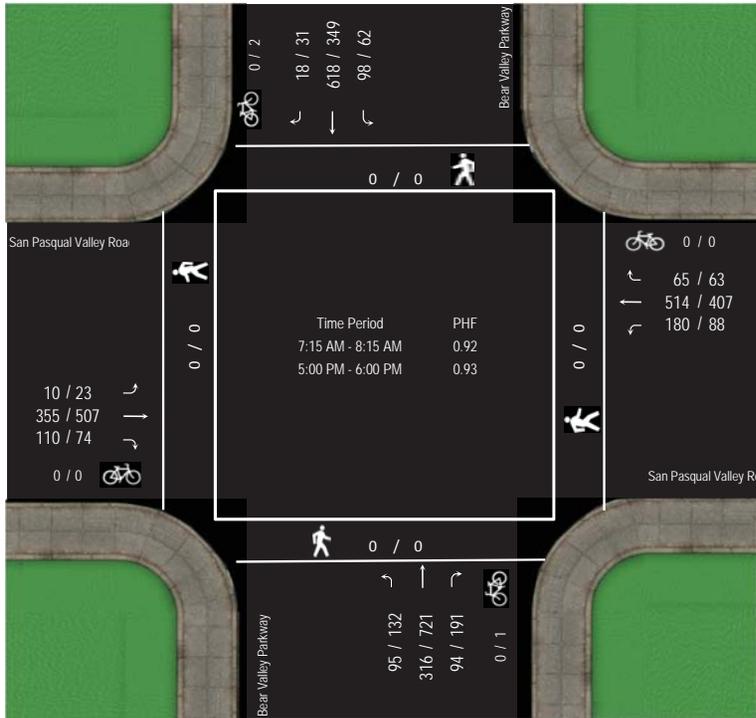
**Location:** San Pasqual Valley Road (SR 78) @ Bear Valley Parkway

**Date of Count:** Tuesday, May 20, 2014

**Analysts:** LV/CD

**Weather:** Sunny

**AVC Proj No:** 14-0205



**Location:** San Pasqual Valley Road (SR 78) @ Bear Valley Parkway

	AM Period (7:00 AM - 9:00 AM)												
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	2	180	31	7	96	31	22	49	11	28	70	2	529
7:15 AM	5	141	32	19	113	54	20	73	23	31	96	0	607
7:30 AM	1	158	13	19	140	44	19	66	28	28	77	5	598
7:45 AM	4	186	20	17	146	53	30	80	17	30	88	1	672
8:00 AM	8	133	33	10	115	29	25	97	27	21	94	4	596
8:15 AM	2	123	13	9	130	31	24	73	29	31	80	1	546
8:30 AM	7	129	14	10	120	30	11	60	12	24	84	4	505
8:45 AM	5	148	16	11	109	31	17	62	17	25	59	3	503
<b>Total</b>	<b>34</b>	<b>1,198</b>	<b>172</b>	<b>102</b>	<b>969</b>	<b>303</b>	<b>168</b>	<b>560</b>	<b>164</b>	<b>218</b>	<b>648</b>	<b>20</b>	<b>4,556</b>

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	18	618	98	65	514	180	94	316	95	110	355	10	2,473
PHF	0.56	0.83	0.74	0.86	0.88	0.83	0.78	0.81	0.85	0.89	0.92	0.50	0.92
Movement PHF	0.87			0.88			0.85			0.94			0.92

	PM Period (4:00 PM - 6:00 PM)												
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	5	90	11	16	94	27	37	206	31	20	103	9	649
4:15 PM	8	77	17	17	123	17	52	184	36	12	109	4	656
4:30 PM	10	103	11	18	129	20	35	166	23	19	134	4	672
4:45 PM	4	79	14	13	115	15	38	136	27	15	104	5	565
5:00 PM	4	72	15	20	132	25	40	168	33	12	118	4	643
5:15 PM	9	99	23	16	113	29	42	188	38	22	126	6	711
5:30 PM	8	99	7	16	87	18	55	162	22	24	144	7	649
5:45 PM	10	79	17	11	75	16	54	203	39	16	119	6	645
<b>Total</b>	<b>58</b>	<b>698</b>	<b>115</b>	<b>127</b>	<b>868</b>	<b>167</b>	<b>353</b>	<b>1,413</b>	<b>249</b>	<b>140</b>	<b>957</b>	<b>45</b>	<b>5,190</b>

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

Intersection PHF : 0.93

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	31	349	62	63	407	88	191	721	132	74	507	23	2648
PHF	0.78	0.881	0.674	0.788	0.771	0.759	0.868	0.888	0.846	0.771	0.88	0.821	0.93
Movement PHF	0.84			0.79			0.88			0.86			0.93



## Turn Count Summary

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 (619) 987-5136



## Vehicular Count

Accurate Video Counts Inc  
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 (619) 987-5136



**Location:** San Pasqual Valley Road (SR 78) @ Citrus Avenue

**Date of Count:** Thursday, March 12, 2015

**Analysts:** LV/CD

**Weather:** Sunny

**AVC Proj No:** 15-0327



**Location:** San Pasqual Valley Road (SR 78) @ Citrus Avenue

	Southbound		Westbound		Eastbound		TOTAL
	Right	Left	Right	Thru	Thru	Left	
7:00 AM	49	50	10	115	131	20	375
7:15 AM	40	42	9	139	142	26	398
7:30 AM	64	44	6	138	106	40	398
7:45 AM	58	56	8	139	115	21	397
8:00 AM	50	63	12	163	128	30	446
8:15 AM	38	42	5	159	126	18	388
8:30 AM	62	15	9	140	99	19	344
8:45 AM	35	10	3	104	113	17	282
<b>Total</b>	<b>396</b>	<b>322</b>	<b>62</b>	<b>1,097</b>	<b>960</b>	<b>191</b>	<b>3,028</b>

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

Intersection PHF : 0.92

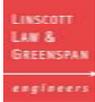
	Southbound		Westbound		Eastbound		TOTAL
	Right	Left	Right	Thru	Thru	Left	
Volume	212	205	35	579	491	117	1,639
PHF	0.83	0.81	0.73	0.89	0.86	0.73	0.92
Movement PHF	0.91		0.88		0.90		0.92

	Southbound		Westbound		Eastbound		TOTAL
	Right	Left	Right	Thru	Thru	Left	
4:00 PM	28	6	24	137	121	51	367
4:15 PM	22	8	23	118	134	62	367
4:30 PM	36	9	17	134	139	63	398
4:45 PM	17	6	22	141	133	69	388
5:00 PM	18	6	18	140	118	62	362
5:15 PM	20	5	19	156	156	71	427
5:30 PM	16	10	26	151	127	66	396
5:45 PM	16	6	15	101	120	76	334
<b>Total</b>	<b>173</b>	<b>56</b>	<b>164</b>	<b>1,078</b>	<b>1,048</b>	<b>520</b>	<b>3,039</b>

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

Intersection PHF : 0.92

	Southbound		Westbound		Eastbound		TOTAL
	Right	Left	Right	Thru	Thru	Left	
Volume	91	26	76	571	546	265	1575
PHF	0.63	0.722	0.864	0.915	0.875	0.933	0.92
Movement PHF	0.65		0.92		0.89		0.92



## Turn Count Summary

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## Vehicular Count

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 (619) 987-5136



**Location:** San Pasqual Valley Rd @ Summit Dr

**Date of Count:** Wednesday, January 11, 2017

**Analysts:** LVCD

**Weather:** Sunny

**AVC Proj No:** 17-0614



**Location:** San Pasqual Valley Rd @ Summit Dr

	AM Period (7:00 AM - 9:00 AM)												TOTAL
	Southbound			Westbound			Northbound			Eastbound			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	5	9	4	0	88	1	1	0	12	80	97	3	300
7:15 AM	10	7	4	0	108	4	5	3	29	66	83	2	321
7:30 AM	5	8	1	1	120	1	1	0	23	56	70	1	287
7:45 AM	7	5	3	0	100	4	2	1	22	54	112	4	314
8:00 AM	3	13	1	0	108	1	0	3	17	40	123	3	312
8:15 AM	5	1	2	0	115	0	2	4	18	37	120	6	310
8:30 AM	5	2	2	0	137	2	0	1	11	17	79	3	259
8:45 AM	2	0	0	0	108	1	0	0	19	9	81	2	222
Total	42	45	17	1	884	14	11	12	151	359	765	24	2,325

AM Intersection Peak Hour : **7:15 AM - 8:15 AM** Intersection PHF : **0.96**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	25	33	9	1	436	10	8	7	91	216	388	10	1,234
PHF	0.63	0.63	0.56	0.25	0.91	0.63	0.40	0.58	0.78	0.82	0.79	0.63	0.96
Movement PHF	0.80			0.92			0.72			0.90			0.96

	PM Period (4:00 PM - 6:00 PM)												TOTAL
	Southbound			Westbound			Northbound			Eastbound			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	6	0	1	1	78	1	2	1	17	10	91	8	216
4:15 PM	4	1	1	2	85	1	0	2	15	14	100	9	234
4:30 PM	2	0	0	1	113	3	0	1	17	13	110	5	265
4:45 PM	2	0	1	0	94	0	1	3	11	15	141	4	272
5:00 PM	7	1	1	1	95	0	0	0	14	22	132	7	280
5:15 PM	2	0	1	0	98	1	1	0	15	9	112	10	249
5:30 PM	5	1	1	2	80	0	0	1	12	14	106	4	226
5:45 PM	0	0	1	2	54	0	1	3	6	12	102	5	186
Total	28	3	7	9	697	6	5	11	107	109	894	52	1,928

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	13	1	3	2	400	4	2	4	57	59	495	26	1066
PHF	0.46	0.25	0.75	0.5	0.885	0.333	0.5	0.333	0.838	0.67	0.878	0.65	0.95
Movement PHF	0.47			0.87			0.88			0.90			0.95



## Turn Count Summary

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## Vehicular Count

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 (619) 987-5136



**Location:** San Pasqual Valley Road @ Cloverdale Road

**Date of Count:** Tuesday, May 06, 2014

**Analysts:** LV/CD

**Weather:** Sunny

**AVC Proj No:** 14-0198



**Location:** San Pasqual Valley Road @ Cloverdale Road

	AM Period (7:00 AM - 9:00 AM)												
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	28	85	2	1	63	2	16	4	6	25	55	11	298
7:15 AM	22	71	0	2	75	8	20	12	2	33	52	10	307
7:30 AM	37	34	2	3	99	2	38	18	5	16	42	18	314
7:45 AM	34	27	2	5	63	5	42	9	2	7	73	25	294
8:00 AM	42	32	3	15	60	2	25	13	5	6	67	45	315
8:15 AM	58	51	6	6	77	7	27	32	6	8	64	48	390
8:30 AM	65	43	4	1	80	7	36	8	3	7	56	23	333
8:45 AM	34	21	0	0	60	6	36	7	1	6	61	12	244
<b>Total</b>	<b>320</b>	<b>364</b>	<b>19</b>	<b>33</b>	<b>577</b>	<b>39</b>	<b>240</b>	<b>103</b>	<b>30</b>	<b>108</b>	<b>470</b>	<b>192</b>	<b>2,495</b>

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

Intersection PHF : 0.85

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	199	153	15	27	280	21	130	62	16	28	260	141	1,332
PHF	0.77	0.75	0.63	0.45	0.88	0.75	0.77	0.48	0.67	0.88	0.89	0.73	0.85
Movement PHF	0.80			0.91			0.80			0.89			0.85

	PM Period (4:00 PM - 6:00 PM)												
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	24	18	3	0	65	30	3	29	5	6	89	28	300
4:15 PM	27	17	2	2	90	52	4	32	4	8	71	23	332
4:30 PM	22	23	2	5	103	97	3	40	9	11	68	34	417
4:45 PM	26	22	2	3	94	49	3	21	8	7	59	25	319
5:00 PM	17	18	1	2	97	38	3	28	22	10	62	29	327
5:15 PM	22	21	1	1	99	52	5	44	8	5	61	36	355
5:30 PM	23	13	0	4	66	15	2	43	11	9	65	45	296
5:45 PM	18	28	2	1	63	5	4	28	3	1	65	32	250
<b>Total</b>	<b>179</b>	<b>160</b>	<b>13</b>	<b>18</b>	<b>677</b>	<b>338</b>	<b>27</b>	<b>265</b>	<b>70</b>	<b>57</b>	<b>540</b>	<b>252</b>	<b>2,596</b>

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

Intersection PHF : 0.85

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	87	84	6	11	393	236	14	133	47	33	250	124	1418
PHF	0.84	0.913	0.75	0.55	0.954	0.608	0.7	0.756	0.534	0.75	0.919	0.861	0.85
Movement PHF	0.89			0.78			0.85			0.90			0.85



## Turn Count Summary

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



## Vehicular Count

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



**Location:** San Pasqual Valley Road (SR 78) @ San Diego Zoo Safari Park Main Entr

**Date of Count:** Tuesday, May 20, 2014

**Analysts:** LV/CD

**Weather:** Sunny

**AVC Proj No:** 14-0205



**Location:** San Pasqual Valley Road (SR 78) @ San Diego Zoo Safari Park Main E

	AM Period (7:00 AM - 9:00 AM)						TOTAL
	Southbound		Westbound		Eastbound		
	Right	Left	Right	Thru	Thru	Left	
7:00 AM	0	0	0	75	48	3	126
7:15 AM	3	0	0	76	46	2	127
7:30 AM	0	1	2	75	57	5	140
7:45 AM	0	0	0	84	49	6	139
8:00 AM	1	1	0	75	50	7	134
8:15 AM	0	1	2	78	51	6	138
8:30 AM	0	1	3	72	54	24	154
8:45 AM	2	0	4	70	58	39	173
<b>Total</b>	<b>6</b>	<b>4</b>	<b>11</b>	<b>605</b>	<b>413</b>	<b>92</b>	<b>1,131</b>

AM Intersection Peak Hour : **8:00 AM - 9:00 AM** Intersection PHF : **0.87**

	Southbound		Westbound		Eastbound		TOTAL
	Right	Left	Right	Thru	Thru	Left	
Volume	3	3	9	295	213	76	599
PHF	0.38	0.75	0.56	0.95	0.92	0.49	0.87
Movement PHF	0.75		0.95		0.74		0.87

	PM Period (4:00 PM - 6:00 PM)						TOTAL
	Southbound		Westbound		Eastbound		
	Right	Left	Right	Thru	Thru	Left	
4:00 PM	41	1	0	50	54	3	149
4:15 PM	58	4	1	87	74	2	226
4:30 PM	44	4	0	80	60	2	190
4:45 PM	61	10	0	58	90	1	220
5:00 PM	66	1	0	66	68	3	204
5:15 PM	50	2	1	43	80	2	178
5:30 PM	18	0	0	56	86	1	161
5:45 PM	6	0	0	40	83	0	129
<b>Total</b>	<b>344</b>	<b>22</b>	<b>2</b>	<b>480</b>	<b>595</b>	<b>14</b>	<b>1,457</b>

PM Intersection Peak Hour : **4:15 PM - 5:15 PM** Intersection PHF : **0.93**

	Southbound		Westbound		Eastbound		TOTAL
	Right	Left	Right	Thru	Thru	Left	
Volume	229	19	1	291	292	8	840
PHF	0.87	0.475	0.25	0.836	0.811	0.667	0.93
Movement PHF	0.87		0.83		0.82		0.93



## Turn Count Summary

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## Vehicular Count

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 (619) 987-5136



**Location:** San Pasqual Road @ Bear Valley Parkway

**Date of Count:** Tuesday, May 20, 2014

**Analysts:** LV/CD

**Weather:** Sunny

**AVC Proj No:** 14-0205



**Location:** San Pasqual Road @ Bear Valley Parkway

	AM Period (7:00 AM - 9:00 AM)						TOTAL
	Southbound		Westbound		Northbound		
	Thru	Left	Right	Left	Right	Thru	
7:00 AM	349	80	11	130	84	195	849
7:15 AM	344	77	19	204	118	316	1,078
7:30 AM	402	15	16	143	53	204	833
7:45 AM	340	15	17	100	42	267	781
8:00 AM	367	16	21	103	65	219	791
8:15 AM	458	20	14	109	67	165	833
8:30 AM	267	12	15	91	58	150	593
8:45 AM	281	6	5	83	71	148	594
<b>Total</b>	<b>2,808</b>	<b>241</b>	<b>118</b>	<b>963</b>	<b>558</b>	<b>1,664</b>	<b>6,352</b>

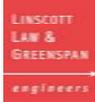
AM Intersection Peak Hour : **7:00 AM - 8:00 AM** Intersection PHF : **0.82**

	Southbound		Westbound		Northbound		TOTAL
	Thru	Left	Right	Left	Right	Thru	
Volume	1,435	187	63	577	297	982	3,541
PHF	0.89	0.58	0.83	0.71	0.63	0.78	0.82
Movement PHF	0.95		0.72		0.74		0.82

	PM Period (4:00 PM - 6:00 PM)						TOTAL
	Southbound		Westbound		Northbound		
	Thru	Left	Right	Left	Right	Thru	
4:00 PM	208	24	18	98	133	322	803
4:15 PM	194	13	10	101	98	351	767
4:30 PM	160	16	10	104	106	300	696
4:45 PM	147	24	8	115	117	345	756
5:00 PM	181	29	15	110	111	356	802
5:15 PM	194	30	20	148	133	350	875
5:30 PM	210	27	28	142	131	354	892
5:45 PM	166	21	19	109	140	362	817
<b>Total</b>	<b>1460</b>	<b>184</b>	<b>128</b>	<b>927</b>	<b>969</b>	<b>2,740</b>	<b>6,408</b>

PM Intersection Peak Hour : **5:00 PM - 6:00 PM** Intersection PHF : **0.95**

	Southbound		Westbound		Northbound		TOTAL
	Thru	Left	Right	Left	Right	Thru	
Volume	751	107	82	509	515	1422	3386
PHF	0.894	0.892	0.732	0.86	0.92	0.982	0.95
Movement PHF	0.91		0.87		0.96		0.95



## Turn Count Summary

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## Vehicular Count

Accurate Video Counts Inc  
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 (619) 987-5136



**Location:** Beethoven Dr @ Bear Valley Pkwy

**Date of Count:** Wednesday, January 11, 2017

**Analysts:** LVCD

**Weather:** Sunny

**AVC Proj No:** 17-0614



**Location:** Beethoven Dr @ Bear Valley Pkwy

	AM Period (7:00 AM - 9:00 AM)												TOTAL
	Southbound			Westbound			Northbound			Eastbound			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	107	323	2	6	10	19	3	240	3	2	2	64	781
7:15 AM	131	416	4	5	23	23	3	259	5	2	0	64	935
7:30 AM	146	424	3	8	15	16	3	201	1	5	0	40	862
7:45 AM	133	373	5	9	16	18	7	173	5	1	3	60	803
8:00 AM	143	495	4	4	7	19	6	217	6	5	2	44	952
8:15 AM	155	435	8	4	11	21	9	230	3	1	1	42	920
8:30 AM	125	352	3	2	12	22	5	170	5	5	1	31	733
8:45 AM	89	251	0	2	11	25	7	146	4	6	1	33	575
<b>Total</b>	<b>1,029</b>	<b>3,069</b>	<b>29</b>	<b>40</b>	<b>105</b>	<b>163</b>	<b>43</b>	<b>1,636</b>	<b>32</b>	<b>27</b>	<b>10</b>	<b>378</b>	<b>6,561</b>

AM Intersection Peak Hour : **7:15 AM - 8:15 AM** Intersection PHF : **0.93**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	553	1,708	16	26	61	76	19	850	17	13	5	208	3,552
PHF	0.95	0.86	0.80	0.72	0.66	0.83	0.68	0.82	0.71	0.65	0.42	0.81	0.93
Movement PHF	0.89			0.80			0.83			0.86			0.93

	PM Period (4:00 PM - 6:00 PM)												TOTAL
	Southbound			Westbound			Northbound			Eastbound			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	83	211	3	1	9	7	23	344	10	15	10	104	820
4:15 PM	72	173	2	1	9	5	24	372	15	21	7	101	802
4:30 PM	95	180	6	5	9	7	27	351	7	17	8	114	826
4:45 PM	84	189	5	4	6	16	32	374	15	10	8	122	865
5:00 PM	84	217	4	2	7	14	21	387	11	20	1	127	895
5:15 PM	75	203	1	4	4	6	23	389	12	23	5	143	888
5:30 PM	79	206	2	0	7	17	24	380	13	17	4	152	901
5:45 PM	75	174	1	4	7	11	28	447	12	17	6	129	911
<b>Total</b>	<b>647</b>	<b>1,553</b>	<b>24</b>	<b>21</b>	<b>58</b>	<b>83</b>	<b>202</b>	<b>3,044</b>	<b>95</b>	<b>140</b>	<b>49</b>	<b>992</b>	<b>6,908</b>

PM Intersection Peak Hour : **5:00 PM - 6:00 PM** Intersection PHF : **0.99**

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	313	800	8	10	25	48	96	1603	48	77	16	551	3595
PHF	0.93	0.922	0.5	0.625	0.893	0.706	0.857	0.897	0.923	0.837	0.667	0.906	0.99
Movement PHF	0.92			0.86			0.90			0.93			0.99





## Turn Count Summary

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



## Vehicular Count

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



**Location:** Via Rancho Parkway @ I-15 SB Ramps

**Date of Count:** Tuesday, May 20, 2014

**Analysts:** LV/CD

**Weather:** Sunny

**AVC Proj No:** 14-0205



**Location:** Via Rancho Parkway @ I-15 SB Ramps

	AM Period (7:00 AM - 9:00 AM)												
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	12	45	16	19	36	266	67	19	4	116	105	55	760
7:15 AM	17	64	18	16	68	197	75	26	8	103	97	37	726
7:30 AM	21	54	9	17	76	266	50	22	5	117	57	35	729
7:45 AM	17	59	17	10	59	186	59	32	4	119	90	44	696
8:00 AM	16	65	25	16	72	212	66	29	8	109	74	34	726
8:15 AM	12	43	13	15	35	235	58	17	4	107	105	56	700
8:30 AM	16	48	13	12	60	200	64	33	4	101	74	34	659
8:45 AM	15	36	22	10	43	225	86	22	9	70	32	21	591
<b>Total</b>	<b>126</b>	<b>414</b>	<b>133</b>	<b>115</b>	<b>449</b>	<b>1,787</b>	<b>525</b>	<b>200</b>	<b>46</b>	<b>842</b>	<b>634</b>	<b>316</b>	<b>5,587</b>

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

Intersection PHF : 0.96

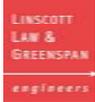
	AM Intersection Peak Hour : 7:00 AM - 8:00 AM												
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	67	222	60	62	239	915	251	99	21	455	349	171	2,911
PHF	0.80	0.87	0.83	0.82	0.79	0.86	0.84	0.77	0.66	0.96	0.83	0.78	0.96
Movement PHF	0.88			0.85			0.85			0.88			0.96

	PM Period (4:00 PM - 6:00 PM)												
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	45	35	40	14	81	199	137	41	10	55	26	16	699
4:15 PM	36	34	27	13	100	217	129	31	11	48	47	23	716
4:30 PM	38	38	24	16	86	217	150	34	15	43	44	22	727
4:45 PM	37	32	25	12	87	192	143	25	11	56	54	25	699
5:00 PM	47	37	33	17	90	235	135	38	11	54	30	16	743
5:15 PM	15	50	20	16	36	235	65	28	5	107	107	56	740
5:30 PM	21	59	11	17	75	253	50	22	5	117	57	35	722
5:45 PM	38	31	23	17	103	178	156	25	2	47	53	18	691
<b>Total</b>	<b>277</b>	<b>316</b>	<b>203</b>	<b>122</b>	<b>658</b>	<b>1,726</b>	<b>965</b>	<b>244</b>	<b>70</b>	<b>527</b>	<b>418</b>	<b>211</b>	<b>5,737</b>

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

Intersection PHF : 0.98

	PM Intersection Peak Hour : 4:30 PM - 5:30 PM												
	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	137	157	102	61	299	879	493	125	42	260	235	119	2,909
PHF	0.73	0.785	0.773	0.897	0.831	0.935	0.822	0.822	0.7	0.607	0.549	0.531	0.98
Movement PHF	0.85			0.91			0.83			0.57			0.98



## Turn Count Summary

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



## Vehicular Count

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



**Location:** San Pasqual Road @ Ryan Drive/Sierra Linda Drive

**Date of Count:** Tuesday, January 24, 2017

**Analysts:** LVCD

**Weather:** Sunny

**AVC Proj No:** 17-0618



**Location:** San Pasqual Road @ Ryan Drive/Sierra Linda Drive

	AM Period (7:00 AM - 9:00 AM)												TOTAL
	Southbound			Westbound			Northbound			Eastbound			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	11	0	1	1	170	0	1	0	8	1	33	4	230
7:15 AM	21	0	0	0	201	0	1	0	11	6	28	5	273
7:30 AM	17	1	0	1	127	1	1	0	7	7	47	9	218
7:45 AM	14	0	1	1	101	0	1	0	13	5	39	4	179
8:00 AM	17	0	0	1	122	0	2	0	17	5	35	3	202
8:15 AM	15	0	1	0	118	1	1	0	4	11	53	7	211
8:30 AM	9	0	0	1	96	0	1	0	6	7	28	3	151
8:45 AM	5	0	0	0	59	2	0	0	7	7	43	3	126
<b>Total</b>	<b>109</b>	<b>1</b>	<b>3</b>	<b>5</b>	<b>994</b>	<b>4</b>	<b>8</b>	<b>0</b>	<b>73</b>	<b>49</b>	<b>306</b>	<b>38</b>	<b>1,590</b>

AM Intersection Peak Hour : 7:00 AM - 8:00 AM Intersection PHF : 0.82

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	63	1	2	3	599	1	4	0	39	19	147	22	900
PHF	0.75	0.25	0.50	0.75	0.75	0.25	1.00	#####	0.75	0.68	0.78	0.61	0.82
Movement PHF		0.79			0.75			0.77			0.75		0.82

	PM Period (4:00 PM - 6:00 PM)												TOTAL
	Southbound			Westbound			Northbound			Eastbound			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
4:00 PM	10	1	0	0	64	1	2	2	6	17	113	16	232
4:15 PM	8	0	0	0	69	0	3	0	7	11	151	9	258
4:30 PM	1	0	0	0	54	2	0	0	6	7	130	10	210
4:45 PM	9	1	0	0	56	0	1	0	6	2	135	15	225
5:00 PM	7	0	1	3	67	2	1	0	5	3	103	19	211
5:15 PM	5	0	0	0	68	1	0	1	9	6	121	20	231
5:30 PM	4	0	0	0	62	1	0	1	7	3	124	10	212
5:45 PM	5	1	1	1	43	1	3	0	0	8	99	14	176
<b>Total</b>	<b>49</b>	<b>3</b>	<b>2</b>	<b>4</b>	<b>483</b>	<b>8</b>	<b>10</b>	<b>4</b>	<b>46</b>	<b>57</b>	<b>976</b>	<b>113</b>	<b>1,755</b>

PM Intersection Peak Hour : 4:00 PM - 5:00 PM Intersection PHF : 0.90

	Southbound			Westbound			Northbound			Eastbound			TOTAL
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Volume	28	2	0	0	243	3	6	2	25	37	529	50	925
PHF	0.70	0.5	#####	#####	0.88	0.375	0.5	0.25	0.893	0.544	0.876	0.781	0.90
Movement PHF		0.68			0.89			0.83			0.90		0.90



## 24 Hour Segment Count

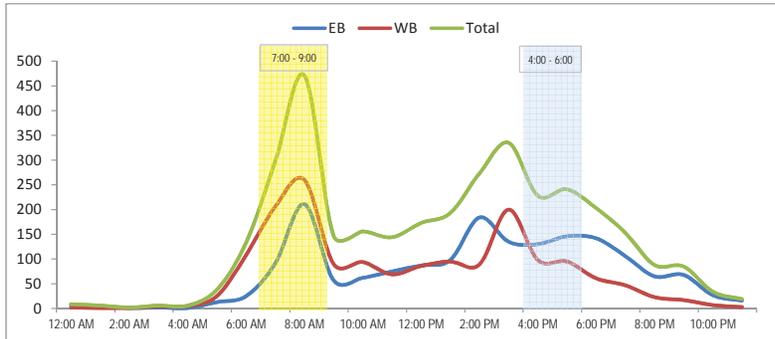
Accurate Video Counts Inc  
 info@accuratevideocounts.com  
 (619) 987-5136



**Location:** 1. Rockwood Road btw Cloverdale Road to San Pasqual Union Elementary School  
**Orientation:** East-West  
**Date of Count:** Wednesday, May 07, 2014  
**Analysts:** DASH  
**Weather:** Sunny  
**AVC Proj. No:** 14-0198

24 Hour Segment Volume				3,440			
Time	Hourly Volume			Time	Hourly Volume		
	EB	WB	Total		EB	WB	Total
12:00 AM - 1:00 AM	7	2	9	12:00 PM - 1:00 PM	87	86	173
1:00 AM - 2:00 AM	5	1	6	1:00 PM - 2:00 PM	98	95	193
2:00 AM - 3:00 AM	1	1	2	2:00 PM - 3:00 PM	184	89	273
3:00 AM - 4:00 AM	2	4	6	3:00 PM - 4:00 PM	135	200	335
4:00 AM - 5:00 AM	1	5	6	4:00 PM - 5:00 PM	130	98	228
5:00 AM - 6:00 AM	13	25	38	5:00 PM - 6:00 PM	146	95	241
6:00 AM - 7:00 AM	25	108	133	6:00 PM - 7:00 PM	142	61	203
7:00 AM - 8:00 AM	91	206	297	7:00 PM - 8:00 PM	106	47	153
8:00 AM - 9:00 AM	211	260	471	8:00 PM - 9:00 PM	65	23	88
9:00 AM - 10:00 AM	57	90	147	9:00 PM - 10:00 PM	68	17	85
10:00 AM - 11:00 AM	62	94	156	10:00 PM - 11:00 PM	27	7	34
11:00 AM - 12:00 PM	75	69	144	11:00 PM - 12:00 PM	16	3	19
<b>Total</b>	<b>550</b>	<b>865</b>	<b>1,415</b>	<b>Total</b>	<b>1,204</b>	<b>821</b>	<b>2,025</b>

24-Hour EB Volume 1,754      24-Hour WB Volume 1,686



## 24 Hour Segment Count

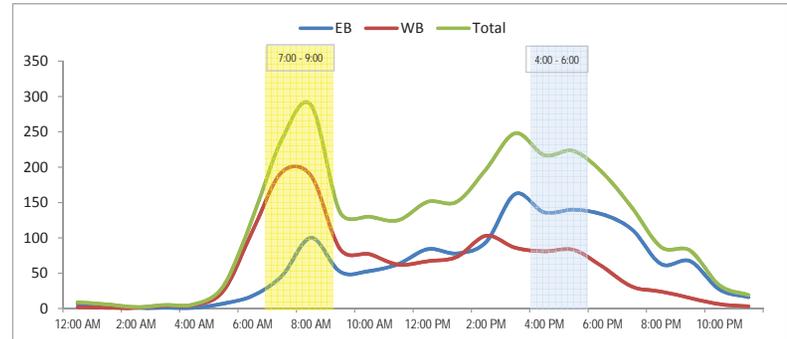
Accurate Video Counts Inc  
 info@accuratevideocounts.com  
 (619) 987-5136



**Location:** 2. Rockwood Road East of San Pasqual Union Elementary School  
**Orientation:** East-West  
**Date of Count:** Wednesday, May 07, 2014  
**Analysts:** DASH  
**Weather:** Sunny  
**AVC Proj. No:** 14-0198

24 Hour Segment Volume				2,849			
Time	Hourly Volume			Time	Hourly Volume		
	EB	WB	Total		EB	WB	Total
12:00 AM - 1:00 AM	7	2	9	12:00 PM - 1:00 PM	84	67	151
1:00 AM - 2:00 AM	5	1	6	1:00 PM - 2:00 PM	78	73	151
2:00 AM - 3:00 AM	1	1	2	2:00 PM - 3:00 PM	94	103	197
3:00 AM - 4:00 AM	1	4	5	3:00 PM - 4:00 PM	162	86	248
4:00 AM - 5:00 AM	1	5	6	4:00 PM - 5:00 PM	136	81	217
5:00 AM - 6:00 AM	7	25	32	5:00 PM - 6:00 PM	140	83	223
6:00 AM - 7:00 AM	18	110	128	6:00 PM - 7:00 PM	133	59	192
7:00 AM - 8:00 AM	46	193	239	7:00 PM - 8:00 PM	112	31	143
8:00 AM - 9:00 AM	100	188	288	8:00 PM - 9:00 PM	63	24	87
9:00 AM - 10:00 AM	52	84	136	9:00 PM - 10:00 PM	67	15	82
10:00 AM - 11:00 AM	53	77	130	10:00 PM - 11:00 PM	27	6	33
11:00 AM - 12:00 PM	63	62	125	11:00 PM - 12:00 PM	16	3	19
<b>Total</b>	<b>354</b>	<b>752</b>	<b>1,106</b>	<b>Total</b>	<b>1,112</b>	<b>631</b>	<b>1,743</b>

24-Hour EB Volume 1,466      24-Hour WB Volume 1,383





## 24 Hour Segment Count

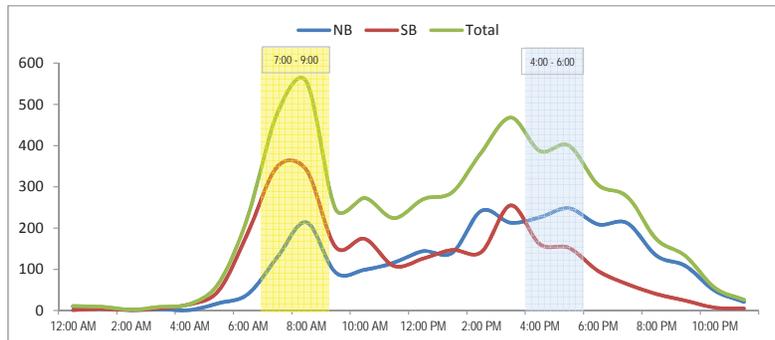
Accurate Video Counts Inc  
 info@accuratevideocounts.com  
 (619) 987-5136



**Location:** 3. Cloverdale Road btw Cloveridge Road to San Pasqual Valley Road  
**Orientation:** North-South  
**Date of Count:** Wednesday, May 07, 2014  
**Analysts:** DASH  
**Weather:** Sunny  
**AVC Proj. No:** 14-0198

24 Hour Segment Volume				5,283			
Time	Hourly Volume			Time	Hourly Volume		
	NB	SB	Total		NB	SB	Total
12:00 AM - 1:00 AM	10	1	11	12:00 PM - 1:00 PM	144	126	270
1:00 AM - 2:00 AM	5	4	9	1:00 PM - 2:00 PM	140	147	287
2:00 AM - 3:00 AM	1	1	2	2:00 PM - 3:00 PM	242	142	384
3:00 AM - 4:00 AM	3	6	9	3:00 PM - 4:00 PM	213	255	468
4:00 AM - 5:00 AM	1	15	16	4:00 PM - 5:00 PM	226	161	387
5:00 AM - 6:00 AM	18	49	67	5:00 PM - 6:00 PM	248	152	400
6:00 AM - 7:00 AM	40	190	230	6:00 PM - 7:00 PM	209	96	305
7:00 AM - 8:00 AM	129	349	478	7:00 PM - 8:00 PM	212	64	276
8:00 AM - 9:00 AM	214	341	555	8:00 PM - 9:00 PM	133	40	173
9:00 AM - 10:00 AM	92	154	246	9:00 PM - 10:00 PM	108	24	132
10:00 AM - 11:00 AM	99	174	273	10:00 PM - 11:00 PM	48	7	55
11:00 AM - 12:00 PM	116	108	224	11:00 PM - 12:00 PM	21	5	26
<b>Total</b>	<b>728</b>	<b>1,392</b>	<b>2,120</b>	<b>Total</b>	<b>1,944</b>	<b>1,219</b>	<b>3,163</b>

24-Hour NB Volume 2,672      24-Hour SB Volume 2,611



## 24 Hour Segment Count

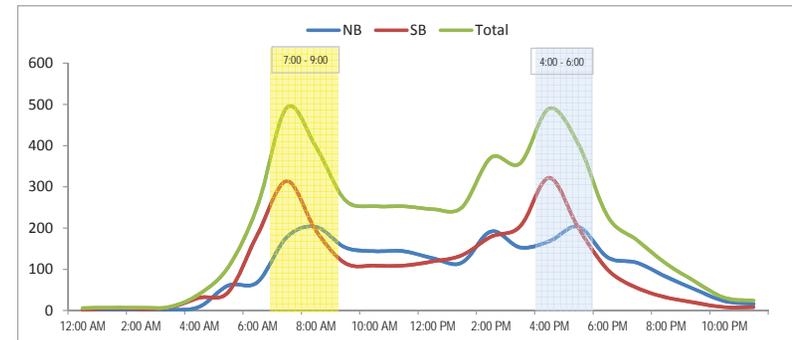
Accurate Video Counts Inc  
 info@accuratevideocounts.com  
 (619) 987-5136



**Location:** 4. San Pasqual Road btw San Pasqual Valley Road to Old San Pasqual Road  
**Orientation:** North-South  
**Date of Count:** Tuesday, May 06, 2014  
**Analysts:** DASH  
**Weather:** Sunny  
**AVC Proj. No:** 14-0198

24 Hour Segment Volume				4,847			
Time	Hourly Volume			Time	Hourly Volume		
	NB	SB	Total		NB	SB	Total
12:00 AM - 1:00 AM	4	2	6	12:00 PM - 1:00 PM	127	119	246
1:00 AM - 2:00 AM	2	5	7	1:00 PM - 2:00 PM	116	134	250
2:00 AM - 3:00 AM	3	4	7	2:00 PM - 3:00 PM	192	179	371
3:00 AM - 4:00 AM	2	7	9	3:00 PM - 4:00 PM	153	204	357
4:00 AM - 5:00 AM	9	31	40	4:00 PM - 5:00 PM	168	322	490
5:00 AM - 6:00 AM	61	45	106	5:00 PM - 6:00 PM	203	200	403
6:00 AM - 7:00 AM	69	185	254	6:00 PM - 7:00 PM	129	99	228
7:00 AM - 8:00 AM	178	314	492	7:00 PM - 8:00 PM	116	55	171
8:00 AM - 9:00 AM	203	194	397	8:00 PM - 9:00 PM	82	32	114
9:00 AM - 10:00 AM	153	115	268	9:00 PM - 10:00 PM	51	19	70
10:00 AM - 11:00 AM	144	109	253	10:00 PM - 11:00 PM	23	8	31
11:00 AM - 12:00 PM	144	109	253	11:00 PM - 12:00 PM	16	8	24
<b>Total</b>	<b>972</b>	<b>1,120</b>	<b>2,092</b>	<b>Total</b>	<b>1,376</b>	<b>1,379</b>	<b>2,755</b>

24-Hour NB Volume 2,348      24-Hour SB Volume 2,499





## 24 Hour Segment Count

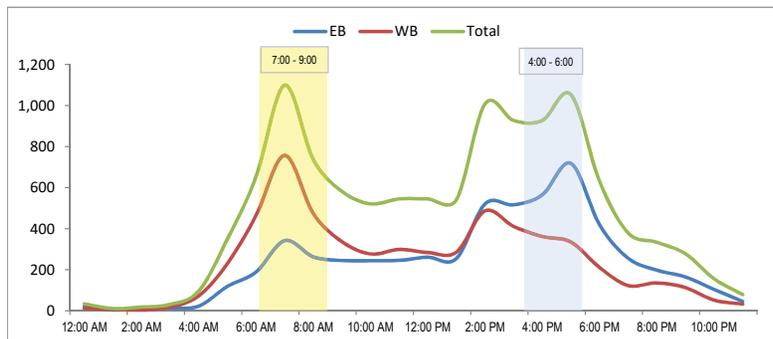
Accurate Video Counts Inc  
 info@accuratevideocounts.com  
 (619) 987-5136



**Location:** A. San Pasqual Rd between Bear Valley Pkwy and Ryan Dr  
**Orientation:** East-West  
**Date of Count:** Wednesday, January 11, 2017  
**Analysts:** DASH  
**Weather:** Sunny  
**AVC Proj. No:** 17-0614

24 Hour Segment Volume				11,533			
Time	Hourly Volume			Time	Hourly Volume		
	EB	WB	Total		EB	WB	Total
12:00 AM - 1:00 AM	22	12	34	12:00 PM - 1:00 PM	261	284	545
1:00 AM - 2:00 AM	4	7	11	1:00 PM - 2:00 PM	255	286	541
2:00 AM - 3:00 AM	14	4	18	2:00 PM - 3:00 PM	521	487	1,008
3:00 AM - 4:00 AM	13	18	31	3:00 PM - 4:00 PM	516	411	927
4:00 AM - 5:00 AM	23	73	96	4:00 PM - 5:00 PM	565	362	927
5:00 AM - 6:00 AM	119	230	349	5:00 PM - 6:00 PM	718	335	1,053
6:00 AM - 7:00 AM	189	464	653	6:00 PM - 7:00 PM	419	211	630
7:00 AM - 8:00 AM	342	757	1,099	7:00 PM - 8:00 PM	256	123	379
8:00 AM - 9:00 AM	263	474	737	8:00 PM - 9:00 PM	198	136	334
9:00 AM - 10:00 AM	245	337	582	9:00 PM - 10:00 PM	165	113	278
10:00 AM - 11:00 AM	244	277	521	10:00 PM - 11:00 PM	104	52	156
11:00 AM - 12:00 PM	246	299	545	11:00 PM - 12:00 AM	46	33	79
<b>Total</b>	<b>1,724</b>	<b>2,952</b>	<b>4,676</b>	<b>Total</b>	<b>4,024</b>	<b>2,833</b>	<b>6,857</b>

24-Hour EB Volume 5,748      24-Hour WB Volume 5,785



## 24 Hour Segment Count

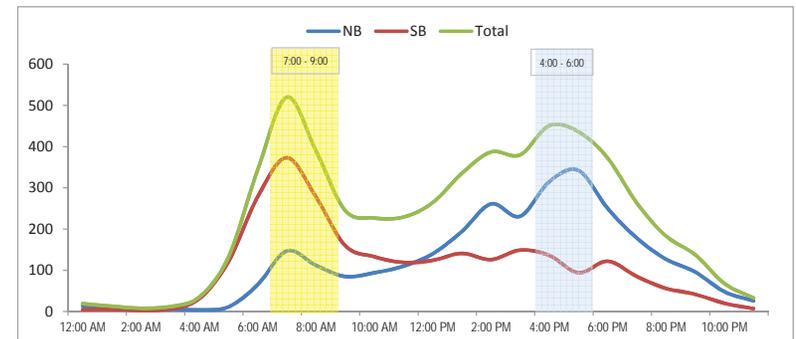
Accurate Video Counts Inc  
 info@accuratevideocounts.com  
 (619) 987-5136



**Location:** 1. Citrus Avenue, north of San Pasqual Valley Road (SR 78)  
**Orientation:** North-South  
**Date of Count:** Thursday, March 12, 2015  
**Analysts:** DASH  
**Weather:** Sunny  
**AVC Proj. No:** 15-0327

24 Hour Segment Volume				5,483			
Time	Hourly Volume			Time	Hourly Volume		
	NB	SB	Total		NB	SB	Total
12:00 AM - 1:00 AM	14	5	19	12:00 PM - 1:00 PM	140	124	264
1:00 AM - 2:00 AM	8	5	13	1:00 PM - 2:00 PM	194	141	335
2:00 AM - 3:00 AM	5	3	8	2:00 PM - 3:00 PM	261	126	387
3:00 AM - 4:00 AM	6	6	12	3:00 PM - 4:00 PM	231	149	380
4:00 AM - 5:00 AM	4	31	35	4:00 PM - 5:00 PM	315	136	451
5:00 AM - 6:00 AM	11	121	132	5:00 PM - 6:00 PM	342	94	436
6:00 AM - 7:00 AM	65	278	343	6:00 PM - 7:00 PM	250	122	372
7:00 AM - 8:00 AM	147	373	520	7:00 PM - 8:00 PM	178	85	263
8:00 AM - 9:00 AM	112	278	390	8:00 PM - 9:00 PM	127	56	183
9:00 AM - 10:00 AM	85	160	245	9:00 PM - 10:00 PM	96	42	138
10:00 AM - 11:00 AM	94	133	227	10:00 PM - 11:00 PM	48	20	68
11:00 AM - 12:00 PM	110	119	229	11:00 PM - 12:00 AM	26	7	33
<b>Total</b>	<b>661</b>	<b>1,512</b>	<b>2,173</b>	<b>Total</b>	<b>2,208</b>	<b>1,102</b>	<b>3,310</b>

24-Hour NB Volume 2,869      24-Hour SB Volume 2,614





## 24 Hour Segment Count

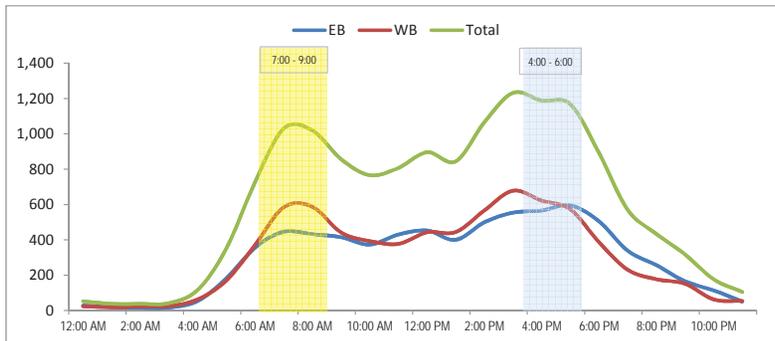
Accurate Video Counts Inc  
 info@accuratevideocounts.com  
 (619) 987-5136



**Location:** San Pasqual Valley Road (SR 78), 17th Avenue to Bear Valley Parkway  
**Orientation:** East-West  
**Date of Count:** Tuesday, May 20, 2014  
**Analysts:** DASH  
**Weather:** Sunny  
**AVC Proj. No:** 14-0205

24 Hour Segment Volume				14,734			
Time	Hourly Volume			Time	Hourly Volume		
	EB	WB	Total		EB	WB	Total
12:00 AM - 1:00 AM	28	24	52	12:00 PM - 1:00 PM	453	443	896
1:00 AM - 2:00 AM	20	18	38	1:00 PM - 2:00 PM	400	444	844
2:00 AM - 3:00 AM	16	22	38	2:00 PM - 3:00 PM	499	566	1,065
3:00 AM - 4:00 AM	17	25	42	3:00 PM - 4:00 PM	554	678	1,232
4:00 AM - 5:00 AM	54	63	117	4:00 PM - 5:00 PM	566	622	1,188
5:00 AM - 6:00 AM	182	170	352	5:00 PM - 6:00 PM	595	573	1,168
6:00 AM - 7:00 AM	356	371	727	6:00 PM - 7:00 PM	505	387	892
7:00 AM - 8:00 AM	446	584	1,030	7:00 PM - 8:00 PM	339	231	570
8:00 AM - 9:00 AM	432	587	1,019	8:00 PM - 9:00 PM	257	177	434
9:00 AM - 10:00 AM	415	442	857	9:00 PM - 10:00 PM	166	152	318
10:00 AM - 11:00 AM	373	393	766	10:00 PM - 11:00 PM	114	63	177
11:00 AM - 12:00 PM	430	377	807	11:00 PM - 12:00 PM	51	54	105
<b>Total</b>	<b>2,769</b>	<b>3,076</b>	<b>5,845</b>	<b>Total</b>	<b>4,499</b>	<b>4,390</b>	<b>8,889</b>

24-Hour EB Volume 7,268      24-Hour WB Volume 7,466



## 24 Hour Segment Count

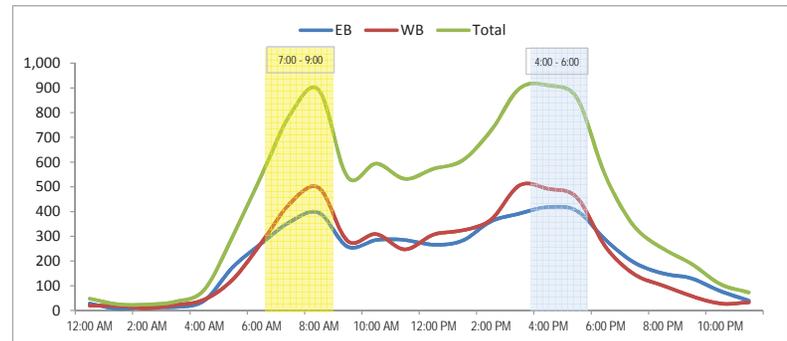
Accurate Video Counts Inc  
 info@accuratevideocounts.com  
 (619) 987-5136



**Location:** 5. San Pasqual Valley Road West of Cloverdale  
**Orientation:** East-West  
**Date of Count:** Tuesday, May 06, 2014  
**Analysts:** DASH  
**Weather:** Sunny  
**AVC Proj. No:** 14-0198

24 Hour Segment Volume				10,494			
Time	Hourly Volume			Time	Hourly Volume		
	EB	WB	Total		EB	WB	Total
12:00 AM - 1:00 AM	28	20	48	12:00 PM - 1:00 PM	266	307	573
1:00 AM - 2:00 AM	7	18	25	1:00 PM - 2:00 PM	282	324	606
2:00 AM - 3:00 AM	15	9	24	2:00 PM - 3:00 PM	360	367	727
3:00 AM - 4:00 AM	14	22	36	3:00 PM - 4:00 PM	392	506	898
4:00 AM - 5:00 AM	40	44	84	4:00 PM - 5:00 PM	418	492	910
5:00 AM - 6:00 AM	176	126	302	5:00 PM - 6:00 PM	403	457	860
6:00 AM - 7:00 AM	272	275	547	6:00 PM - 7:00 PM	286	258	544
7:00 AM - 8:00 AM	359	434	793	7:00 PM - 8:00 PM	194	147	341
8:00 AM - 9:00 AM	395	496	891	8:00 PM - 9:00 PM	150	101	251
9:00 AM - 10:00 AM	258	281	539	9:00 PM - 10:00 PM	130	59	189
10:00 AM - 11:00 AM	285	309	594	10:00 PM - 11:00 PM	79	28	107
11:00 AM - 12:00 PM	285	247	532	11:00 PM - 12:00 PM	40	33	73
<b>Total</b>	<b>2,134</b>	<b>2,281</b>	<b>4,415</b>	<b>Total</b>	<b>3,000</b>	<b>3,079</b>	<b>6,079</b>

24-Hour EB Volume 5,134      24-Hour WB Volume 5,360





## 24 Hour Segment Count

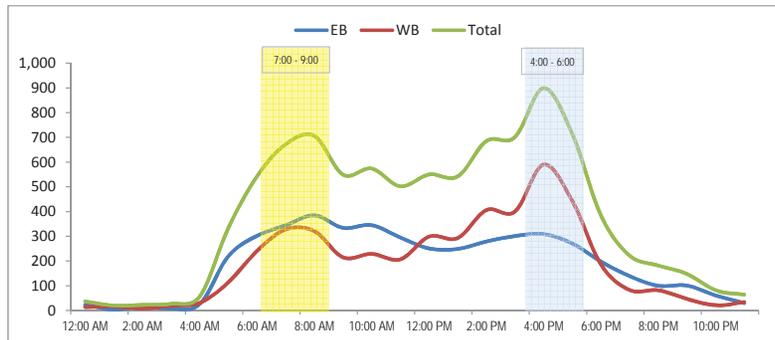
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 (619) 987-5136



**Location:** 6. San Pasqual Valley Road btw East of Cloverdale  
**Orientation:** East-West  
**Date of Count:** Tuesday, May 06, 2014  
**Analysts:** DASH  
**Weather:** Sunny  
**AVC Proj. No:** 14-0198

24 Hour Segment Volume				9,217			
Time	Hourly Volume			Time	Hourly Volume		
	EB	WB	Total		EB	WB	Total
12:00 AM - 1:00 AM	23	14	37	12:00 PM - 1:00 PM	251	299	550
1:00 AM - 2:00 AM	4	16	20	1:00 PM - 2:00 PM	249	293	542
2:00 AM - 3:00 AM	15	8	23	2:00 PM - 3:00 PM	279	406	685
3:00 AM - 4:00 AM	8	19	27	3:00 PM - 4:00 PM	301	400	701
4:00 AM - 5:00 AM	26	31	57	4:00 PM - 5:00 PM	309	590	899
5:00 AM - 6:00 AM	220	114	334	5:00 PM - 6:00 PM	271	443	714
6:00 AM - 7:00 AM	302	241	543	6:00 PM - 7:00 PM	198	186	384
7:00 AM - 8:00 AM	344	328	672	7:00 PM - 8:00 PM	139	83	222
8:00 AM - 9:00 AM	385	321	706	8:00 PM - 9:00 PM	100	82	182
9:00 AM - 10:00 AM	334	215	549	9:00 PM - 10:00 PM	101	47	148
10:00 AM - 11:00 AM	345	229	574	10:00 PM - 11:00 PM	61	21	82
11:00 AM - 12:00 PM	295	207	502	11:00 PM - 12:00 PM	30	34	64
<b>Total</b>	<b>2,301</b>	<b>1,743</b>	<b>4,044</b>	<b>Total</b>	<b>2,289</b>	<b>2,884</b>	<b>5,173</b>

24-Hour EB Volume 4,590      24-Hour WB Volume 4,627



## 24 Hour Segment Count

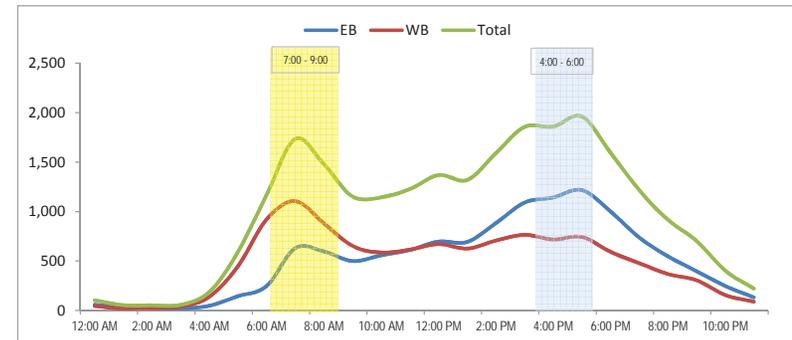
Accurate Video Counts Inc  
 info@accuratevideocounts.com  
 (619) 987-5136



**Location:** Felicitia Ave, Centre City Pkwy to Juniper St  
**Orientation:** East-West  
**Date of Count:** Tuesday, May 20, 2014  
**Analysts:** DASH  
**Weather:** Sunny  
**AVC Proj. No:** 14-0205

24 Hour Segment Volume				23,967			
Time	Hourly Volume			Time	Hourly Volume		
	EB	WB	Total		EB	WB	Total
12:00 AM - 1:00 AM	59	45	104	12:00 PM - 1:00 PM	697	672	1,369
1:00 AM - 2:00 AM	34	20	54	1:00 PM - 2:00 PM	693	626	1,319
2:00 AM - 3:00 AM	26	27	53	2:00 PM - 3:00 PM	883	707	1,590
3:00 AM - 4:00 AM	21	37	58	3:00 PM - 4:00 PM	1,091	765	1,856
4:00 AM - 5:00 AM	48	139	187	4:00 PM - 5:00 PM	1,142	717	1,859
5:00 AM - 6:00 AM	145	447	592	5:00 PM - 6:00 PM	1,217	744	1,961
6:00 AM - 7:00 AM	247	922	1,169	6:00 PM - 7:00 PM	1,002	593	1,595
7:00 AM - 8:00 AM	630	1,105	1,735	7:00 PM - 8:00 PM	738	479	1,217
8:00 AM - 9:00 AM	597	881	1,478	8:00 PM - 9:00 PM	548	369	917
9:00 AM - 10:00 AM	500	652	1,152	9:00 PM - 10:00 PM	398	306	704
10:00 AM - 11:00 AM	558	586	1,144	10:00 PM - 11:00 PM	248	157	405
11:00 AM - 12:00 PM	611	616	1,227	11:00 PM - 12:00 PM	133	89	222
<b>Total</b>	<b>3,476</b>	<b>5,477</b>	<b>8,953</b>	<b>Total</b>	<b>8,790</b>	<b>6,224</b>	<b>15,014</b>

24-Hour EB Volume 12,266      24-Hour WB Volume 11,701



# 24 Hour Segment Count

Accurate Video Counts Inc  
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(619) 987-5136



**Location:** 1. E. Felicita Ave: Maple St to Juniper St

**Orientation:** East-West

**Date of Count:** Tuesday, October 07, 2014

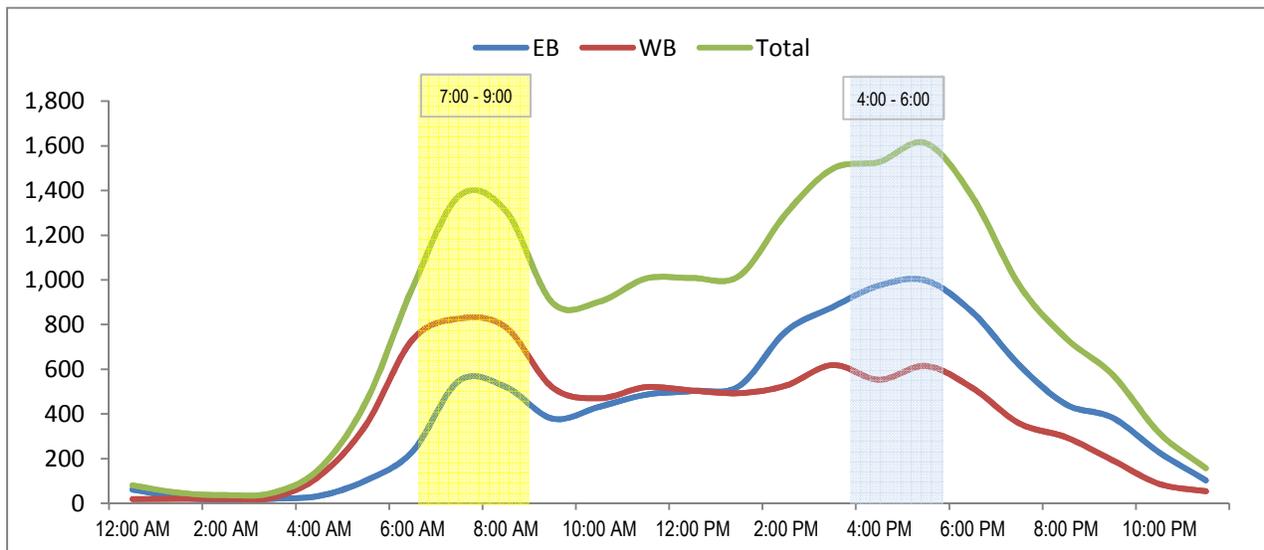
**Analysts:** DASH

**Weather:** Sunny

**AVC Proj. No:** 14-0265

24 Hour Segment Volume					19,367			
Time	Hourly Volume			Time	Hourly Volume			
	EB	WB	Total		EB	WB	Total	
12:00 AM - 1:00 AM	62	19	81	12:00 PM - 1:00 PM	503	505	1,008	
1:00 AM - 2:00 AM	27	20	47	1:00 PM - 2:00 PM	525	493	1,018	
2:00 AM - 3:00 AM	17	20	37	2:00 PM - 3:00 PM	769	527	1,296	
3:00 AM - 4:00 AM	21	26	47	3:00 PM - 4:00 PM	878	619	1,497	
4:00 AM - 5:00 AM	33	121	154	4:00 PM - 5:00 PM	975	553	1,528	
5:00 AM - 6:00 AM	102	350	452	5:00 PM - 6:00 PM	997	615	1,612	
6:00 AM - 7:00 AM	232	732	964	6:00 PM - 7:00 PM	855	516	1,371	
7:00 AM - 8:00 AM	549	827	1,376	7:00 PM - 8:00 PM	619	358	977	
8:00 AM - 9:00 AM	521	788	1,309	8:00 PM - 9:00 PM	443	296	739	
9:00 AM - 10:00 AM	379	519	898	9:00 PM - 10:00 PM	383	193	576	
10:00 AM - 11:00 AM	432	470	902	10:00 PM - 11:00 PM	228	87	315	
11:00 AM - 12:00 PM	486	520	1006	11:00 PM - 12:00 AM	103	54	157	
<b>Total</b>	<b>2,861</b>	<b>4,412</b>	<b>7,273</b>	<b>Total</b>	<b>7,278</b>	<b>4,816</b>	<b>12,094</b>	

**24-Hour EB Volume 10,139**      **24-Hour WB Volume 9,228**





## 24 Hour Segment Count

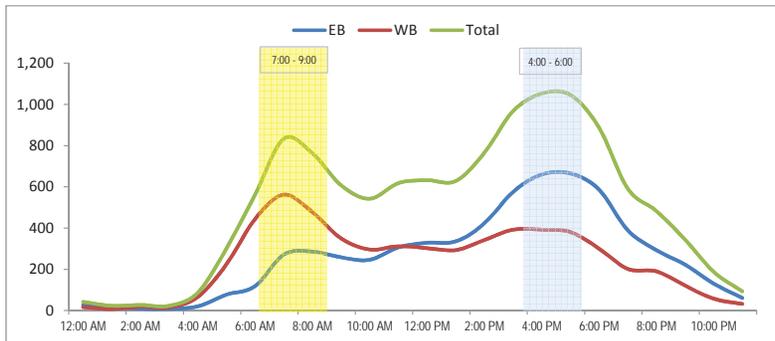
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 info@accuratevideocounts.com  
 (619) 987-5136



**Location:** 17th Ave, Juniper St to San Pasqual Valley Rd (SR 78)  
**Orientation:** East-West  
**Date of Count:** Tuesday, May 20, 2014  
**Analysts:** DASH  
**Weather:** Sunny  
**AVC Proj. No:** 14-0205

24 Hour Segment Volume				12,107			
Time	Hourly Volume			Time	Hourly Volume		
	EB	WB	Total		EB	WB	Total
12:00 AM - 1:00 AM	26	16	42	12:00 PM - 1:00 PM	329	303	632
1:00 AM - 2:00 AM	16	7	23	1:00 PM - 2:00 PM	335	293	628
2:00 AM - 3:00 AM	9	18	27	2:00 PM - 3:00 PM	423	342	765
3:00 AM - 4:00 AM	8	15	23	3:00 PM - 4:00 PM	575	392	967
4:00 AM - 5:00 AM	20	66	86	4:00 PM - 5:00 PM	660	392	1,052
5:00 AM - 6:00 AM	77	224	301	5:00 PM - 6:00 PM	665	381	1,046
6:00 AM - 7:00 AM	118	444	562	6:00 PM - 7:00 PM	587	301	888
7:00 AM - 8:00 AM	271	562	833	7:00 PM - 8:00 PM	390	202	592
8:00 AM - 9:00 AM	286	477	763	8:00 PM - 9:00 PM	293	190	483
9:00 AM - 10:00 AM	258	350	608	9:00 PM - 10:00 PM	223	122	345
10:00 AM - 11:00 AM	246	296	542	10:00 PM - 11:00 PM	131	57	188
11:00 AM - 12:00 PM	306	312	618	11:00 PM - 12:00 PM	61	32	93
<b>Total</b>	<b>1,641</b>	<b>2,787</b>	<b>4,428</b>	<b>Total</b>	<b>4,672</b>	<b>3,007</b>	<b>7,679</b>

24-Hour EB Volume 6,313      24-Hour WB Volume 5,794



## 24 Hour Segment Count

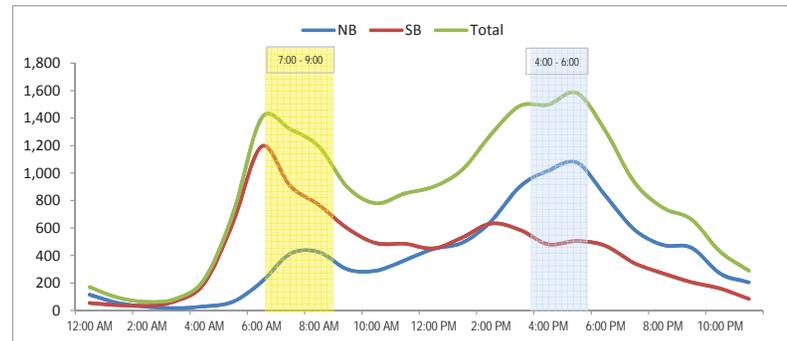
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 (619) 987-5136



**Location:** Bear Valley Pkwy, San Pasqual Valley Rd (SR 78) to Sunset Dr - Ranchito Dr  
**Orientation:** North-South  
**Date of Count:** Tuesday, May 20, 2014  
**Analysts:** DASH  
**Weather:** Sunny  
**AVC Proj. No:** 14-0205

24 Hour Segment Volume				19,929			
Time	Hourly Volume			Time	Hourly Volume		
	NB	SB	Total		NB	SB	Total
12:00 AM - 1:00 AM	115	55	170	12:00 PM - 1:00 PM	449	452	901
1:00 AM - 2:00 AM	54	39	93	1:00 PM - 2:00 PM	493	531	1,024
2:00 AM - 3:00 AM	28	35	63	2:00 PM - 3:00 PM	647	633	1,280
3:00 AM - 4:00 AM	17	68	85	3:00 PM - 4:00 PM	900	588	1,488
4:00 AM - 5:00 AM	30	198	228	4:00 PM - 5:00 PM	1,016	482	1,498
5:00 AM - 6:00 AM	64	639	703	5:00 PM - 6:00 PM	1,077	506	1,583
6:00 AM - 7:00 AM	208	1,194	1,402	6:00 PM - 7:00 PM	835	471	1,306
7:00 AM - 8:00 AM	413	906	1,319	7:00 PM - 8:00 PM	590	345	935
8:00 AM - 9:00 AM	425	768	1,193	8:00 PM - 9:00 PM	477	271	748
9:00 AM - 10:00 AM	299	597	896	9:00 PM - 10:00 PM	457	206	663
10:00 AM - 11:00 AM	290	490	780	10:00 PM - 11:00 PM	269	160	429
11:00 AM - 12:00 PM	366	486	852	11:00 PM - 12:00 PM	205	85	290
<b>Total</b>	<b>2,309</b>	<b>5,475</b>	<b>7,784</b>	<b>Total</b>	<b>7,415</b>	<b>4,730</b>	<b>12,145</b>

24-Hour NB Volume 9,724      24-Hour SB Volume 10,205





## 24 Hour Segment Count

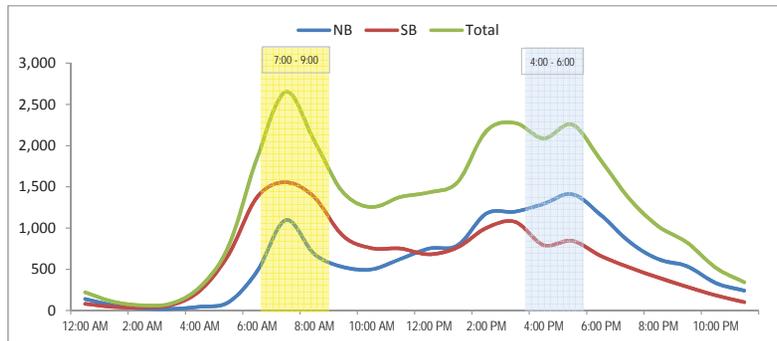
Accurate Video Counts Inc  
 info@accuratevideocounts.com  
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**Location:** Bear Valley Pkwy, Sunset Dr-Ranchito Dr to San Pasqual Rd  
**Orientation:** North-South  
**Date of Count:** Tuesday, May 20, 2014  
**Analysts:** DASH  
**Weather:** Sunny  
**AVC Proj. No.:** 14-0205

24 Hour Segment Volume				29,823			
Time	Hourly Volume			Time	Hourly Volume		
	NB	SB	Total		NB	SB	Total
12:00 AM - 1:00 AM	140	81	221	12:00 PM - 1:00 PM	752	681	1,433
1:00 AM - 2:00 AM	62	43	105	1:00 PM - 2:00 PM	791	767	1,558
2:00 AM - 3:00 AM	25	39	64	2:00 PM - 3:00 PM	1,176	1,001	2,177
3:00 AM - 4:00 AM	19	66	85	3:00 PM - 4:00 PM	1,199	1,076	2,275
4:00 AM - 5:00 AM	45	239	284	4:00 PM - 5:00 PM	1,294	793	2,087
5:00 AM - 6:00 AM	100	675	775	5:00 PM - 6:00 PM	1,410	845	2,255
6:00 AM - 7:00 AM	475	1,374	1,849	6:00 PM - 7:00 PM	1,158	661	1,819
7:00 AM - 8:00 AM	1,097	1,555	2,652	7:00 PM - 8:00 PM	831	521	1,352
8:00 AM - 9:00 AM	684	1,373	2,057	8:00 PM - 9:00 PM	623	399	1,022
9:00 AM - 10:00 AM	528	905	1,433	9:00 PM - 10:00 PM	538	288	826
10:00 AM - 11:00 AM	499	756	1,255	10:00 PM - 11:00 PM	335	185	520
11:00 AM - 12:00 PM	625	752	1,377	11:00 PM - 12:00 PM	241	101	342
<b>Total</b>	<b>4,299</b>	<b>7,858</b>	<b>12,157</b>	<b>Total</b>	<b>10,348</b>	<b>7,318</b>	<b>17,666</b>

24-Hour NB Volume 14,647      24-Hour SB Volume 15,176



## 24 Hour Segment Count

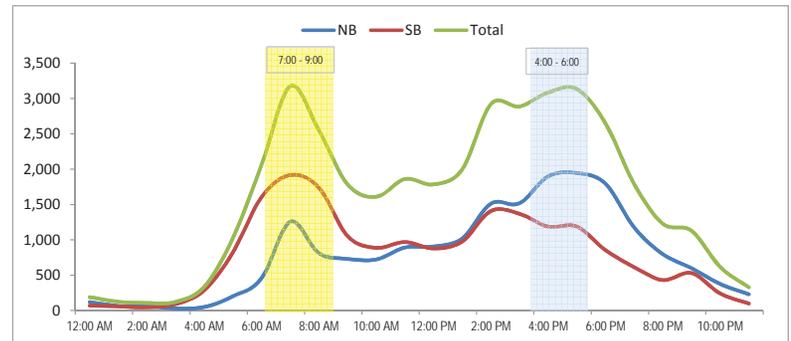
Accurate Video Counts Inc  
 info@accuratevideocounts.com  
 (619) 987-5136



**Location:** 6. Bear Valley Pkwy btw San Pasqual Rd to I-15  
**Orientation:** North-South  
**Date of Count:** Tuesday, March 04, 2014  
**Analysts:** DASH  
**Weather:** Sunny  
**AVC Proj. No.:** 14-0174

24 Hour Segment Volume				38,487			
Time	Hourly Volume			Time	Hourly Volume		
	NB	SB	Total		NB	SB	Total
12:00 AM - 1:00 AM	119	70	189	12:00 PM - 1:00 PM	906	878	1,784
1:00 AM - 2:00 AM	65	59	124	1:00 PM - 2:00 PM	1,020	977	1,997
2:00 AM - 3:00 AM	62	45	107	2:00 PM - 3:00 PM	1,512	1,408	2,920
3:00 AM - 4:00 AM	31	91	122	3:00 PM - 4:00 PM	1,518	1,369	2,887
4:00 AM - 5:00 AM	49	287	336	4:00 PM - 5:00 PM	1,898	1,187	3,085
5:00 AM - 6:00 AM	202	824	1,026	5:00 PM - 6:00 PM	1,946	1,188	3,134
6:00 AM - 7:00 AM	456	1,606	2,062	6:00 PM - 7:00 PM	1,794	854	2,648
7:00 AM - 8:00 AM	1,257	1,917	3,174	7:00 PM - 8:00 PM	1,175	614	1,789
8:00 AM - 9:00 AM	811	1,737	2,548	8:00 PM - 9:00 PM	798	430	1,228
9:00 AM - 10:00 AM	731	1,053	1,784	9:00 PM - 10:00 PM	599	530	1,129
10:00 AM - 11:00 AM	722	887	1,609	10:00 PM - 11:00 PM	376	241	617
11:00 AM - 12:00 PM	891	969	1,860	11:00 PM - 12:00 AM	230	98	328
<b>Total</b>	<b>5,396</b>	<b>9,545</b>	<b>14,941</b>	<b>Total</b>	<b>13,772</b>	<b>9,774</b>	<b>23,546</b>

24-Hour NB Volume 19,168      24-Hour SB Volume 19,319





## 24 Hour Segment Count

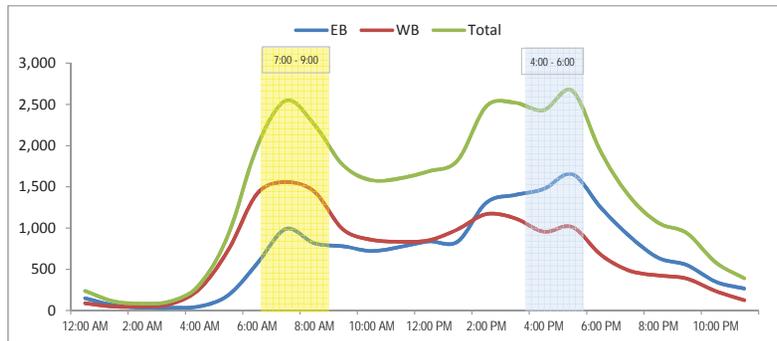
Accurate Video Counts Inc  
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**Location:** Via Rancho Pkwy, Beethoven Dr to I-15 NB Ramps  
**Orientation:** East-West  
**Date of Count:** Tuesday, May 20, 2014  
**Analysts:** DASH  
**Weather:** Sunny  
**AVC Proj. No:** 14-0205

24 Hour Segment Volume				33,401			
Time	Hourly Volume			Time	Hourly Volume		
	EB	WB	Total		EB	WB	Total
12:00 AM - 1:00 AM	149	88	237	12:00 PM - 1:00 PM	838	852	1,690
1:00 AM - 2:00 AM	64	47	111	1:00 PM - 2:00 PM	836	985	1,821
2:00 AM - 3:00 AM	35	49	84	2:00 PM - 3:00 PM	1,308	1,169	2,477
3:00 AM - 4:00 AM	34	80	114	3:00 PM - 4:00 PM	1,401	1,119	2,520
4:00 AM - 5:00 AM	50	265	315	4:00 PM - 5:00 PM	1,474	956	2,430
5:00 AM - 6:00 AM	187	737	924	5:00 PM - 6:00 PM	1,653	1,012	2,665
6:00 AM - 7:00 AM	568	1,416	1,984	6:00 PM - 7:00 PM	1,245	675	1,920
7:00 AM - 8:00 AM	989	1,556	2,545	7:00 PM - 8:00 PM	900	482	1,382
8:00 AM - 9:00 AM	815	1,441	2,256	8:00 PM - 9:00 PM	639	425	1,064
9:00 AM - 10:00 AM	779	984	1,763	9:00 PM - 10:00 PM	551	387	938
10:00 AM - 11:00 AM	721	859	1,580	10:00 PM - 11:00 PM	349	236	585
11:00 AM - 12:00 PM	771	834	1,605	11:00 PM - 12:00 PM	266	125	391
<b>Total</b>	<b>5,162</b>	<b>8,356</b>	<b>13,518</b>	<b>Total</b>	<b>11,460</b>	<b>8,423</b>	<b>19,883</b>

24-Hour EB Volume 16,622      24-Hour WB Volume 16,779



## 24 Hour Segment Count

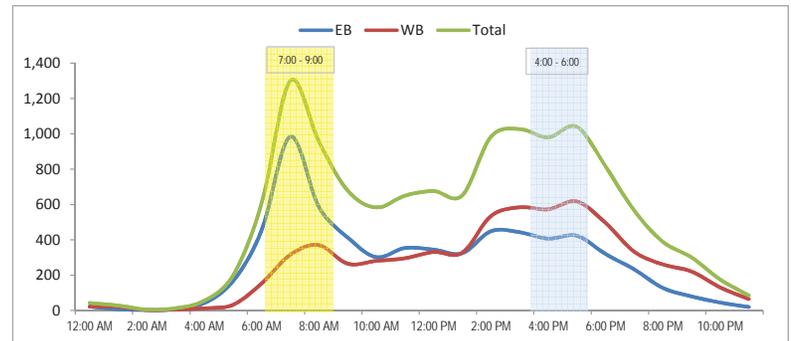
Accurate Video Counts Inc  
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(619) 987-5136



**Location:** Via Rancho Pkwy, I-15 SB Ramps to Lomas Serenas Dr  
**Orientation:** East-West  
**Date of Count:** Tuesday, May 20, 2014  
**Analysts:** DASH  
**Weather:** Sunny  
**AVC Proj. No:** 14-0205

24 Hour Segment Volume				12,808			
Time	Hourly Volume			Time	Hourly Volume		
	EB	WB	Total		EB	WB	Total
12:00 AM - 1:00 AM	22	21	43	12:00 PM - 1:00 PM	345	331	676
1:00 AM - 2:00 AM	7	21	28	1:00 PM - 2:00 PM	324	327	651
2:00 AM - 3:00 AM	3	2	5	2:00 PM - 3:00 PM	449	534	983
3:00 AM - 4:00 AM	7	6	13	3:00 PM - 4:00 PM	443	584	1,027
4:00 AM - 5:00 AM	43	13	56	4:00 PM - 5:00 PM	407	573	980
5:00 AM - 6:00 AM	166	32	198	5:00 PM - 6:00 PM	423	617	1,040
6:00 AM - 7:00 AM	454	153	607	6:00 PM - 7:00 PM	320	496	816
7:00 AM - 8:00 AM	984	316	1,300	7:00 PM - 8:00 PM	233	333	566
8:00 AM - 9:00 AM	586	370	956	8:00 PM - 9:00 PM	128	261	389
9:00 AM - 10:00 AM	414	265	679	9:00 PM - 10:00 PM	80	221	301
10:00 AM - 11:00 AM	302	281	583	10:00 PM - 11:00 PM	45	131	176
11:00 AM - 12:00 PM	354	296	650	11:00 PM - 12:00 PM	20	65	85
<b>Total</b>	<b>3,342</b>	<b>1,776</b>	<b>5,118</b>	<b>Total</b>	<b>3,217</b>	<b>4,473</b>	<b>7,690</b>

24-Hour EB Volume 6,559      24-Hour WB Volume 6,249



Location (I.D.)	Route	Dir	Period	Cars per green	Sec./ Cycle	(per lane) Veh./hr	Total # lanes	HOV
Via Rancho Pkwy (12707)	15	SB	0530 - 0930	2	5.1 - 8.4	1400 - 858	3	Lt
Via Rancho Pkwy (12708)	15	NB	1400 - 1900	1	7.3 - 10.0	493 - 358	2	No

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.

|

**APPENDIX B**  
**HIGHWAY CAPACITY MANUAL 2010**  
**INTERSECTION METHODOLOGY**



## 2010 HIGHWAY CAPACITY MANUAL LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

In the 2010 Highway Capacity Manual (HCM), Level of Service for signalized intersections is defined in terms of delay. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Specifically, Level of Service criteria are stated in terms of the average control delay per vehicle for a 15-minute analysis period. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

Delay is a complex measure, and is dependent on a number of variables, including the quality of progression, the cycle length, the green ratio, and the v/c ratio for the lane group or approach in question.

LEVEL OF SERVICE	CONTROLLED DELAY PER VEHICLE (SEC)		
A		≤	10.0
B	10.1	to	20.0
C	20.1	to	35.0
D	35.1	to	55.0
E	55.1	to	80.0
F		>	80.0

Level of Service A describes operations with very low delay, (i.e. less than 10.0 seconds per vehicle). This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.

Level of Service B describes operations with delay in the range of 10.1 to 20.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.

Level of Service C describes operations with delay in the range of 20.1 to 35.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in the level. The number of vehicles stopping is significant at this level, although many still pass through the intersections without stopping.

Level of Service D describes operations with delay in the range of 35.1 to 55.0 seconds per vehicle. At Level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

Level of Service E describes operations with delay in the range of 55.1 to 80.0 seconds per vehicle. This is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.

Level of Service F describes operations with delay in excess of 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with over-saturation (i.e. when arrival flow rates exceed the capacity of the intersection). It may also occur at high v/c ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

## 2010 HIGHWAY CAPACITY MANUAL LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

In the 2010 Highway Capacity Manual (HCM), Level of Service for unsignalized intersections is determined by the computed or measured control delay and is defined for each minor movement. Level of Service is not defined for the intersection as a whole. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. The criteria are given in the following table, and are based on the average control delay for any particular minor movement.

LEVEL OF SERVICE	AVERAGE CONTROL DELAY SEC/VEH			EXPECTED DELAY TO MINOR STREET TRAFFIC
A	0.0	≤	10.0	Little or no delay
B	10.1	to	15.0	Short traffic delays
C	15.1	to	25.0	Average traffic delays
D	25.1	to	35.0	Long traffic delays
E	35.1	to	50.0	Very long traffic delays
F		>	50.0	Severe congestion

Level of Service F exists when there are insufficient gaps of suitable size to allow a side street demand to safely cross through a major street traffic stream. This Level of Service is generally evident from extremely long control delays experienced by side-street traffic and by queuing on the minor-street approaches. The method, however, is based on a constant critical gap size; that is, the critical gap remains constant no matter how long the side-street motorist waits. LOS F may also appear in the form on side-street vehicles selecting smaller-than-usual gaps. In such cases, safety may be a problem, and some disruption to the major traffic stream may result. It is important to note that LOS F may not always result in long queues but may result in adjustments to normal gap acceptance behavior, which are more difficult to observe in the field than queuing.

In most cases at Two-Way Stop Controlled (TWSC) intersections, the critical movement is the minor-street left-turn movement. As such, the minor-street left-turn movement can generally be considered the primary factor affecting overall intersection performance. The lower threshold for LOS F is set at 50 seconds of delay per vehicle. There are many instances, particularly in urban areas, in which the delay equations will predict delays of 50 seconds (LOS F) or more for minor-street movements under very low volume conditions on the minor street (less than 25 vehicle/hour). Since the first term of the equation is a function only of the capacity, the LOS F threshold of 50 sec/vehicle is reached with a movement capacity of approximately 85 vehicle/hour or less.

This procedure assumes random arrivals on the major street. For a typical four-lane arterial with average daily traffic volumes in the range of 15,000 to 20,000 vehicles per day (peak hour, 1,500 to 2,000 vehicle/hour), the delay equation used in the TWSC capacity analysis procedure will predict 50 seconds of delay or more (LOS F) for many urban TWSC intersections that allow minor-street left-turn movements. **The LOS F threshold will be reached regardless of the volume of minor-street left-turn traffic.** Notwithstanding this fact, most low-volume minor-street approaches would not meet any of the volume or delay warrants for signalization of the *Manual on Uniform Traffic Control Devices (MUTCD)* since the warrants define an asymptote at 100 vehicle/hour on the minor approach. As a result, many public agencies that use the HCM Level of Service thresholds to determine the design adequacy of TWSC intersections may be forced to eliminate the minor-street left-turn movement, even when the movement may not present any operational problem, such as the formation of long queues on the minor street or driveway approach.

## **APPENDIX C**

### **CITY OF ESCONDIDO, CITY OF SAN DIEGO & COUNTY OF SAN DIEGO ROADWAY CLASSIFICATION TABLES**



Table

CITY OF ESCONDIDO PROPOSED LEVEL OF SERVICE STANDARDS

STREET SEGMENT AVERAGE DAILY VEHICLE TRIP THRESHOLDS

Street Classification	Lanes	Cross Sections	Level of Service				
			A	B	C	D	E
Prime Arterial	(8lanes)	116/136 (NP)	23,800	37,800	51,800	62,300	70,000
	(6lanes)	106/126 (NP)	20,400	32,400	44,400	53,400	60,000
Major Road	(6lanes)	90/110 (NP)	17,000	27,000	37,000	44,500	50,000
	(4lanes)	82/102 (NP)	12,600	20,000	27,400	32,900	37,000
Collector	(4lanes)	64/84 (NP)	11,600	18,500	25,300	30,400	34,200
	(4lanes)	(WP)	6,800	10,800	14,800	17,800	20,000
Local Collector	(2lanes)	42/66 (NP)	5,100	8,100	11,100	13,400	15,000
		(WP)	3,400	5,400	7,400	8,900	10,000
Rural collector	(2lanes)						

(NP) No Parking  
(WP) With Parking

The following V/C Ratios were utilized for determining Existing and Future Level of Service.

Level of Service

Volume/Capacity (V/C) Ratio

A-	Less than or Equal to	0.00	to	0.34
B-	Less than or Equal to	0.35	to	0.54
C-	Less than or Equal to	0.55	to	0.74
D-	Less than or Equal to	0.75	to	0.89
E-	Less than or Equal to	0.90	to	1.00

v/c 0.74

**TABLE 2**  
**Roadway Classifications, Levels of Service (LOS)**  
**and Average Daily Traffic (ADT)**

STREET CLASSIFICATION	LANES	CROSS SECTIONS	LEVEL OF SERVICE				
			A	B	C	D	E
Freeway	8 lanes		60,000	84,000	120,000	140,000	150,000
Freeway	6 lanes		45,000	63,000	90,000	110,000	120,000
Freeway	4 lanes		30,000	42,000	60,000	70,000	80,000
Expressway	6 lanes	102/122	30,000	42,000	60,000	70,000	80,000
Primary Arterial	6 lanes	102/122	25,000	35,000	50,000	55,000	60,000
Major Arterial	6 lanes	102/122	20,000	28,000	40,000	45,000	50,000
Major Arterial	4 lanes	78/98	15,000	21,000	30,000	35,000	40,000
Collector	4 lanes	72/92	10,000	14,000	20,000	25,000	30,000
Collector (no center lane) continuous left-turn lane)	4 lanes 2 lanes	64/84 50/70	5,000	7,000	10,000	13,000	15,000
Collector (no fronting property)	2 lanes	40/60	4,000	5,500	7,500	9,000	10,000
Collector (commercial-industrial fronting)	2 lanes	50/70	2,500	3,500	5,000	6,500	8,000
Collector (multifamily)	2 lanes	40/60	2,500	3,500	5,000	6,500	8,000
Sub-Collector (single-family)	2 lanes	36/56	—	—	2,200	—	—

**LEGEND:**

XXX/XXX = Curb to curb width (feet)/right-of-way width (feet): based on the City of San Diego Street Design Manual

XX/XXX= Approximate recommended ADT based on the City of San Diego Street Design Manual.

**NOTES:**

1. The volumes and the average daily level of service listed above are only intended as a general planning guideline.
2. Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

**TABLE 1  
AVERAGE DAILY VEHICLE TRIPS\***

MOBILITY ELEMENT ROADS		LEVELS OF SERVICE					
Road Classification	# of Travel Lanes	A	B	C	D	E	
<b>Expressway (6.1)</b>	6	<36,000	<54,000	<70,000	<86,000	<108,000	
<b>Prime Arterial (6.2)</b>	6	<22,200	<37,000	<44,600	<50,000	<57,000	
<b>Major Road</b>	w/ Raised Median (4.1A)	4	<14,800	<24,700	<29,600	<33,400	<37,000
	w/ Intermittent Turn Lanes (4.1B)	4	<13,700	<22,800	<27,400	<30,800	<34,200
<b>Boulevard</b>	w/ Raised Median (4.2A)	4	<18,000	<21,000	<24,000	<27,000	<30,000
	w/ Intermittent Turn Lanes (4.2B)	4	<16,800	<19,600	<22,500	<25,000	<28,000
<b>Community Collector</b>	w/ Raised Median (2.1A)	2	<10,000	<11,700	<13,400	<15,000	<19,000
	w/ Continuous Left Turn Lane (2.1B)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	w/ Intermittent Turn Lane (2.1C)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	w/ Passing Lane (2.1D)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	No Median (2.1E)	2	<1,900	<4,100	<7,100	<10,900	<16,200
<b>Light Collector</b>	w/ Raised Median (2.2A)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	w/ Continuous Left Turn Lane (2.2B)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	w/ Intermittent Turn Lane (2.2C)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	w/ Passing Lane (2.2D)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	No Median (2.2E)	2	<1,900	<4,100	<7,100	<10,900	<16,200
	w/ Reduced Shoulder (2.2F)	2	<5,800	<6,800	<7,800	<8,700	<9,700
<b>Minor Collector</b>	w/ Raised Median (2.3A)	2	<3,000	<6,000	<7,000	<8,000	<9,000
	w/ Intermittent Turn Lane (2.3B)	2	<3,000	<6,000	<7,000	<8,000	<9,000
	No Median (2.3C)	2	<1,900	<4,100	<6,000	<7,000	<8,000
NON-MOBILITY ELEMENT ROADS**		LEVELS OF SERVICE					
Residential Collector	2	-	-	<4,500	-	-	
Rural Residential Collector***	2	-	-	<4,500	-	-	
Residential Road	2	-	-	<1,500	-	-	
Rural Residential Road***	2	-	-	<1,500	-	-	
Residential Cul-de-Sac or Loop Road	2	-	-	<200	-	-	

\* The values shown are subject to adjustment based on the geometry of the roadway, side frictions, and other relevant factors as determined by the Director, Department of Public Works.

\*\* Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

\*\*\* Rural Residential Collectors and Rural Residential Roads are intended to serve areas with lot sizes of 2 acres or more which do not have a demand for on-street parking. On-street parking is not assured for these cross sections. Additional right-of-way is needed if on-street parking is in paved area.

\*\*\*\* See Tables 2A and 2B for roadway surfacing and right-of-way widths.



## **APPENDIX D**

### **PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS EXISTING**



Existing AM  
1: Cloverdale Rd & Rockwood Rd

2334 - Safari Highlands Ranch  
8/30/2016

Intersection						
Int Delay, s/veh	7.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	278	23	33	191	54	94
Future Vol, veh/h	278	23	33	191	54	94
Conflicting Peds, #/hr	0	0	0	5	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	65	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	302	25	36	208	59	102
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	360	140	0	0	243	0
Stage 1	140	-	-	-	-	-
Stage 2	220	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	639	908	-	-	1323	-
Stage 1	887	-	-	-	-	-
Stage 2	817	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	608	908	-	-	1323	-
Mov Cap-2 Maneuver	651	-	-	-	-	-
Stage 1	887	-	-	-	-	-
Stage 2	777	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	15.5	0		2.9		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	665	1323	-	
HCM Lane V/C Ratio	-	-	0.492	0.044	-	
HCM Control Delay (s)	-	-	15.5	7.8	-	
HCM Lane LOS	-	-	C	A	-	
HCM 95th %tile Q(veh)	-	-	2.7	0.1	-	

Existing AM  
2: Rockwood Rd & Old Ranch Rd

2334 - Safari Highlands Ranch  
8/30/2016

Intersection										
Intersection Delay, s/veh	8.5									
Intersection LOS	A									
Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBU	SBL	SBR	
Traffic Vol, veh/h	0	103	23	0	53	1	0	1	154	
Future Vol, veh/h	0	103	23	0	53	1	0	1	154	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	
Mvmt Flow	0	112	25	0	58	1	0	1	167	
Number of Lanes	0	1	1	0	1	0	0	1	1	
Approach	EB			WB			SB			
Opposing Approach	WB			EB						
Opposing Lanes	1			2			0			
Conflicting Approach Left	SB						WB			
Conflicting Lanes Left	2			0			1			
Conflicting Approach Right				SB			EB			
Conflicting Lanes Right	0			2			2			
HCM Control Delay	9			8.3			8.2			
HCM LOS	A			A			A			
Lane	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2					
Vol Left, %	100%	0%	0%	100%	0%					
Vol Thru, %	0%	100%	98%	0%	0%					
Vol Right, %	0%	0%	2%	0%	100%					
Sign Control	Stop	Stop	Stop	Stop	Stop					
Traffic Vol by Lane	103	23	54	1	154					
LT Vol	103	0	0	1	0					
Through Vol	0	23	53	0	0					
RT Vol	0	0	1	0	154					
Lane Flow Rate	112	25	59	1	167					
Geometry Grp	7	7	4	7	7					
Degree of Util (X)	0.17	0.035	0.08	0.002	0.202					
Departure Headway (Hd)	5.471	4.97	4.886	5.557	4.353					
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes					
Cap	657	722	735	646	827					
Service Time	3.19	2.688	2.906	3.27	2.066					
HCM Lane V/C Ratio	0.17	0.035	0.08	0.002	0.202					
HCM Control Delay	9.3	7.9	8.3	8.3	8.2					
HCM Lane LOS	A	A	A	A	A					
HCM 95th-tile Q	0.6	0.1	0.3	0	0.8					

Existing AM  
3: Rockwood Rd & Site Access

2334 - Safari Highlands Ranch  
8/30/2016

Intersection						
Int Delay, s/veh	0					
<b>Movement</b>						
	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	0	24	54	0	0	0
Future Vol, veh/h	0	24	54	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	26	59	0	0	0
<b>Major/Minor</b>						
	Major1		Major2		Minor2	
Conflicting Flow All	59	0	-	0	85	59
Stage 1	-	-	-	-	59	-
Stage 2	-	-	-	-	26	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1545	-	-	-	916	1007
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	997	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1545	-	-	-	916	1007
Mov Cap-2 Maneuver	-	-	-	-	916	-
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	997	-
<b>Approach</b>						
	EB		WB		SB	
HCM Control Delay, s	0		0		0	
HCM LOS					A	
<b>Minor Lane/Major Mvmt</b>						
	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1545	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	-	0	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	-	

Existing AM  
4: Centre City Pkwy & Felicita Rd/Felicita Ave

2334 - Safari Highlands Ranch  
8/30/2016

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
<b>Movement</b>	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↔	↕	↔	↔	↕	↕	↔	↕	↕	↔	↕	↕	
Traffic Volume (veh/h)	121	326	24	383	458	191	79	376	127	241	574	117	
Future Volume (veh/h)	121	326	24	383	458	191	79	376	127	241	574	117	
Number	7	4	14	3	8	18	5	2	12	1	6	16	
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	
Adj Flow Rate, veh/h	132	354	26	416	498	208	86	409	138	262	624	127	
Adj No. of Lanes	2	2	0	2	2	1	2	2	1	2	2	1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2	
Cap, veh/h	197	689	50	494	1033	458	141	1384	617	334	1583	708	
Arrive On Green	0.06	0.21	0.21	0.14	0.29	0.29	0.04	0.39	0.39	0.10	0.45	0.45	
Sat Flow, veh/h	3442	3345	245	3442	3539	1569	3442	3539	1577	3442	3539	1582	
Grp Volume(v), veh/h	132	187	193	416	498	208	86	409	138	262	624	127	
Grp Sat Flow(s), veh/h/ln	1721	1770	1820	1721	1770	1569	1721	1770	1577	1721	1770	1582	
Q Serve(g_s), s	3.7	9.2	9.3	11.6	11.4	10.6	2.4	7.8	5.7	7.3	11.6	4.7	
Cycle Q Clear(g_c), s	3.7	9.2	9.3	11.6	11.4	10.6	2.4	7.8	5.7	7.3	11.6	4.7	
Prop In Lane	1.00		0.13	1.00		1.00	1.00		1.00	1.00		1.00	
Lane Grp Cap(c), veh/h	197	364	375	494	1033	458	141	1384	617	334	1583	708	
V/C Ratio(X)	0.67	0.51	0.52	0.84	0.48	0.45	0.61	0.30	0.22	0.79	0.39	0.18	
Avail Cap(c_a), veh/h	315	665	684	595	1619	717	210	1384	617	420	1583	708	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	45.5	34.7	34.7	41.1	28.7	28.4	46.4	20.6	20.0	43.4	18.3	16.3	
Incr Delay (d2), s/veh	3.9	1.1	1.1	9.1	0.3	0.7	4.2	0.5	0.8	7.5	0.7	0.6	
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%), veh/ln	1.9	4.6	4.8	6.1	5.6	4.7	1.2	3.9	2.6	3.8	5.8	2.2	
LnGrp Delay(d), s/veh	49.3	35.8	35.8	50.2	29.1	29.1	50.7	21.2	20.8	50.9	19.0	16.9	
LnGrp LOS	D	D	D	D	C	C	D	C	C	D	B	B	
Approach Vol, veh/h	512			1122				633			1013		
Approach Delay, s/veh	39.3			36.9				25.1			27.0		
Approach LOS	D			D				C			C		
<b>Timer</b>	1	2	3	4	5	6	7	8					
Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), s	13.5	42.5	18.1	24.3	8.0	48.0	9.6	32.7					
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Max Green Setting (Gmax), s	12.0	38.0	17.0	37.0	6.0	44.0	9.0	45.0					
Max Q Clear Time (g_c+I1), s	9.3	9.8	13.6	11.3	4.4	13.6	5.7	13.4					
Green Ext Time (p_c), s	0.2	8.2	0.5	6.7	0.0	8.4	0.1	7.1					
<b>Intersection Summary</b>													
HCM 2010 Ctrl Delay				31.9									
HCM 2010 LOS				C									

Existing AM  
5: Escondido Blvd & Felicita Ave

2334 - Safari Highlands Ranch  
02/16/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↔	↕	↔	↔	↕	↕	↔	↕	↕	↔	↕	↕	
Traffic Volume (veh/h)	83	443	145	100	789	29	135	273	54	69	308	271	
Future Volume (veh/h)	83	443	145	100	789	29	135	273	54	69	308	271	
Number	7	4	14	3	8	18	5	2	12	1	6	16	
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.99	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900	
Adj Flow Rate, veh/h	90	482	158	109	858	32	147	297	59	75	335	295	
Adj No. of Lanes	2	2	0	1	2	1	2	2	0	1	2	0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2	
Cap, veh/h	157	889	289	140	1317	586	301	1176	231	435	715	617	
Arrive On Green	0.05	0.34	0.34	0.08	0.37	0.37	0.40	0.40	0.40	0.40	0.40	0.40	
Sat Flow, veh/h	3442	2623	854	1774	3539	1574	790	2951	578	1020	1793	1548	
Grp Volume(v), veh/h	90	324	316	109	858	32	147	176	180	75	331	299	
Grp Sat Flow(s), veh/h/ln	1721	1770	1708	1774	1770	1574	790	1770	1760	1020	1770	1571	
Q Serve(g_s), s	1.9	10.9	11.0	4.4	14.8	1.0	12.5	4.9	5.0	3.9	10.2	10.4	
Cycle Q Clear(g_c), s	1.9	10.9	11.0	4.4	14.8	1.0	22.9	4.9	5.0	8.9	10.2	10.4	
Prop In Lane	1.00		0.50	1.00		1.00	1.00		0.33	1.00		0.99	
Lane Grp Cap(c), veh/h	157	599	578	140	1317	586	301	705	701	435	705	626	
V/C Ratio(X)	0.57	0.54	0.55	0.78	0.65	0.05	0.49	0.25	0.26	0.17	0.47	0.48	
Avail Cap(c_a), veh/h	258	806	778	253	1854	825	336	782	778	479	782	695	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	34.4	19.7	19.7	33.2	19.1	14.8	24.9	14.8	14.8	17.8	16.3	16.4	
Incr Delay (d2), s/veh	3.2	0.8	0.8	8.9	0.6	0.0	1.2	0.2	0.2	0.2	0.5	0.6	
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%), veh/ln	1.0	5.4	5.3	2.5	7.3	0.4	2.8	2.4	2.5	1.1	5.1	4.6	
LnGrp Delay(d), s/veh	37.6	20.4	20.5	42.1	19.7	14.8	26.1	15.0	15.0	18.0	16.8	17.0	
LnGrp LOS	D	C	C	D	B	B	C	B	B	B	B	B	
Approach Vol, veh/h	730			999				503			705		
Approach Delay, s/veh	22.6			22.0				18.2			17.0		
Approach LOS	C			C				B			B		
Timer	1	2	3	4	5	6	7	8					
Assigned Phs	2		3		4		6		7		8		
Phs Duration (G+Y+Rc), s	33.8		10.3		29.4		33.8		7.9		31.8		
Change Period (Y+Rc), s	4.5		4.5		4.5		4.5		4.5		4.5		
Max Green Setting (Gmax), s	32.5		10.5		33.5		32.5		5.5		38.5		
Max Q Clear Time (g_c+I1), s	24.9		6.4		13.0		12.4		3.9		16.8		
Green Ext Time (p_c), s	4.3		0.1		10.2		7.8		0.0		10.6		
Intersection Summary													
HCM 2010 Ctrl Delay				20.3									
HCM 2010 LOS	C												

Existing AM  
6: Juniper St & Felicita Ave/E. 17th Ave

2334 - Safari Highlands Ranch  
02/16/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↔	↕	↔	↔	↕	↕	↔	↕	↕	↔	↕	↕	
Traffic Volume (veh/h)	141	332	131	42	579	45	72	430	12	19	454	219	
Future Volume (veh/h)	141	332	131	42	579	45	72	430	12	19	454	219	
Number	7	4	14	3	8	18	5	2	12	1	6	16	
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.94	0.99		0.94	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863	
Adj Flow Rate, veh/h	153	361	142	46	629	49	78	467	13	21	493	238	
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2	
Cap, veh/h	188	667	262	382	683	572	186	667	19	220	691	721	
Arrive On Green	0.11	0.52	0.52	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	
Sat Flow, veh/h	1774	1270	500	888	1863	1560	712	1800	50	906	1863	1494	
Grp Volume(v), veh/h	153	0	503	46	629	49	78	0	480	21	493	238	
Grp Sat Flow(s), veh/h/ln	1774	0	1770	888	1863	1560	712	0	1850	906	1863	1494	
Q Serve(g_s), s	7.3	0.0	16.3	3.1	27.8	1.8	9.1	0.0	19.0	1.7	19.5	8.5	
Cycle Q Clear(g_c), s	7.3	0.0	16.3	5.8	27.8	1.8	28.6	0.0	19.0	20.7	19.5	8.5	
Prop In Lane	1.00		0.28	1.00		1.00	1.00		0.03	1.00		1.00	
Lane Grp Cap(c), veh/h	188	0	929	382	683	572	186	0	686	220	691	721	
V/C Ratio(X)	0.82	0.00	0.54	0.12	0.92	0.09	0.42	0.00	0.70	0.10	0.71	0.33	
Avail Cap(c_a), veh/h	237	0	997	391	703	589	191	0	698	226	703	731	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	37.7	0.0	13.6	20.0	26.1	17.8	35.4	0.0	23.0	31.8	23.2	14.0	
Incr Delay (d2), s/veh	15.9	0.0	0.5	0.1	17.2	0.1	1.5	0.0	3.0	0.2	3.4	0.3	
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%), veh/ln	0.0	8.0	0.8	17.4	0.8	1.9	0.0	10.2	0.4	10.6	3.6	3.6	
LnGrp Delay(d), s/veh	53.5	0.0	14.1	20.2	43.3	17.9	36.9	0.0	26.1	32.0	26.6	14.3	
LnGrp LOS	D		B	C	D	B	D		C	C	C	B	
Approach Vol, veh/h	656			724				558			752		
Approach Delay, s/veh	23.3			40.1				27.6			22.8		
Approach LOS	C			D				C			C		
Timer	1	2	3	4	5	6	7	8					
Assigned Phs	2		4		6		7		8				
Phs Duration (G+Y+Rc), s	36.4		49.7		36.4		13.6		36.1				
Change Period (Y+Rc), s	4.5		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s	32.5		48.5		32.5		11.5		32.5				
Max Q Clear Time (g_c+I1), s	30.6		18.3		22.7		9.3		29.8				
Green Ext Time (p_c), s	1.4		9.0		5.4		0.1		1.8				
Intersection Summary													
HCM 2010 Ctrl Delay				28.6									
HCM 2010 LOS	C												

Existing AM  
7: San Pasqual Valley Rd & E. 17th Ave/E 17th Ave

2334 - Safari Highlands Ranch  
8/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔		↔	↔	
Traffic Volume (veh/h)	177	2	137	0	0	3	209	425	0	0	353	336
Future Volume (veh/h)	177	2	137	0	0	3	209	425	0	0	353	336
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	192	2	149	0	0	3	227	462	0	0	384	365
Adj No. of Lanes	0	1	1	0	0	1	0	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	201	2	181	0	0	9	236	1410	0	1	517	491
Arrive On Green	0.11	0.11	0.11	0.00	0.00	0.01	0.13	0.76	0.00	0.00	0.59	0.59
Sat Flow, veh/h	1757	18	1583	0	0	1583	1774	1863	0	1774	879	836
Grp Volume(v), veh/h	194	0	149	0	0	3	227	462	0	0	0	749
Grp Sat Flow(s), veh/h/ln	1775	0	1583	0	0	1583	1774	1863	0	1774	0	1715
Q Serve(g_s), s	14.1	0.0	12.0	0.0	0.0	0.2	16.5	10.4	0.0	0.0	0.0	41.6
Cycle Q Clear(g_c), s	14.1	0.0	12.0	0.0	0.0	0.2	16.5	10.4	0.0	0.0	0.0	41.6
Prop In Lane	0.99		1.00	0.00		1.00	1.00		0.00	1.00		0.49
Lane Grp Cap(c), veh/h	203	0	181	0	0	9	236	1410	0	1	0	1008
V/C Ratio(X)	0.95	0.00	0.82	0.00	0.00	0.34	0.96	0.33	0.00	0.00	0.00	0.74
Avail Cap(c_a), veh/h	203	0	181	0	0	292	236	1410	0	96	0	1008
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.00	0.96	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	57.2	0.0	56.2	0.0	0.0	64.4	56.0	5.1	0.0	0.0	0.0	19.6
Incr Delay (d2), s/veh	48.7	0.0	24.2	0.0	0.0	21.6	47.7	0.6	0.0	0.0	0.0	5.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.7	0.0	6.4	0.0	0.0	0.2	11.3	5.5	0.0	0.0	0.0	20.9
LnGrp Delay(d), s/veh	105.9	0.0	80.4	0.0	0.0	86.0	103.7	5.7	0.0	0.0	0.0	24.6
LnGrp LOS	F		F			F	F	A				C
Approach Vol, veh/h	343			3			689			749		
Approach Delay, s/veh	94.8			86.0			38.0			24.6		
Approach LOS	F			F			D			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	82.2			5.8	0.0	104.2		20.0				
Change Period (Y+Rc), s	4.7	5.8		5.1	4.7	5.8		5.1				
Max Green Setting (Gmax), s	53.1			24.0		63.4		14.9				
Max Q Clear Time (g_c+I), s	43.6			2.2	0.0	12.4		16.1				
Green Ext Time (p_c), s	0.0	5.1		0.0	0.0	10.2		0.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				43.4								
HCM 2010 LOS				D								
<b>Notes</b>												

Existing AM  
8: Bear Valley Pkwy & San Pasqual Valley Rd

2334 - Safari Highlands Ranch  
8/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	10	395	110	187	535	69	110	316	105	108	618	18
Future Volume (veh/h)	10	395	110	187	535	69	110	316	105	108	618	18
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	11	429	120	203	582	75	120	343	114	117	672	20
Adj No. of Lanes	1	2	1	1	2	0	2	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	41	1058	474	231	1281	165	310	719	235	145	933	28
Arrive On Green	0.02	0.30	0.30	0.13	0.41	0.41	0.09	0.27	0.27	0.08	0.27	0.27
Sat Flow, veh/h	1774	3539	1583	1774	3155	406	3442	2623	858	1774	3510	104
Grp Volume(v), veh/h	11	429	120	203	326	331	120	230	227	117	339	353
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1791	1721	1770	1711	1774	1770	1844
Q Serve(g_s), s	0.7	11.6	6.9	13.5	16.1	16.2	3.9	13.0	13.3	7.8	20.9	20.9
Cycle Q Clear(g_c), s	0.7	11.6	6.9	13.5	16.1	16.2	3.9	13.0	13.3	7.8	20.9	20.9
Prop In Lane	1.00		1.00	1.00		0.23	1.00		0.50	1.00		0.06
Lane Grp Cap(c), veh/h	41	1058	474	231	719	727	310	485	469	145	470	490
V/C Ratio(X)	0.27	0.41	0.25	0.88	0.45	0.46	0.39	0.47	0.48	0.81	0.72	0.72
Avail Cap(c_a), veh/h	133	1058	474	271	719	727	315	485	469	169	470	490
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.6	33.5	31.9	51.3	25.9	26.0	51.5	36.3	36.5	54.2	40.0	40.0
Incr Delay (d2), s/veh	3.5	1.2	1.3	24.0	2.1	2.1	0.8	3.3	3.6	21.7	9.2	8.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.4	5.8	3.2	8.1	8.3	8.4	1.9	6.8	6.8	4.7	11.4	11.8
LnGrp Delay(d), s/veh	61.1	34.7	33.2	75.3	28.0	28.0	52.3	39.6	40.0	75.9	49.2	48.8
LnGrp LOS	E	C	C	E	C	C	D	D	D	E	D	D
Approach Vol, veh/h	560			860			577			809		
Approach Delay, s/veh	34.9			39.2			42.4			52.9		
Approach LOS	C			D			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	43.1	16.5	39.1	8.5	55.9	15.5	40.1					
Change Period (Y+Rc), s	5.7	7.2	5.7	7.2	5.7	7.2	5.7	7.2				
Max Green Setting (Gmax), s	33.0		11	31.9		9	42.3		11	31.5		
Max Q Clear Time (g_c+I), s	13.6	5.9	22.9	2.7	18.2	9.8	15.3					
Green Ext Time (p_c), s	0.1	6.6	0.1	4.1	0.0	7.2	0.0	5.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				42.9								
HCM 2010 LOS				D								
<b>Notes</b>												

Existing AM 2334 - Safari Highlands Ranch  
 9: San Pasqual Valley Rd/San Pasqual Valley Rd (SR 78) & Citrus Avenue 8/30/2016

Intersection						
Int Delay, s/veh	56.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	117	491	579	35	205	212
Future Vol, veh/h	117	491	579	35	205	212
Conflicting Peds, #/hr	0	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	115	-	-	-	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	127	534	629	38	223	230

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	667	0	-	0	1436
Stage 1	-	-	-	-	648
Stage 2	-	-	-	-	788
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	923	-	-	-	~ 147
Stage 1	-	-	-	-	521
Stage 2	-	-	-	-	448
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	923	-	-	-	~ 127
Mov Cap-2 Maneuver	-	-	-	-	~ 127
Stage 1	-	-	-	-	521
Stage 2	-	-	-	-	386

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	221.2
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	923	-	-	-	127	470
HCM Lane V/C Ratio	0.138	-	-	-	1.755	0.49
HCM Control Delay (s)	9.5	-	-	-	429.4	19.8
HCM Lane LOS	A	-	-	-	F	C
HCM 95th %tile Q(veh)	0.5	-	-	-	16.9	2.7

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

Existing AM 2334 - Safari Highlands Ranch  
 10: Summit Drive & San Pasqual Valley Rd (SR 78) 02/16/2017

Intersection												
Int Delay, s/veh	6.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	388	216	10	436	1	91	7	8	9	33	25
Future Vol, veh/h	10	388	216	10	436	1	91	7	8	9	33	25
Conflicting Peds, #/hr	0	0	0	0	0	3	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Stop	-	-	Stop
Storage Length	400	-	-	415	-	-	-	-	50	-	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	422	235	11	474	1	99	8	9	10	36	27

Major/Minor	Major1	Major2	Minor1	Minor2		
Conflicting Flow All	478	0	0	657	0	0
Stage 1	-	-	-	-	-	561
Stage 2	-	-	-	-	-	514
Critical Hdwy	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	-	-	-	-	6.12
Critical Hdwy Stg 2	-	-	-	-	-	6.12
Follow-up Hdwy	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	1084	-	-	931	-	-
Stage 1	-	-	-	-	-	512
Stage 2	-	-	-	-	-	543
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1084	-	-	931	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	157
Stage 1	-	-	-	-	-	507
Stage 2	-	-	-	-	-	477

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.2	59.7	23.3
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	160	542	1084	-	-	931	-	-	187	587
HCM Lane V/C Ratio	0.666	0.016	0.01	-	-	0.012	-	-	0.244	0.046
HCM Control Delay (s)	63.6	11.8	8.4	-	-	8.9	-	-	30.4	11.4
HCM Lane LOS	F	B	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	3.8	0	0	-	-	0	-	-	0.9	0.1

Existing AM 2334 - Safari Highlands Ranch  
 11: San Pasqual Rd/Cloverdale Rd & San Pasqual Valley Rd 8/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Traffic Volume (veh/h)	141	260	28	21	280	27	16	62	130	15	153	199
Future Volume (veh/h)	141	260	28	21	280	27	16	62	130	15	153	199
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	153	283	30	23	304	29	17	67	141	16	166	216
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	184	1908	854	96	1734	776	52	283	326	56	287	408
Arrive On Green	0.10	0.54	0.54	0.05	0.49	0.49	0.03	0.15	0.15	0.03	0.15	0.15
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	153	283	30	23	304	29	17	67	141	16	166	216
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	9.7	4.6	1.0	1.4	5.5	1.1	1.1	3.6	8.9	1.0	9.5	13.5
Cycle Q Clear(g_c), s	9.7	4.6	1.0	1.4	5.5	1.1	1.1	3.6	8.9	1.0	9.5	13.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	184	1908	854	96	1734	776	52	283	326	56	287	408
V/C Ratio(X)	0.83	0.15	0.04	0.24	0.18	0.04	0.33	0.24	0.43	0.29	0.58	0.53
Avail Cap(c_a), veh/h	251	1908	854	185	1734	776	123	518	527	139	535	618
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.6	13.3	12.5	52.1	16.4	15.2	54.7	42.9	39.8	54.4	45.2	36.7
Incr Delay (d2), s/veh	15.6	0.2	0.1	1.3	0.2	0.1	3.6	0.4	0.9	2.8	1.8	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%)veh/ln	5.6	2.3	0.5	0.7	2.8	0.5	0.6	1.9	4.0	0.5	5.0	6.0
LnGrp Delay(d),s/veh	66.2	13.4	12.5	53.4	16.6	15.3	58.4	43.3	40.7	57.3	47.0	37.8
LnGrp LOS	E	B	B	D	B	B	E	D	D	E	D	D
Approach Vol, veh/h	466			356			225			398		
Approach Delay, s/veh	30.7			18.9			42.8			42.4		
Approach LOS	C			B			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.9	69.5	9.1	24.5	17.6	63.8	9.3	24.3				
Change Period (Y+Rc), s	* 5.7	7.5	* 5.7	6.8	* 5.7	7.5	* 5.7	6.8				
Max Green Setting (Gmax), s	* 12	36.3	* 8	33.0	* 16	32.0	* 9	32.0				
Max Q Clear Time (g_c+I1), s	3.4	6.6	3.1	15.5	11.7	7.5	3.0	10.9				
Green Ext Time (p_c), s	0.0	3.7	0.0	2.2	0.1	3.6	0.0	2.3				
Intersection Summary												
HCM 2010 Ctrl Delay				32.9								
HCM 2010 LOS				C								
Notes												

Existing AM 2334 - Safari Highlands Ranch  
 12: San Pasqual Valley Rd & Safari Park Driveway 8/30/2016

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	76	213	295	9	3	3
Future Vol, veh/h	76	213	295	9	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Free
Storage Length	410	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	83	232	321	10	3	3
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	330	0	-	0	723	-
Stage 1	-	-	-	-	326	-
Stage 2	-	-	-	-	397	-
Critical Hdwy	4.14	-	-	-	6.63	-
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.22	-	-	-	3.519	-
Pot Cap-1 Maneuver	1226	-	-	-	377	0
Stage 1	-	-	-	-	705	0
Stage 2	-	-	-	-	678	0
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1226	-	-	-	351	-
Mov Cap-2 Maneuver	-	-	-	-	351	-
Stage 1	-	-	-	-	705	-
Stage 2	-	-	-	-	632	-
Approach	EB		WB		SB	
HCM Control Delay, s	2.1		0		15.4	
HCM LOS					C	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1226	-	-	-	351	-
HCM Lane V/C Ratio	0.067	-	-	-	0.009	-
HCM Control Delay (s)	8.1	-	-	-	15.4	0
HCM Lane LOS	A	-	-	-	C	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0	-

Existing AM  
13: Bear Valley Pkwy & San Pasqual Rd

2334 - Safari Highlands Ranch  
8/30/2016

	↖	↗	↑	↘	↙	↓		
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations	↖↗	↖	↖↗	↖	↖	↖↗		
Traffic Volume (veh/h)	577	63	982	297	187	1435		
Future Volume (veh/h)	577	63	982	297	187	1435		
Number	3	18	2	12	1	6		
Initial Q (Ob), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	627	68	1067	323	203	1560		
Adj No. of Lanes	2	1	2	1	1	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	783	360	1714	765	242	2375		
Arrive On Green	0.23	0.23	0.48	0.48	0.14	0.67		
Sat Flow, veh/h	3442	1583	3632	1578	1774	3632		
Grp Volume(v), veh/h	627	68	1067	323	203	1560		
Grp Sat Flow(s), veh/h/ln	1721	1583	1770	1578	1774	1770		
Q Serve(g_s), s	13.6	2.7	17.6	10.5	8.8	20.5		
Cycle Q Clear(g_c), s	13.6	2.7	17.6	10.5	8.8	20.5		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	783	360	1714	765	242	2375		
V/C Ratio(X)	0.80	0.19	0.62	0.42	0.84	0.66		
Avail Cap(c_a), veh/h	1395	642	1714	765	270	2375		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	28.8	24.6	15.0	13.2	33.3	7.6		
Incr Delay (d2), s/veh	2.0	0.3	1.7	1.7	19.0	1.4		
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%), veh/ln	6.7	1.2	8.9	4.9	5.6	10.2		
LnGrp Delay(d), s/veh	30.8	24.9	16.7	14.9	52.3	9.1		
LnGrp LOS	C	C	B	B	D	A		
Approach Vol, veh/h	695		1390		1763			
Approach Delay, s/veh	30.2		16.3		14.0			
Approach LOS	C		B		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	14.8	42.2				57.0		22.0
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	12.0	37.0				53.0		32.0
Max Q Clear Time (g_c+I1), s	10.8	19.6				22.5		15.6
Green Ext Time (p_c), s	0.1	15.0				23.9		2.4

Intersection Summary	
HCM 2010 Ctrl Delay	17.8
HCM 2010 LOS	B

Existing AM  
14: Via Rancho Pkwy/Bear Valley Pkwy & Del Lago Blvd/Beethoven Dr

2334 - Safari Highlands Ranch  
02/16/2017

	↖	→	↘	↖	←	↖	↖	↑	↘	↙	↓	↖
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (veh/h)	208	5	13	76	61	26	17	850	19	16	1708	553
Future Volume (veh/h)	208	5	13	76	61	26	17	850	19	16	1708	553
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	230	0	0	83	66	28	18	924	21	17	1857	601
Adj No. of Lanes	2	0	1	1	1	0	2	2	1	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	344	0	154	230	160	68	58	1804	806	28	2587	805
Arrive On Green	0.10	0.00	0.00	0.13	0.13	0.13	0.02	0.51	0.51	0.02	0.51	0.51
Sat Flow, veh/h	3548	0	1583	1774	1234	523	3442	3539	1582	1774	5085	1581
Grp Volume(v), veh/h	230	0	0	83	0	94	18	924	21	17	1857	601
Grp Sat Flow(s), veh/h/ln	1774	0	1583	1774	0	1757	1721	1770	1582	1774	1695	1581
Q Serve(g_s), s	4.6	0.0	0.0	3.1	0.0	3.6	0.4	12.6	0.5	0.7	20.5	21.9
Cycle Q Clear(g_c), s	4.6	0.0	0.0	3.1	0.0	3.6	0.4	12.6	0.5	0.7	20.5	21.9
Prop In Lane	1.00		1.00	1.00		0.30	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	344	0	154	230	0	228	58	1804	806	28	2587	805
V/C Ratio(X)	0.67	0.00	0.00	0.36	0.00	0.41	0.31	0.51	0.03	0.60	0.72	0.75
Avail Cap(c_a), veh/h	878	0	392	1049	0	1039	189	1804	806	98	2587	805
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.7	0.0	0.0	28.9	0.0	29.1	35.3	11.8	8.9	35.5	13.8	14.2
Incr Delay (d2), s/veh	2.2	0.0	0.0	0.9	0.0	1.2	3.0	1.0	0.1	18.6	1.7	6.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.3	0.0	0.0	1.6	0.0	1.8	0.2	6.3	0.2	0.5	9.9	10.9
LnGrp Delay(d), s/veh	33.9	0.0	0.0	29.8	0.0	30.3	38.4	12.9	8.9	54.1	15.6	20.4
LnGrp LOS	C			C		C	D	B	A	D	B	C
Approach Vol, veh/h	230			177			963				2475	
Approach Delay, s/veh	33.9			30.1			13.3				17.0	
Approach LOS	C			C			B				B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.7	41.6		11.6	5.7	41.5		13.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	4.0	37.0		18.0	4.0	37.0		43.0				
Max Q Clear Time (g_c+I1), s	2.7	14.6		6.6	2.4	23.9		5.6				
Green Ext Time (p_c), s	0.0	19.7		0.6	0.0	12.1		0.8				

Intersection Summary	
HCM 2010 Ctrl Delay	17.7
HCM 2010 LOS	B

Existing AM 2334 - Safari Highlands Ranch  
 15: I-15 NB Ramps/Westfield Mall Driveway & Bear Valley Pkwy 8/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	38	553	69	415	1183	23	157	31	471	4	12	6
Future Volume (veh/h)	38	553	69	415	1183	23	157	31	471	4	12	6
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	40	576	72	432	1232	24	164	32	491	4	12	6
Adj No. of Lanes	2	2	1	2	3	1	2	2	2	1	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	396	1393	623	602	2305	715	213	848	1155	204	1047	468
Arrive On Green	0.12	0.39	0.39	0.17	0.45	0.45	0.06	0.24	0.24	0.12	0.30	0.30
Sat Flow, veh/h	3442	3539	1583	3442	5085	1578	3442	3539	2787	1774	3539	1583
Grp Volume(v), veh/h	40	576	72	432	1232	24	164	32	491	4	12	6
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1578	1721	1770	1393	1774	1770	1583
Q Serve(g_s), s	1.4	16.4	4.0	16.5	24.3	0.9	6.5	1.0	13.1	0.3	0.3	0.4
Cycle Q Clear(g_c), s	1.4	16.4	4.0	16.5	24.3	0.9	6.5	1.0	13.1	0.3	0.3	0.4
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	396	1393	623	602	2305	715	213	848	1155	204	1047	468
V/C Ratio(X)	0.10	0.41	0.12	0.72	0.53	0.03	0.77	0.04	0.43	0.02	0.01	0.01
Avail Cap(c_a), veh/h	396	1393	623	602	2305	715	255	848	1155	204	1047	468
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.1	30.5	26.8	54.1	27.4	13.6	64.2	40.6	18.4	54.5	34.6	34.6
Incr Delay (d2), s/veh	0.5	0.9	0.4	7.2	0.9	0.1	11.3	0.1	1.1	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	2.2	1.8	8.5	11.5	0.4	3.4	0.5	5.2	0.1	0.2	0.2
LnGrp Delay(d),s/veh	55.6	31.4	27.2	61.3	28.3	13.7	75.5	40.6	19.6	54.7	34.6	34.7
LnGrp LOS	E	C	C	E	C	B	E	D	B	D	C	C
Approach Vol, veh/h	688			1688				687		22		
Approach Delay, s/veh	32.4			36.6				33.9		38.3		
Approach LOS	C			D				C		D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.0	61.5	14.3	47.2	21.7	69.8	22.1	39.4				
Change Period (Y+Rc), s	5.7	6.4	* 5.7	6.1	* 5.7	6.4	6.1	* 6.1				
Max Green Setting (Gmax), s	44	41.5	* 10	39.0	* 16	49.8	16.0	* 33				
Max Q Clear Time (g_c+I), s	18.4	8.5	2.4	3.4	26.3	2.3	15.1					
Green Ext Time (p_c), s	0.8	12.9	0.1	0.1	0.0	13.0	0.0	2.1				
Intersection Summary												
HCM 2010 Ctrl Delay				35.1								
HCM 2010 LOS				D								
Notes												

Existing AM 2334 - Safari Highlands Ranch  
 16: I-15 SB Ramps/Del Lago Blvd & Via Rancho Pkwy 8/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	171	349	455	915	239	62	21	99	251	60	222	67
Future Volume (veh/h)	171	349	455	915	239	62	21	99	251	60	222	67
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	178	364	474	953	249	65	22	103	261	62	241	73
Adj No. of Lanes	1	2	2	2	2	1	1	2	1	1	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	301	1055	522	1052	1551	803	34	632	767	122	816	365
Arrive On Green	0.17	0.30	0.30	0.31	0.44	0.44	0.02	0.18	0.18	0.07	0.23	0.23
Sat Flow, veh/h	1774	3539	1751	3442	3539	1582	1774	3539	1583	1774	3539	1581
Grp Volume(v), veh/h	178	364	474	953	249	65	22	103	261	62	241	73
Grp Sat Flow(s),veh/h/ln	1774	1770	875	1721	1770	1582	1774	1770	1583	1774	1770	1581
Q Serve(g_s), s	15.6	13.5	38.1	44.7	7.1	1.5	2.1	4.1	0.0	5.7	9.4	6.3
Cycle Q Clear(g_c), s	15.6	13.5	38.1	44.7	7.1	1.5	2.1	4.1	0.0	5.7	9.4	6.3
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	301	1055	522	1052	1551	803	34	632	767	122	816	365
V/C Ratio(X)	0.59	0.34	0.91	0.91	0.16	0.08	0.65	0.16	0.34	0.51	0.30	0.20
Avail Cap(c_a), veh/h	301	1055	522	1052	1551	803	53	632	767	137	816	365
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.4	46.1	43.0	56.0	28.5	7.7	81.8	58.4	26.8	75.5	53.4	52.1
Incr Delay (d2), s/veh	8.3	0.9	22.1	11.1	0.0	0.0	19.0	0.6	1.2	3.2	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	6.8	10.8	22.9	3.5	0.7	1.2	2.1	7.7	2.9	4.6	2.8
LnGrp Delay(d),s/veh	72.7	47.0	65.1	67.1	28.5	7.7	100.8	58.9	28.0	78.7	53.6	52.4
LnGrp LOS	E	D	E	E	C	A	F	E	C	E	D	D
Approach Vol, veh/h	1016			1267				386		376		
Approach Delay, s/veh	59.9			56.5				40.4		57.5		
Approach LOS	E			E				D		E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	57.7	56.5	8.9	44.8	34.2	80.0	17.7	36.1				
Change Period (Y+Rc), s	6.4	* 6.4	* 5.7	6.1	* 5.7	6.4	6.1	* 6.1				
Max Green Setting (Gmax), s	33	* 50	* 5	38.0	* 29	72.9	13.0	* 30				
Max Q Clear Time (g_c+I), s	40.1	4.1	11.4	17.6	9.1	7.7	6.1					
Green Ext Time (p_c), s	2.3	3.0	0.0	1.9	0.3	6.0	0.1	1.5				
Intersection Summary												
HCM 2010 Ctrl Delay				55.7								
HCM 2010 LOS				E								
Notes												

Existing AM  
17: Sierra Linda Dr/Ryan Dr & San Pasqual Rd

2334 - Safari Highlands Ranch  
02/16/2017

Intersection												
Int Delay, s/veh 2.5												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↑	↗		↔			↔	
Traffic Vol, veh/h	22	147	19	1	599	3	39	0	4	2	1	63
Future Vol, veh/h	22	147	19	1	599	3	39	0	4	2	1	63
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	190	-	0	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	100	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	160	21	1	651	3	42	0	4	2	1	68

Major/Minor	Major1	Major2	Minor1	Minor2								
Conflicting Flow All	654	0	0	160	0	0	898	865	160	865	863	653
Stage 1	-	-	-	-	-	-	208	208	-	655	655	-
Stage 2	-	-	-	-	-	-	690	657	-	210	208	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.5	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2,218	-	-	2,218	-	-	3,518	4,018	3,318	3,518	4,018	3,318
Pot Cap-1 Maneuver	933	-	-	1,419	-	-	237	292	885	274	292	467
Stage 1	-	-	-	-	-	-	794	730	-	455	463	-
Stage 2	-	-	-	-	-	-	435	462	-	792	730	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	933	-	-	1,419	-	-	198	284	885	267	284	467
Mov Cap-2 Maneuver	-	-	-	-	-	-	198	284	-	267	284	-
Stage 1	-	-	-	-	-	-	774	711	-	443	463	-
Stage 2	-	-	-	-	-	-	370	462	-	768	711	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0	26.7	14.5
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	212	933	-	-	1,419	-	-	452
HCM Lane V/C Ratio	0.219	0.026	-	-	0.001	-	-	0.159
HCM Control Delay (s)	26.7	9	-	-	7.5	-	-	14.5
HCM Lane LOS	D	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.8	0.1	-	-	0	-	-	0.6

Existing AM  
18: San Pasqual Rd & Old Milky Way

2334 - Safari Highlands Ranch  
06/21/2017

Intersection						
Int Delay, s/veh 6.3						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖		↑	↗		↖
Traffic Vol, veh/h	243	1	111	47	10	339
Future Vol, veh/h	243	1	111	47	10	339
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	100	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	264	1	121	51	11	368

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	511	121	0	0	121	0
Stage 1	121	-	-	-	-	-
Stage 2	390	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3,518	3,318	-	-	2,218	-
Pot Cap-1 Maneuver	523	930	-	-	1,467	-
Stage 1	904	-	-	-	-	-
Stage 2	684	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	518	930	-	-	1,467	-
Mov Cap-2 Maneuver	518	-	-	-	-	-
Stage 1	904	-	-	-	-	-
Stage 2	678	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	519	1,467	-
HCM Lane V/C Ratio	-	-	0.511	0.007	-
HCM Control Delay (s)	-	-	19	7.5	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	2.9	0	-

Existing PM  
1: Cloverdale Rd & Rockwood Rd

2334 - Safari Highlands Ranch  
8/30/2016

Intersection						
Int Delay, s/veh	2.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	93	5	110	165	5	55
Future Vol, veh/h	93	5	110	165	5	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	65	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	101	5	120	179	5	60
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	280	209	0	0	299	0
Stage 1	209	-	-	-	-	-
Stage 2	71	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	710	831	-	-	1262	-
Stage 1	826	-	-	-	-	-
Stage 2	952	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	707	831	-	-	1262	-
Mov Cap-2 Maneuver	718	-	-	-	-	-
Stage 1	826	-	-	-	-	-
Stage 2	948	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	10.8	0		0.7		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	723	1262	-	
HCM Lane V/C Ratio	-	-	0.147	0.004	-	
HCM Control Delay (s)	-	-	10.8	7.9	-	
HCM Lane LOS	-	-	B	A	-	
HCM 95th %tile Q(veh)	-	-	0.5	0	-	

Existing PM  
2: Rockwood Rd & Old Ranch Rd

2334 - Safari Highlands Ranch  
8/30/2016

Intersection										
Intersection Delay, s/veh	8.3									
Intersection LOS	A									
Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBU	SBL	SBR	
Traffic Vol, veh/h	0	105	38	0	32	6	0	5	95	
Future Vol, veh/h	0	105	38	0	32	6	0	5	95	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	
Mvmt Flow	0	114	41	0	35	7	0	5	103	
Number of Lanes	0	1	1	0	1	0	0	1	1	
Approach	EB			WB			SB			
Opposing Approach	WB			EB						
Opposing Lanes	1			2			0			
Conflicting Approach Left	SB						WB			
Conflicting Lanes Left	2			0			1			
Conflicting Approach Right				SB			EB			
Conflicting Lanes Right	0			2			2			
HCM Control Delay	8.8			8			7.7			
HCM LOS	A			A			A			
Lane	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2					
Vol Left, %	100%	0%	0%	100%	0%					
Vol Thru, %	0%	100%	84%	0%	0%					
Vol Right, %	0%	0%	16%	0%	100%					
Sign Control	Stop	Stop	Stop	Stop	Stop					
Traffic Vol by Lane	105	38	38	5	95					
LT Vol	105	0	0	5	0					
Through Vol	0	38	32	0	0					
RT Vol	0	0	6	0	95					
Lane Flow Rate	114	41	41	5	103					
Geometry Grp	7	7	4	7	7					
Degree of Util (X)	0.166	0.054	0.054	0.008	0.125					
Departure Headway (Hd)	5.247	4.746	4.673	5.544	4.341					
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes					
Cap	677	746	769	649	830					
Service Time	3.029	2.527	2.685	3.248	2.044					
HCM Lane V/C Ratio	0.168	0.055	0.053	0.008	0.124					
HCM Control Delay	9.1	7.8	8	8.3	7.7					
HCM Lane LOS	A	A	A	A	A					
HCM 95th-tile Q	0.6	0.2	0.2	0	0.4					

Existing PM  
3: Rockwood Rd & Site Access

2334 - Safari Highlands Ranch  
8/30/2016

Intersection						
Int Delay, s/veh	0					
<b>Movement</b>						
	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	0	43	38	0	0	0
Future Vol, veh/h	0	43	38	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	47	41	0	0	0
<b>Major/Minor</b>						
	Major1		Major2		Minor2	
Conflicting Flow All	41	0	-	0	88	41
Stage 1	-	-	-	-	41	-
Stage 2	-	-	-	-	47	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1568	-	-	-	913	1030
Stage 1	-	-	-	-	981	-
Stage 2	-	-	-	-	975	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1568	-	-	-	913	1030
Mov Cap-2 Maneuver	-	-	-	-	913	-
Stage 1	-	-	-	-	981	-
Stage 2	-	-	-	-	975	-
<b>Approach</b>						
	EB		WB		SB	
HCM Control Delay, s	0		0		0	
HCM LOS					A	
<b>Minor Lane/Major Mvmt</b>						
	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1568	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	-	0	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	-	

Existing PM  
4: Centre City Pkwy & Felicita Rd/Felicita Ave

2334 - Safari Highlands Ranch  
8/30/2016

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
<b>Movement</b>	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Traffic Volume (veh/h)	189	499	48	277	302	146	157	653	327	397	488	88
Future Volume (veh/h)	189	499	48	277	302	146	157	653	327	397	488	88
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	193	509	49	283	308	149	160	666	334	405	498	90
Adj No. of Lanes	2	2	0	2	2	1	2	2	1	2	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	262	787	75	348	943	409	227	1287	567	471	1538	676
Arrive On Green	0.08	0.24	0.24	0.10	0.27	0.27	0.07	0.36	0.36	0.14	0.43	0.43
Sat Flow, veh/h	3442	3259	313	3442	3539	1537	3442	3539	1560	3442	3539	1556
Grp Volume(v), veh/h	193	276	282	283	308	149	160	666	334	405	498	90
Grp Sat Flow(s), veh/h/ln	1721	1770	1802	1721	1770	1537	1721	1770	1560	1721	1770	1556
Q Serve(g_s), s	5.6	14.2	14.3	8.2	7.1	8.0	4.6	15.0	17.6	11.7	9.4	3.5
Cycle Q Clear(g_c), s	5.6	14.2	14.3	8.2	7.1	8.0	4.6	15.0	17.6	11.7	9.4	3.5
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	262	427	435	348	943	409	227	1287	567	471	1538	676
V/C Ratio(X)	0.74	0.65	0.65	0.81	0.33	0.36	0.71	0.52	0.59	0.86	0.32	0.13
Avail Cap(c_a), veh/h	372	643	655	372	1287	559	338	1287	567	507	1538	676
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.0	34.7	34.7	44.8	30.0	30.3	46.6	25.4	26.2	43.0	18.9	17.3
Incr Delay (d2), s/veh	4.6	1.6	1.6	12.3	0.2	0.5	4.0	1.5	4.4	13.3	0.6	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.8	7.2	7.3	4.5	3.5	3.4	2.3	7.6	8.3	6.4	4.7	1.6
LnGrp Delay(d), s/veh	50.6	36.3	36.4	57.2	30.2	30.9	50.6	26.9	30.7	56.2	19.5	17.7
LnGrp LOS	D	D	D	E	C	C	D	C	C	E	B	B
Approach Vol, veh/h	751			740			1160			993		
Approach Delay, s/veh	40.0			40.6			31.2			34.3		
Approach LOS	D			D			C			C		
<b>Timer</b>	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.9	41.0	14.3	28.6	10.7	48.2	11.7	31.1				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	15.0	37.0	11.0	37.0	10.0	42.0	11.0	37.0				
Max Q Clear Time (g_c+I1), s	13.7	19.6	10.2	16.3	6.6	11.4	7.6	10.0				
Green Ext Time (p_c), s	0.2	8.3	0.1	5.9	0.1	10.6	0.2	6.3				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				35.8								
HCM 2010 LOS				D								

Existing PM  
5: Escondido Blvd & Felicita Ave

2334 - Safari Highlands Ranch  
02/16/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↕	↔	↕	↕	↔	↕	↕
Traffic Volume (veh/h)	190	945	126	89	558	43	99	299	139	93	203	136
Future Volume (veh/h)	190	945	126	89	558	43	99	299	139	93	203	136
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	207	1027	137	97	607	47	108	325	151	101	221	148
Adj No. of Lanes	2	2	0	1	2	1	2	0	1	2	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	290	1495	199	116	1621	715	296	701	319	252	613	392
Arrive On Green	0.08	0.48	0.48	0.07	0.46	0.46	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	3442	3134	418	1774	3539	1561	1007	2354	1069	914	2058	1314
Grp Volume(v), veh/h	207	580	584	97	607	47	108	243	233	101	189	180
Grp Sat Flow(s), veh/h/ln	1721	1770	1782	1774	1770	1561	1007	1770	1653	914	1770	1603
Q Serve(g_s), s	5.0	21.5	21.6	4.6	9.5	1.4	8.0	9.4	9.8	8.6	7.1	7.5
Cycle Q Clear(g_c), s	5.0	21.5	21.6	4.6	9.5	1.4	15.5	9.4	9.8	18.3	7.1	7.5
Prop In Lane	1.00		0.23	1.00		1.00	1.00		0.65	1.00		0.82
Lane Grp Cap(c), veh/h	290	844	850	116	1621	715	296	527	493	252	527	477
V/C Ratio(X)	0.71	0.69	0.69	0.84	0.37	0.07	0.37	0.46	0.47	0.40	0.36	0.38
Avail Cap(c_a), veh/h	428	1267	1276	116	2325	1025	359	639	597	310	639	579
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.7	17.2	17.2	39.0	15.0	12.8	29.6	24.1	24.2	31.7	23.3	23.5
Incr Delay (d2), s/veh	3.3	1.0	1.0	39.5	0.1	0.0	0.8	0.6	0.7	1.0	0.4	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.5	10.7	10.8	3.5	4.7	0.6	2.3	4.7	4.6	2.2	3.5	3.4
LnGrp Delay(d), s/veh	41.0	18.2	18.2	78.5	15.1	12.8	30.4	24.7	24.9	32.8	23.7	24.0
LnGrp LOS	D	B	B	E	B	B	C	C	C	C	C	C
Approach Vol, veh/h	1371			751				584			470	
Approach Delay, s/veh	21.6			23.2				25.9			25.7	
Approach LOS	C			C				C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	29.7		10.0	44.8	29.7		11.6	43.2				
Change Period (Y+Rc), s	4.5		4.5	4.5	4.5		4.5	4.5				
Max Green Setting (Gmax), s	30.5		5.5	60.5	30.5		10.5	55.5				
Max Q Clear Time (g_c+I1), s	17.5		6.6	23.6	20.3		7.0	11.5				
Green Ext Time (p_c), s	5.3		0.0	16.7	4.5		0.2	17.9				
Intersection Summary												
HCM 2010 Ctrl Delay				23.4								
HCM 2010 LOS				C								

Existing PM  
6: Juniper St & Felicita Ave/E. 17th Ave

2334 - Safari Highlands Ranch  
02/16/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↕	↔	↕	↕	↔	↕	↕
Traffic Volume (veh/h)	276	742	77	10	372	29	50	145	14	56	171	191
Future Volume (veh/h)	276	742	77	10	372	29	50	145	14	56	171	191
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	300	807	84	11	404	32	54	158	15	61	186	208
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	359	1024	107	280	635	536	263	386	37	302	429	674
Arrive On Green	0.20	0.62	0.62	0.34	0.34	0.34	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1774	1655	172	621	1863	1574	982	1676	159	1207	1863	1536
Grp Volume(v), veh/h	300	0	891	11	404	32	54	0	173	61	186	208
Grp Sat Flow(s), veh/h/ln	1774	0	1827	621	1863	1574	982	0	1835	1207	1863	1536
Q Serve(g_s), s	9.7	0.0	21.6	0.8	10.9	0.8	3.0	0.0	4.8	2.7	5.1	5.3
Cycle Q Clear(g_c), s	9.7	0.0	21.6	5.9	10.9	0.8	8.0	0.0	4.8	7.5	5.1	5.3
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	359	0	1130	280	635	536	263	0	423	302	429	674
V/C Ratio(X)	0.84	0.00	0.79	0.04	0.64	0.06	0.21	0.00	0.41	0.20	0.43	0.31
Avail Cap(c_a), veh/h	521	0	1473	339	813	687	581	0	1017	693	1032	1171
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.8	0.0	8.5	16.8	16.5	13.2	23.0	0.0	19.5	22.6	19.6	11.1
Incr Delay (d2), s/veh	7.8	0.0	2.2	0.1	1.1	0.0	0.4	0.0	0.6	0.3	0.7	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	5.5	0.0	11.3	0.1	5.7	0.4	0.8	0.0	2.5	0.9	2.7	2.3
LnGrp Delay(d), s/veh	30.6	0.0	10.7	16.9	17.6	13.3	23.4	0.0	20.1	23.0	20.3	11.4
LnGrp LOS	C		B	B	B	B	C		C	C	C	B
Approach Vol, veh/h	1191			447				227			455	
Approach Delay, s/veh	15.7			17.3				20.9			16.6	
Approach LOS	B			B				C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4	6		7	8					
Phs Duration (G+Y+Rc), s	18.2		41.3	18.2		16.5	24.8					
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5	4.5					
Max Green Setting (Gmax), s	33.0		48.0	33.0		17.5	26.0					
Max Q Clear Time (g_c+I1), s	10.0		23.6	9.5		11.7	12.9					
Green Ext Time (p_c), s	3.4		10.2	3.4		0.4	7.2					
Intersection Summary												
HCM 2010 Ctrl Delay				16.7								
HCM 2010 LOS				B								

Existing PM  
7: San Pasqual Valley Rd & E. 17th Ave/E 17th Ave

2334 - Safari Highlands Ranch  
8/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	295	1	289	0	1	1	193	480	1	1	326	164
Future Volume (veh/h)	295	1	289	0	1	1	193	480	1	1	326	164
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	301	1	295	0	1	1	197	490	1	1	333	167
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	337	1	302	0	3	3	223	1173	2	3	594	298
Arrive On Green	0.19	0.19	0.19	0.00	0.00	0.00	0.13	0.63	0.63	0.00	0.51	0.51
Sat Flow, veh/h	1768	6	1583	0	856	856	1774	1858	4	1774	1172	588
Grp Volume(v), veh/h	302	0	295	0	0	2	197	0	491	1	0	500
Grp Sat Flow(s), veh/h/ln	1774	0	1583	0	0	1712	1774	0	1862	1774	0	1759
Q Serve(g_s), s	19.9	0.0	22.2	0.0	0.0	0.1	13.1	0.0	15.9	0.1	0.0	23.5
Cycle Q Clear(g_c), s	19.9	0.0	22.2	0.0	0.0	0.1	13.1	0.0	15.9	0.1	0.0	23.5
Prop In Lane	1.00		1.00	0.00		0.50	1.00		0.00	1.00		0.33
Lane Grp Cap(c), veh/h	339	0	302	0	0	6	223	0	1175	3	0	892
V/C Ratio(X)	0.89	0.00	0.98	0.00	0.00	0.31	0.88	0.00	0.42	0.29	0.00	0.56
Avail Cap(c_a), veh/h	339	0	302	0	0	342	226	0	1175	103	0	892
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.63	0.00	0.63	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	47.3	0.0	48.3	0.0	0.0	59.6	51.6	0.0	11.1	59.8	0.0	20.4
Incr Delay (d2), s/veh	16.9	0.0	34.8	0.0	0.0	25.2	30.7	0.0	1.1	42.3	0.0	2.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	3	0.0	12.7	0.0	0.0	0.1	8.3	0.0	8.4	0.1	0.0	12.0
LnGrp Delay(d), s/veh	64.3	0.0	83.0	0.0	0.0	84.8	82.2	0.0	12.2	102.1	0.0	22.9
LnGrp LOS	E		F			F	F		B	F		C
Approach Vol, veh/h	597			2			688			501		
Approach Delay, s/veh	73.5			84.8			32.2			23.1		
Approach LOS	E			F			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4	5	6	8						
Phs Duration (G+Y+Rc), s	66.7	5.6	4.9	81.5	28.0							
Change Period (Y+Rc), s	4.7	5.8	5.1	4.7	5.8	5.1						
Max Green Setting (Gmax), s	37.1	24.0	7	45.4	22.9							
Max Q Clear Time (g_c+I), s	25.5	2.1	2.1	17.9	24.2							
Green Ext Time (p_c), s	0.0	4.5	0.0	0.0	6.5	0.0						
Intersection Summary												
HCM 2010 Ctrl Delay	43.5											
HCM 2010 LOS	D											
Notes												

Existing PM  
8: Bear Valley Pkwy & San Pasqual Valley Rd

2334 - Safari Highlands Ranch  
8/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	23	541	74	104	483	75	132	721	204	66	349	31
Future Volume (veh/h)	23	541	74	104	483	75	132	721	204	66	349	31
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	25	582	80	112	519	81	142	775	219	71	375	33
Adj No. of Lanes	1	2	1	1	2	0	2	2	0	1	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	78	1035	463	156	1034	161	340	826	233	143	942	82
Arrive On Green	0.04	0.29	0.29	0.09	0.34	0.34	0.10	0.30	0.30	0.08	0.29	0.29
Sat Flow, veh/h	1774	3539	1583	1774	3071	477	3442	2711	766	1774	3289	288
Grp Volume(v), veh/h	25	582	80	112	298	302	142	506	488	71	201	207
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1778	1721	1770	1708	1774	1770	1807
Q Serve(g_s), s	1.5	15.3	4.1	6.8	14.8	14.9	4.3	30.6	30.6	4.2	10.0	10.2
Cycle Q Clear(g_c), s	1.5	15.3	4.1	6.8	14.8	14.9	4.3	30.6	30.6	4.2	10.0	10.2
Prop In Lane	1.00		1.00	1.00		0.27	1.00		0.45	1.00		0.16
Lane Grp Cap(c), veh/h	78	1035	463	156	596	599	340	539	520	143	507	518
V/C Ratio(X)	0.32	0.56	0.17	0.72	0.50	0.50	0.42	0.94	0.94	0.50	0.40	0.40
Avail Cap(c_a), veh/h	145	1035	463	161	596	599	344	539	520	161	507	518
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.0	33.0	29.0	48.8	29.1	29.1	46.6	37.2	37.2	48.4	31.6	31.6
Incr Delay (d2), s/veh	2.4	2.2	0.8	13.8	3.0	3.0	0.8	26.2	26.8	2.7	2.3	2.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	8	7.8	1.9	3.9	7.7	7.8	2.1	18.8	18.3	2.2	5.2	5.4
LnGrp Delay(d), s/veh	53.4	35.2	29.8	62.6	32.1	32.2	47.4	63.4	64.1	51.1	33.9	33.9
LnGrp LOS	D	D	C	E	C	C	D	E	E	D	C	C
Approach Vol, veh/h	687			712			1136			479		
Approach Delay, s/veh	35.2			36.9			61.7			36.5		
Approach LOS	D			D			E			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	66.7	39.4	16.6	38.7	10.5	44.2	14.6	40.7				
Change Period (Y+Rc), s	4.7	5.8	5.1	4.7	5.8	5.1						
Max Green Setting (Gmax), s	31.7	24.0	7	45.4	22.9							
Max Q Clear Time (g_c+I), s	25.5	2.1	2.1	17.9	24.2							
Green Ext Time (p_c), s	0.0	4.5	0.0	0.0	6.5	0.0						
Intersection Summary												
HCM 2010 Ctrl Delay	45.8											
HCM 2010 LOS	D											
Notes												

Existing PM 2334 - Safari Highlands Ranch  
 9: San Pasqual Valley Rd/San Pasqual Valley Rd (SR 78) & Citrus Avenue 8/30/2016

Intersection						
Int Delay, s/veh	4.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	265	546	571	76	26	91
Future Vol, veh/h	265	546	571	76	26	91
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	115	-	-	-	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	288	593	621	83	28	99

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	703	0	-	0	1832
Stage 1	-	-	-	-	662
Stage 2	-	-	-	-	1170
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	895	-	-	-	84
Stage 1	-	-	-	-	513
Stage 2	-	-	-	-	295
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	895	-	-	-	57
Mov Cap-2 Maneuver	-	-	-	-	57
Stage 1	-	-	-	-	513
Stage 2	-	-	-	-	200

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	38
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	895	-	-	-	57	462
HCM Lane V/C Ratio	0.322	-	-	-	0.496	0.214
HCM Control Delay (s)	10.9	-	-	-	118.9	14.9
HCM Lane LOS	B	-	-	-	F	B
HCM 95th %tile Q(veh)	1.4	-	-	-	1.9	0.8

Existing PM 2334 - Safari Highlands Ranch  
 10: Summit Drive & San Pasqual Valley Rd (SR 78) 02/16/2017

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔			↔	↔		↔	↔
Traffic Vol, veh/h	26	495	59	4	400	2	57	4	2	3	1	13
Future Vol, veh/h	26	495	59	4	400	2	57	4	2	3	1	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Stop	-	-	Stop
Storage Length	400	-	-	415	-	-	-	-	50	-	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	538	64	4	435	2	62	4	2	3	1	14

Major/Minor	Major1	Major2	Minor1	Minor2		
Conflicting Flow All	437	0	0	602	0	0
Stage 1	-	-	-	-	-	627
Stage 2	-	-	-	-	-	445
Critical Hdwy	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	-	-	-	-	6.12
Critical Hdwy Stg 2	-	-	-	-	-	6.12
Follow-up Hdwy	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	1123	-	-	975	-	-
Stage 1	-	-	-	-	-	471
Stage 2	-	-	-	-	-	592
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1123	-	-	975	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	188
Stage 1	-	-	-	-	-	459
Stage 2	-	-	-	-	-	575

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.1	33.1	14
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	190	521	1123	-	-	975	-	-	194	620
HCM Lane V/C Ratio	0.349	0.004	0.025	-	-	0.004	-	-	0.022	0.023
HCM Control Delay (s)	33.8	11.9	8.3	-	-	8.7	-	-	24	10.9
HCM Lane LOS	D	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	1.5	0	0.1	-	-	0	-	-	0.1	0.1

Existing PM

11: San Pasqual Rd/Cloverdale Rd & San Pasqual Valley Rd

2334 - Safari Highlands Ranch

8/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Traffic Volume (veh/h)	124	250	33	236	393	11	47	133	14	6	84	87
Future Volume (veh/h)	124	250	33	236	393	11	47	133	14	6	84	87
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	135	272	36	257	427	12	51	145	15	7	91	95
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	183	1707	747	251	1844	807	99	255	441	28	162	301
Arrive On Green	0.10	0.48	0.48	0.14	0.52	0.52	0.06	0.14	0.14	0.02	0.09	0.09
Sat Flow, veh/h	1774	3539	1549	1774	3539	1549	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	135	272	36	257	427	12	51	145	15	7	91	95
Grp Sat Flow(s),veh/h/ln	1774	1770	1549	1774	1770	1549	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	8.5	5.0	0.9	16.3	7.6	0.4	3.2	8.4	0.8	0.4	5.4	4.3
Cycle Q Clear(g_c), s	8.5	5.0	0.9	16.3	7.6	0.4	3.2	8.4	0.8	0.4	5.4	4.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	183	1707	747	251	1844	807	99	255	441	28	162	301
V/C Ratio(X)	0.74	0.16	0.05	1.02	0.23	0.01	0.51	0.57	0.03	0.25	0.56	0.32
Avail Cap(c_a), veh/h	251	1707	747	251	1844	807	137	518	665	139	520	605
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.1	16.7	6.7	49.3	15.0	13.3	52.8	46.5	30.2	55.9	50.4	21.8
Incr Delay (d2), s/veh	7.2	0.2	0.1	62.6	0.3	0.0	4.1	2.0	0.0	4.6	3.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%)veh/ln	4.5	2.5	0.4	12.3	3.8	0.2	1.7	4.5	0.3	0.3	2.9	1.9
LnGrp Delay(d),s/veh	57.3	16.9	6.8	112.0	15.3	13.3	56.8	48.5	30.2	60.6	53.4	22.4
LnGrp LOS	E	B	A	F	B	B	E	D	C	E	D	C
Approach Vol, veh/h	443			696			211			193		
Approach Delay, s/veh	28.4			51.0			49.2			38.4		
Approach LOS	C			D			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	22.0	63.0	13.2	16.8	17.5	67.4	7.5	22.5				
Change Period (Y+Rc), s	* 5.7	7.5	6.8	* 6.8	* 5.7	7.5	* 5.7	6.8				
Max Green Setting (Gmax), s	* 16	32.0	8.9	* 32	* 16	32.0	* 9	32.0				
Max Q Clear Time (g_c+I1), s	18.3	7.0	5.2	7.4	10.5	9.6	2.4	10.4				
Green Ext Time (p_c), s	0.0	4.3	0.3	0.7	0.1	4.2	0.0	0.9				

Intersection Summary												
HCM 2010 Ctrl Delay	42.7											
HCM 2010 LOS	D											
Notes												

Existing PM

12: San Pasqual Valley Rd & Safari Park Driveway

2334 - Safari Highlands Ranch

8/30/2016

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	8	292	291	1	19	229
Future Vol, veh/h	8	292	291	1	19	229
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Free
Storage Length	410	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	314	313	1	20	246
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	314	0	-	0	644	-
Stage 1	-	-	-	-	313	-
Stage 2	-	-	-	-	331	-
Critical Hdwy	4.14	-	-	-	6.63	-
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.22	-	-	-	3.519	-
Pot Cap-1 Maneuver	1243	-	-	-	421	0
Stage 1	-	-	-	-	715	0
Stage 2	-	-	-	-	727	0
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1243	-	-	-	418	-
Mov Cap-2 Maneuver	-	-	-	-	418	-
Stage 1	-	-	-	-	715	-
Stage 2	-	-	-	-	722	-
Approach	EB	WB	SB			
HCM Control Delay, s	0.2	0	14.1			
HCM LOS			B			
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1243	-	-	-	418	-
HCM Lane V/C Ratio	0.007	-	-	-	0.049	-
HCM Control Delay (s)	7.9	-	-	-	14.1	0
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2	-

Existing PM  
13: Bear Valley Pkwy & San Pasqual Rd

2334 - Safari Highlands Ranch  
8/30/2016

	↙	↖	↑	↗	↘	↓		
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations	↔↔	↔	↕↕	↔	↔	↕↕		
Traffic Volume (veh/h)	509	82	1422	515	107	751		
Future Volume (veh/h)	509	82	1422	515	107	751		
Number	3	18	2	12	1	6		
Initial Q (Ob), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	536	86	1497	542	113	791		
Adj No. of Lanes	2	1	2	1	1	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	702	323	1948	850	143	2429		
Arrive On Green	0.20	0.20	0.55	0.55	0.08	0.69		
Sat Flow, veh/h	3442	1583	3632	1544	1774	3632		
Grp Volume(v), veh/h	536	86	1497	542	113	791		
Grp Sat Flow(s), veh/h/ln	1721	1583	1770	1544	1774	1770		
Q Serve(g_s), s	10.7	3.3	24.0	17.7	4.6	6.6		
Cycle Q Clear(g_c), s	10.7	3.3	24.0	17.7	4.6	6.6		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	702	323	1948	850	143	2429		
V/C Ratio(X)	0.76	0.27	0.77	0.64	0.79	0.33		
Avail Cap(c_a), veh/h	1512	695	1948	850	146	2429		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	27.3	24.4	12.8	11.3	32.9	4.6		
Incr Delay (d2), s/veh	1.8	0.4	3.0	3.6	24.0	0.4		
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%), veh/ln	5.2	1.5	12.4	8.2	3.2	3.3		
LnGrp Delay(d), s/veh	29.1	24.8	15.7	15.0	56.9	5.0		
LnGrp LOS	C	C	B	B	E	A		
Approach Vol, veh/h	622		2039		904			
Approach Delay, s/veh	28.5		15.5		11.5			
Approach LOS	C		B		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	9.9	44.1				54.0		18.9
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	6.0	40.0				50.0		32.0
Max Q Clear Time (g_c+I1), s	6.6	26.0				8.6		12.7
Green Ext Time (p_c), s	0.0	11.9				27.9		2.2
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			16.8					
HCM 2010 LOS			B					

Existing PM  
14: Via Rancho Pkwy/Bear Valley Pkwy & Del Lago Blvd/Beethoven Dr

2334 - Safari Highlands Ranch  
02/16/2017

	↙	→	↘	↖	←	↗	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↕↕	↕↕	↔	↔	↔
Traffic Volume (veh/h)	551	16	77	48	25	10	48	1603	96	8	800	313
Future Volume (veh/h)	551	16	77	48	25	10	48	1603	96	8	800	313
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	611	0	0	45	37	11	52	1742	104	9	870	340
Adj No. of Lanes	2	0	1	1	1	0	2	2	1	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	707	0	315	118	91	27	102	1964	858	16	2716	835
Arrive On Green	0.20	0.00	0.00	0.07	0.07	0.07	0.03	0.55	0.55	0.01	0.53	0.53
Sat Flow, veh/h	3548	0	1583	1774	1366	406	3442	3539	1546	1774	5085	1564
Grp Volume(v), veh/h	611	0	0	45	0	48	52	1742	104	9	870	340
Grp Sat Flow(s), veh/h/ln	1774	0	1583	1774	0	1771	1721	1770	1546	1774	1695	1564
Q Serve(g_s), s	17.6	0.0	0.0	2.6	0.0	2.7	1.6	45.5	3.4	0.5	10.1	13.6
Cycle Q Clear(g_c), s	17.6	0.0	0.0	2.6	0.0	2.7	1.6	45.5	3.4	0.5	10.1	13.6
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	707	0	315	118	0	118	102	1964	858	16	2716	835
V/C Ratio(X)	0.86	0.00	0.00	0.38	0.00	0.41	0.51	0.89	0.12	0.58	0.32	0.41
Avail Cap(c_a), veh/h	892	0	398	724	0	723	232	1964	858	67	2716	835
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.8	0.0	0.0	47.1	0.0	47.2	50.4	20.6	11.2	52.1	13.8	14.6
Incr Delay (d2), s/veh	7.4	0.0	0.0	2.0	0.0	2.3	3.9	6.4	0.3	29.5	0.3	1.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	9.3	0.0	0.0	1.3	0.0	1.4	0.8	23.8	1.5	0.4	4.8	6.2
LnGrp Delay(d), s/veh	48.2	0.0	0.0	49.2	0.0	49.5	54.3	26.9	11.5	81.5	14.1	16.1
LnGrp LOS	D			D		D	D	C	B	F	B	B
Approach Vol, veh/h	611			93			1898			1219		
Approach Delay, s/veh	48.2			49.3			26.9			15.2		
Approach LOS	D			D			C			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.4	63.0		25.5	7.6	60.8		11.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	4.0	58.5		26.5	7.1	55.4		43.0				
Max Q Clear Time (g_c+I1), s	2.5	47.5		19.6	3.6	15.6		4.7				
Green Ext Time (p_c), s	0.0	10.0		1.4	0.0	30.1		0.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				27.1								
HCM 2010 LOS				C								
<b>Notes</b>												

Existing PM 2334 - Safari Highlands Ranch  
 15: I-15 NB Ramps/Westfield Mall Driveway & Bear Valley Pkwy 8/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	224	493	129	305	700	38	324	339	990	31	229	241
Future Volume (veh/h)	224	493	129	305	700	38	324	339	990	31	229	241
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	229	503	132	311	714	39	331	346	1010	32	234	246
Adj No. of Lanes	2	2	1	2	3	1	2	2	2	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	408	1408	630	416	2034	632	379	1004	1127	210	1045	467
Arrive On Green	0.12	0.40	0.40	0.12	0.40	0.40	0.11	0.28	0.28	0.12	0.30	0.30
Sat Flow, veh/h	3442	3539	1583	3442	5085	1581	3442	3539	2787	1774	3539	1583
Grp Volume(v), veh/h	229	503	132	311	714	39	331	346	1010	32	234	246
Grp Sat Flow(s), veh/h/ln	1721	1770	1583	1721	1695	1581	1721	1770	1393	1774	1770	1583
Q Serve(g_s), s	8.5	13.5	7.4	11.8	13.2	1.7	12.8	10.5	34.2	2.2	6.7	17.5
Cycle Q Clear(g_c), s	8.5	13.5	7.4	11.8	13.2	1.7	12.8	10.5	34.2	2.2	6.7	17.5
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	408	1408	630	416	2034	632	379	1004	1127	210	1045	467
V/C Ratio(X)	0.56	0.36	0.21	0.75	0.35	0.06	0.87	0.34	0.90	0.15	0.22	0.53
Avail Cap(c_a), veh/h	408	1408	630	416	2034	632	390	1004	1127	210	1045	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.2	28.5	26.7	57.4	28.3	16.6	59.2	38.4	23.8	53.4	35.9	39.7
Incr Delay (d2), s/veh	5.5	0.7	0.8	11.7	0.5	0.2	18.9	0.9	11.1	1.5	0.5	4.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	4	6.7	3.4	6.3	6.3	0.8	7.1	5.3	14.8	1.2	3.4	8.2
LnGrp Delay(d), s/veh	61.7	29.2	27.5	69.0	28.7	16.8	78.0	39.3	35.0	54.9	36.4	43.9
LnGrp LOS	E	C	C	E	C	B	E	D	C	D	D	D
Approach Vol, veh/h	864			1064			1687			512		
Approach Delay, s/veh	37.6			40.1			44.3			41.2		
Approach LOS	D			D			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	22.0	60.5	20.6	45.9	21.7	60.8	22.1	44.4				
Change Period (Y+Rc), s	5.7	6.4	* 5.7	6.1	* 5.7	6.4	6.1	* 6.1				
Max Green Setting (Gmax), s	40.5	* 15	39.0	* 16	40.8	16.0	* 38					
Max Q Clear Time (g_c+H), s	15.5	14.8	19.5	10.5	15.2	4.2	36.2					
Green Ext Time (p_c), s	0.3	8.8	0.1	2.3	0.3	8.9	1.9	1.4				
Intersection Summary												
HCM 2010 Ctrl Delay				41.4								
HCM 2010 LOS				D								
Notes												

Existing PM 2334 - Safari Highlands Ranch  
 16: I-15 SB Ramps/Del Lago Blvd & Via Rancho Pkwy 8/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	119	243	260	879	299	61	119	125	500	103	157	137
Future Volume (veh/h)	119	243	260	879	299	61	119	125	500	103	157	137
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	121	248	265	897	305	62	121	128	510	105	160	140
Adj No. of Lanes	1	2	2	2	2	1	1	2	1	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	212	812	401	1085	1520	799	142	774	845	143	786	346
Arrive On Green	0.12	0.23	0.23	0.32	0.43	0.43	0.08	0.22	0.22	0.08	0.22	0.22
Sat Flow, veh/h	1774	3539	1750	3442	3539	1562	1774	3539	1583	1774	3539	1561
Grp Volume(v), veh/h	121	248	265	897	305	62	121	128	510	105	160	140
Grp Sat Flow(s), veh/h/ln	1774	1770	1770	1770	1562	1774	1770	1583	1774	1770	1561	1561
Q Serve(g_s), s	10.3	9.3	17.6	38.6	8.6	1.0	10.8	4.7	0.0	9.3	5.9	12.3
Cycle Q Clear(g_c), s	10.3	9.3	17.6	38.6	8.6	1.0	10.8	4.7	0.0	9.3	5.9	12.3
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	212	812	401	1085	1520	799	142	774	845	143	786	346
V/C Ratio(X)	0.57	0.31	0.66	0.83	0.20	0.08	0.86	0.17	0.60	0.74	0.20	0.40
Avail Cap(c_a), veh/h	212	812	401	1085	1520	799	162	774	845	195	841	371
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.6	51.1	35.7	50.7	28.5	7.5	72.7	50.7	25.6	71.9	50.7	53.2
Incr Delay (d2), s/veh	10.7	1.0	8.3	5.4	0.1	0.0	30.8	0.5	3.2	9.0	0.1	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	7	4.7	4.7	19.1	4.2	0.7	6.5	2.3	16.2	4.9	2.9	5.4
LnGrp Delay(d), s/veh	77.3	52.1	43.9	56.2	28.6	7.5	103.5	51.1	28.8	80.9	50.8	54.0
LnGrp LOS	E	D	D	E	C	A	F	D	C	F	D	D
Approach Vol, veh/h	634			1264			759			405		
Approach Delay, s/veh	53.5			47.1			44.5			59.7		
Approach LOS	D			D			D			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	56.8	43.1	18.5	41.6	24.8	75.1	19.0	41.1				
Change Period (Y+Rc), s	6.4	* 6.4	* 5.7	6.1	* 5.7	6.4	6.1	* 6.1				
Max Green Setting (Gmax), s	40.5	* 37	* 15	38.0	* 19	64.4	17.6	* 35				
Max Q Clear Time (g_c+H), s	19.6	12.8	14.3	12.3	10.6	11.3	6.7					
Green Ext Time (p_c), s	2.9	2.2	0.0	1.7	0.1	6.1	0.9	2.8				
Intersection Summary												
HCM 2010 Ctrl Delay				49.4								
HCM 2010 LOS				D								
Notes												

Existing PM  
17: Sierra Linda Dr/Ryan Dr & San Pasqual Rd

2334 - Safari Highlands Ranch  
02/16/2017

Intersection												
Int Delay, s/veh 1.7												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↑	↗		↔			↔	
Traffic Vol, veh/h	50	529	37	3	243	0	25	2	6	0	2	28
Future Vol, veh/h	50	529	37	3	243	0	25	2	6	0	2	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	190	-	0	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	54	575	40	3	264	0	27	2	7	0	2	30

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	264	0	0	575
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.218
Pot Cap-1 Maneuver	1300	-	-	998
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1300	-	-	998
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.1	25.5	10.6
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	211	1300	-	-	998	-	-	678
HCM Lane V/C Ratio	0.17	0.042	-	-	0.003	-	-	0.048
HCM Control Delay (s)	25.5	7.9	-	-	8.6	-	-	10.6
HCM Lane LOS	D	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0	-	-	0.2

Existing PM  
18: San Pasqual Rd & Old Milky Way

2334 - Safari Highlands Ranch  
06/21/2017

Intersection						
Int Delay, s/veh 1.7						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖		↑	↗		↖
Traffic Vol, veh/h	80	28	226	266	7	254
Future Vol, veh/h	80	28	226	266	7	254
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	100	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	87	30	246	289	8	276

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	537	246	0
Stage 1	246	-	-
Stage 2	291	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	505	793	-
Stage 1	795	-	-
Stage 2	759	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	501	793	-
Mov Cap-2 Maneuver	501	-	-
Stage 1	795	-	-
Stage 2	754	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.2	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	554	1320	-
HCM Lane V/C Ratio	-	-	0.212	0.006	-
HCM Control Delay (s)	-	-	13.2	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.8	0	-

## **APPENDIX E**

### **SITE-SPECIFIC FIRE STATION TRIP GENERATION, SAN DIEGO COUNTY ESTATE HOME TRIP GENERATION CALCULATIONS & SANDAG SELECT ZONE ASSIGNMENT**



## 8.0 TRIP GENERATION/DISTRIBUTION/ASSIGNMENT

### 8.1 Project Trip Generation

Daily vehicle trips and peak hour information was provided by the applicant. The project proposes to redevelop the existing site. The existing site consists of a one-story building occupied by a restaurant with drive-thru. The project is proposing to demolish the existing structure and build an above and below ground 15,980-square foot fire station with three apparatus bays to house a fire engine, a truck and a medic vehicle. The station will house up to 12 personnel, including three Fire Captains, three Fire Engineers, three Firefighters, and three Paramedics. A single level below grade parking structure will be provided to accommodate a total of 15 parking spaces.

As mentioned, currently a restaurant with drive-thru is occupying the site and therefore, generating traffic. Based on the Centre City “cumulative” trips rates outlined in the City of San Diego Trip General Manual, a typical fast food restaurant generates approximately 35 ADT per 1,000 square feet with 1 trip during the AM peak hour and 3 trips during the PM peak hour. Although the site is generating traffic, to provide for a conservative analysis no trip reductions were taken.

As shown, in **Table 8-1**, the proposed fire station is expected to generate approximately 138 ADT with 37 trips during the AM peak period (19 entering and 18 exiting) and 13 trips during the PM peak hour (6 entering and 7 exiting).

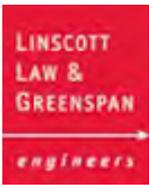
TABLE 8-1  
PROJECT TRIP GENERATION

Land Use	Average Daily Traffic (two-way trips) <sup>a</sup>	PCE Value <sup>b</sup>	ADT <sup>c</sup> with PCE	AM Peak Hour			PM Peak Hour		
				Volume			Volume		
				In	Out	Total	In	Out	Total
Fire Personnel <sup>d</sup>	24	1	24	12	12	24	0	0	0
Battalion Chief	4	1	4	1	0	1	0	1	1
Incident Calls <sup>e</sup>	60	1.5	90	5	5	10	5	5	10
Miscellaneous Trips <sup>f</sup>	20	1	20	1	1	2	1	1	2
<b>TOTAL TRIPS</b>	<b>108</b>	—	<b>138</b>	<b>19</b>	<b>18</b>	<b>37</b>	<b>6</b>	<b>7</b>	<b>13</b>

*Footnotes:*

- Daily vehicle trips and peak hour information was provided by the applicant.
- The Highway Capacity Manual indicates a Passenger-Car Equivalence (PCE) of 1.5 for trucks on level terrain. (See **Appendix E**).
- ADT - Average Daily Traffic.
- The Fire Station at full capacity is expecting 3 crews (4 employees per crew) with one 24-hour shift occurring between 7:30am to 8:00am.
- Assumes a total of 10 Incident Calls. The number of response vehicles is determined by the type of incident. For purposes of this study, it has been assumed that 3 vehicles respond to each of the calls. This analysis also assumes one call during the AM & PM peak hours.
- Miscellaneous trips have been assumed to account for supply vehicles, inspections, meetings, errands or other daily business that may use the facility.





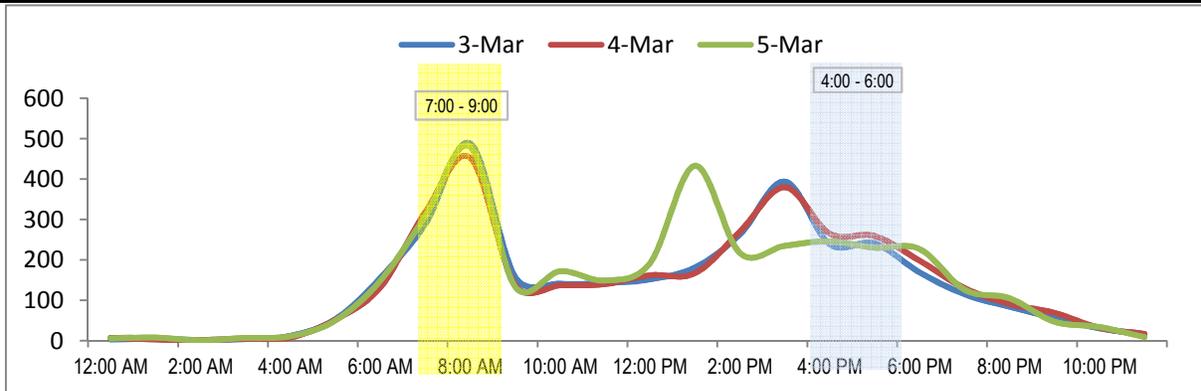
# 3-Day Segment Counts Summary

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



**Location:** Rockwood Road, Cloverdale Road to San Pasqual Union Elementary  
**Orientation:** East-West  
**Day 1** Tuesday, March 03, 2015  
**Day 2** Wednesday, March 04, 2015  
**Day 3** Thursday, March 05, 2015  
**AVC Proj. No:** 15-0315

		<b>Average Daily Traffic</b>		
		<b>3,467</b>		
		<b>Highest Daily Traffic</b>		
		<b>3,575</b>		
Time	Hourly Volume			
	3-Mar	4-Mar	5-Mar	
12:00 AM - 1:00 AM	3	7	6	
1:00 AM - 2:00 AM	4	3	8	
2:00 AM - 3:00 AM	2	2	1	
3:00 AM - 4:00 AM	4	5	7	
4:00 AM - 5:00 AM	12	8	11	
5:00 AM - 6:00 AM	53	52	50	
6:00 AM - 7:00 AM	155	132	148	
7:00 AM - 8:00 AM	289	318	308	
8:00 AM - 9:00 AM	488	453	480	
9:00 AM - 10:00 AM	158	138	134	
10:00 AM - 11:00 AM	141	137	172	
11:00 AM - 12:00 PM	143	140	149	
12:00 PM - 1:00 PM	152	162	192	
1:00 PM - 2:00 PM	181	167	433	
2:00 PM - 3:00 PM	263	270	217	
3:00 PM - 4:00 PM	394	380	235	
4:00 PM - 5:00 PM	239	265	246	
5:00 PM - 6:00 PM	241	259	230	
6:00 PM - 7:00 PM	169	198	227	
7:00 PM - 8:00 PM	115	130	126	
8:00 PM - 9:00 PM	84	91	105	
9:00 PM - 10:00 PM	56	69	47	
10:00 PM - 11:00 PM	31	32	34	
11:00 PM - 12:00 AM	15	17	9	
<b>Total</b>	<b>3,392</b>	<b>3,435</b>	<b>3,575</b>	



# 24 Hour Segment Count

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



**Location:** Rockwood Road, Cloverdale Road to San Pasqual Union Elementary

**Orientation:** East-West

**Date of Count:** Tuesday, March 03, 2015

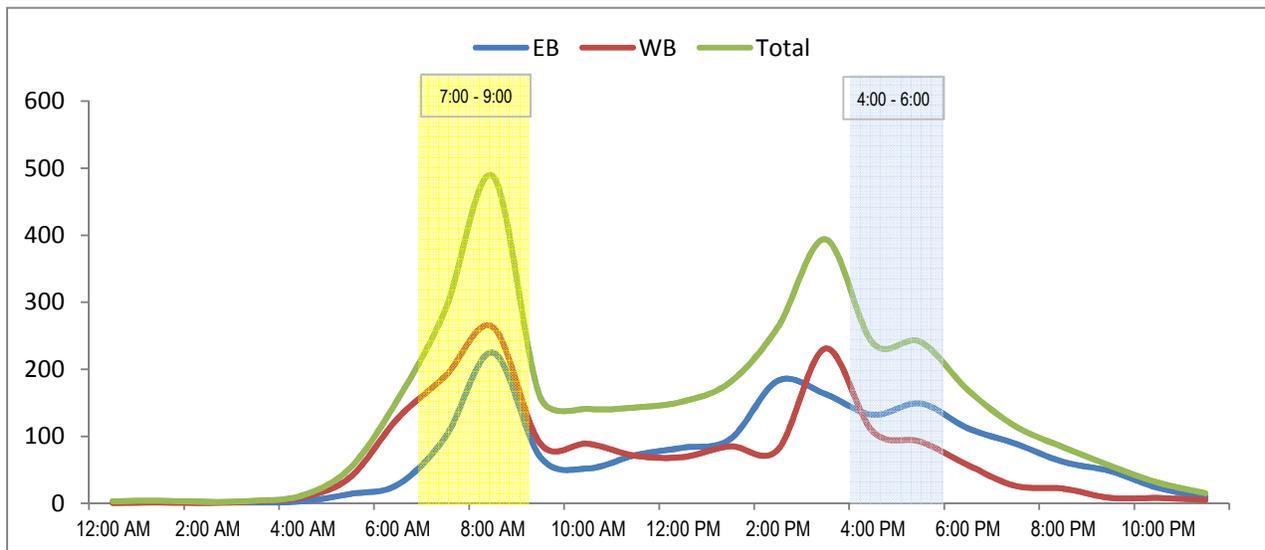
**Analysts:** DASH

**Weather:** Sunny

**AVC Proj. No:** 15-0315

24 Hour Segment Volume					3,392		
Time	Hourly Volume			Time	Hourly Volume		
	EB	WB	Total		EB	WB	Total
12:00 AM - 1:00 AM	3	0	3	12:00 PM - 1:00 PM	83	69	152
1:00 AM - 2:00 AM	3	1	4	1:00 PM - 2:00 PM	96	85	181
2:00 AM - 3:00 AM	2	0	2	2:00 PM - 3:00 PM	183	80	263
3:00 AM - 4:00 AM	1	3	4	3:00 PM - 4:00 PM	163	231	394
4:00 AM - 5:00 AM	3	9	12	4:00 PM - 5:00 PM	132	107	239
5:00 AM - 6:00 AM	14	39	53	5:00 PM - 6:00 PM	149	92	241
6:00 AM - 7:00 AM	28	127	155	6:00 PM - 7:00 PM	112	57	169
7:00 AM - 8:00 AM	99	190	289	7:00 PM - 8:00 PM	89	26	115
8:00 AM - 9:00 AM	225	263	488	8:00 PM - 9:00 PM	62	22	84
9:00 AM - 10:00 AM	69	89	158	9:00 PM - 10:00 PM	48	8	56
10:00 AM - 11:00 AM	52	89	141	10:00 PM - 11:00 PM	23	8	31
11:00 AM - 12:00 PM	72	71	143	11:00 PM - 12:00 AM	10	5	15
<b>Total</b>	<b>571</b>	<b>881</b>	<b>1,452</b>	<b>Total</b>	<b>1,150</b>	<b>790</b>	<b>1,940</b>

**24-Hour EB Volume 1,721**      **24-Hour WB Volume 1,671**





# 24 Hour Segment Count

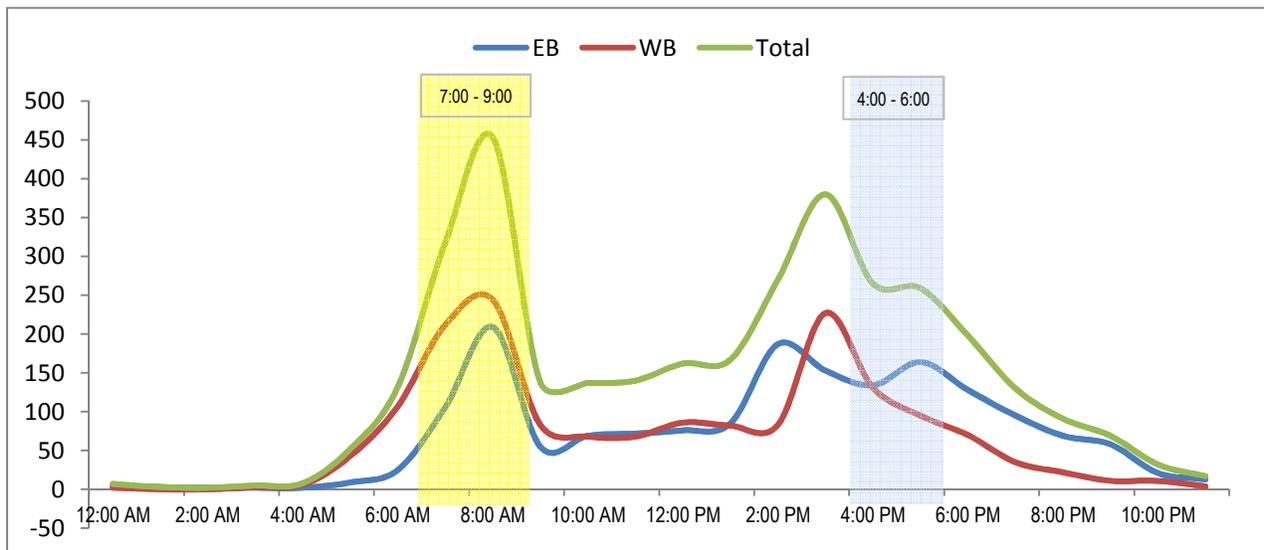
Accurate Video Counts Inc  
 info@accuratevideocounts.com  
 (619) 987-5136



**Location:** Rockwood Road, Cloverdale Road to San Pasqual Union Elementary  
**Orientation:** East-West  
**Date of Count:** Wednesday, March 04, 2015  
**Analysts:** DASH  
**Weather:** Sunny  
**AVC Proj. No:** 15-0315

24 Hour Segment Volume					3,435		
Time	Hourly Volume			Time	Hourly Volume		
	EB	WB	Total		EB	WB	Total
12:00 AM - 1:00 AM	5	2	7	12:00 PM - 1:00 PM	76	86	162
1:00 AM - 2:00 AM	3	0	3	1:00 PM - 2:00 PM	85	82	167
2:00 AM - 3:00 AM	2	0	2	2:00 PM - 3:00 PM	187	83	270
3:00 AM - 4:00 AM	2	3	5	3:00 PM - 4:00 PM	153	227	380
4:00 AM - 5:00 AM	2	6	8	4:00 PM - 5:00 PM	134	131	265
5:00 AM - 6:00 AM	9	43	52	5:00 PM - 6:00 PM	164	95	259
6:00 AM - 7:00 AM	25	107	132	6:00 PM - 7:00 PM	128	70	198
7:00 AM - 8:00 AM	106	212	318	7:00 PM - 8:00 PM	95	35	130
8:00 AM - 9:00 AM	209	244	453	8:00 PM - 9:00 PM	69	22	91
9:00 AM - 10:00 AM	55	83	138	9:00 PM - 10:00 PM	58	11	69
10:00 AM - 11:00 AM	69	68	137	10:00 PM - 11:00 PM	21	11	32
11:00 AM - 12:00 PM	72	68	140	11:00 PM - 12:00 AM	13	4	17
<b>Total</b>	<b>559</b>	<b>836</b>	<b>1,395</b>	<b>Total</b>	<b>1,183</b>	<b>857</b>	<b>2,040</b>

**24-Hour EB Volume 1,742**      **24-Hour WB Volume 1,693**





# 24 Hour Segment Count

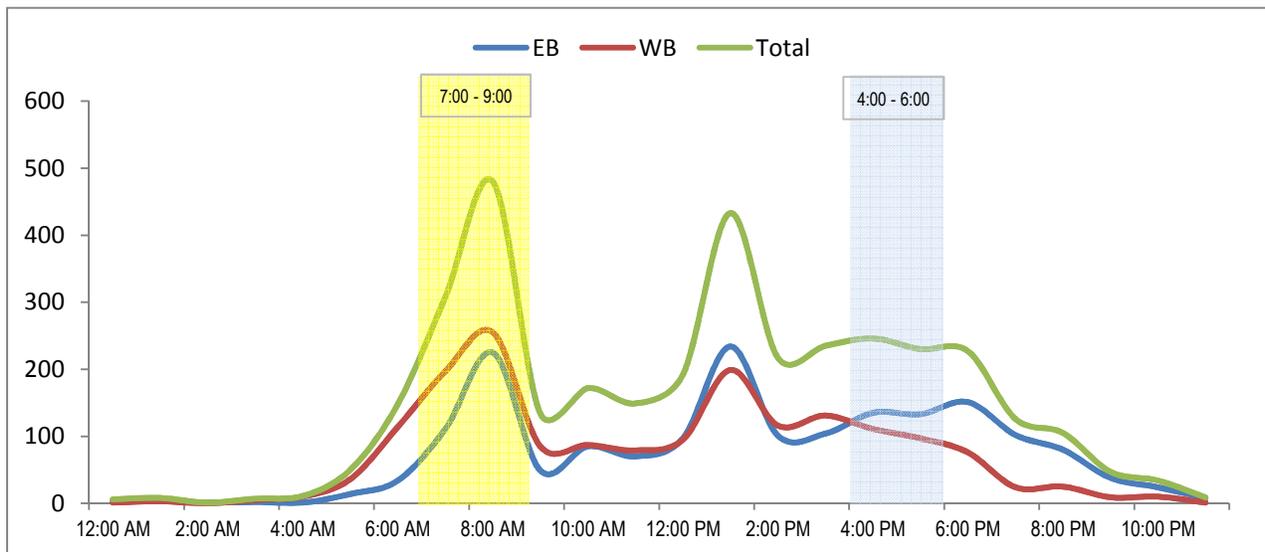
Accurate Video Counts Inc  
 info@accuratevideocounts.com  
 (619) 987-5136

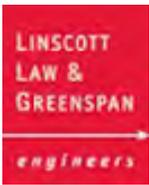


**Location:** Rockwood Road, Cloverdale Road to San Pasqual Union Elementary  
**Orientation:** East-West  
**Date of Count:** Thursday, March 05, 2015  
**Analysts:** DASH  
**Weather:** Sunny  
**AVC Proj. No:** 15-0315

24 Hour Segment Volume					3,575		
Time	Hourly Volume			Time	Hourly Volume		
	EB	WB	Total		EB	WB	Total
12:00 AM - 1:00 AM	5	1	6	12:00 PM - 1:00 PM	97	95	192
1:00 AM - 2:00 AM	5	3	8	1:00 PM - 2:00 PM	234	199	433
2:00 AM - 3:00 AM	1	0	1	2:00 PM - 3:00 PM	101	116	217
3:00 AM - 4:00 AM	2	5	7	3:00 PM - 4:00 PM	104	131	235
4:00 AM - 5:00 AM	1	10	11	4:00 PM - 5:00 PM	135	111	246
5:00 AM - 6:00 AM	14	36	50	5:00 PM - 6:00 PM	133	97	230
6:00 AM - 7:00 AM	34	114	148	6:00 PM - 7:00 PM	151	76	227
7:00 AM - 8:00 AM	111	197	308	7:00 PM - 8:00 PM	102	24	126
8:00 AM - 9:00 AM	225	255	480	8:00 PM - 9:00 PM	80	25	105
9:00 AM - 10:00 AM	49	85	134	9:00 PM - 10:00 PM	38	9	47
10:00 AM - 11:00 AM	85	87	172	10:00 PM - 11:00 PM	24	10	34
11:00 AM - 12:00 PM	70	79	149	11:00 PM - 12:00 AM	8	1	9
<b>Total</b>	<b>602</b>	<b>872</b>	<b>1,474</b>	<b>Total</b>	<b>1,207</b>	<b>894</b>	<b>2,101</b>

**24-Hour EB Volume 1,809**      **24-Hour WB Volume 1,766**





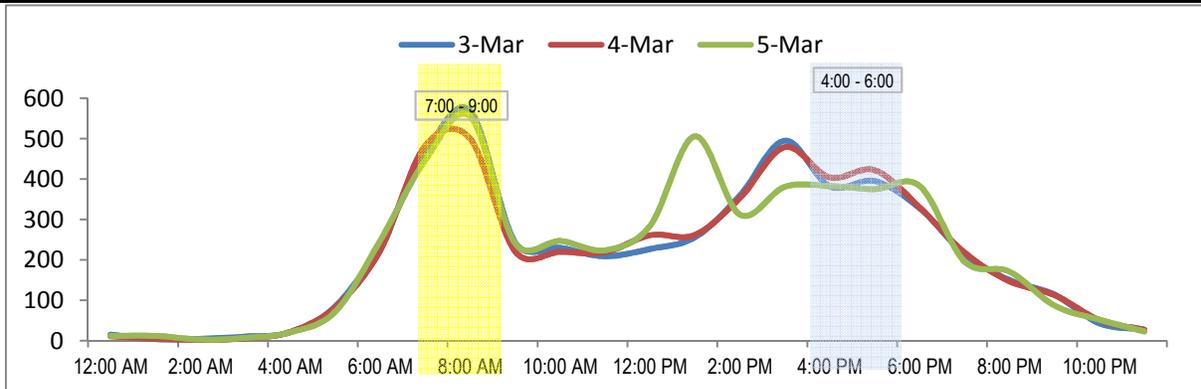
# 3-Day Segment Counts Summary

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



**Location:** Cloverdale Road, immediately South of Rockwood Road  
**Orientation:** North-South  
**Day 1** Tuesday, March 03, 2015  
**Day 2** Wednesday, March 04, 2015  
**Day 3** Thursday, March 05, 2015  
**AVC Proj. No:** 15-0315

		<b>Average Daily Traffic</b>		<b>5,129</b>
		<b>Highest Daily Traffic</b>		<b>5,242</b>
Time	Hourly Volume			
	3-Mar	4-Mar	5-Mar	
12:00 AM - 1:00 AM	15	11	12	
1:00 AM - 2:00 AM	4	5	12	
2:00 AM - 3:00 AM	5	2	3	
3:00 AM - 4:00 AM	10	6	7	
4:00 AM - 5:00 AM	21	22	21	
5:00 AM - 6:00 AM	85	83	72	
6:00 AM - 7:00 AM	238	224	248	
7:00 AM - 8:00 AM	463	483	447	
8:00 AM - 9:00 AM	569	500	555	
9:00 AM - 10:00 AM	243	221	241	
10:00 AM - 11:00 AM	230	220	247	
11:00 AM - 12:00 PM	209	219	224	
12:00 PM - 1:00 PM	227	261	284	
1:00 PM - 2:00 PM	256	262	506	
2:00 PM - 3:00 PM	359	353	312	
3:00 PM - 4:00 PM	495	479	381	
4:00 PM - 5:00 PM	382	404	383	
5:00 PM - 6:00 PM	395	422	375	
6:00 PM - 7:00 PM	328	330	383	
7:00 PM - 8:00 PM	214	218	196	
8:00 PM - 9:00 PM	150	147	171	
9:00 PM - 10:00 PM	114	113	87	
10:00 PM - 11:00 PM	43	51	52	
11:00 PM - 12:00 AM	27	27	23	
<b>Total</b>	<b>5,082</b>	<b>5,063</b>	<b>5,242</b>	





# 24 Hour Segment Count

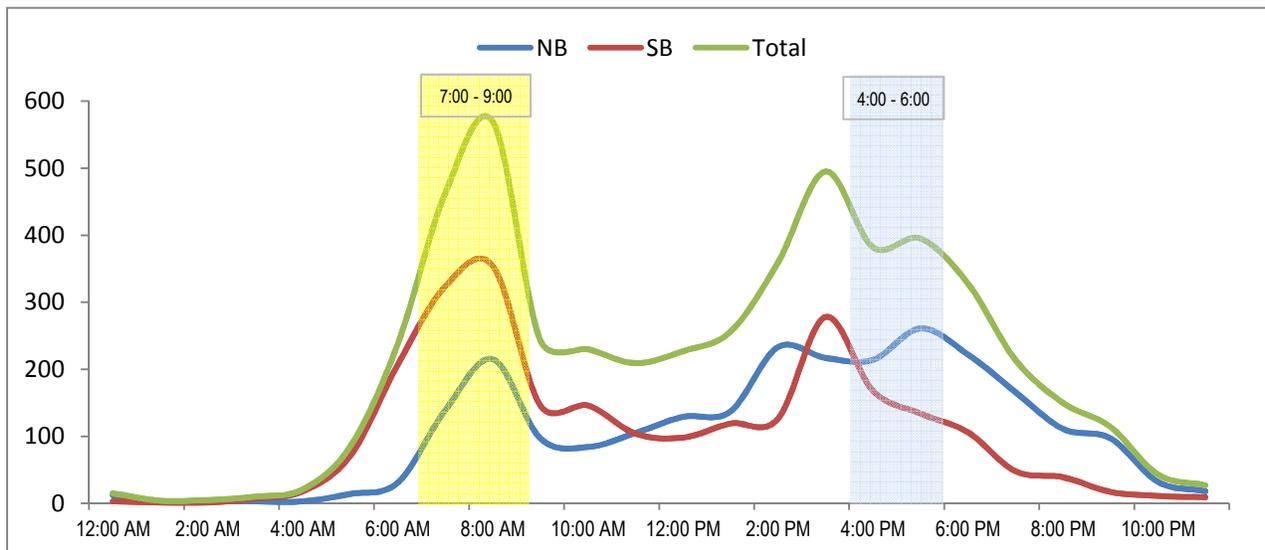
Accurate Video Counts Inc  
 info@accuratevideocounts.com  
 (619) 987-5136



**Location:** Cloverdale Road, immediately South of Rockwood Road  
**Orientation:** North-South  
**Date of Count:** Tuesday, March 03, 2015  
**Analysts:** DASH  
**Weather:** Sunny  
**AVC Proj. No:** 15-0315

24 Hour Segment Volume					5,082			
Time	Hourly Volume			Time	Hourly Volume			
	NB	SB	Total		NB	SB	Total	
12:00 AM - 1:00 AM	12	3	15	12:00 PM - 1:00 PM	129	98	227	
1:00 AM - 2:00 AM	3	1	4	1:00 PM - 2:00 PM	137	119	256	
2:00 AM - 3:00 AM	4	1	5	2:00 PM - 3:00 PM	233	126	359	
3:00 AM - 4:00 AM	3	7	10	3:00 PM - 4:00 PM	217	278	495	
4:00 AM - 5:00 AM	3	18	21	4:00 PM - 5:00 PM	214	168	382	
5:00 AM - 6:00 AM	14	71	85	5:00 PM - 6:00 PM	261	134	395	
6:00 AM - 7:00 AM	31	207	238	6:00 PM - 7:00 PM	222	106	328	
7:00 AM - 8:00 AM	139	324	463	7:00 PM - 8:00 PM	166	48	214	
8:00 AM - 9:00 AM	215	354	569	8:00 PM - 9:00 PM	111	39	150	
9:00 AM - 10:00 AM	97	146	243	9:00 PM - 10:00 PM	97	17	114	
10:00 AM - 11:00 AM	84	146	230	10:00 PM - 11:00 PM	32	11	43	
11:00 AM - 12:00 PM	105	104	209	11:00 PM - 12:00 AM	18	9	27	
<b>Total</b>	<b>710</b>	<b>1,382</b>	<b>2,092</b>	<b>Total</b>	<b>1,837</b>	<b>1,153</b>	<b>2,990</b>	

**24-Hour NB Volume 2,547**      **24-Hour SB Volume 2,535**





# 24 Hour Segment Count

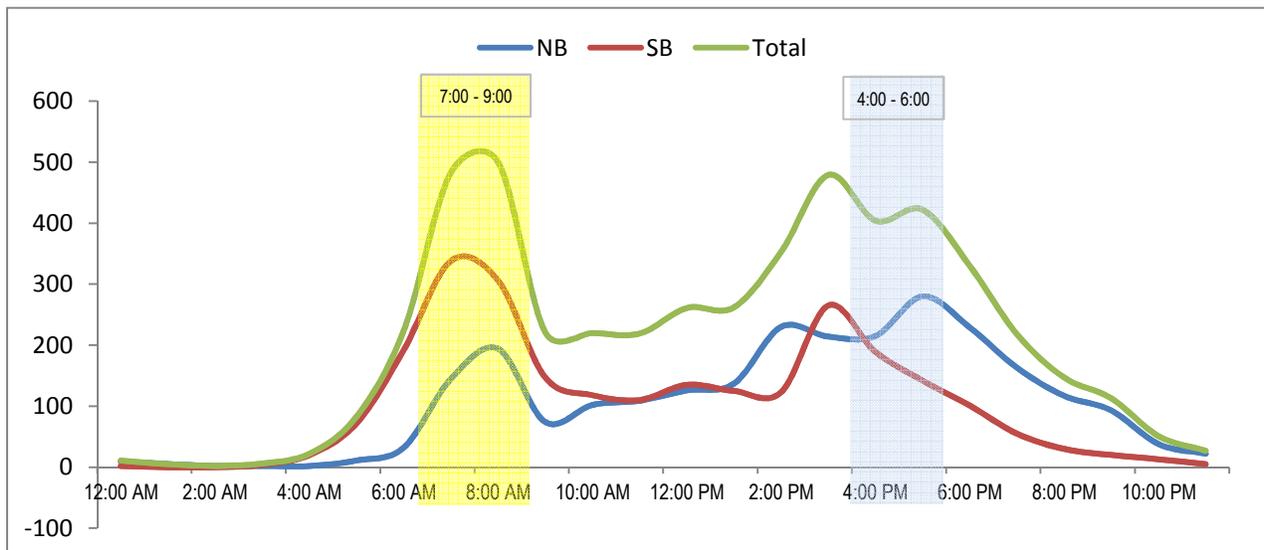
Accurate Video Counts Inc  
 info@accuratevideocounts.com  
 (619) 987-5136



**Location:** Cloverdale Road, immediately South of Rockwood Road  
**Orientation:** North-South  
**Date of Count:** Wednesday, March 04, 2015  
**Analysts:** DASH  
**Weather:** Sunny  
**AVC Proj. No:** 15-0315

24 Hour Segment Volume					5,063				
Time	Hourly Volume			Time	Hourly Volume				
	NB	SB	Total		NB	SB	Total		
12:00 AM - 1:00 AM	9	2	11	12:00 PM - 1:00 PM	126	135	261		
1:00 AM - 2:00 AM	5	0	5	1:00 PM - 2:00 PM	137	125	262		
2:00 AM - 3:00 AM	2	0	2	2:00 PM - 3:00 PM	230	123	353		
3:00 AM - 4:00 AM	2	4	6	3:00 PM - 4:00 PM	214	265	479		
4:00 AM - 5:00 AM	2	20	22	4:00 PM - 5:00 PM	215	189	404		
5:00 AM - 6:00 AM	11	72	83	5:00 PM - 6:00 PM	280	142	422		
6:00 AM - 7:00 AM	32	192	224	6:00 PM - 7:00 PM	229	101	330		
7:00 AM - 8:00 AM	145	338	483	7:00 PM - 8:00 PM	163	55	218		
8:00 AM - 9:00 AM	194	306	500	8:00 PM - 9:00 PM	117	30	147		
9:00 AM - 10:00 AM	74	147	221	9:00 PM - 10:00 PM	93	20	113		
10:00 AM - 11:00 AM	102	118	220	10:00 PM - 11:00 PM	38	13	51		
11:00 AM - 12:00 PM	109	110	219	11:00 PM - 12:00 AM	22	5	27		
<b>Total</b>	<b>687</b>	<b>1,309</b>	<b>1,996</b>	<b>Total</b>	<b>1,864</b>	<b>1,203</b>	<b>3,067</b>		

**24-Hour NB Volume 2,551**      **24-Hour SB Volume 2,512**



# 24 Hour Segment Count

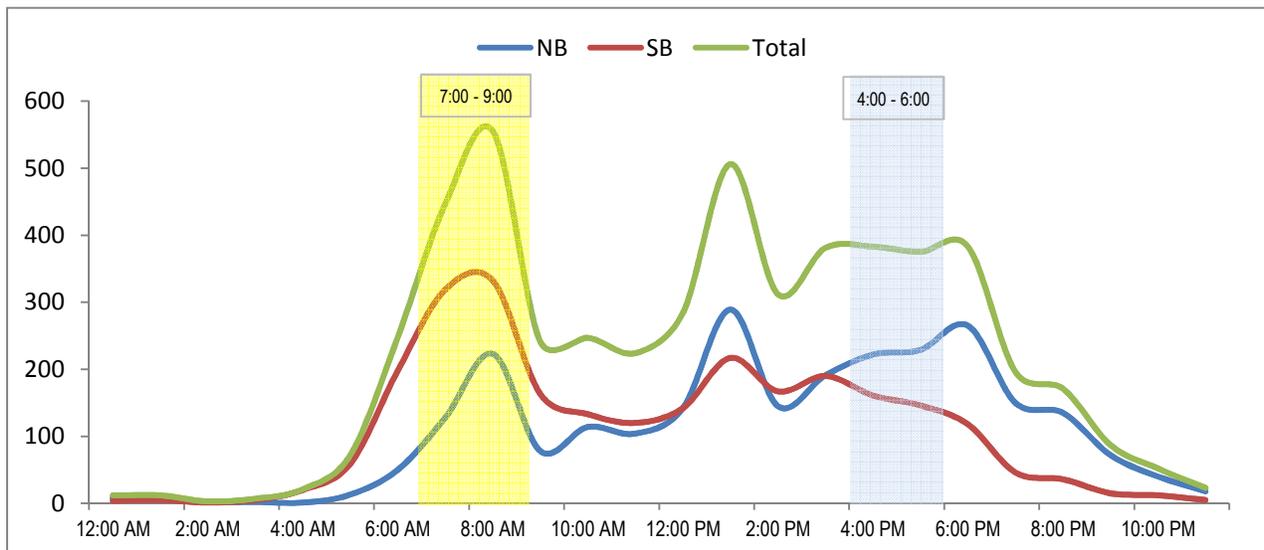
Accurate Video Counts Inc  
info@accuratevideocounts.com  
(619) 987-5136



**Location:** Cloverdale Road, immediately South of Rockwood Road  
**Orientation:** North-South  
**Date of Count:** Thursday, March 05, 2015  
**Analysts:** DASH  
**Weather:** Sunny  
**AVC Proj. No:** 15-0315

24 Hour Segment Volume					5,242				
Time	Hourly Volume			Time	Hourly Volume				
	NB	SB	Total		NB	SB	Total		
12:00 AM - 1:00 AM	8	4	12	12:00 PM - 1:00 PM	142	142	284		
1:00 AM - 2:00 AM	7	5	12	1:00 PM - 2:00 PM	289	217	506		
2:00 AM - 3:00 AM	2	1	3	2:00 PM - 3:00 PM	145	167	312		
3:00 AM - 4:00 AM	2	5	7	3:00 PM - 4:00 PM	191	190	381		
4:00 AM - 5:00 AM	1	20	21	4:00 PM - 5:00 PM	222	161	383		
5:00 AM - 6:00 AM	13	59	72	5:00 PM - 6:00 PM	229	146	375		
6:00 AM - 7:00 AM	50	198	248	6:00 PM - 7:00 PM	265	118	383		
7:00 AM - 8:00 AM	128	319	447	7:00 PM - 8:00 PM	150	46	196		
8:00 AM - 9:00 AM	223	332	555	8:00 PM - 9:00 PM	135	36	171		
9:00 AM - 10:00 AM	78	163	241	9:00 PM - 10:00 PM	72	15	87		
10:00 AM - 11:00 AM	114	133	247	10:00 PM - 11:00 PM	40	12	52		
11:00 AM - 12:00 PM	104	120	224	11:00 PM - 12:00 AM	18	5	23		
<b>Total</b>	<b>730</b>	<b>1,359</b>	<b>2,089</b>	<b>Total</b>	<b>1,898</b>	<b>1,255</b>	<b>3,153</b>		

**24-Hour NB Volume 2,628**      **24-Hour SB Volume 2,614**



SANDAG  
Series 12  
2008

TAZ 1021  
Select Zone Plot

**Functional Classifications**

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

Traffic Analysis Zones

# Selz Volumes & Percentage

# Unadjusted ADT(x1000)

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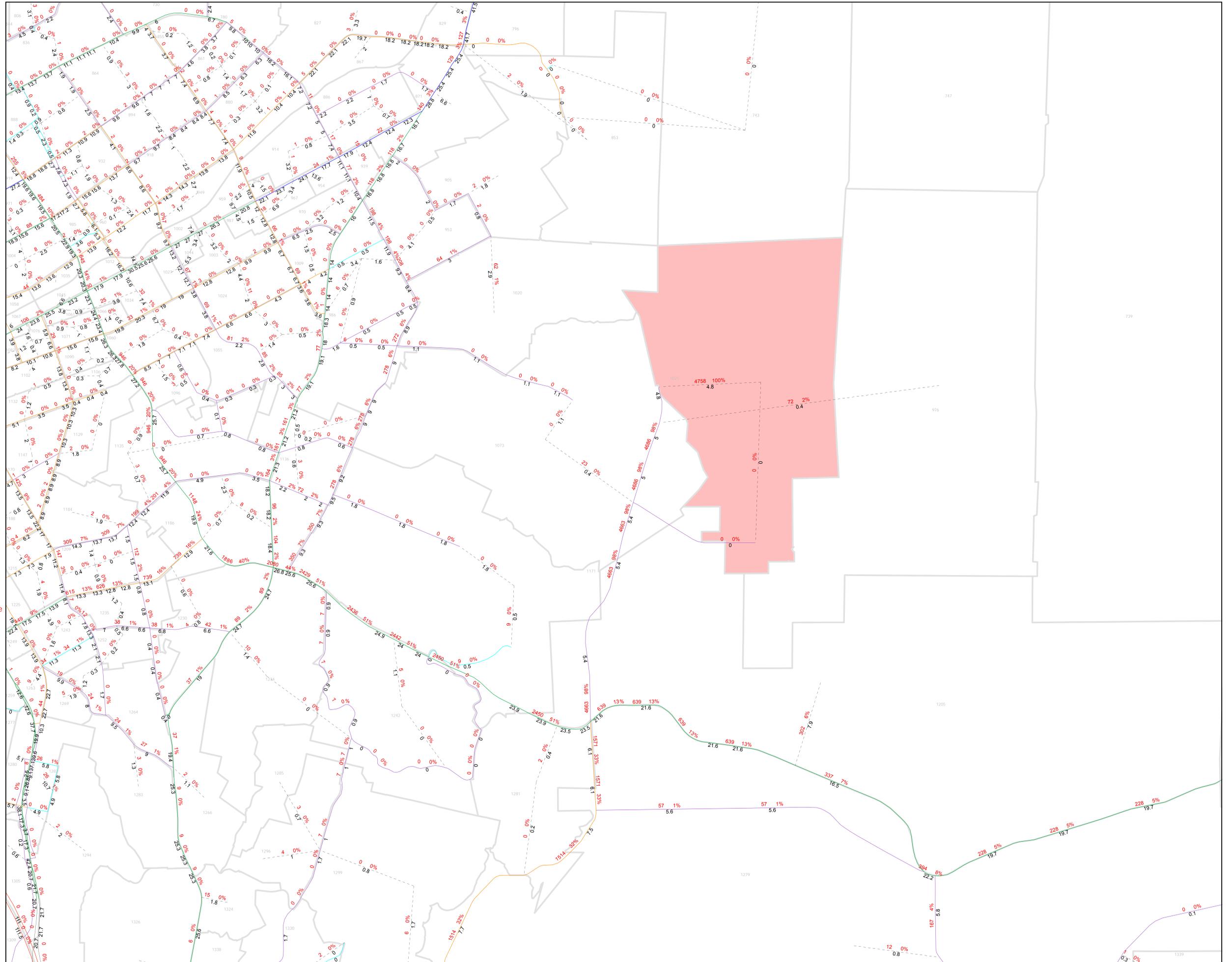
SAN DIEGO ASSOCIATION OF GOVERNMENTS  
401 B STREET, SUITE 800  
SAN DIEGO, CALIFORNIA 92101 USA  
(619) 499-1900  
E-mail: sandag@sandag.org  
Web site: www.sandag.org



**SANDAG**

**servicebureau**

Date: March 20, 2015





**APPENDIX F**  
**CUMULATIVE PROJECT DATA**



Safari Highlands Ranch

INTERSECTION	DIRECTION	Total Cumulative						Black Angus Restaurant						Amanda Lane					
		Ram	Rpm	Tam	Tpm	Lam	Lpm	Ram	Rpm	Tam	Tpm	Lam	Lpm	Ram	Rpm	Tam	Tpm	Lam	Lpm
1. Rockwood Road / Cloverdale Road	Sb	-	-	-	-	-	-												
	Wb	-	-	-	-	-	-												
	Nb	-	-	-	-	-	-												
	Eb	-	-	-	-	-	-												
2. Rockwood Road / Old Ranch Road	Sb	-	-	-	-	-	-												
	Wb	-	-	-	-	-	-												
	Nb	-	-	-	-	-	-												
	Eb	-	-	-	-	-	-												
3. Rockwood Road / Site Access	Sb	-	-	-	-	-	-												
	Wb	-	-	-	-	-	-												
	Nb	-	-	-	-	-	-												
	Eb	-	-	-	-	-	-												
4. Centre City Parkway / Felicita Avenue	Sb	1	3	21	38	11	13										1	3	
	Wb	12	11	15	21	3	4												
	Nb	3	4	28	31	-	2										2	1	
	Eb	-	1	16	17	1	-												
5. Escondido Blvd/ Felicita Avenue	Sb	-	-	-	-	4	6										1	3	
	Wb	5	6	28	33	9	9												
	Nb	9	10	-	-	-	-										2	1	
	Eb	-	-	27	33	-	-												
6. Juniper Street / Felicita Avenue	Sb	-	-	-	-	9	9										1	3	
	Wb	9	9	43	48	-	-												
	Nb	-	-	-	-	-	-										2	1	
	Eb	-	-	40	50	-	-												
7. San Pasqual Valley Road / 17th Avenue	Sb	19	21	7	14	-	-												
	Wb	-	-	-	1	-	-												
	Nb	-	-	11	8	30	29												
	Eb	26	35	1	1	19	19												
8. San Pasqual Valley Road / Bear Valley Parkway	Sb	17	18	4	12	-	1				5								
	Wb	1	1	24	19	1	1												
	Nb	1	1	2	2	2	1				1								
	Eb	3	8	20	36	17	18												
9. San Pasqual Valley Road / Citrus Avenue	Sb	-	-	-	-	1	3												
	Wb	3	2	26	21	-	-												
	Nb	-	-	-	-	-	-												
	Eb	-	-	18	33	-	-												
10. San Pasqual Valley Road / Summit Drive	Sb	-	-	-	-	-	-												
	Wb	-	-	28	20	-	-												
	Nb	-	-	-	-	-	-												
	Eb	-	-	17	35	-	-												
11. San Pasqual Valley Road / San Pasqual Road	Sb	-	-	-	-	-	-												
	Wb	-	-	6	6	3	6												
	Nb	5	4	-	-	19	14												
	Eb	12	26	6	6	-	-												
12. San Pasqual Valley Road / Safari Park Driveway	Sb	-	-	-	-	-	-												
	Wb	-	-	9	12	-	-												
	Nb	-	-	-	-	-	-												
	Eb	-	-	11	10	-	-												
13. San Pasqual Road / Bear Valley Parkway	Sb	-	-	15	24	2	2				1	11							
	Wb	2	2	-	-	14	10						2						
	Nb	7	20	9	22	-	-				2	1	2						
	Eb	-	-	-	-	-	-												
14. Beethoven Drive / Via Rancho Parkway	Sb	2	1	26	33	-	-				1	13							
	Wb	-	-	-	-	-	-												
	Nb	-	-	15	40	-	-				1	4							
	Eb	-	-	-	-	1	1												
15. Via Rancho Parkway / I-15 NB Ramps	Sb	1	6	1	5	-	-				1	6	1	5					
	Wb	-	-	23	19	-	-												
	Nb	13	36	1	8	-	-				1	4	1	8					
	Eb	-	-	-	1	2	17							2	17				
16. Via Rancho Parkway / I-15 SB Ramps	Sb	-	-	-	-	2	13						2	13					
	Wb	-	-	-	2	24	23							1	6				
	Nb	-	-	-	-	-	-						2						
	Eb	-	-	-	5	-	-					4							

Safari Highlands Ranch

INTERSECTION	DIRECTION	Oak Creek						Emmanuel Faith Church						2412 S Escondido Blvd					
		Ram	Rpm	Tam	Tpm	Lam	Lpm	Ram	Rpm	Tam	Tpm	Lam	Lpm	Ram	Rpm	Tam	Tpm	Lam	Lpm
1. Rockwood Road / Cloverdale Road	Sb Wb Nb Eb																		
2. Rockwood Road / Old Ranch Road	Sb Wb Nb Eb																		
3. Rockwood Road / Site Access	Sb Wb Nb Eb																		
4. Centre City Parkway / Felicita Avenue	Sb Wb Nb Eb	1		3	6		1	9	9	8	9	9	9			2	6		
				5	3					8	9					6	3		
5. Escondido Blvd/ Felicita Avenue	Sb Wb Nb Eb			3	6			4	5	17	18	4	5						
				5	3			9	9	17	18	9	9						
6. Juniper Street / Felicita Avenue	Sb Wb Nb Eb			3	6			9	9	30	32	9	9						
				5	3					30	32								
7. San Pasqual Valley Road / 17th Avenue	Sb Wb Nb Eb	1	2					17	18										
		2	1			1	2					22	23						
						2	1	21	23			17	18						
8. San Pasqual Valley Road / Bear Valley Parkway	Sb Wb Nb Eb			1	2			17	18	5	5								
				2	1					5	5	17	18						
9. San Pasqual Valley Road / Citrus Avenue	Sb Wb Nb Eb			1	2					5	5								
				2	1					5	5								
10. San Pasqual Valley Road / Summit Drive	Sb Wb Nb Eb									5	5								
										5	5								
11. San Pasqual Valley Road / San Pasqual Road	Sb Wb Nb Eb									4	4								
										4	4								
12. San Pasqual Valley Road / Safari Park Driveway	Sb Wb Nb Eb									4	4								
										4	4								
13. San Pasqual Road / Bear Valley Parkway	Sb Wb Nb Eb							2	2	2	3	2	2						
										2	3								
14. Beethoven Drive / Via Rancho Parkway	Sb Wb Nb Eb									2	3								
										2	3								
15. Via Rancho Parkway / I-15 NB Ramps	Sb Wb Nb Eb																		
16. Via Rancho Parkway / I-15 SB Ramps	Sb Wb Nb Eb																		

Safari Highlands Ranch

INTERSECTION	DIRECTION	2516 S Escondido Blvd				1560 S Escondido Blvd				City Plaza Mixed-use											
		Ram	Rpm	Tam	Tpm	Lam	Lpm	Ram	Rpm	Tam	Tpm	Lam	Lpm	Ram	Rpm	Tam	Tpm	Lam	Lpm		
1. Rockwood Road / Cloverdale Road	Sb Wb Nb Eb																				
2. Rockwood Road / Old Ranch Road	Sb Wb Nb Eb																				
3. Rockwood Road / Site Access	Sb Wb Nb Eb																				
4. Centre City Parkway / Felicita Avenue	Sb Wb Nb Eb			1	6			1	1			5	6			4	7				
5. Escondido Blvd/ Felicita Avenue	Sb Wb Nb Eb							1	1												
6. Juniper Street / Felicita Avenue	Sb Wb Nb Eb							1	1												
7. San Pasqual Valley Road / 17th Avenue	Sb Wb Nb Eb					1	1					1	1								
8. San Pasqual Valley Road / Bear Valley Parkway	Sb Wb Nb Eb																				
9. San Pasqual Valley Road / Citrus Avenue	Sb Wb Nb Eb																				
10. San Pasqual Valley Road / Summit Drive	Sb Wb Nb Eb																				
11. San Pasqual Valley Road / San Pasqual Road	Sb Wb Nb Eb																				
12. San Pasqual Valley Road / Safari Park Driveway	Sb Wb Nb Eb																				
13. San Pasqual Road / Bear Valley Parkway	Sb Wb Nb Eb																				
14. Beethoven Drive / Via Rancho Parkway	Sb Wb Nb Eb																				
15. Via Rancho Parkway / I-15 NB Ramps	Sb Wb Nb Eb																				
16. Via Rancho Parkway / I-15 SB Ramps	Sb Wb Nb Eb																				

Safari Highlands Ranch

INTERSECTION	DIRECTION	Talk of the Town						Monticello Congregate Care						Westminster Seminary					
		Ram	Rpm	Tam	Tpm	Lam	Lpm	Ram	Rpm	Tam	Tpm	Lam	Lpm	Ram	Rpm	Tam	Tpm	Lam	Lpm
1. Rockwood Road / Cloverdale Road	Sb Wb Nb Eb																		
2. Rockwood Road / Old Ranch Road	Sb Wb Nb Eb																		
3. Rockwood Road / Site Access	Sb Wb Nb Eb																		
4. Centre City Parkway / Felicita Avenue	Sb Wb Nb Eb			13	20	3	4	1	2		1	1							
5. Escondido Blvd/ Felicita Avenue	Sb Wb Nb Eb			-	1					1	1								
6. Juniper Street / Felicita Avenue	Sb Wb Nb Eb			-	1					1	1								
7. San Pasqual Valley Road / 17th Avenue	Sb Wb Nb Eb																		
8. San Pasqual Valley Road / Bear Valley Parkway	Sb Wb Nb Eb																		
9. San Pasqual Valley Road / Citrus Avenue	Sb Wb Nb Eb																		
10. San Pasqual Valley Road / Summit Drive	Sb Wb Nb Eb																		
11. San Pasqual Valley Road / San Pasqual Road	Sb Wb Nb Eb																		
12. San Pasqual Valley Road / Safari Park Driveway	Sb Wb Nb Eb																		
13. San Pasqual Road / Bear Valley Parkway	Sb Wb Nb Eb																		
14. Beethoven Drive / Via Rancho Parkway	Sb Wb Nb Eb																		
15. Via Rancho Parkway / I-15 NB Ramps	Sb Wb Nb Eb																		
16. Via Rancho Parkway / I-15 SB Ramps	Sb Wb Nb Eb																		

Safari Highlands Ranch

INTERSECTION	DIRECTION	661 Bear Valley						SD County Group A Projects 14, 16, 21, 24						(13,	SD County Group B Projects					
		Ram	Rpm	Tam	Tpm	Lam	Lpm	Ram	Rpm	Tam	Tpm	Lam	Lpm	Ram	Rpm	Tam	Tpm	Lam	Lpm	
1. Rockwood Road / Cloverdale Road	Sb Wb Nb Eb																			
2. Rockwood Road / Old Ranch Road	Sb Wb Nb Eb																			
3. Rockwood Road / Site Access	Sb Wb Nb Eb																			
4. Centre City Parkway / Felicita Avenue	Sb Wb Nb Eb							3	2	1	1	2	4							
5. Escondido Blvd/ Felicita Avenue	Sb Wb Nb Eb							1	1	4	3	-	1			1	-			
6. Juniper Street / Felicita Avenue	Sb Wb Nb Eb									5	4					1	-			
7. San Pasqual Valley Road / 17th Avenue	Sb Wb Nb Eb									5	12					1	1			
8. San Pasqual Valley Road / Bear Valley Parkway	Sb Wb Nb Eb			1	2	-	1	1	1	14	10	-	1			2	1			
9. San Pasqual Valley Road / Citrus Avenue	Sb Wb Nb Eb				1			2	1	16	11	1	3	1	1	2	1			
10. San Pasqual Valley Road / Summit Drive	Sb Wb Nb Eb									18	12					3	2			
11. San Pasqual Valley Road / San Pasqual Road	Sb Wb Nb Eb							5	3			2	6			-	1	1	2	
12. San Pasqual Valley Road / Safari Park Driveway	Sb Wb Nb Eb									2	6					-	1			
13. San Pasqual Road / Bear Valley Parkway	Sb Wb Nb Eb			9	5			6	15			11	7	1	2			2	1	
14. Beethoven Drive / Via Rancho Parkway	Sb Wb Nb Eb			9	5			1	1	9	6			1	-	1	1			
15. Via Rancho Parkway / I-15 NB Ramps	Sb Wb Nb Eb	3	12	9	5			5	12	9	6			1	2	1	1			
16. Via Rancho Parkway / I-15 SB Ramps	Sb Wb Nb Eb					9	5					9	6					1	1	

Safari Highlands Ranch

INTERSECTION	DIRECTION	SD County Group C Projects						SD County Group D Projects					
		Ram	Rpm	Tam	Tpm	Lam	Lpm	Ram	Rpm	Tam	Tpm	Lam	Lpm
1. Rockwood Road / Cloverdale Road	Sb Wb Nb Eb												
2. Rockwood Road / Old Ranch Road	Sb Wb Nb Eb												
3. Rockwood Road / Site Access	Sb Wb Nb Eb												
4. Centre City Parkway / Felicita Avenue	Sb Wb Nb Eb												
5. Escondido Blvd/ Felicita Avenue	Sb Wb Nb Eb												
6. Juniper Street / Felicita Avenue	Sb Wb Nb Eb				1	-							
7. San Pasqual Valley Road / 17th Avenue	Sb Wb Nb Eb				1	1							
8. San Pasqual Valley Road / Bear Valley Parkway	Sb Wb Nb Eb				2	1				3	5		
9. San Pasqual Valley Road / Citrus Avenue	Sb Wb Nb Eb				2	1							
10. San Pasqual Valley Road / Summit Drive	Sb Wb Nb Eb				2	1							
11. San Pasqual Valley Road / San Pasqual Road	Sb Wb Nb Eb				2	1	1						
12. San Pasqual Valley Road / Safari Park Driveway	Sb Wb Nb Eb				3	1							
13. San Pasqual Road / Bear Valley Parkway	Sb Wb Nb Eb						1			3	5		
14. Beethoven Drive / Via Rancho Parkway	Sb Wb Nb Eb				1	-				3	5		
15. Via Rancho Parkway / I-15 NB Ramps	Sb Wb Nb Eb									3	5	3	5
16. Via Rancho Parkway / I-15 SB Ramps	Sb Wb Nb Eb						1					3	5

## Safari Highlands Ranch

Street Segment	Total Cumulative Volumes	Black Angus	Amanda Lane	Oak Creek	Emmanuel Faith	1560 S Esco Blvd	2516 S Esco Blvd	2412 S Esco Blvd
<b>Rockwood Road</b>								
Cloverdale to San Pasqual Union Elementary School	15	-	-	-	6	-	-	-
Fronting San Pasqual Union Elementary School	15	-	-	-	6	-	-	-
East of San Pasqual Union Elementary School	15	-	-	-	6	-	-	-
<b>Cloverdale Road</b>								
Rockwood Road to San Pasqual Valley Road (SR 78)	30	-	-	-	11	-	-	-
<b>San Pasqual Road</b>								
San Pasqual Valley Road (SR 78) to Ryan Drive	360	30	-	-	11	-	-	-
Ryan Drive to Bear Valley Parkway	344	30	-	-	-	-	-	-
<b>Citrus Avenue</b>								
North of San Pasqual Valley Road	158	-	2	6	50	-	-	-
<b>San Pasqual Valley Road (SR 78)</b>								
17th Avenue to Bear Valley Parkway	926	-	20	61	264	12	-	-
Bear Valley Parkway to Cloverdale Road / San Pasqual Road	734	-	16	49	53	12	-	-
Cloverdale Road / San Pasqual Road to Safari Park Driveway	301	-	12	37	31	12	-	-
<b>17th Ave</b>								
Centre City Pkwy to Juniper St	870	-	38	117	370	61	-	-
Juniper St to San Pasqual Valley Rd	970	-	28	86	475	61	-	-
<b>Bear Valley Parkway</b>								
San Pasqual Valley Road (SR 78) to Sunset Drive / Ranchito Drive	785	113	-	-	0	-	-	-
Sunset Drive / Ranchito Drive to San Pasqual Road	690	188	-	-	106	-	-	-
<b>Via Rancho Pkwy</b>								
San Pasqual Road to Beethoven Dr	1103	525	-	-	42	-	-	-
Beethoven Dr to I-15 NB Ramps	1075	525	-	-	42	-	-	-
I-15 SB Ramps to Lomas Serenas Drive	277	75	-	101	-	-	-	-

## Safari Highlands Ranch

Street Segment	City Plaza	Talk to the Town	Monticello	Westminster	661 Bear Valley
<b>Rockwood Road</b>					
Cloverdale to San Pasqual Union Elementary School	-	4	3	2	
Fronting San Pasqual Union Elementary School	-	4	3	2	
East of San Pasqual Union Elementary School	-	4	3	2	
<b>Cloverdale Road</b>					
Rockwood Road to San Pasqual Valley Road (SR 78)	-	8	6	5	
<b>San Pasqual Road</b>					
San Pasqual Valley Road (SR 78) to Ryan Drive	-	-	-	5	
Ryan Drive to Bear Valley Parkway	-	-	-	-	
<b>Citrus Avenue</b>					
North of San Pasqual Valley Road	-	-	-	26	11
<b>San Pasqual Valley Road (SR 78)</b>					
17th Avenue to Bear Valley Parkway	-	32	25	84	61
Bear Valley Parkway to Cloverdale Road / San Pasqual Road	-	32	25	21	17
Cloverdale Road / San Pasqual Road to Safari Park Driveway	-	16	13	10	17
<b>17th Ave</b>					
Centre City Pkwy to Juniper St	-	95	40	42	
Juniper St to San Pasqual Valley Rd	-	95	40	42	
<b>Bear Valley Parkway</b>					
San Pasqual Valley Road (SR 78) to Sunset Drive / Ranchito Drive	-	8	6	101	429
Sunset Drive / Ranchito Drive to San Pasqual Road	-	-	-	75	193
<b>Via Rancho Pkwy</b>					
San Pasqual Road to Beethoven Dr	-	-	-	-	165
Beethoven Dr to I-15 NB Ramps	-	-	-	-	165
I-15 SB Ramps to Lomas Serenas Drive	-	-	-	-	83

## **APPENDIX G**

### **PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS EXISTING + PROJECT**



Existing + Project AM  
1: Cloverdale Rd & Rockwood Rd

2334 - Safari Highlands Ranch  
9/7/2016

Intersection						
Int Delay, s/veh	65.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	636	23	33	357	54	94
Future Vol, veh/h	636	23	33	357	54	94
Conflicting Peds, #/hr	0	0	0	5	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	65	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	691	25	36	388	59	102
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	450	230	0	0	424	0
Stage 1	230	-	-	-	-	-
Stage 2	220	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	- 567	809	-	-	1135	-
Stage 1	808	-	-	-	-	-
Stage 2	817	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	- 535	809	-	-	1135	-
Mov Cap-2 Maneuver	- 604	-	-	-	-	-
Stage 1	808	-	-	-	-	-
Stage 2	771	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	119.1	0		3		
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	609	1135	-	
HCM Lane V/C Ratio	-	-	1.176	0.052	-	
HCM Control Delay (s)	-	-	119.1	8.3	-	
HCM Lane LOS	-	-	F	A	-	
HCM 95th %tile Q(veh)	-	-	24.4	0.2	-	
Notes						
-: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    *: All major volume in platoon						

Existing + Project AM  
2: Rockwood Rd & Old Ranch Rd

2334 - Safari Highlands Ranch  
9/7/2016

Intersection										
Intersection Delay, s/veh	14.1									
Intersection LOS	B									
Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBU	SBL	SBR	
Traffic Vol, veh/h	0	103	192	0	418	1	0	1	154	
Future Vol, veh/h	0	103	192	0	418	1	0	1	154	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	
Mvmt Flow	0	112	209	0	454	1	0	1	167	
Number of Lanes	0	1	1	0	1	0	0	1	1	
Approach	EB			WB			SB			
Opposing Approach	WB			EB						
Opposing Lanes	1			2			0			
Conflicting Approach Left	SB						WB			
Conflicting Lanes Left	2			0			1			
Conflicting Approach Right				SB			EB			
Conflicting Lanes Right	0			2			2			
HCM Control Delay	10.6			17.8			10.6			
HCM LOS	B			C			B			
Lane	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2					
Vol Left, %	100%	0%	0%	100%	0%					
Vol Thru, %	0%	100%	100%	0%	0%					
Vol Right, %	0%	0%	0%	0%	100%					
Sign Control	Stop	Stop	Stop	Stop	Stop					
Traffic Vol by Lane	103	192	419	1	154					
LT Vol	103	0	0	1	0					
Through Vol	0	192	418	0	0					
RT Vol	0	0	1	0	154					
Lane Flow Rate	112	209	455	1	167					
Geometry Grp	7	7	4	7	7					
Degree of Util (X)	0.185	0.315	0.657	0.002	0.269					
Departure Headway (Hd)	6.058	5.552	5.19	7.009	5.791					
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes					
Cap	596	651	688	514	624					
Service Time	3.758	3.252	3.284	4.709	3.491					
HCM Lane V/C Ratio	0.188	0.321	0.661	0.002	0.268					
HCM Control Delay	10.1	10.8	17.8	9.7	10.6					
HCM Lane LOS	B	B	C	A	B					
HCM 95th-tile Q	0.7	1.3	4.9	0	1.1					

Existing + Project AM  
3: Rockwood Rd & Site Access

2334 - Safari Highlands Ranch  
9/7/2016

Intersection						
Int Delay, s/veh	8.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	169	24	54	0	0	365
Future Vol, veh/h	169	24	54	0	0	365
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	184	26	59	0	0	397
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	59	0	-	0	452	59
Stage 1	-	-	-	-	59	-
Stage 2	-	-	-	-	393	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1545	-	-	-	565	1007
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	682	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1545	-	-	-	497	1007
Mov Cap-2 Maneuver	-	-	-	-	497	-
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	599	-
Approach	EB		WB		SB	
HCM Control Delay, s	6.7		0		10.9	
HCM LOS					B	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1545	-	-	-	1007	
HCM Lane V/C Ratio	0.119	-	-	-	0.394	
HCM Control Delay (s)	7.6	0	-	-	10.9	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.4	-	-	-	1.9	

Existing + Project AM  
4: Centre City Pkwy & Felicita Rd

2334 - Safari Highlands Ranch  
9/7/2016

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	↔	↗	↘	↔	↖	↗	↔	↖	↗	↔	↖	↗
Lane Configurations	↔	↗	↘	↔	↖	↗	↔	↖	↗	↔	↖	↗
Traffic Volume (veh/h)	121	331	24	386	468	219	79	376	129	253	574	117
Future Volume (veh/h)	121	331	24	386	468	219	79	376	129	253	574	117
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	132	360	26	420	509	238	86	409	140	275	624	127
Adj No. of Lanes	2	2	0	2	2	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	706	51	495	1052	466	141	1349	601	341	1556	695
Arrive On Green	0.06	0.21	0.21	0.14	0.30	0.30	0.04	0.38	0.38	0.10	0.44	0.44
Sat Flow, veh/h	3442	3349	241	3442	3539	1569	3442	3539	1577	3442	3539	1582
Grp Volume(v), veh/h	132	189	197	420	509	238	86	409	140	275	624	127
Grp Sat Flow(s), veh/h/ln	1721	1770	1820	1721	1770	1569	1721	1770	1577	1721	1770	1582
Q Serve(g_s), s	3.6	9.2	9.3	11.5	11.5	12.2	2.4	7.8	5.8	7.6	11.6	4.7
Cycle Q Clear(g_c), s	3.6	9.2	9.3	11.5	11.5	12.2	2.4	7.8	5.8	7.6	11.6	4.7
Prop In Lane	1.00		0.13	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	197	373	384	495	1052	466	141	1349	601	341	1556	695
V/C Ratio(X)	0.67	0.51	0.51	0.85	0.48	0.51	0.61	0.30	0.23	0.81	0.40	0.18
Avail Cap(c_a), veh/h	284	675	694	567	1641	728	213	1349	601	355	1556	695
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.8	33.8	33.9	40.5	28.0	28.2	45.8	21.0	20.4	42.8	18.5	16.6
Incr Delay (d2), s/veh	3.9	1.1	1.1	10.5	0.3	0.9	4.2	0.6	0.9	12.4	0.8	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.8	4.6	4.8	6.2	5.6	5.4	1.2	3.9	2.7	4.2	5.8	2.2
LnGrp Delay(d), s/veh	48.7	34.9	34.9	51.0	28.3	29.1	50.0	21.6	21.3	55.2	19.3	17.2
LnGrp LOS	D	C	C	D	C	C	D	C	C	E	B	B
Approach Vol, veh/h	518			1167				635			1026	
Approach Delay, s/veh	38.4			36.6				25.4			28.6	
Approach LOS	D			D				C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.6	41.0	18.0	24.5	8.0	46.6	9.6	32.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	10.0	37.0	16.0	37.0	6.0	41.0	8.0	45.0				
Max Q Clear Time (g_c+I1), s	9.6	9.8	13.5	11.3	4.4	13.6	5.6	14.2				
Green Ext Time (p_c), s	0.0	8.2	0.4	7.0	0.0	8.2	0.1	7.3				
Intersection Summary												
HCM 2010 Ctrl Delay				32.3								
HCM 2010 LOS				C								

Existing + Project AM  
5: Escondido Blvd & Felicita Ave

2334 - Safari Highlands Ranch  
02/16/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↕	↔	↕	↕	↔	↕	↕
Traffic Volume (veh/h)	83	462	145	103	830	36	135	273	56	72	308	271
Future Volume (veh/h)	83	462	145	103	830	36	135	273	56	72	308	271
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	90	502	158	112	902	39	147	297	61	78	335	295
Adj No. of Lanes	2	2	0	1	2	1	2	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	155	916	287	144	1350	601	294	1156	234	426	707	610
Arrive On Green	0.05	0.35	0.35	0.08	0.38	0.38	0.39	0.39	0.39	0.39	0.39	0.39
Sat Flow, veh/h	3442	2652	830	1774	3539	1575	790	2932	594	1018	1793	1548
Grp Volume(v), veh/h	90	334	326	112	902	39	147	178	180	78	331	299
Grp Sat Flow(s), veh/h/ln	1721	1770	1712	1774	1770	1575	790	1770	1757	1018	1770	1571
Q Serve(g_s), s	1.9	11.5	11.6	4.7	15.9	1.2	12.9	5.1	5.2	4.2	10.5	10.7
Cycle Q Clear(g_c), s	1.9	11.5	11.6	4.7	15.9	1.2	23.6	5.1	5.2	9.4	10.5	10.7
Prop In Lane	1.00		0.48	1.00		1.00	1.00		0.34	1.00		0.99
Lane Grp Cap(c), veh/h	155	611	592	144	1350	601	294	697	692	426	697	619
V/C Ratio(X)	0.58	0.55	0.55	0.78	0.67	0.06	0.50	0.25	0.26	0.18	0.47	0.48
Avail Cap(c_a), veh/h	252	788	762	248	1811	806	324	764	759	465	764	679
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.2	19.9	19.9	33.9	19.3	14.8	25.9	15.4	15.4	18.6	17.0	17.1
Incr Delay (d2), s/veh	3.4	0.8	0.8	8.8	0.6	0.0	1.3	0.2	0.2	0.2	0.5	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.0	5.7	5.6	2.6	7.9	0.5	2.9	2.5	2.5	1.2	5.1	4.8
LnGrp Delay(d), s/veh	38.6	20.6	20.7	42.7	19.9	14.8	27.2	15.5	15.6	18.8	17.5	17.6
LnGrp LOS	D	C	C	D	B	B	C	B	B	B	B	B
Approach Vol, veh/h		750			1053			505			708	
Approach Delay, s/veh		22.8			22.1			19.0			17.7	
Approach LOS		C			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		34.2	10.6	30.5		34.2	7.9	33.2				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		32.5	10.5	33.5		32.5	5.5	38.5				
Max Q Clear Time (g_c+I1), s		25.6	6.7	13.6		12.7	3.9	17.9				
Green Ext Time (p_c), s		4.0	0.1	10.6		7.8	0.0	10.8				
Intersection Summary												
HCM 2010 Ctrl Delay						20.7						
HCM 2010 LOS						C						

Existing + Project AM  
6: Juniper St & Felicita Ave/E. 17th Ave

2334 - Safari Highlands Ranch  
02/16/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↕	↔	↕	↕	↔	↕	↕
Traffic Volume (veh/h)	141	356	131	42	630	48	72	430	12	21	454	219
Future Volume (veh/h)	141	356	131	42	630	48	72	430	12	21	454	219
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.94	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	153	387	142	46	685	52	78	467	13	23	493	238
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	174	692	254	370	716	600	179	660	18	212	683	703
Arrive On Green	0.10	0.53	0.53	0.38	0.38	0.38	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	1774	1298	476	867	1863	1561	712	1800	50	907	1863	1493
Grp Volume(v), veh/h	153	0	529	46	685	52	78	0	480	23	493	238
Grp Sat Flow(s), veh/h/ln	1774	0	1774	867	1863	1561	712	0	1850	907	1863	1493
Q Serve(g_s), s	7.6	0.0	17.8	3.3	32.1	1.9	9.5	0.0	19.9	2.0	20.4	9.1
Cycle Q Clear(g_c), s	7.6	0.0	17.8	7.8	32.1	1.9	29.9	0.0	19.9	21.8	20.4	9.1
Prop In Lane	1.00		0.27	1.00		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	174	0	945	370	716	600	179	0	679	212	683	703
V/C Ratio(X)	0.88	0.00	0.56	0.12	0.96	0.09	0.44	0.00	0.71	0.11	0.72	0.34
Avail Cap(c_a), veh/h	174	0	947	371	718	601	182	0	686	216	691	709
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.8	0.0	13.9	21.0	26.9	17.6	37.3	0.0	24.2	33.6	24.4	15.2
Incr Delay (d2), s/veh	36.1	0.0	0.7	0.1	23.5	0.1	1.7	0.0	3.3	0.2	3.7	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	5.5	0.0	8.9	0.8	21.0	0.8	1.9	0.0	10.8	0.5	11.1	3.8
LnGrp Delay(d), s/veh	75.9	0.0	14.7	21.1	50.4	17.6	38.9	0.0	27.5	33.8	28.1	15.5
LnGrp LOS	E		B	C	D	B	D		C	C	C	B
Approach Vol, veh/h		682			783			558			754	
Approach Delay, s/veh		28.4			46.5			29.1			24.3	
Approach LOS		C			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		37.3		52.2		37.3	13.3	38.9				
Change Period (Y+Rc), s		4.5		4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		33.2		47.8		33.2	8.8	34.5				
Max Q Clear Time (g_c+I1), s		31.9		19.8		23.8	9.6	34.1				
Green Ext Time (p_c), s		0.9		9.7		5.2	0.0	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay								32.5				
HCM 2010 LOS								C				

Existing + Project AM  
7: San Pasqual Valley Rd & E 17th Ave

2334 - Safari Highlands Ranch  
9/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔		↔	↔	
Traffic Volume (veh/h)	177	2	163	0	0	3	263	507	0	0	391	336
Future Volume (veh/h)	177	2	163	0	0	3	263	507	0	0	391	336
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	192	2	177	0	0	3	286	551	0	0	425	365
Adj No. of Lanes	0	1	1	0	0	1	0	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	201	2	181	0	0	9	313	1410	0	1	504	433
Arrive On Green	0.11	0.11	0.11	0.00	0.00	0.01	0.18	0.76	0.00	0.00	0.54	0.54
Sat Flow, veh/h	1757	18	1583	0	0	1583	1774	1863	0	1774	927	796
Grp Volume(v), veh/h	194	0	177	0	0	3	286	551	0	0	0	790
Grp Sat Flow(s), veh/h/ln	1775	0	1583	0	0	1583	1774	1863	0	1774	0	1722
Q Serve(g_s), s	14.1	0.0	14.5	0.0	0.0	0.2	20.6	13.3	0.0	0.0	0.0	50.2
Cycle Q Clear(g_c), s	14.1	0.0	14.5	0.0	0.0	0.2	20.6	13.3	0.0	0.0	0.0	50.2
Prop In Lane	0.99		1.00	0.00		1.00	1.00		0.00	1.00		0.46
Lane Grp Cap(c), veh/h	203	0	181	0	0	9	313	1410	0	1	0	937
V/C Ratio(X)	0.95	0.00	0.98	0.00	0.00	0.34	0.91	0.39	0.00	0.00	0.00	0.84
Avail Cap(c_a), veh/h	203	0	181	0	0	292	373	1410	0	96	0	937
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.00	0.96	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	57.2	0.0	57.4	0.0	0.0	64.4	52.6	5.5	0.0	0.0	0.0	24.9
Incr Delay (d2), s/veh	48.6	0.0	58.0	0.0	0.0	21.6	24.0	0.8	0.0	0.0	0.0	9.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.7	0.0	9.3	0.0	0.0	0.2	12.2	7.1	0.0	0.0	0.0	26.1
LnGrp Delay(d), s/veh	105.8	0.0	115.4	0.0	0.0	86.0	76.5	6.3	0.0	0.0	0.0	34.1
LnGrp LOS	F		F			F	E	A				C
Approach Vol, veh/h	371			3			837			790		
Approach Delay, s/veh	110.3			86.0			30.3			34.1		
Approach LOS	F			F			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	76.5			5.8	0.0	104.2		20.0				
Change Period (Y+Rc), s	4.7			5.1	* 4.7	5.8		5.1				
Max Green Setting (Gmax), s	43.1			24.0	* 7	63.4		14.9				
Max Q Clear Time (g_c+I), s	52.2			2.2	0.0	15.3		16.5				
Green Ext Time (p_c), s	0.4	0.0		0.0	0.0	12.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	46.7											
HCM 2010 LOS	D											
Notes												

HCM 2010 Signalized Intersection Summary  
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Synchro 9 Report

Existing + Project AM  
8: Bear Valley Pkwy & San Pasqual Valley Rd

2334 - Safari Highlands Ranch  
9/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	10	459	110	194	671	76	110	316	108	111	618	18
Future Volume (veh/h)	10	459	110	194	671	76	110	316	108	111	618	18
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	11	499	120	211	729	83	120	343	117	121	672	20
Adj No. of Lanes	1	2	1	1	2	0	2	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	41	1034	463	239	1293	147	310	718	241	147	942	28
Arrive On Green	0.02	0.29	0.29	0.13	0.40	0.40	0.09	0.28	0.28	0.08	0.27	0.27
Sat Flow, veh/h	1774	3539	1583	1774	3203	365	3442	2604	874	1774	3510	104
Grp Volume(v), veh/h	11	499	120	211	403	409	120	231	229	121	339	353
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1798	1721	1770	1708	1774	1770	1844
Q Serve(g_s), s	0.7	13.9	7.0	14.0	21.1	21.1	3.9	13.1	13.4	8.1	20.8	20.8
Cycle Q Clear(g_c), s	0.7	13.9	7.0	14.0	21.1	21.1	3.9	13.1	13.4	8.1	20.8	20.8
Prop In Lane	1.00		1.00	1.00		0.20	1.00		0.51	1.00		0.06
Lane Grp Cap(c), veh/h	41	1034	463	239	714	726	310	488	471	147	475	495
V/C Ratio(X)	0.27	0.48	0.26	0.88	0.56	0.56	0.39	0.47	0.49	0.83	0.71	0.71
Avail Cap(c_a), veh/h	133	1034	463	273	714	726	315	488	471	173	475	495
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.6	35.0	32.5	51.0	27.6	27.6	51.5	36.2	36.3	54.2	39.7	39.7
Incr Delay (d2), s/veh	3.5	1.6	1.4	25.0	3.2	3.2	0.8	3.3	3.6	23.6	8.8	8.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.4	7.0	3.2	8.5	10.9	11.1	1.9	6.8	6.8	4.9	11.3	11.8
LnGrp Delay(d), s/veh	61.1	36.6	33.9	76.0	30.8	30.8	52.3	39.5	39.9	77.8	48.6	48.2
LnGrp LOS	E	D	C	E	C	C	D	D	D	E	D	D
Approach Vol, veh/h	630			1023			580			813		
Approach Delay, s/veh	36.5			40.1			42.3			52.8		
Approach LOS	D			D			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	42.3	16.5	39.4	8.5	55.6	15.6	40.3					
Change Period (Y+Rc), s	7.2	* 5.7	7.2	* 5.7	7.2	* 5.7	7.2					
Max Green Setting (Gmax), s	32.5	* 11	32.2	* 9	42.0	* 12	31.5					
Max Q Clear Time (g_c+I), s	15.9	5.9	22.8	2.7	23.1	10.1	15.4					
Green Ext Time (p_c), s	0.1	7.5	0.1	4.2	0.0	8.1	0.0	5.7				
Intersection Summary												
HCM 2010 Ctrl Delay	43.2											
HCM 2010 LOS	D											
Notes												

HCM 2010 Signalized Intersection Summary  
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Synchro 9 Report

Existing + Project AM  
9: San Pasqual Valley Rd & Citrus Avenue

2334 - Safari Highlands Ranch  
9/7/2016

Intersection						
Int Delay, s/veh	105					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	117	561	729	59	216	212
Future Vol, veh/h	117	561	729	59	216	212
Conflicting Peds, #/hr	0	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	115	-	-	-	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	127	610	792	64	235	230

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	857	0	-	0	1688
Stage 1	-	-	-	-	824
Stage 2	-	-	-	-	864
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	783	-	-	-	103
Stage 1	-	-	-	-	431
Stage 2	-	-	-	-	413
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	783	-	-	-	86
Mov Cap-2 Maneuver	-	-	-	-	86
Stage 1	-	-	-	-	431
Stage 2	-	-	-	-	346

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	\$ 461.8
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	783	-	-	-	86	373
HCM Lane V/C Ratio	0.162	-	-	-	2.73	0.618
HCM Control Delay (s)	10.5	-	-	-	\$ 886.6	29
HCM Lane LOS	B	-	-	-	F	D
HCM 95th %tile Q(veh)	0.6	-	-	-	22.5	4

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

Existing + Project AM  
10: Summit Drive & San Pasqual Valley Rd (SR 78)

2334 - Safari Highlands Ranch  
02/16/2017

Intersection												
Int Delay, s/veh	15.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	10	469	216	10	610	1	91	7	8	9	33	25
Future Vol, veh/h	10	469	216	10	610	1	91	7	8	9	33	25
Conflicting Peds, #/hr	0	0	0	0	0	3	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Stop	-	-	Stop
Storage Length	400	-	-	415	-	-	-	-	50	-	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	510	235	11	663	1	99	8	9	10	36	27

Major/Minor	Major1	Major2	Minor1	Minor2		
Conflicting Flow All	667	0	0	745	0	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	923	-	-	863	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	923	-	-	863	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	196.1	36.3
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	95	484	923	-	-	863	-	-	124	458
HCM Lane V/C Ratio	1.121	0.018	0.012	-	-	0.013	-	-	0.368	0.059
HCM Control Delay (s)	211.1	12.6	8.9	-	-	9.2	-	-	50	13.4
HCM Lane LOS	F	B	A	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	7.1	0.1	0	-	-	0	-	-	1.5	0.2

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

Existing + Project AM 2334 - Safari Highlands Ranch  
 11: San Pasqual Rd/Cloverdale Rd & San Pasqual Valley Rd 9/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Traffic Volume (veh/h)	228	254	28	11	266	48	16	120	126	59	279	387
Future Volume (veh/h)	228	254	28	11	266	48	16	120	126	59	279	387
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	248	276	30	12	289	52	17	130	137	64	303	421
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	251	1622	726	59	1238	554	52	404	396	121	477	629
Arrive On Green	0.14	0.46	0.46	0.03	0.35	0.35	0.03	0.22	0.22	0.07	0.26	0.26
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	248	276	30	12	289	52	17	130	137	64	303	421
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	16.0	5.3	1.2	0.8	6.6	2.5	1.1	6.8	8.2	4.0	16.6	25.1
Cycle Q Clear(g_c), s	16.0	5.3	1.2	0.8	6.6	2.5	1.1	6.8	8.2	4.0	16.6	25.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	251	1622	726	59	1238	554	52	404	396	121	477	629
V/C Ratio(X)	0.99	0.17	0.04	0.20	0.23	0.09	0.33	0.32	0.35	0.53	0.64	0.67
Avail Cap(c_a), veh/h	251	1622	726	185	1238	554	123	518	493	139	535	679
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.2	18.3	17.2	54.1	26.5	25.1	54.7	37.9	35.4	51.8	38.0	28.4
Incr Delay (d2), s/veh	52.8	0.2	0.1	1.7	0.4	0.3	3.6	0.5	0.5	3.6	2.1	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%)veh/ln	11.5	2.6	0.5	0.4	3.3	1.2	0.6	3.5	3.6	2.1	8.9	11.3
LnGrp Delay(d),s/veh	102.0	18.5	17.3	55.8	26.9	25.5	58.4	38.4	35.9	55.4	40.1	30.7
LnGrp LOS	F	B	B	E	C	C	E	D	D	E	D	C
Approach Vol, veh/h	554			353				284			788	
Approach Delay, s/veh	55.8			27.7				38.4			36.3	
Approach LOS	E			C				D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.5	60.2	9.1	36.2	22.0	47.7	13.5	31.7				
Change Period (Y+Rc), s	* 5.7	7.5	* 5.7	6.8	* 5.7	7.5	* 5.7	6.8				
Max Green Setting (Gmax), s	* 12	36.3	* 8	33.0	* 16	32.0	* 9	32.0				
Max Q Clear Time (g_c+I1), s	2.8	7.3	3.1	27.1	18.0	8.6	6.0	10.2				
Green Ext Time (p_c), s	0.0	3.6	0.0	2.3	0.0	3.5	0.0	4.4				

Intersection Summary	
HCM 2010 Ctrl Delay	40.5
HCM 2010 LOS	D
Notes	

Existing + Project AM 2334 - Safari Highlands Ranch  
 12: San Pasqual Valley Rd & Safari Park Driveway 9/7/2016

Intersection	
Int Delay, s/veh	1
Movement	
	EBL EBT WBT WBR SBL SBR
Traffic Vol, veh/h	76 257 316 9 3 3
Future Vol, veh/h	76 257 316 9 3 3
Conflicting Peds, #/hr	0 0 0 0 0 0
Sign Control	Free Free Free Free Stop Stop
RT Channelized	- None - None - Free
Storage Length	410 - - - 0 0
Veh in Median Storage, #	- 0 0 - 0 -
Grade, %	- 0 0 - 0 -
Peak Hour Factor	92 92 92 92 92 92
Heavy Vehicles, %	2 2 2 2 2 2
Mvmt Flow	83 279 343 10 3 3
Major/Minor	
	Major1 Major2 Minor2
Conflicting Flow All	353 0 - 0 793 -
Stage 1	- - - - 348 -
Stage 2	- - - - 445 -
Critical Hdwy	4.14 - - - 6.63 -
Critical Hdwy Stg 1	- - - - 5.83 -
Critical Hdwy Stg 2	- - - - 5.43 -
Follow-up Hdwy	2.22 - - - 3.519 -
Pot Cap-1 Maneuver	1202 - - - 341 0
Stage 1	- - - - 687 0
Stage 2	- - - - 645 0
Platoon blocked, %	- - - - -
Mov Cap-1 Maneuver	1202 - - - 317 -
Mov Cap-2 Maneuver	- - - - 317 -
Stage 1	- - - - 687 -
Stage 2	- - - - 600 -
Approach	
	EB WB SB
HCM Control Delay, s	1.9 0 16.5
HCM LOS	C
Minor Lane/Major Mvmt	
	EBL EBT WBT WBR SBLn1 SBLn2
Capacity (veh/h)	1202 - - - 317 -
HCM Lane V/C Ratio	0.069 - - - 0.01 -
HCM Control Delay (s)	8.2 - - - 16.5 0
HCM Lane LOS	A - - - C A
HCM 95th %tile Q(veh)	0.2 - - - 0 -

Existing + Project AM  
13: Bear Valley Pkwy & San Pasqual Rd

2334 - Safari Highlands Ranch  
9/12/2016

	↖	↗	↑	↘	↙	↓		
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations	↖↗	↖	↕	↖	↖	↕		
Traffic Volume (veh/h)	679	63	982	345	187	1435		
Future Volume (veh/h)	679	63	982	345	187	1435		
Number	3	18	2	12	1	6		
Initial Q (Ob), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	738	68	1067	375	203	1560		
Adj No. of Lanes	2	1	2	1	1	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	891	410	1629	726	240	2279		
Arrive On Green	0.26	0.26	0.46	0.46	0.14	0.64		
Sat Flow, veh/h	3442	1583	3632	1578	1774	3632		
Grp Volume(v), veh/h	738	68	1067	375	203	1560		
Grp Sat Flow(s), veh/h/ln	1721	1583	1770	1578	1774	1770		
Q Serve(g_s), s	16.7	2.7	19.2	13.8	9.2	23.1		
Cycle Q Clear(g_c), s	16.7	2.7	19.2	13.8	9.2	23.1		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	891	410	1629	726	240	2279		
V/C Ratio(X)	0.83	0.17	0.66	0.52	0.85	0.68		
Avail Cap(c_a), veh/h	1338	616	1629	726	259	2279		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	28.8	23.6	17.2	15.7	34.7	9.3		
Incr Delay (d2), s/veh	2.8	0.2	2.1	2.6	21.0	1.7		
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%), veh/ln	8.2	1.2	9.8	6.6	5.9	11.6		
LnGrp Delay(d), s/veh	31.6	23.8	19.2	18.3	55.7	11.0		
LnGrp LOS	C	C	B	B	E	B		
Approach Vol, veh/h	806		1442		1763			
Approach Delay, s/veh	30.9		19.0		16.2			
Approach LOS	C		B		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	15.1	41.9				57.0		25.3
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	12.0	37.0				53.0		32.0
Max Q Clear Time (g_c+I1), s	11.2	21.2				25.1		18.7
Green Ext Time (p_c), s	0.0	13.8				22.5		2.6
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			20.2					
HCM 2010 LOS			C					

HCM 2010 Signalized Intersection Summary  
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Synchro 9 Report

Existing + Project AM  
14: Via Rancho Pkwy/Bear Valley Pkwy & Del Lago Blvd/Beethoven Dr

2334 - Safari Highlands Ranch  
02/16/2017

	↖	→	↘	↖	←	↖	↖	↑	↘	↙	↓	↖
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖	↖	↖	↕	↖	↖	↕	↖	↖	↖	↖
Traffic Volume (veh/h)	213	5	13	76	61	26	17	891	19	16	1797	563
Future Volume (veh/h)	213	5	13	76	61	26	17	891	19	16	1797	563
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	236	0	0	83	66	28	18	968	21	17	1953	612
Adj No. of Lanes	2	0	1	1	1	0	2	2	1	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	351	0	157	230	160	68	58	1799	804	28	2581	803
Arrive On Green	0.10	0.00	0.00	0.13	0.13	0.13	0.02	0.51	0.51	0.02	0.51	0.51
Sat Flow, veh/h	3548	0	1583	1774	1234	523	3442	3539	1582	1774	5085	1581
Grp Volume(v), veh/h	236	0	0	83	0	94	18	968	21	17	1953	612
Grp Sat Flow(s), veh/h/ln	1774	0	1583	1774	0	1757	1721	1770	1582	1774	1695	1581
Q Serve(g_s), s	4.7	0.0	0.0	3.1	0.0	3.6	0.4	13.5	0.5	0.7	22.4	22.7
Cycle Q Clear(g_c), s	4.7	0.0	0.0	3.1	0.0	3.6	0.4	13.5	0.5	0.7	22.4	22.7
Prop In Lane	1.00		1.00	1.00		0.30	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	351	0	157	230	0	228	58	1799	804	28	2581	803
V/C Ratio(X)	0.67	0.00	0.00	0.36	0.00	0.41	0.31	0.54	0.03	0.60	0.76	0.76
Avail Cap(c_a), veh/h	876	0	391	1047	0	1037	189	1799	804	97	2581	803
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.7	0.0	0.0	29.0	0.0	29.2	35.4	12.1	8.9	35.6	14.3	14.4
Incr Delay (d2), s/veh	2.2	0.0	0.0	0.9	0.0	1.2	3.0	1.2	0.1	18.6	2.1	6.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.4	0.0	0.0	1.6	0.0	1.8	0.2	6.9	0.2	0.5	10.8	11.2
LnGrp Delay(d), s/veh	33.9	0.0	0.0	29.9	0.0	30.3	38.4	13.3	9.0	54.3	16.5	21.2
LnGrp LOS	C			C		C	D	B	A	D	B	C
Approach Vol, veh/h	236			177			1007				2582	
Approach Delay, s/veh	33.9			30.1			13.6				17.8	
Approach LOS	C			C			B				B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.7	41.6		11.7	5.7	41.5		14.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	4.0	37.0		18.0	4.0	37.0		43.0				
Max Q Clear Time (g_c+I1), s	2.7	15.5		6.7	2.4	24.7		5.6				
Green Ext Time (p_c), s	0.0	19.4		0.6	0.0	11.6		0.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				18.3								
HCM 2010 LOS				B								
<b>Notes</b>												

HCM 2010 Signalized Intersection Summary  
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Synchro 9 Report

Existing + Project AM 2334 - Safari Highlands Ranch  
 15: I-15 NB Ramps/Westfield Mall Driveway & Bear Valley Pkwy 9/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	38	556	69	415	1272	23	157	31	509	4	12	6
Future Volume (veh/h)	38	556	69	415	1272	23	157	31	509	4	12	6
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	40	579	72	432	1325	24	164	32	530	4	12	6
Adj No. of Lanes	2	2	1	2	3	1	2	2	2	1	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	396	1393	623	602	2305	715	213	848	1155	204	1047	468
Arrive On Green	0.12	0.39	0.39	0.17	0.45	0.45	0.06	0.24	0.24	0.12	0.30	0.30
Sat Flow, veh/h	3442	3539	1583	3442	5085	1578	3442	3539	2787	1774	3539	1583
Grp Volume(v), veh/h	40	579	72	432	1325	24	164	32	530	4	12	6
Grp Sat Flow(s), veh/h/ln	1721	1770	1583	1721	1695	1578	1721	1770	1393	1774	1770	1583
Q Serve(g_s), s	1.4	16.5	4.0	16.5	26.8	0.9	6.5	1.0	14.3	0.3	0.3	0.4
Cycle Q Clear(g_c), s	1.4	16.5	4.0	16.5	26.8	0.9	6.5	1.0	14.3	0.3	0.3	0.4
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	396	1393	623	602	2305	715	213	848	1155	204	1047	468
V/C Ratio(X)	0.10	0.42	0.12	0.72	0.57	0.03	0.77	0.04	0.46	0.02	0.01	0.01
Avail Cap(c_a), veh/h	396	1393	623	602	2305	715	255	848	1155	204	1047	468
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.1	30.6	26.8	54.1	28.1	13.6	64.2	40.6	18.8	54.5	34.6	34.6
Incr Delay (d2), s/veh	0.5	0.9	0.4	7.2	1.1	0.1	11.3	0.1	1.3	0.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	7.2	8.2	1.8	8.5	12.7	0.4	3.4	0.5	5.7	0.1	0.2	0.2
LnGrp Delay(d), s/veh	55.6	31.5	27.2	61.3	29.1	13.7	75.5	40.6	20.1	54.7	34.6	34.7
LnGrp LOS	E	C	C	E	C	B	E	D	C	D	C	C
Approach Vol, veh/h	691			1781			726			22		
Approach Delay, s/veh	32.4			36.7			33.5			38.3		
Approach LOS	C			D			C			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.0	61.5	14.3	47.2	21.7	69.8	22.1	39.4				
Change Period (Y+Rc), s	5.7	6.4	* 5.7	6.1	* 5.7	6.4	6.1	* 6.1				
Max Green Setting (Gmax), s	41.5	* 10	39.0	* 16	49.8	16.0	* 33					
Max Q Clear Time (g_c+10), s	18.5	8.5	2.4	3.4	28.8	2.3	16.3					
Green Ext Time (p_c), s	0.8	13.6	0.1	0.1	0.0	12.8	0.0	2.2				
Intersection Summary												
HCM 2010 Ctrl Delay				35.1								
HCM 2010 LOS				D								
Notes												

Existing + Project AM 2334 - Safari Highlands Ranch  
 16: I-15 SB Ramps/Del Lago Blvd & Bear Valley Pkwy 9/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	171	352	455	997	246	62	21	99	251	60	222	67
Future Volume (veh/h)	171	352	455	997	246	62	21	99	251	60	222	67
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	178	367	474	1039	256	65	22	103	261	62	241	73
Adj No. of Lanes	1	2	2	2	2	1	1	2	1	1	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	299	1003	496	1152	1606	834	34	567	783	130	766	342
Arrive On Green	0.17	0.28	0.28	0.33	0.45	0.45	0.02	0.16	0.16	0.07	0.22	0.22
Sat Flow, veh/h	1774	3539	1751	3442	3539	1582	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	178	367	474	1039	256	65	22	103	261	62	241	73
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1582	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	15.6	13.9	39.0	48.3	7.2	1.5	2.1	4.2	0.0	5.6	9.6	6.4
Cycle Q Clear(g_c), s	15.6	13.9	39.0	48.3	7.2	1.5	2.1	4.2	0.0	5.6	9.6	6.4
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	299	1003	496	1152	1606	834	34	567	783	130	766	342
V/C Ratio(X)	0.60	0.37	0.96	0.90	0.16	0.08	0.65	0.18	0.33	0.48	0.31	0.21
Avail Cap(c_a), veh/h	299	1003	496	1152	1606	834	53	567	783	170	801	358
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.6	48.1	45.1	53.3	27.0	7.0	81.8	61.0	25.7	74.8	55.3	54.1
Incr Delay (d2), s/veh	8.5	1.0	30.8	9.9	0.0	0.0	19.0	0.7	1.1	2.7	0.2	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	4.4	7.0	11.5	24.5	3.5	0.6	1.2	2.1	7.6	2.9	4.7	2.8
LnGrp Delay(d), s/veh	73.0	49.2	75.8	63.2	27.1	7.0	100.8	61.7	26.8	77.5	55.6	54.4
LnGrp LOS	E	D	E	E	C	A	F	E	C	E	E	D
Approach Vol, veh/h	1019			1360			386			376		
Approach Delay, s/veh	65.7			53.7			40.4			59.0		
Approach LOS	E			D			D			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	62.6	54.0	8.9	42.5	34.0	82.6	18.4	33.0				
Change Period (Y+Rc), s	6.4	* 6.4	* 5.7	6.1	* 5.7	6.4	6.1	* 6.1				
Max Green Setting (Gmax), s	63.8	* 48	* 5	38.0	* 28	73.1	16.1	* 27				
Max Q Clear Time (g_c+10), s	41.0	4.1	11.6	17.6	9.2	7.6	6.2					
Green Ext Time (p_c), s	2.0	2.3	0.0	1.9	0.3	6.7	1.2	1.4				
Intersection Summary												
HCM 2010 Ctrl Delay				56.6								
HCM 2010 LOS				E								
Notes												

Existing + Project AM  
17: Sierra Linda Dr/Ryan Dr & San Pasqual Rd

2334 - Safari Highlands Ranch  
02/16/2017

Intersection												
Int Delay, s/veh 2.6												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↑	↗		↔			↔	
Traffic Vol, veh/h	22	198	19	1	708	3	39	0	4	2	1	63
Future Vol, veh/h	22	198	19	1	708	3	39	0	4	2	1	63
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	190	-	0	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	215	21	1	770	3	42	0	4	2	1	68

Major/Minor	Major1	Major2	Minor1	Minor2								
Conflicting Flow All	773	0	0	215	0	0	1071	1038	215	1038	1036	771
Stage 1	-	-	-	-	-	-	263	263	-	773	773	-
Stage 2	-	-	-	-	-	-	808	775	-	265	263	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	842	-	-	1355	-	-	198	231	825	209	232	400
Stage 1	-	-	-	-	-	-	742	691	-	392	409	-
Stage 2	-	-	-	-	-	-	375	408	-	740	691	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	842	-	-	1355	-	-	160	224	825	203	225	400
Mov Cap-2 Maneuver	-	-	-	-	-	-	160	224	-	203	225	-
Stage 1	-	-	-	-	-	-	721	671	-	381	409	-
Stage 2	-	-	-	-	-	-	310	408	-	715	671	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0	33.3	16.5
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	173	842	-	-	1355	-	-	384
HCM Lane V/C Ratio	0.27	0.028	-	-	0.001	-	-	0.187
HCM Control Delay (s)	33.3	9.4	-	-	7.7	-	-	16.5
HCM Lane LOS	D	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1	0.1	-	-	0	-	-	0.7

Existing + Project AM  
18: San Pasqual Rd & Old Milky Way

2334 - Safari Highlands Ranch  
06/21/2017

Intersection						
Int Delay, s/veh 7.8						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖		↑	↗		↖
Traffic Vol, veh/h	243	1	165	47	10	455
Future Vol, veh/h	243	1	165	47	10	455
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	100	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	264	1	179	51	11	495

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	695	179	0	0	179	0
Stage 1	179	-	-	-	-	-
Stage 2	516	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	408	864	-	-	1397	-
Stage 1	852	-	-	-	-	-
Stage 2	599	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	404	864	-	-	1397	-
Mov Cap-2 Maneuver	404	-	-	-	-	-
Stage 1	852	-	-	-	-	-
Stage 2	592	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	29.2	0	0.2
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	405	1397	-
HCM Lane V/C Ratio	-	-	0.655	0.008	-
HCM Control Delay (s)	-	-	29.2	7.6	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	4.5	0	-

Existing + Project PM  
1: Cloverdale Rd & Rockwood Rd

2334 - Safari Highlands Ranch  
9/7/2016

Intersection						
Int Delay, s/veh	5.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	282	5	110	595	5	55
Future Vol, veh/h	282	5	110	595	5	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	65	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	307	5	120	647	5	60
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	514	443	0	0	766	0
Stage 1	443	-	-	-	-	-
Stage 2	71	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	521	615	-	-	847	-
Stage 1	647	-	-	-	-	-
Stage 2	952	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	518	615	-	-	847	-
Mov Cap-2 Maneuver	563	-	-	-	-	-
Stage 1	647	-	-	-	-	-
Stage 2	946	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	19	0	0.8			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	564	847	-	
HCM Lane V/C Ratio	-	-	0.553	0.006	-	
HCM Control Delay (s)	-	-	19	9.3	-	
HCM Lane LOS	-	-	C	A	-	
HCM 95th %tile Q(veh)	-	-	3.4	0	-	

Existing + Project PM  
2: Rockwood Rd & Old Ranch Rd

2334 - Safari Highlands Ranch  
9/7/2016

Intersection										
Intersection Delay, s/veh	15.6									
Intersection LOS	C									
Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBU	SBL	SBR	
Traffic Vol, veh/h	0	105	476	0	225	6	0	5	95	
Future Vol, veh/h	0	105	476	0	225	6	0	5	95	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	
Mvmt Flow	0	114	517	0	245	7	0	5	103	
Number of Lanes	0	1	1	0	1	0	0	1	1	
Approach	EB	WB	SB							
Opposing Approach	WB	EB								
Opposing Lanes	1	2	0							
Conflicting Approach Left	SB		WB							
Conflicting Lanes Left	2	0	1							
Conflicting Approach Right		SB	EB							
Conflicting Lanes Right	0	2	2							
HCM Control Delay	18.3	11.5	9.8							
HCM LOS	C	B	A							
Lane	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2					
Vol Left, %	100%	0%	0%	100%	0%					
Vol Thru, %	0%	100%	97%	0%	0%					
Vol Right, %	0%	0%	3%	0%	100%					
Sign Control	Stop	Stop	Stop	Stop	Stop					
Traffic Vol by Lane	105	476	231	5	95					
LT Vol	105	0	0	5	0					
Through Vol	0	476	225	0	0					
RT Vol	0	0	6	0	95					
Lane Flow Rate	114	517	251	5	103					
Geometry Grp	7	7	4	7	7					
Degree of Util (X)	0.177	0.729	0.37	0.011	0.168					
Departure Headway (Hd)	5.576	5.073	5.302	7.069	5.851					
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes					
Cap	640	709	673	503	608					
Service Time	3.334	2.83	3.37	4.856	3.637					
HCM Lane V/C Ratio	0.178	0.729	0.373	0.01	0.169					
HCM Control Delay	9.5	20.3	11.5	9.9	9.8					
HCM Lane LOS	A	C	B	A	A					
HCM 95th-tile Q	0.6	6.4	1.7	0	0.6					

Existing + Project PM  
3: Rockwood Rd & Site Access

2334 - Safari Highlands Ranch  
9/7/2016

Intersection						
Int Delay, s/veh	7.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	438	43	38	0	0	193
Future Vol, veh/h	438	43	38	0	0	193
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	476	47	41	0	0	210
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	41	0	-	0	1040	41
Stage 1	-	-	-	-	41	-
Stage 2	-	-	-	-	999	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1568	-	-	-	255	1030
Stage 1	-	-	-	-	981	-
Stage 2	-	-	-	-	356	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1568	-	-	-	175	1030
Mov Cap-2 Maneuver	-	-	-	-	175	-
Stage 1	-	-	-	-	981	-
Stage 2	-	-	-	-	245	-
Approach	EB		WB		SB	
HCM Control Delay, s	7.6		0		9.4	
HCM LOS					A	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1568	-	-	-	1030	
HCM Lane V/C Ratio	0.304	-	-	-	0.204	
HCM Control Delay (s)	8.3	0	-	-	9.4	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	1.3	-	-	-	0.8	

Existing + Project PM  
4: Centre City Pkwy & Felicita Rd

2334 - Safari Highlands Ranch  
9/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Traffic Volume (veh/h)	189	511	48	279	307	160	157	653	331	430	488	88
Future Volume (veh/h)	189	511	48	279	307	160	157	653	331	430	488	88
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	193	521	49	285	313	163	160	666	338	439	498	90
Adj No. of Lanes	2	2	0	2	2	1	2	2	1	2	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	260	794	74	348	950	413	225	1263	557	497	1543	678
Arrive On Green	0.08	0.24	0.24	0.10	0.27	0.27	0.07	0.36	0.36	0.14	0.44	0.44
Sat Flow, veh/h	3442	3267	306	3442	3539	1537	3442	3539	1560	3442	3539	1556
Grp Volume(v), veh/h	193	282	288	285	313	163	160	666	338	439	498	90
Grp Sat Flow(s), veh/h/ln	1721	1770	1803	1721	1770	1537	1721	1770	1560	1721	1770	1556
Q Serve(g_s), s	5.7	14.8	14.9	8.4	7.4	9.0	4.7	15.4	18.4	13.0	9.6	3.6
Cycle Q Clear(g_c), s	5.7	14.8	14.9	8.4	7.4	9.0	4.7	15.4	18.4	13.0	9.6	3.6
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	260	430	438	348	950	413	225	1263	557	497	1543	678
V/C Ratio(X)	0.74	0.65	0.66	0.82	0.33	0.39	0.71	0.53	0.61	0.88	0.32	0.13
Avail Cap(c_a), veh/h	365	632	644	365	1263	549	332	1263	557	498	1543	678
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.9	35.3	35.3	45.7	30.4	31.0	47.5	26.4	27.3	43.5	19.2	17.5
Incr Delay (d2), s/veh	4.9	1.7	1.7	13.2	0.2	0.6	4.1	1.6	4.9	16.9	0.6	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.9	7.5	7.7	4.6	3.6	3.9	2.4	7.8	8.7	7.3	4.8	1.6
LnGrp Delay(d), s/veh	51.8	37.0	37.0	58.9	30.6	31.6	51.6	28.0	32.2	60.3	19.7	17.9
LnGrp LOS	D	D	D	E	C	C	D	C	C	E	B	B
Approach Vol, veh/h	763			761			1164			1027		
Approach Delay, s/veh	40.8			41.4			32.4			36.9		
Approach LOS	D			D			C			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.0	41.0	14.5	29.2	10.8	49.2	11.8	31.8				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	15.0	37.0	11.0	37.0	10.0	42.0	11.0	37.0				
Max Q Clear Time (g_c+I1), s	15.0	20.4	10.4	16.9	6.7	11.6	7.7	11.0				
Green Ext Time (p_c), s	0.0	8.1	0.1	6.0	0.1	10.6	0.2	6.5				
Intersection Summary												
HCM 2010 Ctrl Delay							37.2					
HCM 2010 LOS							D					

Existing + Project PM  
5: Escondido Blvd & Felicita Ave

2334 - Safari Highlands Ranch  
02/16/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↕	↔	↕	↕	↔	↕	↕
Traffic Volume (veh/h)	190	994	126	91	579	47	99	299	143	101	203	136
Future Volume (veh/h)	190	994	126	91	579	47	99	299	143	101	203	136
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	207	1080	137	99	629	51	108	325	155	110	221	148
Adj No. of Lanes	2	2	0	1	2	1	2	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	286	1536	195	110	1647	735	294	700	327	248	618	396
Arrive On Green	0.08	0.49	0.49	0.06	0.47	0.47	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	3442	3161	400	1774	3539	1580	1007	2342	1094	910	2068	1326
Grp Volume(v), veh/h	207	604	613	99	629	51	108	244	236	110	188	181
Grp Sat Flow(s), veh/h/ln	1721	1770	1792	1774	1770	1580	1007	1770	1667	910	1770	1624
Q Serve(g_s), s	5.2	23.5	23.6	4.9	10.2	1.6	8.4	9.9	10.2	9.9	7.3	7.8
Cycle Q Clear(g_c), s	5.2	23.5	23.6	4.9	10.2	1.6	16.1	9.9	10.2	20.1	7.3	7.8
Prop In Lane	1.00		0.22	1.00		1.00	1.00		0.66	1.00		0.82
Lane Grp Cap(c), veh/h	286	860	871	110	1647	735	294	529	498	248	529	485
V/C Ratio(X)	0.72	0.70	0.70	0.90	0.38	0.07	0.37	0.46	0.47	0.44	0.36	0.37
Avail Cap(c_a), veh/h	409	1212	1227	110	2224	993	341	611	576	291	611	561
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.5	17.7	17.7	41.1	15.4	13.0	30.8	25.2	25.3	33.5	24.3	24.4
Incr Delay (d2), s/veh	3.6	1.1	1.1	54.4	0.1	0.0	0.8	0.6	0.7	1.2	0.4	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.6	11.7	11.8	4.1	5.0	0.7	2.4	4.9	4.8	2.6	3.7	3.5
LnGrp Delay(d), s/veh	43.1	18.8	18.8	95.5	15.5	13.1	31.6	25.8	26.0	34.8	24.7	24.9
LnGrp LOS	D	B	B	F	B	B	C	C	C	C	C	C
Approach Vol, veh/h	1424			779				588			479	
Approach Delay, s/veh	22.3			25.5				26.9			27.1	
Approach LOS	C			C				C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.9	10.0	47.4		30.9	11.8	45.6				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		30.5	5.5	60.5		30.5	10.5	55.5				
Max Q Clear Time (g_c+I1), s		18.1	6.9	25.6		22.1	7.2	12.2				
Green Ext Time (p_c), s		5.2	0.0	17.3		4.0	0.2	19.0				
Intersection Summary												
HCM 2010 Ctrl Delay				24.6								
HCM 2010 LOS				C								

Existing + Project PM  
6: Juniper St & Felicita Ave/E. 17th Ave

2334 - Safari Highlands Ranch  
02/16/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↕	↔	↕	↕	↔	↕	↕
Traffic Volume (veh/h)	276	803	77	10	399	31	50	145	14	60	171	191
Future Volume (veh/h)	276	803	77	10	399	31	50	145	14	60	171	191
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	300	873	84	11	434	34	54	158	15	65	186	208
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	357	1047	101	244	654	553	257	382	36	295	424	676
Arrive On Green	0.20	0.63	0.63	0.35	0.35	0.35	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1774	1673	161	584	1863	1574	982	1676	159	1207	1863	1569
Grp Volume(v), veh/h	300	0	957	11	434	34	54	0	173	65	186	208
Grp Sat Flow(s), veh/h/ln	1774	0	1834	584	1863	1574	982	0	1835	1207	1863	1569
Q Serve(g_s), s	10.0	0.0	25.1	0.9	12.1	0.9	3.1	0.0	4.9	3.0	5.3	5.4
Cycle Q Clear(g_c), s	10.0	0.0	25.1	9.2	12.1	0.9	8.3	0.0	4.9	7.9	5.3	5.4
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	357	0	1147	244	654	553	257	0	418	295	424	676
V/C Ratio(X)	0.84	0.00	0.83	0.05	0.66	0.06	0.21	0.00	0.41	0.22	0.44	0.31
Avail Cap(c_a), veh/h	506	0	1435	286	789	667	561	0	987	669	1002	1162
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	0.0	9.0	19.2	16.8	13.2	23.9	0.0	20.2	23.6	20.3	11.5
Incr Delay (d2), s/veh	8.6	0.0	3.6	0.1	1.6	0.0	0.4	0.0	0.7	0.4	0.7	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	7.7	0.0	13.6	0.2	6.4	0.4	0.9	0.0	2.6	1.0	2.8	2.4
LnGrp Delay(d), s/veh	32.2	0.0	12.6	19.2	18.4	13.2	24.3	0.0	20.9	23.9	21.0	11.8
LnGrp LOS	C		B	B	B	B	C		C	C	C	B
Approach Vol, veh/h	1257			479				227			459	
Approach Delay, s/veh	17.3			18.1				21.7			17.3	
Approach LOS	B			B				C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		18.5		42.9		18.5	16.8	26.1				
Change Period (Y+Rc), s		4.5		4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		33.0		48.0		33.0	17.5	26.0				
Max Q Clear Time (g_c+I1), s		10.3		27.1		9.9	12.0	14.1				
Green Ext Time (p_c), s		3.4		10.4		3.4	0.4	7.3				
Intersection Summary												
HCM 2010 Ctrl Delay				17.8								
HCM 2010 LOS				B								

Existing + Project PM  
7: San Pasqual Valley Rd & E 17th Ave

2334 - Safari Highlands Ranch  
9/17/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	295	1	354	0	1	1	222	523	1	1	425	164
Future Volume (veh/h)	295	1	354	0	1	1	222	523	1	1	425	164
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	301	1	361	0	1	1	227	534	1	1	434	167
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	426	1	381	0	3	3	211	1080	2	3	595	229
Arrive On Green	0.24	0.24	0.24	0.00	0.00	0.00	0.12	0.58	0.58	0.00	0.46	0.46
Sat Flow, veh/h	1768	6	1583	0	856	856	1774	1859	3	1774	1282	493
Grp Volume(v), veh/h	302	0	361	0	0	2	227	0	535	1	0	601
Grp Sat Flow(s), veh/h/ln	1774	0	1583	0	0	1712	1774	0	1862	1774	0	1776
Q Serve(g_s), s	18.7	0.0	26.9	0.0	0.0	0.1	14.3	0.0	20.3	0.1	0.0	32.9
Cycle Q Clear(g_c), s	18.7	0.0	26.9	0.0	0.0	0.1	14.3	0.0	20.3	0.1	0.0	32.9
Prop In Lane	1.00	1.00	0.00			0.50	1.00		0.00	1.00		0.28
Lane Grp Cap(c), veh/h	427	0	381	0	0	6	211	0	1082	3	0	823
V/C Ratio(X)	0.71	0.00	0.95	0.00	0.00	0.31	1.07	0.00	0.49	0.29	0.00	0.73
Avail Cap(c_a), veh/h	427	0	381	0	0	355	211	0	1082	103	0	823
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.56	0.00	0.56	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.7	0.0	44.8	0.0	0.0	59.6	52.8	0.0	14.8	59.8	0.0	26.1
Incr Delay (d2), s/veh	3.0	0.0	22.3	0.0	0.0	25.2	82.8	0.0	1.6	42.3	0.0	5.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.5	0.0	14.1	0.0	0.0	0.1	11.9	0.0	10.9	0.1	0.0	17.3
LnGrp Delay(d), s/veh	44.7	0.0	67.1	0.0	0.0	84.8	135.7	0.0	16.4	102.1	0.0	31.7
LnGrp LOS	D		E			F	F		B	F		C
Approach Vol, veh/h	663			2			762			602		
Approach Delay, s/veh	56.9			84.8			51.9			31.8		
Approach LOS	E			F			D			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	61.4			5.6	4.9	75.5		34.0				
Change Period (Y+Rc), s	4.7	5.8		5.1	4.7	5.8		5.1				
Max Green Setting (Gmax), s	31.2			24.9	7	38.5		28.9				
Max Q Clear Time (g_c+I), s	34.9			2.1	2.1	22.3		28.9				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	6.4		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	47.6											
HCM 2010 LOS	D											
Notes												

HCM 2010 Signalized Intersection Summary  
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Synchro 9 Report

Existing + Project PM  
8: Bear Valley Pkwy & San Pasqual Valley Rd

2334 - Safari Highlands Ranch  
9/17/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	23	705	74	108	555	78	132	721	212	74	349	31
Future Volume (veh/h)	23	705	74	108	555	78	132	721	212	74	349	31
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	25	758	80	116	597	84	142	775	228	80	375	33
Adj No. of Lanes	1	2	1	1	2	0	2	2	0	1	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	78	1031	461	157	1047	147	340	813	239	147	945	83
Arrive On Green	0.04	0.29	0.29	0.09	0.34	0.34	0.10	0.30	0.30	0.08	0.29	0.29
Sat Flow, veh/h	1774	3539	1583	1774	3117	438	3442	2683	789	1774	3289	288
Grp Volume(v), veh/h	25	758	80	116	338	343	142	511	492	80	201	207
Grp Sat Flow(s), veh/h/ln	1774	1583	1774	1770	1786	1721	1770	1703	1774	1770	1807	
Q Serve(g_s), s	1.5	21.2	4.1	7.0	17.3	17.4	4.3	31.1	31.1	4.8	10.0	10.2
Cycle Q Clear(g_c), s	1.5	21.2	4.1	7.0	17.3	17.4	4.3	31.1	31.1	4.8	10.0	10.2
Prop In Lane	1.00	1.00	0.00			0.25	1.00		0.46	1.00		0.16
Lane Grp Cap(c), veh/h	78	1031	461	157	594	600	340	536	516	147	508	519
V/C Ratio(X)	0.32	0.74	0.17	0.74	0.57	0.57	0.42	0.95	0.95	0.54	0.40	0.40
Avail Cap(c_a), veh/h	145	1031	461	161	594	600	344	536	516	163	508	519
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.0	35.2	29.1	48.9	30.0	30.0	46.6	37.6	37.6	48.4	31.5	31.6
Incr Delay (d2), s/veh	2.4	4.7	0.8	16.1	3.9	3.9	0.8	28.9	29.6	3.1	2.3	2.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.8	11.0	1.9	4.2	9.1	9.2	2.1	19.5	18.9	2.5	5.2	5.4
LnGrp Delay(d), s/veh	53.4	39.8	29.9	65.1	33.9	34.0	47.4	66.4	67.2	51.5	33.8	33.8
LnGrp LOS	D	D	C	E	C	C	D	E	E	D	C	C
Approach Vol, veh/h	863			797			1145			488		
Approach Delay, s/veh	39.3			38.5			64.4			36.7		
Approach LOS	D			D			E			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.4	39.2	16.6	38.8	10.5	44.1	14.8	40.5				
Change Period (Y+Rc), s	7.2	5.7	7.2	5.7	7.2	5.7	7.2	5.7				
Max Green Setting (Gmax), s	31.6	11	31.6	7	32.6	10	32.5					
Max Q Clear Time (g_c+I), s	23.2	6.3	12.2	3.5	19.4	6.8	33.1					
Green Ext Time (p_c), s	0.0	5.2	0.2	8.1	0.0	7.2	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	47.4											
HCM 2010 LOS	D											
Notes												

HCM 2010 Signalized Intersection Summary  
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Synchro 9 Report

Existing + Project PM  
9: San Pasqual Valley Rd & Citrus Avenue

2334 - Safari Highlands Ranch  
9/7/2016

Intersection						
Int Delay, s/veh	19					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	265	726	650	89	55	91
Future Vol, veh/h	265	726	650	89	55	91
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	115	-	-	-	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	288	789	707	97	60	99

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	803	0	-	0	2120 755
Stage 1	-	-	-	-	755 -
Stage 2	-	-	-	-	1365 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	821	-	-	-	- 55 409
Stage 1	-	-	-	-	464 -
Stage 2	-	-	-	-	237 -
Platoon blocked, %	-	-	-	-	- -
Mov Cap-1 Maneuver	821	-	-	-	- 36 409
Mov Cap-2 Maneuver	-	-	-	-	- 36 -
Stage 1	-	-	-	-	464 -
Stage 2	-	-	-	-	154 -

Approach	EB	WB	SB
HCM Control Delay, s	3.1	0	223.1
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	821	-	-	-	36	409
HCM Lane V/C Ratio	0.351	-	-	-	1.661	0.242
HCM Control Delay (s)	11.7	-	-	-	564.8	16.6
HCM Lane LOS	B	-	-	-	F	C
HCM 95th %tile Q(veh)	1.6	-	-	-	6.4	0.9

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

Existing + Project PM  
10: Summit Drive & San Pasqual Valley Rd (SR 78)

2334 - Safari Highlands Ranch  
02/16/2017

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	704	59	4	492	2	57	4	2	3	1	13
Future Vol, veh/h	26	704	59	4	492	2	57	4	2	3	1	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Stop	-	-	Stop
Storage Length	400	-	-	415	-	-	-	-	50	-	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	765	64	4	535	2	62	4	2	3	1	14

Major/Minor	Major1	Major2	Minor1	Minor2								
Conflicting Flow All	537	0	0	829	0	0	1399	1400	797	1401	1431	536
Stage 1	-	-	-	-	-	-	854	854	-	545	545	-
Stage 2	-	-	-	-	-	-	545	546	-	856	886	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1031	-	-	803	-	-	118	140	387	118	134	545
Stage 1	-	-	-	-	-	-	353	375	-	523	519	-
Stage 2	-	-	-	-	-	-	523	518	-	352	363	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1031	-	-	803	-	-	111	136	387	112	130	545
Mov Cap-2 Maneuver	-	-	-	-	-	-	111	136	-	112	130	-
Stage 1	-	-	-	-	-	-	343	365	-	509	516	-
Stage 2	-	-	-	-	-	-	506	515	-	336	353	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.1	73.8	17.8
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	112	387	1031	-	-	803	-	-	116	545
HCM Lane V/C Ratio	0.592	0.006	0.027	-	-	0.005	-	-	0.037	0.026
HCM Control Delay (s)	75.7	14.4	8.6	-	-	9.5	-	-	37.2	11.8
HCM Lane LOS	F	B	A	-	-	A	-	-	E	B
HCM 95th %tile Q(veh)	2.9	0	0.1	-	-	0	-	-	0.1	0.1

Existing + Project PM 2334 - Safari Highlands Ranch  
 11: San Pasqual Rd/Cloverdale Rd & San Pasqual Valley Rd 9/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Traffic Volume (veh/h)	350	233	33	231	385	64	47	284	2	29	150	187
Future Volume (veh/h)	350	233	33	231	385	64	47	284	2	29	150	187
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	380	253	36	251	418	70	51	309	2	32	163	203
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	251	1376	602	245	1363	597	99	372	535	89	361	531
Arrive On Green	0.14	0.39	0.39	0.14	0.39	0.39	0.06	0.20	0.20	0.05	0.19	0.19
Sat Flow, veh/h	1774	3539	1549	1774	3539	1549	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	380	253	36	251	418	70	51	309	2	32	163	203
Grp Sat Flow(s), veh/h/ln	1774	1770	1549	1774	1770	1549	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	16.3	5.4	1.7	15.9	9.5	3.3	3.2	18.3	0.1	2.0	8.9	11.2
Cycle Q Clear(g_c), s	16.3	5.4	1.7	15.9	9.5	3.3	3.2	18.3	0.1	2.0	8.9	11.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	251	1376	602	245	1363	597	99	372	535	89	361	531
V/C Ratio(X)	1.51	0.18	0.06	1.02	0.31	0.12	0.51	0.83	0.00	0.36	0.45	0.38
Avail Cap(c_a), veh/h	251	1376	602	245	1363	597	137	518	659	139	520	666
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	23.1	22.0	49.5	24.6	22.8	52.8	44.2	25.3	52.8	41.0	29.1
Incr Delay (d2), s/veh	249.6	0.3	0.2	63.6	0.6	0.4	4.1	7.9	0.0	2.4	0.9	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%)veh/ln	25.4	2.7	0.7	12.1	4.8	1.5	1.7	10.3	0.0	1.0	4.7	5.0
LnGrp Delay(d),s/veh	298.9	23.4	22.2	113.3	25.2	23.2	56.8	52.1	25.3	55.3	41.9	29.6
LnGrp LOS	F	C	C	F	C	C	E	D	C	E	D	C
Approach Vol, veh/h	669			739			362			398		
Approach Delay, s/veh	179.8			54.9			52.6			36.7		
Approach LOS	F			D			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.6	52.2	12.1	29.1	22.0	51.8	11.5	29.7				
Change Period (Y+Rc), s	* 5.7	7.5	* 5.7	6.8	* 5.7	7.5	* 5.7	6.8				
Max Green Setting (Gmax), s	* 16	32.4	* 8.9	32.1	* 16	32.0	* 9	32.0				
Max Q Clear Time (g_c+I1), s	17.9	7.4	5.2	13.2	18.3	11.5	4.0	20.3				
Green Ext Time (p_c), s	0.0	4.3	0.0	3.2	0.0	4.1	0.0	2.6				
Intersection Summary												
HCM 2010 Ctrl Delay				89.7								
HCM 2010 LOS	F											
Notes												

Existing + Project PM 2334 - Safari Highlands Ranch  
 12: San Pasqual Valley Rd & Safari Park Driveway 9/7/2016

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	8	315	344	1	19	229
Future Vol, veh/h	8	315	344	1	19	229
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Free
Storage Length	410	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	339	370	1	20	246
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	371	0	-	0	726	-
Stage 1	-	-	-	-	370	-
Stage 2	-	-	-	-	356	-
Critical Hdwy	4.14	-	-	-	6.63	-
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.22	-	-	-	3.519	-
Pot Cap-1 Maneuver	1184	-	-	-	375	0
Stage 1	-	-	-	-	670	0
Stage 2	-	-	-	-	708	0
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1184	-	-	-	372	-
Mov Cap-2 Maneuver	-	-	-	-	372	-
Stage 1	-	-	-	-	670	-
Stage 2	-	-	-	-	703	-
Approach	EB		WB		SB	
HCM Control Delay, s	0.2		0		15.2	
HCM LOS					C	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1184	-	-	-	372	-
HCM Lane V/C Ratio	0.007	-	-	-	0.055	-
HCM Control Delay (s)	8.1	-	-	-	15.2	0
HCM Lane LOS	A	-	-	-	C	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2	-

Existing + Project PM  
13: Bear Valley Pkwy & San Pasqual Rd

2334 - Safari Highlands Ranch  
9/17/2016

	↖	↗	↑	↘	↙	↓		
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations	↖↗	↖	↖↗	↖	↖↗	↖↗		
Traffic Volume (veh/h)	563	82	1422	638	107	751		
Future Volume (veh/h)	563	82	1422	638	107	751		
Number	3	18	2	12	1	6		
Initial Q (Ob), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	593	86	1497	672	113	791		
Adj No. of Lanes	2	1	2	1	1	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	760	349	1902	830	143	2378		
Arrive On Green	0.22	0.22	0.54	0.54	0.08	0.67		
Sat Flow, veh/h	3442	1583	3632	1544	1774	3632		
Grp Volume(v), veh/h	593	86	1497	672	113	791		
Grp Sat Flow(s), veh/h/ln	1721	1583	1770	1544	1774	1770		
Q Serve(g_s), s	12.1	3.3	25.2	26.5	4.7	7.0		
Cycle Q Clear(g_c), s	12.1	3.3	25.2	26.5	4.7	7.0		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	760	349	1902	830	143	2378		
V/C Ratio(X)	0.78	0.25	0.79	0.81	0.79	0.33		
Avail Cap(c_a), veh/h	1480	681	1902	830	143	2378		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	27.3	23.9	13.8	14.1	33.6	5.2		
Incr Delay (d2), s/veh	1.8	0.4	3.4	8.4	25.1	0.4		
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%), veh/ln	5.9	1.5	13.2	13.1	3.3	3.5		
LnGrp Delay(d), s/veh	29.1	24.3	17.2	22.5	58.7	5.5		
LnGrp LOS	C	C	B	C	E	A		
Approach Vol, veh/h	679		2169		904			
Approach Delay, s/veh	28.5		18.8		12.2			
Approach LOS	C		B		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	10.0	44.0				54.0		20.4
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	6.0	40.0				50.0		32.0
Max Q Clear Time (g_c+I1), s	6.7	28.5				9.0		14.1
Green Ext Time (p_c), s	0.0	10.1				28.9		2.4
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			19.0					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary  
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Synchro 9 Report

Existing + Project PM  
14: Via Rancho Pkwy/Bear Valley Pkwy & Del Lago Blvd/Beethoven Dr

2334 - Safari Highlands Ranch  
9/17/2016

	↖	→	↘	↖	←	↖	↖	↑	↘	↙	↓	↖
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (veh/h)	563	16	77	48	25	10	48	1709	96	8	847	318
Future Volume (veh/h)	563	16	77	48	25	10	48	1709	96	8	847	318
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	624	0	0	45	37	11	52	1858	104	9	921	346
Adj No. of Lanes	2	0	1	1	1	0	2	2	1	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	718	0	320	117	91	27	102	1956	875	16	2704	842
Arrive On Green	0.20	0.00	0.00	0.07	0.07	0.07	0.03	0.55	0.55	0.01	0.53	0.53
Sat Flow, veh/h	3548	0	1583	1774	1373	408	3442	3539	1583	1774	5085	1583
Grp Volume(v), veh/h	624	0	0	45	0	48	52	1858	104	9	921	346
Grp Sat Flow(s), veh/h/ln	1774	0	1583	1774	0	1782	1721	1770	1583	1774	1695	1583
Q Serve(g_s), s	18.0	0.0	0.0	2.6	0.0	2.7	1.6	52.3	3.3	0.5	11.0	13.9
Cycle Q Clear(g_c), s	18.0	0.0	0.0	2.6	0.0	2.7	1.6	52.3	3.3	0.5	11.0	13.9
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	718	0	320	117	0	118	102	1956	875	16	2704	842
V/C Ratio(X)	0.87	0.00	0.00	0.38	0.00	0.41	0.51	0.95	0.12	0.58	0.34	0.41
Avail Cap(c_a), veh/h	888	0	396	721	0	724	231	1956	875	67	2704	842
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.9	0.0	0.0	47.4	0.0	47.4	50.6	22.3	11.3	52.3	14.2	14.8
Incr Delay (d2), s/veh	7.8	0.0	0.0	2.0	0.0	2.2	3.9	11.6	0.3	29.5	0.3	1.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	9.6	0.0	0.0	1.3	0.0	1.4	0.8	28.4	1.5	0.4	5.2	6.4
LnGrp Delay(d), s/veh	48.7	0.0	0.0	49.4	0.0	49.7	54.5	33.9	11.6	81.8	14.5	16.3
LnGrp LOS	D			D		D	D	C	B	F	B	B
Approach Vol, veh/h	624			93			2014					1276
Approach Delay, s/veh	48.7			49.5			33.2					15.5
Approach LOS	D			D			C					B
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.4	63.0		25.9	7.6	60.8		11.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	4.0	58.5		26.5	7.1	55.4		43.0				
Max Q Clear Time (g_c+I1), s	2.5	54.3		20.0	3.6	15.9		4.7				
Green Ext Time (p_c), s	0.0	4.0		1.4	0.0	31.7		0.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				30.4								
HCM 2010 LOS				C								
<b>Notes</b>												

HCM 2010 Signalized Intersection Summary  
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Synchro 9 Report

Existing + Project PM 2334 - Safari Highlands Ranch  
 15: I-15 NB Ramps/Westfield Mall Driveway & Bear Valley Pkwy 9/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	224	501	129	305	747	38	324	339	1088	31	229	241
Future Volume (veh/h)	224	501	129	305	747	38	324	339	1088	31	229	241
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	229	511	132	311	762	39	331	346	1110	32	234	246
Adj No. of Lanes	2	2	1	2	3	1	2	2	2	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	408	1408	630	416	2034	632	379	1004	1127	210	1045	467
Arrive On Green	0.12	0.40	0.40	0.12	0.40	0.40	0.11	0.28	0.28	0.12	0.30	0.30
Sat Flow, veh/h	3442	3539	1583	3442	5085	1581	3442	3539	2787	1774	3539	1583
Grp Volume(v), veh/h	229	511	132	311	762	39	331	346	1110	32	234	246
Grp Sat Flow(s), veh/h/ln	1721	1770	1583	1721	1695	1581	1721	1770	1393	1774	1770	1583
Q Serve(g_s), s	8.5	13.7	7.4	11.8	14.3	1.7	12.8	10.5	38.3	2.2	6.7	17.5
Cycle Q Clear(g_c), s	8.5	13.7	7.4	11.8	14.3	1.7	12.8	10.5	38.3	2.2	6.7	17.5
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	408	1408	630	416	2034	632	379	1004	1127	210	1045	467
V/C Ratio(X)	0.56	0.36	0.21	0.75	0.37	0.06	0.87	0.34	0.98	0.15	0.22	0.53
Avail Cap(c_a), veh/h	408	1408	630	416	2034	632	390	1004	1127	210	1045	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.2	28.6	26.7	57.4	28.6	16.6	59.2	38.4	25.9	53.4	35.9	39.7
Incr Delay (d2), s/veh	5.5	0.7	0.8	11.7	0.5	0.2	18.9	0.9	23.4	1.5	0.5	4.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	4	6.8	3.4	6.3	6.8	0.8	7.1	5.3	24.5	1.2	3.4	8.2
LnGrp Delay(d), s/veh	61.7	29.3	27.5	69.0	29.1	16.8	78.0	39.3	49.3	54.9	36.4	43.9
LnGrp LOS	E	C	C	E	C	B	E	D	D	D	D	D
Approach Vol, veh/h	872			1112			1787			512		
Approach Delay, s/veh	37.5			39.8			52.7			41.2		
Approach LOS	D			D			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	22.0	60.5	20.6	45.9	21.7	60.8	22.1	44.4				
Change Period (Y+Rc), s	5.7	6.4	* 5.7	6.1	* 5.7	6.4	6.1	* 6.1				
Max Green Setting (Gmax), s	40.5	* 15	39.0	* 16	40.8	16.0	* 38					
Max Q Clear Time (g_c+H), s	15.7	14.8	19.5	10.5	16.3	4.2	40.3					
Green Ext Time (p_c), s	0.3	9.2	0.1	2.3	0.3	9.2	1.9	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	44.9											
HCM 2010 LOS	D											
Notes												

Existing + Project PM 2334 - Safari Highlands Ranch  
 16: I-15 SB Ramps/Del Lago Blvd & Bear Valley Pkwy 9/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	119	251	260	922	303	61	119	125	500	103	157	137
Future Volume (veh/h)	119	251	260	922	303	61	119	125	500	103	157	137
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	0.99	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	121	256	265	941	309	62	121	128	510	105	160	140
Adj No. of Lanes	1	2	2	2	2	1	1	2	1	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	212	812	401	1085	1520	799	142	774	845	143	786	346
Arrive On Green	0.12	0.23	0.23	0.32	0.43	0.43	0.08	0.22	0.22	0.08	0.22	0.22
Sat Flow, veh/h	1774	3539	1750	3442	3539	1562	1774	3539	1583	1774	3539	1561
Grp Volume(v), veh/h	121	256	265	941	309	62	121	128	510	105	160	140
Grp Sat Flow(s), veh/h/ln	1774	1770	1770	1770	1562	1774	1770	1583	1774	1770	1561	1561
Q Serve(g_s), s	10.3	9.6	17.6	41.2	8.7	1.0	10.8	4.7	0.0	9.3	5.9	12.3
Cycle Q Clear(g_c), s	10.3	9.6	17.6	41.2	8.7	1.0	10.8	4.7	0.0	9.3	5.9	12.3
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	212	812	401	1085	1520	799	142	774	845	143	786	346
V/C Ratio(X)	0.57	0.32	0.66	0.87	0.20	0.08	0.86	0.17	0.60	0.74	0.20	0.40
Avail Cap(c_a), veh/h	212	812	401	1085	1520	799	162	774	845	195	841	371
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.6	51.2	35.7	51.6	28.5	7.5	72.7	50.7	25.6	71.9	50.7	53.2
Incr Delay (d2), s/veh	10.7	1.0	8.3	7.6	0.1	0.0	30.8	0.5	3.2	9.0	0.1	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	7.7	4.8	4.7	20.8	4.3	0.7	6.5	2.3	16.2	4.9	2.9	5.4
LnGrp Delay(d), s/veh	77.3	52.2	43.9	59.3	28.6	7.5	103.5	51.1	28.8	80.9	50.8	54.0
LnGrp LOS	E	D	D	E	C	A	F	D	C	F	D	D
Approach Vol, veh/h	642			1312			759			405		
Approach Delay, s/veh	53.5			49.6			44.5			59.7		
Approach LOS	D			D			D			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	56.8	43.1	18.5	41.6	24.8	75.1	19.0	41.1				
Change Period (Y+Rc), s	6.4	* 6.4	* 5.7	6.1	* 5.7	6.4	6.1	* 6.1				
Max Green Setting (Gmax), s	40.5	* 37	* 15	38.0	* 19	64.4	17.6	* 35				
Max Q Clear Time (g_c+H), s	19.6	12.8	14.3	12.3	10.7	11.3	6.7					
Green Ext Time (p_c), s	2.0	2.3	0.0	1.7	0.1	6.5	0.9	2.8				
Intersection Summary												
HCM 2010 Ctrl Delay	50.5											
HCM 2010 LOS	D											
Notes												

Existing + Project PM  
17: Sierra Linda Dr/Ryan Dr & San Pasqual Rd

2334 - Safari Highlands Ranch  
02/16/2017

Intersection												
Int Delay, s/veh 1.6												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↑	↔	↔	↔			↔			↔	
Traffic Vol, veh/h	50	660	37	3	301	0	25	2	6	0	2	28
Future Vol, veh/h	50	660	37	3	301	0	25	2	6	0	2	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	190	-	0	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	54	717	40	3	327	0	27	2	7	0	2	30

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	327	0	0	717
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.218
Pot Cap-1 Maneuver	1233	-	-	884
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1233	-	-	884
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	30.6	11.3
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	176	1233	-	-	884	-	-	600
HCM Lane V/C Ratio	0.204	0.044	-	-	0.004	-	-	0.054
HCM Control Delay (s)	30.6	8.1	-	-	9.1	-	-	11.3
HCM Lane LOS	D	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.7	0.1	-	-	0	-	-	0.2

Existing + Project PM  
18: San Pasqual Rd & Old Milky Way

2334 - Safari Highlands Ranch  
06/21/2017

Intersection						
Int Delay, s/veh 1.8						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑	↔		↑
Traffic Vol, veh/h	80	28	365	266	7	315
Future Vol, veh/h	80	28	365	266	7	315
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	100	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	87	30	397	289	8	342

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	755	397	0
Stage 1	397	-	-
Stage 2	358	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	376	652	-
Stage 1	679	-	-
Stage 2	707	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	373	652	-
Mov Cap-2 Maneuver	373	-	-
Stage 1	679	-	-
Stage 2	701	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.9	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	420	1162	-
HCM Lane V/C Ratio	-	-	0.28	0.007	-
HCM Control Delay (s)	-	-	16.9	8.1	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.1	0	-

## **APPENDIX H**

### **PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS EXISTING + CUMULATIVE PROJECTS**



Existing + Cumulative Projects AM  
1: Cloverdale Rd & Rockwood Rd

2334 - Safari Highlands Ranch  
8/30/2016

Intersection						
Int Delay, s/veh	7.6					
<b>Movement</b>	<b>WBL</b>	<b>WBR</b>	<b>NBT</b>	<b>NBR</b>	<b>SBL</b>	<b>SBT</b>
Traffic Vol, veh/h	278	23	33	191	54	94
Future Vol, veh/h	278	23	33	191	54	94
Conflicting Peds, #/hr	0	0	0	5	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	65	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	302	25	36	208	59	102
<b>Major/Minor</b>	<b>Minor1</b>	<b>Major1</b>		<b>Major2</b>		
Conflicting Flow All	360	140	0	0	243	0
Stage 1	140	-	-	-	-	-
Stage 2	220	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	639	908	-	-	1323	-
Stage 1	887	-	-	-	-	-
Stage 2	817	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	608	908	-	-	1323	-
Mov Cap-2 Maneuver	651	-	-	-	-	-
Stage 1	887	-	-	-	-	-
Stage 2	777	-	-	-	-	-
<b>Approach</b>	<b>WB</b>	<b>NB</b>		<b>SB</b>		
HCM Control Delay, s	15.5	0		2.9		
HCM LOS	C					
<b>Minor Lane/Major Mvmt</b>	<b>NBT</b>	<b>NBR</b>	<b>WBLn1</b>	<b>SBL</b>	<b>SBT</b>	
Capacity (veh/h)	-	-	665	1323	-	
HCM Lane V/C Ratio	-	-	0.492	0.044	-	
HCM Control Delay (s)	-	-	15.5	7.8	-	
HCM Lane LOS	-	-	C	A	-	
HCM 95th %tile Q(veh)	-	-	2.7	0.1	-	

Existing + Cumulative Projects AM  
2: Rockwood Rd & Old Ranch Rd

2334 - Safari Highlands Ranch  
8/30/2016

Intersection										
Intersection Delay, s/veh	8.5									
Intersection LOS	A									
<b>Movement</b>	<b>EBU</b>	<b>EBL</b>	<b>EBT</b>	<b>WBU</b>	<b>WBT</b>	<b>WBR</b>	<b>SBU</b>	<b>SBL</b>	<b>SBT</b>	
Traffic Vol, veh/h	0	103	23	0	53	1	0	1	154	
Future Vol, veh/h	0	103	23	0	53	1	0	1	154	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	
Mvmt Flow	0	112	25	0	58	1	0	1	167	
Number of Lanes	0	1	1	0	1	0	0	1	1	
<b>Approach</b>	<b>EB</b>			<b>WB</b>			<b>SB</b>			
Opposing Approach	WB			EB						
Opposing Lanes	1			2			0			
Conflicting Approach Left	SB						WB			
Conflicting Lanes Left	2			0			1			
Conflicting Approach Right				SB			EB			
Conflicting Lanes Right	0			2			2			
HCM Control Delay	9			8.3			8.2			
HCM LOS	A			A			A			
<b>Lane</b>	<b>EBLn1</b>	<b>EBLn2</b>	<b>WBLn1</b>	<b>SBLn1</b>	<b>SBLn2</b>					
Vol Left, %	100%	0%	0%	100%	0%					
Vol Thru, %	0%	100%	98%	0%	0%					
Vol Right, %	0%	0%	2%	0%	100%					
Sign Control	Stop	Stop	Stop	Stop	Stop					
Traffic Vol by Lane	103	23	54	1	154					
LT Vol	103	0	0	1	0					
Through Vol	0	23	53	0	0					
RT Vol	0	0	1	0	154					
Lane Flow Rate	112	25	59	1	167					
Geometry Grp	7	7	4	7	7					
Degree of Util (X)	0.17	0.035	0.08	0.002	0.202					
Departure Headway (Hd)	5.471	4.97	4.886	5.557	4.353					
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes					
Cap	657	722	735	646	827					
Service Time	3.19	2.688	2.906	3.27	2.066					
HCM Lane V/C Ratio	0.17	0.035	0.08	0.002	0.202					
HCM Control Delay	9.3	7.9	8.3	8.3	8.2					
HCM Lane LOS	A	A	A	A	A					
HCM 95th-tile Q	0.6	0.1	0.3	0	0.8					

Existing + Cumulative Projects AM  
3: Rockwood Rd & Site Access

2334 - Safari Highlands Ranch  
8/30/2016

Intersection						
Int Delay, s/veh	0					
<b>Movement</b>						
	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	0	24	54	0	0	0
Future Vol, veh/h	0	24	54	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	26	59	0	0	0
<b>Major/Minor</b>						
	Major1		Major2		Minor2	
Conflicting Flow All	59	0	-	0	85	59
Stage 1	-	-	-	-	59	-
Stage 2	-	-	-	-	26	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1545	-	-	-	916	1007
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	997	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1545	-	-	-	916	1007
Mov Cap-2 Maneuver	-	-	-	-	916	-
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	997	-
<b>Approach</b>						
	EB		WB		SB	
HCM Control Delay, s	0		0		0	
HCM LOS					A	
<b>Minor Lane/Major Mvmt</b>						
	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1545	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	-	0	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	-	

Existing + Cumulative Projects AM  
4: Centre City Pkwy & Felicita Rd

2334 - Safari Highlands Ranch  
8/30/2016

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
<b>Movement</b>	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Traffic Volume (veh/h)	122	342	24	386	473	203	79	404	130	252	595	118
Future Volume (veh/h)	122	342	24	386	473	203	79	404	130	252	595	118
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	133	372	26	420	514	221	86	439	141	274	647	128
Adj No. of Lanes	2	2	0	2	2	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	198	716	50	495	1060	470	141	1345	599	340	1549	693
Arrive On Green	0.06	0.21	0.21	0.14	0.30	0.30	0.04	0.38	0.38	0.10	0.44	0.44
Sat Flow, veh/h	3442	3357	234	3442	3539	1569	3442	3539	1577	3442	3539	1582
Grp Volume(v), veh/h	133	195	203	420	514	221	86	439	141	274	647	128
Grp Sat Flow(s), veh/h/ln	1721	1770	1822	1721	1770	1569	1721	1770	1577	1721	1770	1582
Q Serve(g_s), s	3.7	9.5	9.6	11.6	11.6	11.2	2.4	8.6	5.9	7.6	12.2	4.8
Cycle Q Clear(g_c), s	3.7	9.5	9.6	11.6	11.6	11.2	2.4	8.6	5.9	7.6	12.2	4.8
Prop In Lane	1.00		0.13	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	198	377	389	495	1060	470	141	1345	599	340	1549	693
V/C Ratio(X)	0.67	0.52	0.52	0.85	0.49	0.47	0.61	0.33	0.24	0.81	0.42	0.18
Avail Cap(c_a), veh/h	283	672	692	565	1635	725	212	1345	599	353	1549	693
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.0	33.9	33.9	40.7	28.0	27.8	45.9	21.4	20.6	43.0	18.8	16.7
Incr Delay (d2), s/veh	3.9	1.1	1.1	10.6	0.3	0.7	4.2	0.6	0.9	12.4	0.8	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.9	4.8	5.0	6.2	5.7	5.0	1.2	4.3	2.7	4.2	6.1	2.2
LnGrp Delay(d), s/veh	48.9	35.0	35.0	51.3	28.3	28.6	50.2	22.0	21.5	55.4	19.7	17.3
LnGrp LOS	D	C	C	D	C	C	D	C	C	E	B	B
Approach Vol, veh/h	531			1155				666			1049	
Approach Delay, s/veh	38.5			36.7				25.5			28.7	
Approach LOS	D			D				C			C	
<b>Timer</b>	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.6	41.0	18.0	24.8	8.0	46.6	9.6	33.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	10.0	37.0	16.0	37.0	6.0	41.0	8.0	45.0				
Max Q Clear Time (g_c+I1), s	9.6	10.6	13.6	11.6	4.4	14.2	5.7	13.6				
Green Ext Time (p_c), s	0.0	8.6	0.4	7.0	0.0	8.6	0.1	7.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				32.3								
HCM 2010 LOS				C								

Existing + Cumulative Projects AM  
5: Escondido Blvd & Felicita Ave/Felicita Ave #1

2334 - Safari Highlands Ranch  
02/16/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↕	↔	↕	↕	↔	↕	↕
Traffic Volume (veh/h)	83	443	145	100	789	29	135	273	54	69	308	271
Future Volume (veh/h)	83	443	145	100	789	29	135	273	54	69	308	271
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	90	482	158	109	858	32	147	297	59	75	335	295
Adj No. of Lanes	2	2	0	1	2	1	2	0	1	2	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	158	884	288	140	1311	583	302	1178	231	436	716	618
Arrive On Green	0.05	0.34	0.34	0.08	0.37	0.37	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	3442	2623	854	1774	3539	1574	790	2951	578	1020	1793	1548
Grp Volume(v), veh/h	90	324	316	109	858	32	147	176	180	75	331	299
Grp Sat Flow(s),veh/h/ln	1721	1770	1708	1774	1770	1574	790	1770	1760	1020	1770	1572
Q Serve(g_s), s	1.9	10.9	11.0	4.4	14.8	1.0	12.4	4.9	5.0	3.9	10.1	10.3
Cycle Q Clear(g_c), s	1.9	10.9	11.0	4.4	14.8	1.0	22.8	4.9	5.0	8.9	10.1	10.3
Prop In Lane	1.00		0.50	1.00		1.00	1.00		0.33	1.00		0.99
Lane Grp Cap(c), veh/h	158	597	576	140	1311	583	302	707	703	436	707	628
V/C Ratio(X)	0.57	0.54	0.55	0.78	0.65	0.05	0.49	0.25	0.26	0.17	0.47	0.48
Avail Cap(c_a), veh/h	259	810	781	254	1861	828	338	786	781	482	786	698
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.2	19.7	19.7	33.1	19.2	14.8	24.8	14.7	14.7	17.7	16.2	16.3
Incr Delay (d2), s/veh	3.2	0.8	0.8	8.9	0.6	0.0	1.2	0.2	0.2	0.2	0.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%)veh/ln	1.0	5.4	5.3	2.5	7.3	0.4	2.8	2.4	2.4	1.1	5.0	4.6
LnGrp Delay(d),s/veh	37.4	20.5	20.5	42.0	19.7	14.9	26.0	14.9	14.9	17.9	16.7	16.9
LnGrp LOS	D	C	C	D	B	B	C	B	B	B	B	B
Approach Vol, veh/h	730			999				503			705	
Approach Delay, s/veh	22.6			22.0				18.1			16.9	
Approach LOS	C			C				B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	33.7		10.3	29.2	33.7		7.9	31.6				
Change Period (Y+Rc), s	4.5		4.5	4.5	4.5		4.5	4.5				
Max Green Setting (Gmax), s	32.5		10.5	33.5	32.5		5.5	38.5				
Max Q Clear Time (g_c+I1), s	24.8		6.4	13.0	12.3		3.9	16.8				
Green Ext Time (p_c), s	4.3		0.1	10.0	7.8		0.0	10.4				
Intersection Summary												
HCM 2010 Ctrl Delay				20.3								
HCM 2010 LOS	C											

Existing + Cumulative Projects AM  
6: Juniper St & Felicita Ave #1/E. 17th Ave #1

2334 - Safari Highlands Ranch  
02/16/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↕	↔	↕	↕	↔	↕	↕
Traffic Volume (veh/h)	142	348	131	45	594	57	72	458	15	30	475	220
Future Volume (veh/h)	142	348	131	45	594	57	72	458	15	30	475	220
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.94	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	154	378	142	49	646	62	78	498	16	33	516	239
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	188	677	254	369	685	574	174	666	21	197	692	723
Arrive On Green	0.11	0.53	0.53	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	1774	1289	484	874	1863	1560	697	1791	58	882	1863	1494
Grp Volume(v), veh/h	154	0	520	49	646	62	78	0	514	33	516	239
Grp Sat Flow(s),veh/h/ln	1774	0	1773	874	1863	1560	697	0	1849	882	1863	1494
Q Serve(g_s), s	7.4	0.0	17.2	3.5	29.3	2.3	9.6	0.0	21.2	3.0	21.1	8.7
Cycle Q Clear(g_c), s	7.4	0.0	17.2	6.9	29.3	2.3	30.6	0.0	21.2	24.1	21.1	8.7
Prop In Lane	1.00		0.27	1.00		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	188	0	932	369	685	574	174	0	687	197	692	723
V/C Ratio(X)	0.82	0.00	0.56	0.13	0.94	0.11	0.45	0.00	0.75	0.17	0.75	0.33
Avail Cap(c_a), veh/h	233	0	983	373	692	580	174	0	687	197	692	723
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.3	0.0	13.9	20.9	26.7	18.2	37.2	0.0	23.9	34.4	23.9	14.2
Incr Delay (d2), s/veh	16.7	0.0	0.6	0.2	21.2	0.1	1.8	0.0	4.5	0.4	4.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%)veh/ln	5.0	0.0	8.5	0.9	19.1	1.0	1.9	0.0	11.6	0.7	11.6	3.6
LnGrp Delay(d),s/veh	55.0	0.0	14.6	21.0	48.0	18.3	39.0	0.0	28.4	34.8	28.3	14.5
LnGrp LOS	D		B	C	D	B	D		C	C	C	B
Approach Vol, veh/h	674			757				592			788	
Approach Delay, s/veh	23.8			43.8				29.8			24.4	
Approach LOS	C			D				C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4	6		7	8					
Phs Duration (G+Y+Rc), s	37.0		50.5	37.0		13.8	36.7					
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5	4.5					
Max Green Setting (Gmax), s	32.6		48.5	32.5		11.5	32.5					
Max Q Clear Time (g_c+I1), s	32.6		19.2	26.1		9.4	31.3					
Green Ext Time (p_c), s	0.0		9.3	4.1		0.1	0.8					
Intersection Summary												
HCM 2010 Ctrl Delay				30.6								
HCM 2010 LOS	C											

Existing + Cumulative Projects AM  
7: San Pasqual Valley Rd & E 17th Ave

2334 - Safari Highlands Ranch  
8/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔		↔	↔	
Traffic Volume (veh/h)	196	3	163	0	0	3	239	436	0	0	360	355
Future Volume (veh/h)	196	3	163	0	0	3	239	436	0	0	360	355
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	213	3	177	0	0	3	260	474	0	0	391	386
Adj No. of Lanes	0	1	1	0	0	1	0	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	201	3	181	0	0	9	288	1410	0	1	481	475
Arrive On Green	0.11	0.11	0.11	0.00	0.00	0.01	0.16	0.76	0.00	0.00	0.56	0.56
Sat Flow, veh/h	1751	25	1583	0	0	1583	1774	1863	0	1774	862	851
Grp Volume(v), veh/h	216	0	177	0	0	3	260	474	0	0	0	777
Grp Sat Flow(s), veh/h/ln	1775	0	1583	0	0	1583	1774	1863	0	1774	0	1713
Q Serve(g_s), s	14.9	0.0	14.5	0.0	0.0	0.2	18.7	10.8	0.0	0.0	0.0	47.7
Cycle Q Clear(g_c), s	14.9	0.0	14.5	0.0	0.0	0.2	18.7	10.8	0.0	0.0	0.0	47.7
Prop In Lane	0.99		1.00	0.00		1.00	1.00		0.00	1.00		0.50
Lane Grp Cap(c), veh/h	203	0	181	0	0	9	288	1410	0	1	0	956
V/C Ratio(X)	1.06	0.00	0.98	0.00	0.00	0.34	0.90	0.34	0.00	0.00	0.00	0.81
Avail Cap(c_a), veh/h	203	0	181	0	0	292	373	1410	0	96	0	956
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.00	0.96	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	57.6	0.0	57.4	0.0	0.0	64.4	53.4	5.2	0.0	0.0	0.0	23.2
Incr Delay (d2), s/veh	78.9	0.0	58.0	0.0	0.0	21.6	20.8	0.6	0.0	0.0	0.0	7.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	8	0.0	9.3	0.0	0.0	0.2	10.8	5.8	0.0	0.0	0.0	24.4
LnGrp Delay(d), s/veh	136.5	0.0	115.3	0.0	0.0	86.0	74.2	5.8	0.0	0.0	0.0	30.7
LnGrp LOS	F		F			F	E	A				C
Approach Vol, veh/h	393			3			734			777		
Approach Delay, s/veh	127.0			86.0			30.0			30.7		
Approach LOS	F			F			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	78.4			5.8	0.0	104.2		20.0				
Change Period (Y+Rc), s	4.7	5.8		5.1	* 4.7	5.8		5.1				
Max Green Setting (Gmax), s	43.1			24.0	* 7	63.4		14.9				
Max Q Clear Time (g_c+I), s	49.7			2.2	0.0	12.8		16.9				
Green Ext Time (p_c), s	0.4	0.0		0.0	0.0	10.9		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				50.4								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary  
N:\2334\Analysis\2016\Synchro\CHEx + CP AM.syn

Synchro 9 Report

Existing + Cumulative Projects AM  
8: Bear Valley Pkwy & San Pasqual Valley Rd

2334 - Safari Highlands Ranch  
8/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	27	415	113	188	559	70	112	318	106	108	622	35
Future Volume (veh/h)	27	415	113	188	559	70	112	318	106	108	622	35
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	29	451	123	204	608	76	122	346	115	117	676	38
Adj No. of Lanes	1	2	1	1	2	0	2	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	82	1056	472	232	1212	151	310	719	235	145	906	51
Arrive On Green	0.05	0.30	0.30	0.13	0.38	0.38	0.09	0.27	0.27	0.08	0.27	0.27
Sat Flow, veh/h	1774	3539	1583	1774	3167	395	3442	2622	858	1774	3407	191
Grp Volume(v), veh/h	29	451	123	204	339	345	122	232	229	117	351	363
Grp Sat Flow(s), veh/h/ln	1774	1583	1774	1770	1793	1721	1770	1711	1774	1770	1829	
Q Serve(g_s), s	1.9	12.3	7.1	13.6	17.6	17.6	4.0	13.1	13.5	7.8	21.8	21.8
Cycle Q Clear(g_c), s	1.9	12.3	7.1	13.6	17.6	17.6	4.0	13.1	13.5	7.8	21.8	21.8
Prop In Lane	1.00		1.00	1.00		0.22	1.00		0.50	1.00		0.10
Lane Grp Cap(c), veh/h	82	1056	472	232	677	686	310	485	469	145	470	486
V/C Ratio(X)	0.35	0.43	0.26	0.88	0.50	0.50	0.39	0.48	0.49	0.81	0.75	0.75
Avail Cap(c_a), veh/h	133	1056	472	271	677	686	315	485	469	169	470	486
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.5	33.8	32.0	51.2	28.3	28.3	51.5	36.4	36.5	54.2	40.3	40.4
Incr Delay (d2), s/veh	2.5	1.3	1.3	24.2	2.6	2.6	0.8	3.3	3.6	21.7	10.3	10.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0	6.2	3.3	8.2	9.1	9.2	1.9	6.9	6.8	4.7	12.0	12.4
LnGrp Delay(d), s/veh	58.0	35.1	33.4	75.4	30.9	30.9	52.3	39.7	40.1	75.9	50.6	50.4
LnGrp LOS	E	D	C	E	C	C	D	D	D	E	D	D
Approach Vol, veh/h	603			888			583			831		
Approach Delay, s/veh	35.9			41.2			42.5			54.1		
Approach LOS	D			D			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	31.4	43.0	16.5	39.1	11.3	53.1	15.5	40.1				
Change Period (Y+Rc), s	5.7	7.2	* 5.7	7.2	* 5.7	7.2	* 5.7	7.2				
Max Green Setting (Gmax), s	33.0	* 11	31.9	* 9	42.3	* 11	31.5					
Max Q Clear Time (g_c+I), s	14.3	6.0	23.8	3.9	19.6	9.8	15.5					
Green Ext Time (p_c), s	0.1	6.9	0.1	3.9	0.0	7.4	0.0	5.8				
Intersection Summary												
HCM 2010 Ctrl Delay				44.0								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary  
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Synchro 9 Report

Existing + Cumulative Projects AM  
9: San Pasqual Valley Rd & Citrus Avenue

2334 - Safari Highlands Ranch  
8/30/2016

Intersection						
Int Delay, s/veh	63.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	117	509	605	38	206	212
Future Vol, veh/h	117	509	605	38	206	212
Conflicting Peds, #/hr	0	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	115	-	-	-	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	127	553	658	41	224	230
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	699	0	-	0	1486	678
Stage 1	-	-	-	-	678	-
Stage 2	-	-	-	-	808	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2,218	-	-	-	3,518	3,318
Pot Cap-1 Maneuver	898	-	-	-	~ 137	452
Stage 1	-	-	-	-	504	-
Stage 2	-	-	-	-	438	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	898	-	-	-	~ 118	452
Mov Cap-2 Maneuver	-	-	-	-	~ 118	-
Stage 1	-	-	-	-	504	-
Stage 2	-	-	-	-	376	-
Approach	EB		WB		SB	
HCM Control Delay, s	1.8		0		255.1	
HCM LOS					F	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	898	-	-	-	118	452
HCM Lane V/C Ratio	0.142	-	-	-	1.898	0.51
HCM Control Delay (s)	9.7	-	-	-	\$ 496	21
HCM Lane LOS	A	-	-	-	F	C
HCM 95th %tile Q(veh)	0.5	-	-	-	17.9	2.8
Notes						
-: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    *: All major volume in platoon						

Existing + Cumulative Projects AM  
10: Summit Drive & San Pasqual Valley Rd (SR 78)

2334 - Safari Highlands Ranch  
02/16/2017

Intersection												
Int Delay, s/veh	7.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔			↔	↔		↔	↔
Traffic Vol, veh/h	10	406	216	10	462	4	91	7	8	10	33	25
Future Vol, veh/h	10	406	216	10	462	4	91	7	8	10	33	25
Conflicting Peds, #/hr	0	0	0	0	0	3	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Stop	-	-	Stop
Storage Length	400	-	-	415	-	-	-	-	50	-	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	441	235	11	502	4	99	8	9	11	36	27
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	510	0	0	676	0	0	1124	1111	559	1113	1227	507
Stage 1	-	-	-	-	-	-	580	580	-	529	529	-
Stage 2	-	-	-	-	-	-	544	531	-	584	698	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2,218	-	-	2,218	-	-	3,518	4,018	3,318	3,518	4,018	3,318
Pot Cap-1 Maneuver	1055	-	-	915	-	-	183	209	529	186	178	566
Stage 1	-	-	-	-	-	-	500	500	-	533	527	-
Stage 2	-	-	-	-	-	-	523	526	-	498	442	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1055	-	-	915	-	-	144	204	529	174	174	565
Mov Cap-2 Maneuver	-	-	-	-	-	-	144	204	-	174	174	-
Stage 1	-	-	-	-	-	-	495	495	-	526	519	-
Stage 2	-	-	-	-	-	-	458	518	-	477	437	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.2			71.4			25.2		
HCM LOS							F			D		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	147	529	1055	-	-	915	-	-	174	565		
HCM Lane V/C Ratio	0.725	0.016	0.01	-	-	0.012	-	-	0.269	0.048		
HCM Control Delay (s)	76.3	11.9	8.4	-	-	9	-	-	33.1	11.7		
HCM Lane LOS	F	B	A	-	-	A	-	-	D	B		
HCM 95th %tile Q(veh)	4.3	0.1	0	-	-	0	-	-	1	0.2		

Existing + Cumulative Projects AM  
 11: San Pasqual Rd/Cloverdale Rd & San Pasqual Valley Rd

2334 - Safari Highlands Ranch  
 8/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	141	266	40	24	286	27	35	62	135	15	153	199
Future Volume (veh/h)	141	266	40	24	286	27	35	62	135	15	153	199
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	153	289	43	26	311	29	38	67	147	16	166	216
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	184	1821	815	104	1663	744	87	320	365	56	287	408
Arrive On Green	0.10	0.51	0.51	0.06	0.47	0.47	0.05	0.17	0.17	0.03	0.15	0.15
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	153	289	43	26	311	29	38	67	147	16	166	216
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	9.7	5.0	1.6	1.6	5.9	1.1	2.4	3.6	9.1	1.0	9.5	13.5
Cycle Q Clear(g_c), s	9.7	5.0	1.6	1.6	5.9	1.1	2.4	3.6	9.1	1.0	9.5	13.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	184	1821	815	104	1663	744	87	320	365	56	287	408
V/C Ratio(X)	0.83	0.16	0.05	0.25	0.19	0.04	0.44	0.21	0.40	0.29	0.58	0.53
Avail Cap(c_a), veh/h	251	1821	815	185	1663	744	123	518	534	139	535	618
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.6	14.8	13.9	51.7	17.7	16.5	53.2	40.9	37.5	54.4	45.2	36.7
Incr Delay (d2), s/veh	15.6	0.2	0.1	1.2	0.2	0.1	3.4	0.3	0.7	2.8	1.8	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%)veh/ln	5.6	2.5	0.7	0.8	2.9	0.5	1.3	1.9	4.0	0.5	5.0	6.0
LnGrp Delay(d),s/veh	66.2	14.9	14.1	52.9	18.0	16.6	56.6	41.2	38.2	57.3	47.0	37.8
LnGrp LOS	E	B	B	D	B	B	E	D	D	E	D	D
Approach Vol, veh/h	485			366			252			398		
Approach Delay, s/veh	31.0			20.3			41.8			42.4		
Approach LOS	C			C			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.5	66.7	11.3	24.5	17.6	61.5	9.3	26.6				
Change Period (Y+Rc), s	* 5.7	7.5	* 5.7	6.8	* 5.7	7.5	* 5.7	6.8				
Max Green Setting (Gmax), s	* 12	36.3	* 8	33.0	* 16	32.0	* 9	32.0				
Max Q Clear Time (g_c+I1), s	3.6	7.0	4.4	15.5	11.7	7.9	3.0	11.1				
Green Ext Time (p_c), s	0.0	3.9	0.0	2.2	0.1	3.7	0.0	2.3				
Intersection Summary												
HCM 2010 Ctrl Delay				33.2								
HCM 2010 LOS				C								
Notes												

HCM 2010 Signalized Intersection Summary  
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Synchro 9 Report

Existing + Cumulative Projects AM  
 12: San Pasqual Valley Rd & Safari Park Driveway

2334 - Safari Highlands Ranch  
 8/30/2016

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	76	224	304	9	3	3
Future Vol, veh/h	76	224	304	9	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Free
Storage Length	410	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	83	243	330	10	3	3
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	340	0	-	0	744	-
Stage 1	-	-	-	-	335	-
Stage 2	-	-	-	-	409	-
Critical Hdwy	4.14	-	-	-	6.63	-
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.22	-	-	-	3.519	-
Pot Cap-1 Maneuver	1216	-	-	-	366	0
Stage 1	-	-	-	-	697	0
Stage 2	-	-	-	-	670	0
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1216	-	-	-	341	-
Mov Cap-2 Maneuver	-	-	-	-	341	-
Stage 1	-	-	-	-	697	-
Stage 2	-	-	-	-	624	-
Approach	EB		WB		SB	
HCM Control Delay, s	2.1		0		15.7	
HCM LOS					C	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1216	-	-	-	341	-
HCM Lane V/C Ratio	0.068	-	-	-	0.01	-
HCM Control Delay (s)	8.2	-	-	-	15.7	0
HCM Lane LOS	A	-	-	-	C	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0	-

HCM 2010 TWSC  
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Synchro 9 Report

Existing + Cumulative Projects AM  
13: Bear Valley Pkwy & San Pasqual Rd

2334 - Safari Highlands Ranch  
8/30/2016

	↖	↗	↑	↘	↙	↓		
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations	↖↗	↖	↖↗	↖	↖	↖↗		
Traffic Volume (veh/h)	591	65	991	304	189	1450		
Future Volume (veh/h)	591	65	991	304	189	1450		
Number	3	18	2	12	1	6		
Initial Q (Ob), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	642	71	1077	330	205	1576		
Adj No. of Lanes	2	1	2	1	1	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	798	367	1698	757	243	2362		
Arrive On Green	0.23	0.23	0.48	0.48	0.14	0.67		
Sat Flow, veh/h	3442	1583	3632	1578	1774	3632		
Grp Volume(v), veh/h	642	71	1077	330	205	1576		
Grp Sat Flow(s),veh/h/ln	1721	1583	1770	1578	1774	1770		
Q Serve(g_s), s	14.0	2.9	18.1	10.9	9.0	21.2		
Cycle Q Clear(g_c), s	14.0	2.9	18.1	10.9	9.0	21.2		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	798	367	1698	757	243	2362		
V/C Ratio(X)	0.80	0.19	0.63	0.44	0.84	0.67		
Avail Cap(c_a), veh/h	1387	638	1698	757	268	2362		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	28.8	24.5	15.4	13.6	33.4	7.9		
Incr Delay (d2), s/veh	2.0	0.3	1.8	1.8	19.6	1.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%) veh/ln	6.8	1.3	9.3	5.2	5.7	10.6		
LnGrp Delay(d),s/veh	30.8	24.8	17.3	15.4	53.0	9.4		
LnGrp LOS	C	C	B	B	D	A		
Approach Vol, veh/h	713		1407		1781			
Approach Delay, s/veh	30.2		16.8		14.4			
Approach LOS	C		B		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	14.9	42.1				57.0		22.4
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	12.0	37.0				53.0		32.0
Max Q Clear Time (g_c+I1), s	11.0	20.1				23.2		16.0
Green Ext Time (p_c), s	0.1	14.7				23.7		2.4

Intersection Summary	
HCM 2010 Ctrl Delay	18.2
HCM 2010 LOS	B

Existing + Cumulative Projects AM  
14: Via Rancho Pkwy/Bear Valley Pkwy & Del Lago Blvd/Beethoven Dr

2334 - Safari Highlands Ranch  
02/16/2017

	↖	→	↘	↖	←	↘	↖	↗	↓	↘		
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖	↖	↖	↖↗	↖	↖↗	↖↗	↖	↖	↖↗	↖
Traffic Volume (veh/h)	208	5	13	90	61	28	17	859	26	18	1723	553
Future Volume (veh/h)	208	5	13	90	61	28	17	859	26	18	1723	553
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	230	0	0	97	67	30	18	934	28	20	1873	601
Adj No. of Lanes	2	0	1	1	1	0	2	2	1	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	344	0	153	235	161	72	58	1791	801	32	2581	803
Arrive On Green	0.10	0.00	0.00	0.13	0.13	0.13	0.02	0.51	0.51	0.02	0.51	0.51
Sat Flow, veh/h	3548	0	1583	1774	1211	542	3442	3539	1582	1774	5085	1581
Grp Volume(v), veh/h	230	0	0	97	0	97	18	934	28	20	1873	601
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	0	1754	1721	1770	1582	1774	1695	1581
Q Serve(g_s), s	4.6	0.0	0.0	3.7	0.0	3.7	0.4	12.9	0.7	0.8	21.0	22.1
Cycle Q Clear(g_c), s	4.6	0.0	0.0	3.7	0.0	3.7	0.4	12.9	0.7	0.8	21.0	22.1
Prop In Lane	1.00		1.00	1.00		0.31	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	344	0	153	235	0	232	58	1791	801	32	2581	803
V/C Ratio(X)	0.67	0.00	0.00	0.41	0.00	0.42	0.31	0.52	0.03	0.62	0.73	0.75
Avail Cap(c_a), veh/h	874	0	390	1043	0	1032	188	1791	801	97	2581	803
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.9	0.0	0.0	29.1	0.0	29.1	35.5	12.1	9.1	35.6	14.0	14.3
Incr Delay (d2), s/veh	2.3	0.0	0.0	1.2	0.0	1.2	3.0	1.1	0.1	17.6	1.8	6.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%) veh/ln	2.3	0.0	0.0	1.9	0.0	1.9	0.2	6.5	0.3	0.6	10.1	10.9
LnGrp Delay(d),s/veh	34.1	0.0	0.0	30.3	0.0	30.3	38.6	13.2	9.2	53.2	15.8	20.6
LnGrp LOS	C			C		C	D	B	A	D	B	C
Approach Vol, veh/h	230			194		980		2494				
Approach Delay, s/veh	34.1			30.3		13.6		17.3				
Approach LOS	C			C		B		B				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.8	41.5		11.6	5.7	41.6		14.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	4.0	37.0		18.0	4.0	37.0		43.0				
Max Q Clear Time (g_c+I1), s	2.8	14.9		6.6	2.4	24.1		5.7				
Green Ext Time (p_c), s	0.0	19.5		0.6	0.0	12.0		0.8				

Intersection Summary	
HCM 2010 Ctrl Delay	18.0
HCM 2010 LOS	B

Notes

Existing + Cumulative Projects AM 2334 - Safari Highlands Ranch  
 15: I-15 NB Ramps/Westfield Mall Driveway & Bear Valley Pkwy 8/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	40	553	69	415	1206	23	157	32	484	4	13	7
Future Volume (veh/h)	40	553	69	415	1206	23	157	32	484	4	13	7
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	42	576	72	432	1256	24	164	33	504	4	14	7
Adj No. of Lanes	2	2	1	2	3	1	2	2	2	1	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	396	1393	623	602	2305	715	213	848	1155	204	1047	468
Arrive On Green	0.12	0.39	0.39	0.17	0.45	0.45	0.06	0.24	0.24	0.12	0.30	0.30
Sat Flow, veh/h	3442	3539	1583	3442	5085	1578	3442	3539	2787	1774	3539	1583
Grp Volume(v), veh/h	42	576	72	432	1256	24	164	33	504	4	14	7
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1578	1721	1770	1393	1774	1770	1583
Q Serve(g_s), s	1.5	16.4	4.0	16.5	24.9	0.9	6.5	1.0	13.5	0.3	0.4	0.4
Cycle Q Clear(g_c), s	1.5	16.4	4.0	16.5	24.9	0.9	6.5	1.0	13.5	0.3	0.4	0.4
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	396	1393	623	602	2305	715	213	848	1155	204	1047	468
V/C Ratio(X)	0.11	0.41	0.12	0.72	0.54	0.03	0.77	0.04	0.44	0.02	0.01	0.01
Avail Cap(c_a), veh/h	396	1393	623	602	2305	715	255	848	1155	204	1047	468
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.1	30.5	26.8	54.1	27.6	13.6	64.2	40.6	18.5	54.5	34.6	34.6
Incr Delay (d2), s/veh	0.5	0.9	0.4	7.2	0.9	0.1	11.3	0.1	1.2	0.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8	8.2	1.8	8.5	11.8	0.4	3.4	0.5	5.4	0.1	0.2	0.2
LnGrp Delay(d),s/veh	55.6	31.4	27.2	61.3	28.5	13.7	75.5	40.7	19.7	54.7	34.6	34.7
LnGrp LOS	E	C	C	E	C	B	E	D	B	D	C	C
Approach Vol, veh/h	690			1712			701			25		
Approach Delay, s/veh	32.5			36.6			33.8			37.9		
Approach LOS	C			D			C			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.0	61.5	14.3	47.2	21.7	69.8	22.1	39.4				
Change Period (Y+Rc), s	5.7	6.4	* 5.7	6.1	* 5.7	6.4	6.1	* 6.1				
Max Green Setting (Gmax), s	44	41.5	* 10	39.0	* 16	49.8	16.0	* 33				
Max Q Clear Time (g_c+I), s	18.4	8.5	2.4	3.5	26.9	2.3	15.5					
Green Ext Time (p_c), s	0.8	13.1	0.1	0.1	0.1	13.0	0.0	2.1				
Intersection Summary												
HCM 2010 Ctrl Delay				35.1								
HCM 2010 LOS				D								
Notes												

Existing + Cumulative Projects AM 2334 - Safari Highlands Ranch  
 16: I-15 SB Ramps/Del Lago Blvd & Bear Valley Pkwy 8/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	171	349	455	939	239	62	21	99	251	62	222	67
Future Volume (veh/h)	171	349	455	939	239	62	21	99	251	62	222	67
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	178	364	474	978	249	65	22	103	261	65	241	73
Adj No. of Lanes	1	2	2	2	2	1	1	2	1	1	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	301	1055	522	1049	1549	803	34	632	765	123	819	366
Arrive On Green	0.17	0.30	0.30	0.30	0.44	0.44	0.02	0.18	0.18	0.07	0.23	0.23
Sat Flow, veh/h	1774	3539	1751	3442	3539	1582	1774	3539	1583	1774	3539	1581
Grp Volume(v), veh/h	178	364	474	978	249	65	22	103	261	65	241	73
Grp Sat Flow(s),veh/h/ln	1774	1770	875	1721	1770	1582	1774	1770	1583	1774	1770	1581
Q Serve(g_s), s	15.6	13.5	38.1	46.4	7.2	1.5	2.1	4.1	0.0	5.9	9.4	6.2
Cycle Q Clear(g_c), s	15.6	13.5	38.1	46.4	7.2	1.5	2.1	4.1	0.0	5.9	9.4	6.2
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	301	1055	522	1049	1549	803	34	632	765	123	819	366
V/C Ratio(X)	0.59	0.34	0.91	0.93	0.16	0.08	0.65	0.16	0.34	0.53	0.29	0.20
Avail Cap(c_a), veh/h	301	1055	522	1051	1549	803	53	632	765	137	819	366
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.4	46.1	43.0	56.7	28.6	7.7	81.8	58.4	26.8	75.5	53.3	52.0
Incr Delay (d2), s/veh	8.3	0.9	22.1	14.3	0.0	0.0	19.0	0.6	1.2	3.5	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3	6.8	10.8	24.1	3.5	0.7	1.2	2.1	7.7	3.0	4.6	2.8
LnGrp Delay(d),s/veh	72.7	47.0	65.1	71.0	28.6	7.7	100.8	58.9	28.0	79.0	53.5	52.3
LnGrp LOS	E	D	E	E	C	A	F	E	C	E	D	D
Approach Vol, veh/h	1016			1292			386			379		
Approach Delay, s/veh	59.9			59.6			40.4			57.6		
Approach LOS	E			E			D			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	57.6	56.5	8.9	45.0	34.2	79.9	17.8	36.1				
Change Period (Y+Rc), s	6.4	* 6.4	* 5.7	6.1	* 5.7	6.4	6.1	* 6.1				
Max Green Setting (Gmax), s	33	* 50	* 5	38.0	* 29	72.9	13.0	* 30				
Max Q Clear Time (g_c+I), s	40.1	4.1	11.4	17.6	9.2	7.9	6.1					
Green Ext Time (p_c), s	1.6	3.0	0.0	1.9	0.3	6.2	0.1	1.5				
Intersection Summary												
HCM 2010 Ctrl Delay				57.1								
HCM 2010 LOS				E								
Notes												

Existing + Cumulative Projects AM  
17: Sierra Linda Dr/Ryan Dr & San Pasqual Rd

2334 - Safari Highlands Ranch  
02/16/2017

Intersection												
Int Delay, s/veh 2.6												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↕	↔	↕	↕		↕	↕		↕	↕
Traffic Vol, veh/h	22	156	19	1	615	3	39	0	4	2	1	63
Future Vol, veh/h	22	156	19	1	615	3	39	0	4	2	1	63
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	190	-	0	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	170	21	1	668	3	42	0	4	2	1	68

Major/Minor	Major1	Major2	Minor1	Minor2								
Conflicting Flow All	672	0	0	170	0	0	924	891	170	892	889	670
Stage 1	-	-	-	-	-	-	217	217	-	672	672	-
Stage 2	-	-	-	-	-	-	707	674	-	220	217	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.5	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2,218	-	-	2,218	-	-	3,518	4,018	3,318	3,518	4,018	3,318
Pot Cap-1 Maneuver	919	-	-	1407	-	-	227	282	874	263	282	457
Stage 1	-	-	-	-	-	-	785	723	-	445	454	-
Stage 2	-	-	-	-	-	-	426	454	-	782	723	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	919	-	-	1407	-	-	188	274	874	256	274	457
Mov Cap-2 Maneuver	-	-	-	-	-	-	188	274	-	256	274	-
Stage 1	-	-	-	-	-	-	764	704	-	433	454	-
Stage 2	-	-	-	-	-	-	361	454	-	758	704	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0	28	14.7
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	203	919	-	-	1407	-	-	442
HCM Lane V/C Ratio	0.23	0.026	-	-	0.001	-	-	0.162
HCM Control Delay (s)	28	9	-	-	7.6	-	-	14.7
HCM Lane LOS	D	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.9	0.1	-	-	0	-	-	0.6

Existing + Cumulative Projects AM  
18: San Pasqual Rd & Old Milky Way

2334 - Safari Highlands Ranch  
06/21/2017

Intersection						
Int Delay, s/veh 6.5						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↕	↕	↔	↔
Traffic Vol, veh/h	243	1	135	47	10	354
Future Vol, veh/h	243	1	135	47	10	354
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	100	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	264	1	147	51	11	385

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	554	147	0	0	147	0
Stage 1	147	-	-	-	-	-
Stage 2	407	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3,518	3,318	-	-	2,218	-
Pot Cap-1 Maneuver	493	900	-	-	1435	-
Stage 1	880	-	-	-	-	-
Stage 2	672	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	488	900	-	-	1435	-
Mov Cap-2 Maneuver	488	-	-	-	-	-
Stage 1	880	-	-	-	-	-
Stage 2	665	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.7	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	489	1435	-
HCM Lane V/C Ratio	-	-	0.542	0.008	-
HCM Control Delay (s)	-	-	20.7	7.5	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	3.2	0	-

HCM 2010 TWSC  
1: Cloverdale Rd & Rockwood Rd

Existing + Cumulative Projects PM  
8/30/2016

Intersection						
Int Delay, s/veh	2.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	93	5	110	165	5	55
Future Vol, veh/h	93	5	110	165	5	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	65	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	101	5	120	179	5	60
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	280	209	0	0	299	0
Stage 1	209	-	-	-	-	-
Stage 2	71	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	710	831	-	-	1262	-
Stage 1	826	-	-	-	-	-
Stage 2	952	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	707	831	-	-	1262	-
Mov Cap-2 Maneuver	718	-	-	-	-	-
Stage 1	826	-	-	-	-	-
Stage 2	948	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	10.8	0		0.7		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	723	1262	-	
HCM Lane V/C Ratio	-	-	0.147	0.004	-	
HCM Control Delay (s)	-	-	10.8	7.9	-	
HCM Lane LOS	-	-	B	A	-	
HCM 95th %tile Q(veh)	-	-	0.5	0	-	

HCM 2010 AWSC  
2: Rockwood Rd & Old Ranch Rd

Existing + Cumulative Projects PM  
8/30/2016

Intersection										
Intersection Delay, s/veh	8.3									
Intersection LOS	A									
Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBU	SBL	SBR	
Traffic Vol, veh/h	0	105	38	0	32	6	0	5	95	
Future Vol, veh/h	0	105	38	0	32	6	0	5	95	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	
Mvmt Flow	0	114	41	0	35	7	0	5	103	
Number of Lanes	0	1	1	0	1	0	0	1	1	
Approach	EB	WB				SB				
Opposing Approach	WB	EB								
Opposing Lanes	1	2				0				
Conflicting Approach Left	SB					WB				
Conflicting Lanes Left	2	0				1				
Conflicting Approach Right		SB				EB				
Conflicting Lanes Right	0	2				2				
HCM Control Delay	8.8	8				7.7				
HCM LOS	A	A				A				
Lane	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2					
Vol Left, %	100%	0%	0%	100%	0%					
Vol Thru, %	0%	100%	84%	0%	0%					
Vol Right, %	0%	0%	16%	0%	100%					
Sign Control	Stop	Stop	Stop	Stop	Stop					
Traffic Vol by Lane	105	38	38	5	95					
LT Vol	105	0	0	5	0					
Through Vol	0	38	32	0	0					
RT Vol	0	0	6	0	95					
Lane Flow Rate	114	41	41	5	103					
Geometry Grp	7	7	4	7	7					
Degree of Util (X)	0.166	0.054	0.054	0.008	0.125					
Departure Headway (Hd)	5.247	4.746	4.673	5.544	4.341					
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes					
Cap	677	746	769	649	830					
Service Time	3.029	2.527	2.685	3.248	2.044					
HCM Lane V/C Ratio	0.168	0.055	0.053	0.008	0.124					
HCM Control Delay	9.1	7.8	8	8.3	7.7					
HCM Lane LOS	A	A	A	A	A					
HCM 95th %tile Q	0.6	0.2	0.2	0	0.4					

HCM 2010 TWSC  
3: Rockwood Rd & Site Access

Existing + Cumulative Projects PM  
8/30/2016

Intersection						
Int Delay, s/veh	0					
<b>Movement</b>						
	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	0	43	38	0	0	0
Future Vol, veh/h	0	43	38	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	47	41	0	0	0
<b>Major/Minor</b>						
	Major1		Major2		Minor2	
Conflicting Flow All	41	0	-	0	88	41
Stage 1	-	-	-	-	41	-
Stage 2	-	-	-	-	47	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1568	-	-	-	913	1030
Stage 1	-	-	-	-	981	-
Stage 2	-	-	-	-	975	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1568	-	-	-	913	1030
Mov Cap-2 Maneuver	-	-	-	-	913	-
Stage 1	-	-	-	-	981	-
Stage 2	-	-	-	-	975	-
<b>Approach</b>						
	EB		WB		SB	
HCM Control Delay, s	0		0		0	
HCM LOS					A	
<b>Minor Lane/Major Mvmt</b>						
	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1568	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	-	0	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	-	

HCM 2010 Signalized Intersection Summary  
4: Centre City Pkwy & Felicita Rd

Existing + Cumulative Projects PM  
8/30/2016

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
<b>Movement</b>	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Traffic Volume (veh/h)	189	516	49	281	323	157	159	684	331	410	526	91
Future Volume (veh/h)	189	516	49	281	323	157	159	684	331	410	526	91
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	193	527	50	287	330	160	162	698	338	418	537	93
Adj No. of Lanes	2	2	0	2	2	1	2	2	1	2	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	261	803	76	350	962	418	228	1267	559	480	1527	671
Arrive On Green	0.08	0.25	0.25	0.10	0.27	0.27	0.07	0.36	0.36	0.14	0.43	0.43
Sat Flow, veh/h	3442	3264	309	3442	3539	1537	3442	3539	1560	3442	3539	1556
Grp Volume(v), veh/h	193	285	292	287	330	160	162	698	338	418	537	93
Grp Sat Flow(s), veh/h/ln	1721	1770	1803	1721	1770	1537	1721	1770	1560	1721	1770	1556
Q Serve(g_s), s	5.7	15.0	15.1	8.4	7.7	8.7	4.8	16.3	18.3	12.3	10.5	3.7
Cycle Q Clear(g_c), s	5.7	15.0	15.1	8.4	7.7	8.7	4.8	16.3	18.3	12.3	10.5	3.7
Prop In Lane	1.00	1.00	0.17	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	261	435	443	350	962	418	228	1267	559	480	1527	671
V/C Ratio(X)	0.74	0.65	0.66	0.82	0.34	0.38	0.71	0.55	0.60	0.87	0.35	0.14
Avail Cap(c_a), veh/h	366	634	646	366	1267	550	333	1267	559	500	1527	671
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.8	35.0	35.1	45.5	30.2	30.6	47.3	26.5	27.2	43.5	19.7	17.8
Incr Delay (d2), s/veh	4.9	1.7	1.7	13.3	0.2	0.6	4.1	1.7	4.8	14.9	0.6	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.9	7.5	7.7	4.7	3.8	3.8	2.4	8.3	8.7	6.9	5.3	1.7
LnGrp Delay(d), s/veh	51.6	36.7	36.7	58.8	30.4	31.2	51.4	28.2	32.0	58.5	20.3	18.2
LnGrp LOS	D	D	D	E	C	C	D	C	C	E	C	B
Approach Vol, veh/h	770			777			1198			1048		
Approach Delay, s/veh	40.5			41.1			32.4			35.3		
Approach LOS	D			D			C			D		
<b>Timer</b>												
	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.4	41.0	14.5	29.4	10.8	48.6	11.8	32.1				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	15.0	37.0	11.0	37.0	10.0	42.0	11.0	37.0				
Max Q Clear Time (g_c+I1), s	14.3	20.3	10.4	17.1	6.8	12.5	7.7	10.7				
Green Ext Time (p_c), s	0.1	8.6	0.1	6.1	0.1	11.2	0.2	6.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				36.6								
HCM 2010 LOS				D								

HCM 2010 Signalized Intersection Summary  
5: Escondido Blvd & Felicita Ave/Felicita Ave #1

Existing + Cumulative Projects PM  
02/16/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↕	↔	↕	↕	↔	↕	↕
Traffic Volume (veh/h)	190	945	126	89	558	43	99	299	139	93	203	136
Future Volume (veh/h)	190	945	126	89	558	43	99	299	139	93	203	136
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	207	1027	137	97	607	47	108	325	151	101	221	148
Adj No. of Lanes	2	2	0	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	290	1493	199	116	1617	722	297	705	321	253	616	395
Arrive On Green	0.08	0.48	0.48	0.07	0.46	0.46	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	3442	3139	418	1774	3539	1580	1007	2364	1076	914	2068	1326
Grp Volume(v), veh/h	207	578	586	97	607	47	108	242	234	101	188	181
Grp Sat Flow(s), veh/h/ln	1721	1770	1788	1774	1770	1580	1007	1770	1670	914	1770	1624
Q Serve(g_s), s	4.9	21.4	21.4	4.5	9.4	1.4	8.0	9.3	9.6	8.5	7.0	7.4
Cycle Q Clear(g_c), s	4.9	21.4	21.4	4.5	9.4	1.4	15.4	9.3	9.6	18.1	7.0	7.4
Prop In Lane	1.00	0.23	1.00		1.00		1.00		0.64	1.00		0.82
Lane Grp Cap(c), veh/h	290	842	851	116	1617	722	297	527	498	253	527	484
V/C Ratio(X)	0.71	0.69	0.69	0.83	0.38	0.07	0.36	0.46	0.47	0.40	0.36	0.37
Avail Cap(c_a), veh/h	430	1275	1289	116	2340	1045	363	643	607	313	643	590
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.4	17.1	17.2	38.8	14.9	12.8	29.4	24.0	24.1	31.5	23.1	23.3
Incr Delay (d2), s/veh	3.3	1.0	1.0	38.2	0.1	0.0	0.7	0.6	0.7	1.0	0.4	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.5	10.7	10.8	3.4	4.6	0.6	2.3	4.7	4.5	2.2	3.4	3.4
LnGrp Delay(d), s/veh	40.7	18.2	18.2	77.0	15.1	12.8	30.1	24.6	24.8	32.5	23.5	23.8
LnGrp LOS	D	B	B	E	B	B	C	C	C	C	C	C
Approach Vol, veh/h	1371			751				584			470	
Approach Delay, s/veh	21.6			22.9				25.7			25.5	
Approach LOS	C			C				C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2	3	4		6	7	8					
Phs Duration (G+Y+Rc), s	29.5	10.0	44.4		29.5	11.6	42.8					
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5	4.5	4.5					
Max Green Setting (Gmax), s	30.5	5.5	60.5		30.5	10.5	55.5					
Max Q Clear Time (g_c+I1), s	17.4	6.5	23.4		20.1	6.9	11.4					
Green Ext Time (p_c), s	5.3	0.0	16.5		4.6	0.2	17.6					
Intersection Summary												
HCM 2010 Ctrl Delay	23.2											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary  
6: Juniper St & Felicita Ave #1/E. 17th Ave #1

Existing + Cumulative Projects PM  
02/16/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↕	↔	↕	↕	↔	↕	↕
Traffic Volume (veh/h)	276	759	78	14	393	40	52	176	18	69	209	194
Future Volume (veh/h)	276	759	78	14	393	40	52	176	18	69	209	194
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	300	825	85	15	427	43	57	191	20	75	227	211
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	354	1004	103	243	625	528	256	424	44	297	477	717
Arrive On Green	0.20	0.60	0.60	0.34	0.34	0.34	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1774	1661	171	610	1863	1574	944	1658	174	1166	1863	1571
Grp Volume(v), veh/h	300	0	910	15	427	43	57	0	211	75	227	211
Grp Sat Flow(s), veh/h/ln	1774	0	1832	610	1863	1574	944	0	1832	1166	1863	1571
Q Serve(g_s), s	10.5	0.0	25.2	1.3	12.7	1.2	3.5	0.0	6.2	3.7	6.7	5.5
Cycle Q Clear(g_c), s	10.5	0.0	25.2	9.1	12.7	1.2	10.2	0.0	6.2	10.0	6.7	5.5
Prop In Lane	1.00		0.09	1.00		1.00		1.00		0.09	1.00	1.00
Lane Grp Cap(c), veh/h	354	0	1108	243	625	528	256	0	469	297	477	717
V/C Ratio(X)	0.85	0.00	0.82	0.06	0.68	0.08	0.22	0.00	0.45	0.25	0.48	0.29
Avail Cap(c_a), veh/h	481	0	1363	284	751	634	497	0	937	595	953	1119
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.9	0.0	10.0	20.4	18.5	14.6	24.7	0.0	20.2	24.4	20.3	11.1
Incr Delay (d2), s/veh	10.2	0.0	3.4	0.1	2.0	0.1	0.4	0.0	0.7	0.4	0.7	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.0	13.4	0.2	6.9	0.5	0.9	0.0	3.3	1.2	3.5	2.4	2.4
LnGrp Delay(d), s/veh	35.1	0.0	13.4	20.5	20.5	14.7	25.1	0.0	20.9	24.8	21.1	11.3
LnGrp LOS	D		B	C	C	B	C		C	C	C	B
Approach Vol, veh/h	1210			485				268			513	
Approach Delay, s/veh	18.8			19.9				21.8			17.6	
Approach LOS	B			B				C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4		6	7	8					
Phs Duration (G+Y+Rc), s	21.0		43.5		21.0	17.4	26.2					
Change Period (Y+Rc), s	4.5		4.5		4.5	4.5	4.5					
Max Green Setting (Gmax), s	33.0		48.0		33.0	17.5	26.0					
Max Q Clear Time (g_c+I1), s	12.2		27.2		12.0	12.5	14.7					
Green Ext Time (p_c), s	3.9		9.9		3.9	0.4	6.7					
Intersection Summary												
HCM 2010 Ctrl Delay	19.1											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary  
7: San Pasqual Valley Rd & E 17th Ave

Existing + Cumulative Projects PM  
8/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	314	2	324	0	2	1	222	488	1	1	340	185
Future Volume (veh/h)	314	2	324	0	2	1	222	488	1	1	340	185
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	320	2	331	0	2	1	227	498	1	1	347	189
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	364	2	327	0	7	3	242	1140	2	3	543	296
Arrive On Green	0.21	0.21	0.21	0.00	0.01	0.01	0.14	0.61	0.61	0.00	0.48	0.48
Sat Flow, veh/h	1764	11	1583	0	1173	586	1774	1858	4	1774	1135	618
Grp Volume(v), veh/h	322	0	331	0	0	3	227	0	499	1	0	536
Grp Sat Flow(s), veh/h/ln	1775	0	1583	0	0	1759	1774	0	1862	1774	0	1754
Q Serve(g_s), s	21.1	0.0	24.8	0.0	0.0	0.2	15.2	0.0	17.0	0.1	0.0	27.5
Cycle Q Clear(g_c), s	21.1	0.0	24.8	0.0	0.0	0.2	15.2	0.0	17.0	0.1	0.0	27.5
Prop In Lane	0.99	1.00	0.00			0.33	1.00		0.00	1.00		0.35
Lane Grp Cap(c), veh/h	367	0	327	0	0	10	242	0	1142	3	0	839
V/C Ratio(X)	0.88	0.00	1.01	0.00	0.00	0.31	0.94	0.00	0.44	0.29	0.00	0.64
Avail Cap(c_a), veh/h	367	0	327	0	0	365	242	0	1142	103	0	839
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.60	0.00	0.60	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	46.1	0.0	47.6	0.0	0.0	59.4	51.3	0.0	12.3	59.8	0.0	23.5
Incr Delay (d2), s/veh	13.6	0.0	41.3	0.0	0.0	16.8	40.6	0.0	1.2	42.3	0.0	3.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	8	0.0	14.6	0.0	0.0	0.1	10.2	0.0	9.1	0.1	0.0	14.1
LnGrp Delay(d), s/veh	59.8	0.0	89.0	0.0	0.0	76.2	91.9	0.0	13.5	102.1	0.0	27.2
LnGrp LOS	E		F			E	F		B	F		C
Approach Vol, veh/h	653			3			726			537		
Approach Delay, s/veh	74.6			76.2			38.0			27.3		
Approach LOS	E			E			D			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	63.2			5.8	4.9	79.4		29.9				
Change Period (Y+Rc), s	4.7			5.1	* 4.7	5.8		5.1				
Max Green Setting (Gmax), s	33.2			24.9	* 7	42.6		24.8				
Max Q Clear Time (g_c+I), s	29.5			2.2	2.1	19.0		26.8				
Green Ext Time (p_c), s	0.0	2.0		0.0	0.0	6.6		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	47.5											
HCM 2010 LOS	D											
Notes												

HCM 2010 Signalized Intersection Summary  
8: Bear Valley Pkwy & San Pasqual Valley Rd

Existing + Cumulative Projects PM  
8/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	41	577	82	105	502	76	133	723	205	67	361	49
Future Volume (veh/h)	41	577	82	105	502	76	133	723	205	67	361	49
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	44	620	88	113	540	82	143	777	220	72	388	53
Adj No. of Lanes	1	2	1	1	2	0	2	2	0	1	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	1035	463	156	986	149	340	825	233	143	895	121
Arrive On Green	0.06	0.29	0.29	0.09	0.32	0.32	0.10	0.30	0.30	0.08	0.29	0.29
Sat Flow, veh/h	1774	3539	1583	1774	3083	467	3442	2710	767	1774	3127	424
Grp Volume(v), veh/h	44	620	88	113	309	313	143	507	490	72	218	223
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1780	1721	1770	1708	1774	1770	1781
Q Serve(g_s), s	2.6	16.5	4.6	6.8	15.8	15.9	4.3	30.8	30.8	4.3	11.0	11.2
Cycle Q Clear(g_c), s	2.6	16.5	4.6	6.8	15.8	15.9	4.3	30.8	30.8	4.3	11.0	11.2
Prop In Lane	1.00	1.00	1.00			0.26	1.00		0.45	1.00		0.24
Lane Grp Cap(c), veh/h	107	1035	463	156	566	569	340	538	520	143	507	510
V/C Ratio(X)	0.41	0.60	0.19	0.72	0.55	0.55	0.42	0.94	0.94	0.50	0.43	0.44
Avail Cap(c_a), veh/h	145	1035	463	161	566	569	344	538	520	161	507	510
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.8	33.4	29.2	48.9	30.8	30.9	46.6	37.3	37.3	48.4	32.0	32.0
Incr Delay (d2), s/veh	2.5	2.6	0.9	14.4	3.8	3.8	0.8	26.8	27.5	2.7	2.7	2.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	4	8.5	2.1	4.0	8.3	8.4	2.1	19.0	18.4	2.2	5.8	5.9
LnGrp Delay(d), s/veh	52.3	36.0	30.1	63.2	34.6	34.6	47.4	64.2	64.8	51.1	34.6	34.7
LnGrp LOS	D	D	C	E	C	C	D	E	E	D	C	C
Approach Vol, veh/h	752			735			1140			513		
Approach Delay, s/veh	36.2			39.0			62.3			37.0		
Approach LOS	D			D			E			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	35.4	39.4	16.6	38.7	12.4	42.4	14.6	40.7				
Change Period (Y+Rc), s	5.7	7.2	* 5.7	7.2	* 5.7	7.2	* 5.7	7.2				
Max Green Setting (Gmax), s	31.7	* 11	31.5	* 9	32.7	* 10	32.5					
Max Q Clear Time (g_c+I), s	18.5	6.3	13.2	4.6	17.9	6.3	32.8					
Green Ext Time (p_c), s	0.0	6.2	0.2	8.0	0.0	6.6	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	46.5											
HCM 2010 LOS	D											
Notes												

HCM 2010 TWSC  
9: San Pasqual Valley Rd & Citrus Avenue

Existing + Cumulative Projects PM  
8/30/2016

Intersection						
Int Delay, s/veh	5.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	265	579	592	78	29	91
Future Vol, veh/h	265	579	592	78	29	91
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	115	-	-	-	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	288	629	643	85	32	99

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	728	0	1891
Stage 1	-	-	686
Stage 2	-	-	1205
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	876	-	77
Stage 1	-	-	500
Stage 2	-	-	284
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	876	-	52
Mov Cap-2 Maneuver	-	-	52
Stage 1	-	-	500
Stage 2	-	-	191

Approach	EB	WB	SB
HCM Control Delay, s	3.5	0	47.6
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	876	-	-	-	52	447
HCM Lane V/C Ratio	0.329	-	-	-	0.606	0.221
HCM Control Delay (s)	11.1	-	-	-	149.1	15.3
HCM Lane LOS	B	-	-	-	F	C
HCM 95th %tile Q(veh)	1.4	-	-	-	2.4	0.8

HCM 2010 TWSC  
10: Summit Drive & San Pasqual Valley Rd (SR 78)

Existing + Cumulative Projects PM  
02/16/2017

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔			↔	↔		↔	↔
Traffic Vol, veh/h	26	528	59	4	421	4	57	4	2	6	1	13
Future Vol, veh/h	26	528	59	4	421	4	57	4	2	6	1	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Stop	-	-	Stop
Storage Length	400	-	-	415	-	-	-	-	50	-	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	574	64	4	458	4	62	4	2	7	1	14

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	462	0	0	638
Stage 1	-	-	-	663
Stage 2	-	-	-	469
Critical Hdwy	4.12	-	-	7.12
Critical Hdwy Stg 1	-	-	-	6.12
Critical Hdwy Stg 2	-	-	-	6.12
Follow-up Hdwy	2.218	-	-	3.518
Pot Cap-1 Maneuver	1099	-	-	180
Stage 1	-	-	-	450
Stage 2	-	-	-	575
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1099	-	-	171
Mov Cap-2 Maneuver	-	-	-	171
Stage 1	-	-	-	439
Stage 2	-	-	-	558

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.1	37.7	16.5
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	172	497	1099	-	-	946	-	-	174	601
HCM Lane V/C Ratio	0.385	0.004	0.026	-	-	0.005	-	-	0.044	0.024
HCM Control Delay (s)	38.5	12.3	8.4	-	-	8.8	-	-	26.6	11.1
HCM Lane LOS	E	B	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	1.7	0	0.1	-	-	0	-	-	0.1	0.1

HCM 2010 Signalized Intersection Summary Existing + Cumulative Projects PM  
 11: San Pasqual Rd/Cloverdale Rd & San Pasqual Valley Rd 8/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↔	↗	↘	↔	↗	↘	↔	↗	↘	↔	↗	↘	
Traffic Volume (veh/h)	124	256	59	242	399	11	61	133	18	6	84	87	
Future Volume (veh/h)	124	256	59	242	399	11	61	133	18	6	84	87	
Number	5	2	12	1	6	16	3	8	18	7	4	14	
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	
Adj Flow Rate, veh/h	135	278	64	263	434	12	66	145	20	7	91	95	
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2	
Cap, veh/h	183	1723	754	251	1860	814	108	247	434	28	162	301	
Arrive On Green	0.10	0.49	0.49	0.14	0.53	0.53	0.06	0.13	0.13	0.02	0.09	0.09	
Sat Flow, veh/h	1774	3539	1549	1774	3539	1549	1774	1863	1583	1774	1863	1583	
Grp Volume(v), veh/h	135	278	64	263	434	12	66	145	20	7	91	95	
Grp Sat Flow(s), veh/h/ln	1774	1770	1549	1774	1770	1549	1774	1863	1583	1774	1863	1583	
Q Serve(g_s), s	8.5	5.0	2.5	16.3	7.6	0.4	4.2	8.4	1.1	0.4	5.4	5.9	
Cycle Q Clear(g_c), s	8.5	5.0	2.5	16.3	7.6	0.4	4.2	8.4	1.1	0.4	5.4	5.9	
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	
Lane Grp Cap(c), veh/h	183	1723	754	251	1860	814	108	247	434	28	162	301	
V/C Ratio(X)	0.74	0.16	0.08	1.05	0.23	0.01	0.61	0.59	0.05	0.25	0.56	0.32	
Avail Cap(c_a), veh/h	251	1723	754	251	1860	814	137	518	665	139	520	605	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	50.1	16.4	15.8	49.3	14.8	13.0	52.6	46.9	30.7	55.9	50.4	40.1	
Incr Delay (d2), s/veh	7.2	0.2	0.2	69.3	0.3	0.0	5.4	2.2	0.0	4.6	3.0	0.6	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%)veh/ln	4.5	2.5	1.1	12.8	3.8	0.2	2.2	4.5	0.5	0.3	2.9	2.6	
LnGrp Delay(d),s/veh	57.3	16.6	16.0	118.6	15.0	13.1	58.1	49.2	30.7	60.6	53.4	40.7	
LnGrp LOS	E	B	B	F	B	B	E	D	C	E	D	D	
Approach Vol, veh/h	477			709				231			193		
Approach Delay, s/veh	28.1			53.4				50.1			47.4		
Approach LOS	C			D				D			D		
Timer	1	2	3	4	5	6	7	8					
Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), s	22.0	63.5	12.7	16.8	17.5	67.9	7.5	22.0					
Change Period (Y+Rc), s	* 5.7	7.5	* 5.7	6.8	* 5.7	7.5	* 5.7	6.8					
Max Green Setting (Gmax), s	* 16	32.0	* 8.9	32.1	* 16	32.0	* 9	32.0					
Max Q Clear Time (g_c+I1), s	18.3	7.0	6.2	7.9	10.5	9.6	2.4	10.4					
Green Ext Time (p_c), s	0.0	4.5	0.0	1.6	0.1	4.4	0.0	1.5					

Intersection Summary	
HCM 2010 Ctrl Delay	44.7
HCM 2010 LOS	D
Notes	

HCM 2010 TWSC Existing + Cumulative Projects PM  
 12: San Pasqual Valley Rd & Safari Park Driveway 8/30/2016

Intersection	
Int Delay, s/veh	0.5
Movement	
	EBL EBT WBT WBR SBL SBR
Traffic Vol, veh/h	8 302 303 1 19 229
Future Vol, veh/h	8 302 303 1 19 229
Conflicting Peds, #/hr	0 0 0 0 0 0
Sign Control	Free Free Free Free Stop Stop
RT Channelized	- None - None - Free
Storage Length	410 - - - 0 0
Veh in Median Storage, #	- 0 0 - 0 -
Grade, %	- 0 0 - 0 -
Peak Hour Factor	93 93 93 93 93 93
Heavy Vehicles, %	2 2 2 2 2 2
Mvmt Flow	9 325 326 1 20 246
Major/Minor	
	Major1 Major2 Minor2
Conflicting Flow All	327 0 - 0 668 -
Stage 1	- - - - 326 -
Stage 2	- - - - 342 -
Critical Hdwy	4.14 - - - 6.63 -
Critical Hdwy Stg 1	- - - - 5.83 -
Critical Hdwy Stg 2	- - - - 5.43 -
Follow-up Hdwy	2.22 - - - 3.519 -
Pot Cap-1 Maneuver	1229 - - - 407 0
Stage 1	- - - - 705 0
Stage 2	- - - - 718 0
Platoon blocked, %	- - - - -
Mov Cap-1 Maneuver	1229 - - - 404 -
Mov Cap-2 Maneuver	- - - - 404 -
Stage 1	- - - - 705 -
Stage 2	- - - - 713 -
Approach	
	EB WB SB
HCM Control Delay, s	0.2 0 14.4
HCM LOS	B
Minor Lane/Major Mvmt	
	EBL EBT WBT WBR SBLn1 SBLn2
Capacity (veh/h)	1229 - - - 404 -
HCM Lane V/C Ratio	0.007 - - - 0.051 -
HCM Control Delay (s)	8 - - - 14.4 0
HCM Lane LOS	A - - - B A
HCM 95th %tile Q(veh)	0 - - - 0.2 -

HCM 2010 Signalized Intersection Summary  
13: Bear Valley Pkwy & San Pasqual Rd

Existing + Cumulative Projects PM  
8/30/2016

Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations	↔	↔	↑	↔	↔	↔		
Traffic Volume (veh/h)	519	84	1444	535	109	775		
Future Volume (veh/h)	519	84	1444	535	109	775		
Number	3	18	2	12	1	6		
Initial Q (Ob), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	546	88	1520	563	115	816		
Adj No. of Lanes	2	1	2	1	1	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	712	328	1936	845	146	2420		
Arrive On Green	0.21	0.21	0.55	0.55	0.08	0.68		
Sat Flow, veh/h	3442	1583	3632	1544	1774	3632		
Grp Volume(v), veh/h	546	88	1520	563	115	816		
Grp Sat Flow(s), veh/h/ln	1721	1583	1770	1544	1774	1770		
Q Serve(g_s), s	10.9	3.4	24.9	19.0	4.7	6.9		
Cycle Q Clear(g_c), s	10.9	3.4	24.9	19.0	4.7	6.9		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	712	328	1936	845	146	2420		
V/C Ratio(X)	0.77	0.27	0.79	0.67	0.79	0.34		
Avail Cap(c_a), veh/h	1506	693	1936	845	146	2420		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	27.3	24.4	13.2	11.8	33.0	4.8		
Incr Delay (d2), s/veh	1.8	0.4	3.3	4.1	24.8	0.4		
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%), veh/ln	5.3	1.5	12.9	8.9	3.3	3.4		
LnGrp Delay(d), s/veh	29.1	24.8	16.4	16.0	57.7	5.1		
LnGrp LOS	C	C	B	B	E	A		
Approach Vol, veh/h	634		2083		931			
Approach Delay, s/veh	28.5		16.3		11.6			
Approach LOS	C		B		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	10.0	44.0				54.0		19.1
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	6.0	40.0				50.0		32.0
Max Q Clear Time (g_c+I1), s	6.7	26.9				8.9		12.9
Green Ext Time (p_c), s	0.0	11.3				28.5		2.2

Intersection Summary		
HCM 2010 Ctrl Delay		17.2
HCM 2010 LOS		B

HCM 2010 Signalized Intersection Summary  
14: Via Rancho Pkwy/Bear Valley Pkwy & Del Lago Blvd/Beethoven Dr

Existing + Cumulative Projects PM  
02/16/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	551	16	77	58	25	12	48	1625	116	10	824	313
Future Volume (veh/h)	551	16	77	58	25	12	48	1625	116	10	824	313
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	611	0	0	52	43	13	52	1766	126	11	896	340
Adj No. of Lanes	2	0	1	1	1	0	2	2	1	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	705	0	315	127	98	30	102	1947	871	19	2700	841
Arrive On Green	0.20	0.00	0.00	0.07	0.07	0.07	0.03	0.55	0.55	0.01	0.53	0.53
Sat Flow, veh/h	3548	0	1583	1774	1368	414	3442	3539	1583	1774	5085	1583
Grp Volume(v), veh/h	611	0	0	52	0	56	52	1766	126	11	896	340
Grp Sat Flow(s), veh/h/ln	1774	0	1583	1774	0	1781	1721	1770	1583	1774	1695	1583
Q Serve(g_s), s	17.7	0.0	0.0	3.0	0.0	3.2	1.6	47.7	4.1	0.7	10.7	13.6
Cycle Q Clear(g_c), s	17.7	0.0	0.0	3.0	0.0	3.2	1.6	47.7	4.1	0.7	10.7	13.6
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	705	0	315	127	0	128	102	1947	871	19	2700	841
V/C Ratio(X)	0.87	0.00	0.00	0.41	0.00	0.44	0.51	0.91	0.14	0.59	0.33	0.40
Avail Cap(c_a), veh/h	884	0	394	177	0	720	230	1947	871	67	2700	841
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.2	0.0	0.0	47.2	0.0	47.3	50.9	21.5	11.7	52.4	14.2	14.9
Incr Delay (d2), s/veh	7.6	0.0	0.0	2.1	0.0	2.4	3.9	7.6	0.3	26.8	0.3	1.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	9.4	0.0	0.0	1.5	0.0	1.7	0.8	25.1	1.9	0.5	5.1	6.3
LnGrp Delay(d), s/veh	48.8	0.0	0.0	49.3	0.0	49.7	54.8	29.1	12.1	79.2	14.5	16.3
LnGrp LOS	D			D		D	D	C	B	E	B	B
Approach Vol, veh/h	611			108			1944			1247		
Approach Delay, s/veh	48.8			49.5			28.7			15.6		
Approach LOS	D			D			C			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.6	63.0		25.6	7.6	61.0		12.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	4.0	58.5		26.5	7.1	55.4		43.0				
Max Q Clear Time (g_c+I1), s	2.7	49.7		19.7	3.6	15.6		5.2				
Green Ext Time (p_c), s	0.0	8.2		1.4	0.0	30.7		0.4				

Intersection Summary		
HCM 2010 Ctrl Delay		28.3
HCM 2010 LOS		C

Notes

HCM 2010 Signalized Intersection Summary Existing + Cumulative Projects PM  
 15: I-15 NB Ramps/Westfield Mall Driveway & Bear Valley Pkwy 8/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	241	494	129	305	719	38	324	347	1026	31	234	247
Future Volume (veh/h)	241	494	129	305	719	38	324	347	1026	31	234	247
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	246	504	132	311	734	39	331	354	1047	32	239	252
Adj No. of Lanes	2	2	1	2	3	1	2	2	2	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	408	1408	630	416	2034	632	379	1004	1127	210	1045	467
Arrive On Green	0.12	0.40	0.40	0.12	0.40	0.40	0.11	0.28	0.28	0.12	0.30	0.30
Sat Flow, veh/h	3442	3539	1583	3442	5085	1581	3442	3539	2787	1774	3539	1583
Grp Volume(v), veh/h	246	504	132	311	734	39	331	354	1047	32	239	252
Grp Sat Flow(s), veh/h/ln	1721	1770	1583	1721	1695	1581	1721	1770	1393	1774	1770	1583
Q Serve(g_s), s	9.2	13.5	7.4	11.8	13.7	1.7	12.8	10.7	36.2	2.2	6.9	18.0
Cycle Q Clear(g_c), s	9.2	13.5	7.4	11.8	13.7	1.7	12.8	10.7	36.2	2.2	6.9	18.0
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	408	1408	630	416	2034	632	379	1004	1127	210	1045	467
V/C Ratio(X)	0.60	0.36	0.21	0.75	0.36	0.06	0.87	0.35	0.93	0.15	0.23	0.54
Avail Cap(c_a), veh/h	408	1408	630	416	2034	632	390	1004	1127	210	1045	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.5	28.5	26.7	57.4	28.4	16.6	59.2	38.5	24.3	53.4	36.0	39.9
Incr Delay (d2), s/veh	6.5	0.7	0.8	11.7	0.5	0.2	18.9	1.0	14.4	1.5	0.5	4.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	7	6.7	3.4	6.3	6.5	0.8	7.1	5.4	16.1	1.2	3.5	8.4
LnGrp Delay(d), s/veh	63.0	29.3	27.5	69.0	28.9	16.8	78.0	39.5	38.7	54.9	36.5	44.3
LnGrp LOS	E	C	C	E	C	B	E	D	D	D	D	D
Approach Vol, veh/h	882			1084			1732			523		
Approach Delay, s/veh	38.4			40.0			46.4			41.4		
Approach LOS	D			D			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	22.0	60.5	20.6	45.9	21.7	60.8	22.1	44.4				
Change Period (Y+Rc), s	5.7	6.4	* 5.7	6.1	* 5.7	6.4	6.1	* 6.1				
Max Green Setting (Gmax), s	40.5	* 15	39.0	* 16	40.8	16.0	* 38					
Max Q Clear Time (g_c+I), s	15.5	14.8	20.0	11.2	15.7	4.2	38.2					
Green Ext Time (p_c), s	0.3	9.0	0.1	2.4	0.3	9.0	2.0	0.1				
Intersection Summary												
HCM 2010 Ctrl Delay	42.4											
HCM 2010 LOS	D											
Notes												

HCM 2010 Signalized Intersection Summary Existing + Cumulative Projects PM  
 16: I-15 SB Ramps/Del Lago Blvd & Bear Valley Pkwy 8/30/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	119	248	260	902	301	61	119	125	500	116	157	137
Future Volume (veh/h)	119	248	260	902	301	61	119	125	500	116	157	137
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	121	253	265	920	307	62	121	128	510	118	160	140
Adj No. of Lanes	1	2	2	2	2	1	1	2	1	1	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	212	812	401	1077	1513	799	142	774	842	147	793	350
Arrive On Green	0.12	0.23	0.23	0.31	0.43	0.43	0.08	0.22	0.22	0.08	0.22	0.22
Sat Flow, veh/h	1774	3539	1750	3442	3539	1562	1774	3539	1583	1774	3539	1561
Grp Volume(v), veh/h	121	253	265	920	307	62	121	128	510	118	160	140
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1562	1774	1770	1583	1774	1770	1561
Q Serve(g_s), s	10.3	9.5	17.6	40.1	8.7	1.0	10.8	4.7	0.0	10.5	5.9	12.2
Cycle Q Clear(g_c), s	10.3	9.5	17.6	40.1	8.7	1.0	10.8	4.7	0.0	10.5	5.9	12.2
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	212	812	401	1077	1513	799	142	774	842	147	793	350
V/C Ratio(X)	0.57	0.31	0.66	0.85	0.20	0.08	0.86	0.17	0.61	0.80	0.20	0.40
Avail Cap(c_a), veh/h	212	812	401	1077	1513	799	162	774	842	195	841	371
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.6	51.2	35.7	51.5	28.7	7.5	72.7	50.7	25.9	72.1	50.4	52.9
Incr Delay (d2), s/veh	10.7	1.0	8.3	6.8	0.1	0.0	30.8	0.5	3.2	16.3	0.1	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	7	4.8	4.7	20.1	4.3	0.7	6.5	2.3	16.3	5.8	2.9	5.4
LnGrp Delay(d), s/veh	77.3	52.2	43.9	58.4	28.8	7.5	103.5	51.1	29.1	88.4	50.6	53.6
LnGrp LOS	E	D	D	E	C	A	F	D	C	F	D	D
Approach Vol, veh/h	639			1289			759			418		
Approach Delay, s/veh	53.5			48.9			44.7			62.3		
Approach LOS	D			D			D			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	56.5	43.1	18.5	42.0	24.8	74.8	19.3	41.1				
Change Period (Y+Rc), s	6.4	* 6.4	* 5.7	6.1	* 5.7	6.4	6.1	* 6.1				
Max Green Setting (Gmax), s	40.5	* 37	* 15	38.0	* 19	64.4	17.6	* 35				
Max Q Clear Time (g_c+I), s	19.6	12.8	14.2	12.3	10.7	12.5	6.7					
Green Ext Time (p_c), s	2.4	2.2	0.0	1.7	0.1	6.3	0.8	2.8				
Intersection Summary												
HCM 2010 Ctrl Delay	50.6											
HCM 2010 LOS	D											
Notes												

HCM 2010 TWSC  
17: Sierra Linda Dr/Ryan Dr & San Pasqual Rd

Existing + Cumulative Projects PM  
02/16/2017

Intersection												
Int Delay, s/veh 1.7												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↕	↔	↕	↕		↕	↕		↕	↕
Traffic Vol, veh/h	50	551	37	3	255	0	25	2	6	0	2	28
Future Vol, veh/h	50	551	37	3	255	0	25	2	6	0	2	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	190	-	0	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	54	599	40	3	277	0	27	2	7	0	2	30

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	277	0	0	599	0	0	1008	992	599	996	992	277
Stage 1	-	-	-	-	-	-	708	708	-	284	284	-
Stage 2	-	-	-	-	-	-	300	284	-	712	708	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.7	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1286	-	-	978	-	-	186	246	502	223	246	762
Stage 1	-	-	-	-	-	-	426	438	-	723	676	-
Stage 2	-	-	-	-	-	-	709	676	-	423	438	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1286	-	-	978	-	-	171	235	502	211	235	762
Mov Cap-2 Maneuver	-	-	-	-	-	-	171	235	-	211	235	-
Stage 1	-	-	-	-	-	-	408	420	-	693	674	-
Stage 2	-	-	-	-	-	-	676	674	-	398	420	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.1	27.2	10.7
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	198	1286	-	-	978	-	-	663
HCM Lane V/C Ratio	0.181	0.042	-	-	0.003	-	-	0.049
HCM Control Delay (s)	27.2	7.9	-	-	8.7	-	-	10.7
HCM Lane LOS	D	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0	-	-	0.2

HCM 2010 TWSC  
18: San Pasqual Rd & Old Milky Way

Existing + Cumulative Projects PM  
06/21/2017

Intersection						
Int Delay, s/veh 1.7						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↕	↕	↔	↔
Traffic Vol, veh/h	80	28	244	266	7	286
Future Vol, veh/h	80	28	244	266	7	286
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	100	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	87	30	265	289	8	311

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	591	265	0	0	265	0
Stage 1	265	-	-	-	-	-
Stage 2	326	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	470	774	-	-	1299	-
Stage 1	779	-	-	-	-	-
Stage 2	731	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	467	774	-	-	1299	-
Mov Cap-2 Maneuver	467	-	-	-	-	-
Stage 1	779	-	-	-	-	-
Stage 2	726	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.9	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	521	1299	-
HCM Lane V/C Ratio	-	-	0.225	0.006	-
HCM Control Delay (s)	-	-	13.9	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.9	0	-

# APPENDIX I

## PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS EXISTING + CUMULATIVE PROJECTS + PROJECT



Existing + Cumulative Projects + Project AM  
1: Cloverdale Rd & Rockwood Rd

2334 - Safari Highlands Ranch  
9/7/2016

Intersection						
Int Delay, s/veh	65.9					
<b>Movement</b>						
	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	636	23	33	357	54	94
Future Vol, veh/h	636	23	33	357	54	94
Conflicting Peds, #/hr	0	0	0	5	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	65	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	691	25	36	388	59	102
<b>Major/Minor</b>						
	Minor1		Major1		Major2	
Conflicting Flow All	450	230	0	0	424	0
Stage 1	230	-	-	-	-	-
Stage 2	220	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	- 567	809	-	-	1135	-
Stage 1	808	-	-	-	-	-
Stage 2	817	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	- 535	809	-	-	1135	-
Mov Cap-2 Maneuver	- 604	-	-	-	-	-
Stage 1	808	-	-	-	-	-
Stage 2	771	-	-	-	-	-
<b>Approach</b>						
	WB		NB		SB	
HCM Control Delay, s	119.1		0		3	
HCM LOS	F					
<b>Minor Lane/Major Mvmt</b>						
	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	609	1135	-	
HCM Lane V/C Ratio	-	-	1.176	0.052	-	
HCM Control Delay (s)	-	-	119.1	8.3	-	
HCM Lane LOS	-	-	F	A	-	
HCM 95th %tile Q(veh)	-	-	24.4	0.2	-	
<b>Notes</b>						
-: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    *: All major volume in platoon						

Existing + Cumulative Projects + Project AM  
2: Rockwood Rd & Old Ranch Rd

2334 - Safari Highlands Ranch  
9/7/2016

Intersection										
Intersection Delay, s/veh	14.1									
Intersection LOS	B									
<b>Movement</b>										
	EBU	EBL	EBT	WBU	WBT	WBR	SBU	SBL	SBR	
Traffic Vol, veh/h	0	103	192	0	418	1	0	1	154	
Future Vol, veh/h	0	103	192	0	418	1	0	1	154	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	
Mvmt Flow	0	112	209	0	454	1	0	1	167	
Number of Lanes	0	1	1	0	1	0	0	1	1	
<b>Approach</b>										
	EB			WB			SB			
Opposing Approach	WB			EB						
Opposing Lanes	1			2			0			
Conflicting Approach Left	SB						WB			
Conflicting Lanes Left	2					0	1			
Conflicting Approach Right				SB			EB			
Conflicting Lanes Right				2			2			
HCM Control Delay	10.6			17.8			10.6			
HCM LOS	B			C			B			
<b>Lane</b>										
	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2					
Vol Left, %	100%	0%	0%	100%	0%					
Vol Thru, %	0%	100%	100%	0%	0%					
Vol Right, %	0%	0%	0%	0%	100%					
Sign Control	Stop	Stop	Stop	Stop	Stop					
Traffic Vol by Lane	103	192	419	1	154					
LT Vol	103	0	0	1	0					
Through Vol	0	192	418	0	0					
RT Vol	0	0	1	0	154					
Lane Flow Rate	112	209	455	1	167					
Geometry Grp	7	7	4	7	7					
Degree of Util (X)	0.185	0.315	0.657	0.002	0.269					
Departure Headway (Hd)	6.058	5.552	5.19	7.009	5.791					
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes					
Cap	596	651	688	514	624					
Service Time	3.758	3.252	3.284	4.709	3.491					
HCM Lane V/C Ratio	0.188	0.321	0.661	0.002	0.268					
HCM Control Delay	10.1	10.8	17.8	9.7	10.6					
HCM Lane LOS	B	B	C	A	B					
HCM 95th-tile Q	0.7	1.3	4.9	0	1.1					

Existing + Cumulative Projects + Project AM  
3: Rockwood Rd & Site Access

2334 - Safari Highlands Ranch  
9/7/2016

Intersection						
Int Delay, s/veh	8.6					
<b>Movement</b>						
	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	169	24	54	0	0	365
Future Vol, veh/h	169	24	54	0	0	365
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	184	26	59	0	0	397
<b>Major/Minor</b>						
	Major1		Major2		Minor2	
Conflicting Flow All	59	0	-	0	452	59
Stage 1	-	-	-	-	59	-
Stage 2	-	-	-	-	393	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1545	-	-	-	565	1007
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	682	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1545	-	-	-	497	1007
Mov Cap-2 Maneuver	-	-	-	-	497	-
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	599	-
<b>Approach</b>						
	EB		WB		SB	
HCM Control Delay, s	6.7		0		10.9	
HCM LOS					B	
<b>Minor Lane/Major Mvmt</b>						
	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1545	-	-	-	1007	
HCM Lane V/C Ratio	0.119	-	-	-	0.394	
HCM Control Delay (s)	7.6	0	-	-	10.9	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.4	-	-	-	1.9	

Existing + Cumulative Projects + Project AM  
4: Centre City Pkwy & Felicita Rd

2334 - Safari Highlands Ranch  
9/7/2016

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
<b>Movement</b>	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↕	↔	↕	↕	↔	↕	↕
Traffic Volume (veh/h)	122	347	24	389	483	231	79	404	132	264	595	118
Future Volume (veh/h)	122	347	24	389	483	231	79	404	132	264	595	118
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	133	377	26	423	525	251	86	439	143	287	647	128
Adj No. of Lanes	2	2	0	2	2	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	198	724	50	496	1069	474	141	1331	593	350	1546	691
Arrive On Green	0.06	0.22	0.22	0.14	0.30	0.30	0.04	0.38	0.38	0.10	0.44	0.44
Sat Flow, veh/h	3442	3361	231	3442	3539	1569	3442	3539	1577	3442	3539	1582
Grp Volume(v), veh/h	133	198	205	423	525	251	86	439	143	287	647	128
Grp Sat Flow(s), veh/h/ln	1721	1770	1822	1721	1770	1569	1721	1770	1577	1721	1770	1582
Q Serve(g_s), s	3.7	9.7	9.8	11.8	12.0	13.1	2.4	8.7	6.1	8.0	12.4	4.9
Cycle Q Clear(g_c), s	3.7	9.7	9.8	11.8	12.0	13.1	2.4	8.7	6.1	8.0	12.4	4.9
Prop In Lane	1.00		0.13	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	198	381	393	496	1069	474	141	1331	593	350	1546	691
V/C Ratio(X)	0.67	0.52	0.52	0.85	0.49	0.53	0.61	0.33	0.24	0.82	0.42	0.19
Avail Cap(c_a), veh/h	280	666	685	560	1619	718	210	1331	593	350	1546	691
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.5	34.1	34.1	41.1	28.1	28.5	46.4	21.9	21.1	43.3	19.1	17.0
Incr Delay (d2), s/veh	3.9	1.1	1.1	11.1	0.4	0.9	4.2	0.7	1.0	14.3	0.8	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.9	4.8	5.0	6.3	5.9	5.7	1.2	4.3	2.8	4.5	6.2	2.2
LnGrp Delay(d), s/veh	49.4	35.2	35.2	52.2	28.5	29.4	50.7	22.5	22.0	57.6	19.9	17.6
LnGrp LOS	D	D	D	D	C	C	D	C	C	E	B	B
Approach Vol, veh/h	536			1199				668			1062	
Approach Delay, s/veh	38.7			37.0				26.0			29.8	
Approach LOS	D			D				C			C	
<b>Timer</b>	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	41.0	18.2	25.2	8.0	47.0	9.6	33.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	10.0	37.0	16.0	37.0	6.0	41.0	8.0	45.0				
Max Q Clear Time (g_c+1t), s	10.0	10.7	13.8	11.8	4.4	14.4	5.7	15.1				
Green Ext Time (p_c), s	0.0	8.6	0.4	7.3	0.0	8.6	0.1	7.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay							33.0					
HCM 2010 LOS							C					

Existing + Cumulative Projects + Project AM  
5: Escondido Blvd & Felicita Ave/Felicita Ave #1

2334 - Safari Highlands Ranch  
02/16/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↕	↔	↕	↕	↔	↕	↕
Traffic Volume (veh/h)	83	462	145	103	830	36	135	273	56	72	308	271
Future Volume (veh/h)	83	462	145	103	830	36	135	273	56	72	308	271
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	90	502	158	112	902	39	147	297	61	78	335	295
Adj No. of Lanes	2	2	0	1	2	1	2	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	155	912	286	144	1344	598	296	1158	235	428	708	611
Arrive On Green	0.05	0.34	0.34	0.08	0.38	0.38	0.39	0.39	0.39	0.39	0.39	0.39
Sat Flow, veh/h	3442	2652	830	1774	3539	1575	790	2932	594	1018	1793	1548
Grp Volume(v), veh/h	90	334	326	112	902	39	147	178	180	78	331	299
Grp Sat Flow(s),veh/h/ln	1721	1770	1712	1774	1770	1575	790	1770	1757	1018	1770	1571
Q Serve(g_s), s	1.9	11.4	11.6	4.6	15.9	1.2	12.8	5.1	5.2	4.2	10.4	10.7
Cycle Q Clear(g_c), s	1.9	11.4	11.6	4.6	15.9	1.2	23.5	5.1	5.2	9.4	10.4	10.7
Prop In Lane	1.00		0.48	1.00		1.00	1.00		0.34	1.00		0.99
Lane Grp Cap(c), veh/h	155	609	589	144	1344	598	296	699	694	428	699	620
V/C Ratio(X)	0.58	0.55	0.55	0.78	0.67	0.07	0.50	0.25	0.26	0.18	0.47	0.48
Avail Cap(c_a), veh/h	253	791	765	249	1818	809	326	767	762	467	767	681
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.1	19.9	19.9	33.8	19.3	14.8	25.7	15.3	15.3	18.5	16.9	17.0
Incr Delay (d2), s/veh	3.4	0.8	0.8	8.8	0.6	0.0	1.3	0.2	0.2	0.2	0.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.7	5.6	2.6	7.9	0.5	2.9	2.5	2.5	1.2	5.1	4.7
LnGrp Delay(d),s/veh	38.5	20.7	20.7	42.6	19.9	14.8	27.0	15.4	15.5	18.7	17.4	17.5
LnGrp LOS	D	C	C	D	B	B	C	B	B	B	B	B
Approach Vol, veh/h		750			1053			505			708	
Approach Delay, s/veh		22.8			22.2			18.8			17.6	
Approach LOS		C			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		34.1	10.6	30.3		34.1	7.9	33.0				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		32.5	10.5	33.5		32.5	5.5	38.5				
Max Q Clear Time (g_c+I1), s		25.5	6.6	13.6		12.7	3.9	17.9				
Green Ext Time (p_c), s		4.0	0.1	10.4		7.8	0.0	10.6				
Intersection Summary												
HCM 2010 Ctrl Delay						20.7						
HCM 2010 LOS						C						

HCM 2010 Signalized Intersection Summary  
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Synchro 9 Report

Existing + Cumulative Projects + Project AM  
6: Juniper St & Felicita Ave #1/E 17th Ave #1

2334 - Safari Highlands Ranch  
02/16/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↕	↔	↕	↕	↔	↕	↕
Traffic Volume (veh/h)	142	372	131	45	645	60	72	458	15	32	475	220
Future Volume (veh/h)	142	372	131	45	645	60	72	458	15	32	475	220
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.94	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	154	404	142	49	701	65	78	498	16	35	516	239
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	173	704	248	361	722	605	164	653	21	186	679	699
Arrive On Green	0.10	0.54	0.54	0.39	0.39	0.39	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1774	1315	462	854	1863	1561	697	1791	58	883	1863	1492
Grp Volume(v), veh/h	154	0	546	49	701	65	78	0	514	35	516	239
Grp Sat Flow(s),veh/h/ln	1774	0	1777	854	1863	1561	697	0	1848	883	1863	1492
Q Serve(g_s), s	7.7	0.0	18.5	3.7	33.2	2.4	10.0	0.0	22.0	3.3	21.9	9.2
Cycle Q Clear(g_c), s	7.7	0.0	18.5	8.9	33.2	2.4	31.9	0.0	22.0	25.3	21.9	9.2
Prop In Lane	1.00		0.26	1.00		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	173	0	952	361	722	605	164	0	674	186	679	699
V/C Ratio(X)	0.89	0.00	0.57	0.14	0.97	0.11	0.47	0.00	0.76	0.19	0.76	0.34
Avail Cap(c_a), veh/h	173	0	952	361	722	605	164	0	674	186	679	699
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.1	0.0	14.0	21.5	27.0	17.6	39.2	0.0	25.2	36.3	25.1	15.5
Incr Delay (d2), s/veh	38.4	0.0	0.8	0.2	26.2	0.1	2.1	0.0	5.2	0.5	5.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	9.2	0.9	22.2	1.0	2.0	0.0	12.1	0.8	12.1	3.9
LnGrp Delay(d),s/veh	78.5	0.0	14.9	21.6	53.3	17.7	41.3	0.0	30.3	36.8	30.1	15.8
LnGrp LOS	E		B	C	D	B	D		C	D	C	B
Approach Vol, veh/h		700			815			592			790	
Approach Delay, s/veh		28.9			48.5			31.8			26.1	
Approach LOS		C			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		37.3		52.7		37.3	13.3	39.4				
Change Period (Y+Rc), s		4.5		4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		32.8		48.2		32.8	8.8	34.9				
Max Q Clear Time (g_c+I1), s		33.9		20.5		27.3	9.7	35.2				
Green Ext Time (p_c), s		0.0		10.1		3.6	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay						34.2						
HCM 2010 LOS						C						

HCM 2010 Signalized Intersection Summary  
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Synchro 9 Report

Existing + Cumulative Projects + Project AM  
7: San Pasqual Valley Rd & E 17th Ave

2334 - Safari Highlands Ranch  
9/17/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔		↔	↔	
Traffic Volume (veh/h)	196	3	189	0	0	3	293	518	0	0	398	355
Future Volume (veh/h)	196	3	189	0	0	3	293	518	0	0	398	355
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	213	3	205	0	0	3	318	563	0	0	433	386
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	228	3	206	0	0	9	342	1381	0	1	466	415
Arrive On Green	0.13	0.13	0.13	0.00	0.00	0.01	0.19	0.74	0.00	0.00	0.51	0.51
Sat Flow, veh/h	1751	25	1583	0	0	1583	1774	1863	0	1774	909	811
Grp Volume(v), veh/h	216	0	205	0	0	3	318	563	0	0	0	819
Grp Sat Flow(s), veh/h/ln	1775	0	1583	0	0	1583	1774	1863	0	1774	0	1720
Q Serve(g_s), s	15.7	0.0	16.8	0.0	0.0	0.2	22.9	14.6	0.0	0.0	0.0	57.6
Cycle Q Clear(g_c), s	15.7	0.0	16.8	0.0	0.0	0.2	22.9	14.6	0.0	0.0	0.0	57.6
Prop In Lane	0.99	1.00	0.00			1.00	1.00		0.00	1.00		0.47
Lane Grp Cap(c), veh/h	231	0	206	0	0	9	342	1381	0	1	0	881
V/C Ratio(X)	0.94	0.00	1.00	0.00	0.00	0.34	0.93	0.41	0.00	0.00	0.00	0.93
Avail Cap(c_a), veh/h	231	0	206	0	0	315	359	1381	0	96	0	881
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.00	0.95	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	56.0	0.0	56.5	0.0	0.0	64.4	51.6	6.2	0.0	0.0	0.0	29.5
Incr Delay (d2), s/veh	40.6	0.0	60.0	0.0	0.0	21.6	29.6	0.9	0.0	0.0	0.0	17.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	10.3	0.0	10.8	0.0	0.0	0.2	14.0	7.7	0.0	0.0	0.0	31.6
LnGrp Delay(d), s/veh	96.6	0.0	116.5	0.0	0.0	86.0	81.2	7.1	0.0	0.0	0.0	46.9
LnGrp LOS	F		F			F	F	A				D
Approach Vol, veh/h	421				3			881				819
Approach Delay, s/veh	106.3				86.0			33.8				46.9
Approach LOS	F				F			C				D
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	72.4			5.8	0.0	102.2		22.0				
Change Period (Y+Rc), s	4.7	5.8		5.1	* 4.7	5.8		5.1				
Max Green Setting (Gmax), s	40.2			25.9	* 7	59.5		16.9				
Max Q Clear Time (g_c+I), s	59.6			2.2	0.0	16.6		18.8				
Green Ext Time (p_c), s	0.1	0.0		0.0	0.0	12.4		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	53.3											
HCM 2010 LOS	D											
Notes												

HCM 2010 Signalized Intersection Summary  
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Synchro 9 Report

Existing + Cumulative Projects + Project AM  
8: Bear Valley Pkwy & San Pasqual Valley Rd

2334 - Safari Highlands Ranch  
9/17/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	27	479	113	195	695	77	112	318	109	111	622	35
Future Volume (veh/h)	27	479	113	195	695	77	112	318	109	111	622	35
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	29	521	123	212	755	84	122	346	118	121	676	38
Adj No. of Lanes	1	2	1	1	2	0	2	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	82	1032	462	240	1221	136	310	718	241	147	914	51
Arrive On Green	0.05	0.29	0.29	0.14	0.38	0.38	0.09	0.28	0.28	0.08	0.27	0.27
Sat Flow, veh/h	1774	3539	1583	1774	3212	357	3442	2604	874	1774	3407	191
Grp Volume(v), veh/h	29	521	123	212	416	423	122	233	231	121	351	363
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1800	1721	1770	1708	1774	1770	1829
Q Serve(g_s), s	1.9	14.7	7.2	14.1	22.8	22.9	4.0	13.2	13.6	8.1	21.7	21.7
Cycle Q Clear(g_c), s	1.9	14.7	7.2	14.1	22.8	22.9	4.0	13.2	13.6	8.1	21.7	21.7
Prop In Lane	1.00	1.00	1.00			1.00	0.20	1.00		0.51	1.00	0.10
Lane Grp Cap(c), veh/h	82	1032	462	240	673	684	310	488	471	147	475	491
V/C Ratio(X)	0.35	0.50	0.27	0.88	0.62	0.62	0.39	0.48	0.49	0.83	0.74	0.74
Avail Cap(c_a), veh/h	133	1032	462	273	673	684	315	488	471	173	475	491
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.5	35.3	32.7	51.0	30.1	30.1	51.5	36.3	36.4	54.2	40.1	40.1
Incr Delay (d2), s/veh	2.5	1.8	1.4	25.2	4.2	4.2	0.8	3.3	3.6	23.6	9.9	9.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0	7.4	3.3	8.6	11.9	12.1	1.9	6.9	6.9	4.9	11.9	12.3
LnGrp Delay(d), s/veh	58.0	37.1	34.1	76.1	34.4	34.3	52.3	39.6	40.0	77.8	50.0	49.7
LnGrp LOS	E	D	C	E	C	C	D	D	D	E	D	D
Approach Vol, veh/h	673				1051			586				835
Approach Delay, s/veh	37.4				42.8			42.4				53.9
Approach LOS	D				D			D				D
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	42.2	16.5	39.4	11.3	52.8	15.6	40.3					
Change Period (Y+Rc), s	7.2	* 5.7	7.2	* 5.7	7.2	* 5.7	7.2					
Max Green Setting (Gmax), s	32.5	* 11	32.2	* 9	42.0	* 12	31.5					
Max Q Clear Time (g_c+I), s	16.7	6.0	23.7	3.9	24.9	10.1	15.6					
Green Ext Time (p_c), s	0.1	7.6	0.1	4.0	0.0	8.0	0.0	5.8				
Intersection Summary												
HCM 2010 Ctrl Delay	44.5											
HCM 2010 LOS	D											
Notes												

HCM 2010 Signalized Intersection Summary  
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Synchro 9 Report

Existing + Cumulative Projects + Project AM  
9: San Pasqual Valley Rd & Citrus Avenue

2334 - Safari Highlands Ranch  
9/7/2016

Intersection						
Int Delay, s/veh	114.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	117	579	755	62	217	212
Future Vol, veh/h	117	579	755	62	217	212
Conflicting Peds, #/hr	0	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	115	-	-	-	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	127	629	821	67	236	230
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	888	0	-	0	1738	854
Stage 1	-	-	-	-	854	-
Stage 2	-	-	-	-	884	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	763	-	-	-	-96	358
Stage 1	-	-	-	-	417	-
Stage 2	-	-	-	-	404	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	763	-	-	-	-80	358
Mov Cap-2 Maneuver	-	-	-	-	-80	-
Stage 1	-	-	-	-	417	-
Stage 2	-	-	-	-	337	-
Approach	EB		WB		SB	
HCM Control Delay, s	1.8		0		\$ 516.5	
HCM LOS					F	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	763	-	-	-	80	358
HCM Lane V/C Ratio	0.167	-	-	-	2.948	0.644
HCM Control Delay (s)	10.7	-	-	-	\$ 990.3	31.5
HCM Lane LOS	B	-	-	-	F	D
HCM 95th %tile Q(veh)	0.6	-	-	-	23.3	4.3
Notes	-: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    *: All major volume in platoon					

Existing + Cumulative Projects + Project AM  
10: Summit Drive & San Pasqual Valley Rd (SR 78)

2334 - Safari Highlands Ranch  
02/16/2017

Intersection												
Int Delay, s/veh	19.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔			↔	↔		↔	↔
Traffic Vol, veh/h	10	487	216	10	636	4	91	7	8	10	33	25
Future Vol, veh/h	10	487	216	10	636	4	91	7	8	10	33	25
Conflicting Peds, #/hr	0	0	0	0	0	3	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Stop	-	-	Stop
Storage Length	400	-	-	415	-	-	-	-	50	-	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	529	235	11	691	4	99	8	9	11	36	27
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	699	0	0	764	0	0	1401	1388	647	1390	1504	696
Stage 1	-	-	-	-	-	-	668	668	-	718	718	-
Stage 2	-	-	-	-	-	-	733	720	-	672	786	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	898	-	-	849	-	-	118	143	471	120	121	442
Stage 1	-	-	-	-	-	-	448	456	-	420	433	-
Stage 2	-	-	-	-	-	-	412	432	-	445	403	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	898	-	-	849	-	-	-83	139	471	110	118	441
Mov Cap-2 Maneuver	-	-	-	-	-	-	-83	139	-	110	118	-
Stage 1	-	-	-	-	-	-	443	450	-	414	426	-
Stage 2	-	-	-	-	-	-	349	425	-	424	398	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.1			249.7			40.2		
HCM LOS							F			E		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	85	471	898	-	-	849	-	-	116	441		
HCM Lane V/C Ratio	1.253	0.018	0.012	-	-	0.013	-	-	0.403	0.062		
HCM Control Delay (s)	269	12.8	9.1	-	-	9.3	-	-	55.6	13.7		
HCM Lane LOS	F	B	A	-	-	A	-	-	F	B		
HCM 95th %tile Q(veh)	7.8	0.1	0	-	-	0	-	-	1.7	0.2		
Notes	-: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    *: All major volume in platoon											

Existing + Cumulative Projects + Project AM  
 11: San Pasqual Rd/Cloverdale Rd & San Pasqual Valley Rd

2334 - Safari Highlands Ranch  
 9/17/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↔	↗	↘	↔	↗	↘	↔	↗	↘	↔	↗	↘	
Traffic Volume (veh/h)	228	260	40	14	272	48	35	120	131	59	279	387	
Future Volume (veh/h)	228	260	40	14	272	48	35	120	131	59	279	387	
Number	5	2	12	1	6	16	3	8	18	7	4	14	
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	
Adj Flow Rate, veh/h	248	283	43	15	296	52	38	130	142	64	303	421	
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2	
Cap, veh/h	251	1529	684	70	1168	522	87	441	438	121	477	630	
Arrive On Green	0.14	0.43	0.43	0.04	0.33	0.33	0.05	0.24	0.24	0.07	0.26	0.26	
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583	
Grp Volume(v), veh/h	248	283	43	15	296	52	38	130	142	64	303	421	
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583	
Q Serve(g_s), s	16.0	5.7	1.8	0.9	7.0	2.6	2.4	6.6	8.2	4.0	16.6	25.1	
Cycle Q Clear(g_c), s	16.0	5.7	1.8	0.9	7.0	2.6	2.4	6.6	8.2	4.0	16.6	25.1	
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	251	1529	684	70	1168	522	87	441	438	121	477	630	
V/C Ratio(X)	0.99	0.19	0.06	0.21	0.25	0.10	0.44	0.29	0.32	0.53	0.64	0.67	
Avail Cap(c_a), veh/h	251	1529	684	185	1168	522	123	518	503	139	535	679	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	49.2	20.2	19.1	53.5	28.2	26.7	53.2	36.0	33.1	51.8	38.0	28.4	
Incr Delay (d2), s/veh	52.8	0.3	0.2	1.5	0.5	0.4	3.4	0.4	0.4	3.6	2.1	2.3	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%)veh/ln	11.5	2.8	0.8	0.5	3.5	1.2	1.3	3.4	3.6	2.1	8.9	11.3	
LnGrp Delay(d),s/veh	102.0	20.4	19.2	55.0	28.7	27.1	56.6	36.4	33.5	55.4	40.1	30.7	
LnGrp LOS	F	C	B	D	C	C	E	D	C	E	D	C	
Approach Vol, veh/h	574			363				310			788		
Approach Delay, s/veh	55.6			29.5				37.5			36.3		
Approach LOS	E			C				D			D		
Timer	1	2	3	4	5	6	7	8					
Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), s	10.3	57.2	11.3	36.2	22.0	45.4	13.5	34.0					
Change Period (Y+Rc), s	* 5.7	7.5	* 5.7	6.8	* 5.7	7.5	* 5.7	6.8					
Max Green Setting (Gmax), s	* 12	36.3	* 8	33.0	* 16	32.0	* 9	32.0					
Max Q Clear Time (g_c+I1), s	2.9	7.7	4.4	27.1	18.0	9.0	6.0	10.2					
Green Ext Time (p_c), s	0.0	3.8	0.0	2.3	0.0	3.6	0.0	4.4					

Intersection Summary												
HCM 2010 Ctrl Delay	40.7											
HCM 2010 LOS	D											
Notes												

Existing + Cumulative Projects + Project AM  
 12: San Pasqual Valley Rd & Safari Park Driveway

2334 - Safari Highlands Ranch  
 9/17/2016

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	76	268	325	9	3	3
Future Vol, veh/h	76	268	325	9	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Free
Storage Length	410	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	83	291	353	10	3	3
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	363	0	-	0	815	-
Stage 1	-	-	-	-	358	-
Stage 2	-	-	-	-	457	-
Critical Hdwy	4.14	-	-	-	6.63	-
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.22	-	-	-	3.519	-
Pot Cap-1 Maneuver	1192	-	-	-	331	0
Stage 1	-	-	-	-	679	0
Stage 2	-	-	-	-	637	0
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1192	-	-	-	308	-
Mov Cap-2 Maneuver	-	-	-	-	308	-
Stage 1	-	-	-	-	679	-
Stage 2	-	-	-	-	593	-
Approach	EB	WB	SB			
HCM Control Delay, s	1.8	0	16.8			
HCM LOS			C			
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1192	-	-	-	308	-
HCM Lane V/C Ratio	0.069	-	-	-	0.011	-
HCM Control Delay (s)	8.2	-	-	-	16.8	0
HCM Lane LOS	A	-	-	-	C	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0	-

Existing + Cumulative Projects + Project AM  
13: Bear Valley Pkwy & San Pasqual Rd

2334 - Safari Highlands Ranch  
9/17/2016

	↖	↗	↑	↘	↙	↓		
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations	↔	↔	↕	↕	↔	↔		
Traffic Volume (veh/h)	693	65	991	352	189	1450		
Future Volume (veh/h)	693	65	991	352	189	1450		
Number	3	18	2	12	1	6		
Initial Q (Ob), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	753	71	1077	383	205	1576		
Adj No. of Lanes	2	1	2	1	1	2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	905	416	1613	719	242	2266		
Arrive On Green	0.26	0.26	0.46	0.46	0.14	0.64		
Sat Flow, veh/h	3442	1583	3632	1578	1774	3632		
Grp Volume(v), veh/h	753	71	1077	383	205	1576		
Grp Sat Flow(s),veh/h/ln	1721	1583	1770	1578	1774	1770		
Q Serve(g_s), s	17.1	2.9	19.7	14.4	9.3	23.9		
Cycle Q Clear(g_c), s	17.1	2.9	19.7	14.4	9.3	23.9		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	905	416	1613	719	242	2266		
V/C Ratio(X)	0.83	0.17	0.67	0.53	0.85	0.70		
Avail Cap(c_a), veh/h	1331	612	1613	719	257	2266		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	28.8	23.5	17.6	16.2	34.9	9.6		
Incr Delay (d2), s/veh	3.0	0.2	2.2	2.8	21.6	1.8		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%) veh/ln	8.4	1.3	10.1	6.8	6.0	11.9		
LnGrp Delay(d),s/veh	31.8	23.7	19.8	19.0	56.5	11.4		
LnGrp LOS	C	C	B	B	E	B		
Approach Vol, veh/h	824		1460		1781			
Approach Delay, s/veh	31.1		19.6		16.6			
Approach LOS	C		B		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	15.3	41.7				57.0		25.8
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	12.0	37.0				53.0		32.0
Max Q Clear Time (g_c+I1), s	11.3	21.7				25.9		19.1
Green Ext Time (p_c), s	0.0	13.5				22.1		2.7
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			20.6					
HCM 2010 LOS			C					

Existing + Cumulative Projects + Project AM  
14: Via Rancho Pkwy/Bear Valley Pkwy & Del Lago Blvd/Beethoven Dr

2334 - Safari Highlands Ranch  
02/16/2017

	↖	→	↘	↙	←	↗	↖	↑	↘	↙	↓	↖
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↕	↕	↔	↔	↔
Traffic Volume (veh/h)	213	5	13	90	61	28	17	900	26	18	1812	563
Future Volume (veh/h)	213	5	13	90	61	28	17	900	26	18	1812	563
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	236	0	0	97	67	30	18	978	28	20	1970	612
Adj No. of Lanes	2	0	1	1	1	0	2	2	1	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	350	0	156	235	160	72	58	1787	799	32	2575	801
Arrive On Green	0.10	0.00	0.00	0.13	0.13	0.13	0.02	0.50	0.50	0.02	0.51	0.51
Sat Flow, veh/h	3548	0	1583	1774	1211	542	3442	3539	1582	1774	5085	1581
Grp Volume(v), veh/h	236	0	0	97	0	97	18	978	28	20	1970	612
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	0	1754	1721	1770	1582	1774	1695	1581
Q Serve(g_s), s	4.7	0.0	0.0	3.7	0.0	3.7	0.4	13.9	0.7	0.8	22.9	22.8
Cycle Q Clear(g_c), s	4.7	0.0	0.0	3.7	0.0	3.7	0.4	13.9	0.7	0.8	22.9	22.8
Prop In Lane	1.00		1.00	1.00		0.31	1.00		1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	350	0	156	235	0	232	58	1787	799	32	2575	801
V/C Ratio(X)	0.67	0.00	0.00	0.41	0.00	0.42	0.31	0.55	0.04	0.62	0.76	0.76
Avail Cap(c_a), veh/h	872	0	389	1041	0	1029	188	1787	799	97	2575	801
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.9	0.0	0.0	29.2	0.0	29.2	35.6	12.4	9.1	35.7	14.6	14.6
Incr Delay (d2), s/veh	2.3	0.0	0.0	1.2	0.0	1.2	3.0	1.2	0.1	17.6	2.2	6.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%) veh/ln	2.4	0.0	0.0	1.9	0.0	1.9	0.2	7.0	0.3	0.6	11.1	11.4
LnGrp Delay(d),s/veh	34.1	0.0	0.0	30.3	0.0	30.4	38.6	13.6	9.2	53.3	16.8	21.4
LnGrp LOS	C			C		C	D	B	A	D	B	C
Approach Vol, veh/h	236			194			1024				2602	
Approach Delay, s/veh	34.1			30.4			13.9				18.2	
Approach LOS	C			C			B				B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.8	41.5		11.7	5.7	41.6		14.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	4.0	37.0		18.0	4.0	37.0		43.0				
Max Q Clear Time (g_c+I1), s	2.8	15.9		6.7	2.4	24.9		5.7				
Green Ext Time (p_c), s	0.0	19.2		0.6	0.0	11.4		0.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				18.6								
HCM 2010 LOS				B								
<b>Notes</b>												

Existing + Cumulative Projects + Project AM  
 15: I-15 NB Ramps/Westfield Mall Driveway & Bear Valley Pkwy

2334 - Safari Highlands Ranch  
 9/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	40	556	69	415	1295	23	157	32	522	4	13	7
Future Volume (veh/h)	40	556	69	415	1295	23	157	32	522	4	13	7
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	42	579	72	432	1349	24	164	33	544	4	14	7
Adj No. of Lanes	2	2	1	2	3	1	2	2	2	1	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	396	1393	623	602	2305	715	213	848	1155	204	1047	468
Arrive On Green	0.12	0.39	0.39	0.17	0.45	0.45	0.06	0.24	0.24	0.12	0.30	0.30
Sat Flow, veh/h	3442	3539	1583	3442	5085	1578	3442	3539	2787	1774	3539	1583
Grp Volume(v), veh/h	42	579	72	432	1349	24	164	33	544	4	14	7
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1695	1578	1721	1770	1393	1774	1770	1583
Q Serve(g_s), s	1.5	16.5	4.0	16.5	27.4	0.9	6.5	1.0	14.8	0.3	0.4	0.4
Cycle Q Clear(g_c), s	1.5	16.5	4.0	16.5	27.4	0.9	6.5	1.0	14.8	0.3	0.4	0.4
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	396	1393	623	602	2305	715	213	848	1155	204	1047	468
V/C Ratio(X)	0.11	0.42	0.12	0.72	0.59	0.03	0.77	0.04	0.47	0.02	0.01	0.01
Avail Cap(c_a), veh/h	396	1393	623	602	2305	715	255	848	1155	204	1047	468
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.1	30.6	26.8	54.1	28.3	13.6	64.2	40.6	18.9	54.5	34.6	34.6
Incr Delay (d2), s/veh	0.5	0.9	0.4	7.2	1.1	0.1	11.3	0.1	1.4	0.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	8.2	1.8	8.5	13.1	0.4	3.4	0.5	5.9	0.1	0.2	0.2
LnGrp Delay(d),s/veh	55.6	31.5	27.2	61.3	29.4	13.7	75.5	40.7	20.2	54.7	34.6	34.7
LnGrp LOS	E	C	C	E	C	B	E	D	C	D	C	C
Approach Vol, veh/h	693			1805			741			25		
Approach Delay, s/veh	32.5			36.8			33.4			37.9		
Approach LOS	C			D			C			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.0	61.5	14.3	47.2	21.7	69.8	22.1	39.4				
Change Period (Y+Rc), s	5.7	6.4	* 5.7	6.1	* 5.7	6.4	6.1	* 6.1				
Max Green Setting (Gmax), s	41.5	* 10	39.0	* 16	49.8	16.0	* 33					
Max Q Clear Time (g_c+I), s	18.5	8.5	2.4	3.5	29.4	2.3	16.8					
Green Ext Time (p_c), s	0.8	13.8	0.1	0.1	0.1	12.7	0.0	2.2				
Intersection Summary												
HCM 2010 Ctrl Delay				35.1								
HCM 2010 LOS				D								
Notes												

HCM 2010 Signalized Intersection Summary  
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Synchro 9 Report

Existing + Cumulative Projects + Project AM  
 16: I-15 SB Ramps/Del Lago Blvd & Bear Valley Pkwy

2334 - Safari Highlands Ranch  
 9/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	171	352	455	1021	246	62	21	99	251	62	222	67
Future Volume (veh/h)	171	352	455	1021	246	62	21	99	251	62	222	67
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	178	367	474	1064	256	65	22	103	261	65	241	73
Adj No. of Lanes	1	2	2	2	2	1	1	2	1	1	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	299	1003	496	1150	1604	834	34	567	782	131	768	343
Arrive On Green	0.17	0.28	0.28	0.33	0.45	0.45	0.02	0.16	0.16	0.07	0.22	0.22
Sat Flow, veh/h	1774	3539	1751	3442	3539	1582	1774	3539	1583	1774	3539	1581
Grp Volume(v), veh/h	178	367	474	1064	256	65	22	103	261	65	241	73
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1582	1774	1770	1583	1774	1770	1581
Q Serve(g_s), s	15.6	13.9	39.0	50.1	7.2	1.5	2.1	4.2	0.0	5.9	9.6	6.4
Cycle Q Clear(g_c), s	15.6	13.9	39.0	50.1	7.2	1.5	2.1	4.2	0.0	5.9	9.6	6.4
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	299	1003	496	1150	1604	834	34	567	782	131	768	343
V/C Ratio(X)	0.60	0.37	0.96	0.93	0.16	0.08	0.65	0.18	0.33	0.50	0.31	0.21
Avail Cap(c_a), veh/h	299	1003	496	1150	1604	834	53	567	782	170	801	358
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.6	48.1	45.1	53.9	27.1	7.0	81.8	61.0	25.7	74.8	55.3	54.0
Incr Delay (d2), s/veh	8.5	1.0	30.8	12.5	0.0	0.0	19.0	0.7	1.1	2.9	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	7.0	11.5	25.8	3.5	0.6	1.2	2.1	7.6	3.0	4.7	2.8
LnGrp Delay(d),s/veh	73.0	49.2	75.8	66.4	27.1	7.0	100.8	61.7	26.9	77.7	55.5	54.3
LnGrp LOS	E	D	E	E	C	A	F	E	C	E	E	D
Approach Vol, veh/h	1019			1385			386			379		
Approach Delay, s/veh	65.7			56.4			40.4			59.1		
Approach LOS	E			E			D			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	62.5	54.0	8.9	42.6	34.0	82.5	18.5	33.0				
Change Period (Y+Rc), s	6.4	* 6.4	* 5.7	6.1	* 5.7	6.4	6.1	* 6.1				
Max Green Setting (Gmax), s	63.8	* 48	* 5	38.0	* 28	73.1	16.1	* 27				
Max Q Clear Time (g_c+I), s	41.0	4.1	11.6	17.6	9.2	7.9	6.2					
Green Ext Time (p_c), s	1.1	2.3	0.0	1.9	0.3	6.9	1.2	1.4				
Intersection Summary												
HCM 2010 Ctrl Delay				57.8								
HCM 2010 LOS				E								
Notes												

HCM 2010 Signalized Intersection Summary  
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Synchro 9 Report

Existing + Cumulative Projects + Project AM  
17: Sierra Linda Dr/Ryan Dr & San Pasqual Rd

2334 - Safari Highlands Ranch  
02/16/2017

Intersection												
Int Delay, s/veh 2.6												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↑	↗		↕			↕	
Traffic Vol, veh/h	22	207	19	1	724	3	39	0	4	2	1	63
Future Vol, veh/h	22	207	19	1	724	3	39	0	4	2	1	63
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	190	-	0	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	225	21	1	787	3	42	0	4	2	1	68

Major/Minor	Major1	Major2	Minor1	Minor2								
Conflicting Flow All	790	0	0	225	0	0	1099	1065	225	1066	1064	789
Stage 1	-	-	-	-	-	-	273	273	-	791	791	-
Stage 2	-	-	-	-	-	-	826	792	-	275	273	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2,218	-	-	2,218	-	-	3,518	4,018	3,318	3,518	4,018	3,318
Pot Cap-1 Maneuver	830	-	-	1,344	-	-	190	223	814	200	223	391
Stage 1	-	-	-	-	-	-	733	684	-	383	401	-
Stage 2	-	-	-	-	-	-	366	401	-	731	684	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	830	-	-	1,344	-	-	153	216	814	194	216	391
Mov Cap-2 Maneuver	-	-	-	-	-	-	153	216	-	194	216	-
Stage 1	-	-	-	-	-	-	712	664	-	372	401	-
Stage 2	-	-	-	-	-	-	301	401	-	706	664	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0	35	16.9
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	166	830	-	-	1344	-	-	375
HCM Lane V/C Ratio	0.282	0.029	-	-	0.001	-	-	0.191
HCM Control Delay (s)	35	9.5	-	-	7.7	-	-	16.9
HCM Lane LOS	E	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.1	0.1	-	-	0	-	-	0.7

Existing + Cumulative Projects + Project AM  
18: San Pasqual Rd & Old Milky Way

2334 - Safari Highlands Ranch  
06/21/2017

Intersection						
Int Delay, s/veh 8.6						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖		↑	↗		↕
Traffic Vol, veh/h	243	1	189	47	10	470
Future Vol, veh/h	243	1	189	47	10	470
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	100	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	264	1	205	51	11	511

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	738	205	0	0	205	0
Stage 1	205	-	-	-	-	-
Stage 2	533	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3,518	3,318	-	-	2,218	-
Pot Cap-1 Maneuver	385	836	-	-	1366	-
Stage 1	829	-	-	-	-	-
Stage 2	588	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	381	836	-	-	1366	-
Mov Cap-2 Maneuver	381	-	-	-	-	-
Stage 1	829	-	-	-	-	-
Stage 2	582	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	33.3	0	0.2
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	382	1366	-
HCM Lane V/C Ratio	-	-	0.694	0.008	-
HCM Control Delay (s)	-	-	33.3	7.7	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	5.1	0	-

Existing + Cumulative Projects + Project PM  
1: Cloverdale Rd & Rockwood Rd

2334 - Safari Highlands Ranch  
9/7/2016

Intersection						
Int Delay, s/veh	5.2					
<b>Movement</b>	<b>WBL</b>	<b>WBR</b>	<b>NBT</b>	<b>NBR</b>	<b>SBL</b>	<b>SBT</b>
Traffic Vol, veh/h	282	5	110	595	5	55
Future Vol, veh/h	282	5	110	595	5	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	65	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	307	5	120	647	5	60
<b>Major/Minor</b>	<b>Minor1</b>		<b>Major1</b>		<b>Major2</b>	
Conflicting Flow All	514	443	0	0	766	0
Stage 1	443	-	-	-	-	-
Stage 2	71	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	521	615	-	-	847	-
Stage 1	647	-	-	-	-	-
Stage 2	952	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	518	615	-	-	847	-
Mov Cap-2 Maneuver	563	-	-	-	-	-
Stage 1	647	-	-	-	-	-
Stage 2	946	-	-	-	-	-
<b>Approach</b>	<b>WB</b>		<b>NB</b>		<b>SB</b>	
HCM Control Delay, s	19		0		0.8	
HCM LOS	C					
<b>Minor Lane/Major Mvmt</b>	<b>NBT</b>	<b>NBR</b>	<b>WBLn1</b>	<b>SBL</b>	<b>SBT</b>	
Capacity (veh/h)	-	-	564	847	-	
HCM Lane V/C Ratio	-	-	0.553	0.006	-	
HCM Control Delay (s)	-	-	19	9.3	-	
HCM Lane LOS	-	-	C	A	-	
HCM 95th %tile Q(veh)	-	-	3.4	0	-	

Existing + Cumulative Projects + Project PM  
2: Rockwood Rd & Old Ranch Rd

2334 - Safari Highlands Ranch  
9/7/2016

Intersection										
Intersection Delay, s/veh	15.6									
Intersection LOS	C									
<b>Movement</b>	<b>EBU</b>	<b>EBL</b>	<b>EBT</b>	<b>WBU</b>	<b>WBT</b>	<b>WBR</b>	<b>SBU</b>	<b>SBL</b>	<b>SBT</b>	
Traffic Vol, veh/h	0	105	476	0	225	6	0	5	95	95
Future Vol, veh/h	0	105	476	0	225	6	0	5	95	95
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	114	517	0	245	7	0	5	103	103
Number of Lanes	0	1	1	0	1	0	0	1	1	1
<b>Approach</b>	<b>EB</b>			<b>WB</b>			<b>SB</b>			
Opposing Approach	WB			EB						
Opposing Lanes	1			2			0			
Conflicting Approach Left	SB						WB			
Conflicting Lanes Left	2						1			
Conflicting Approach Right				SB			EB			
Conflicting Lanes Right				2			2			
HCM Control Delay	18.3				11.5			9.8		
HCM LOS	C				B			A		
<b>Lane</b>	<b>EBLn1</b>	<b>EBLn2</b>	<b>WBLn1</b>	<b>SBLn1</b>	<b>SBLn2</b>					
Vol Left, %	100%	0%	0%	100%	0%					
Vol Thru, %	0%	100%	97%	0%	0%					
Vol Right, %	0%	0%	3%	0%	100%					
Sign Control	Stop	Stop	Stop	Stop	Stop					
Traffic Vol by Lane	105	476	231	5	95					
LT Vol	105	0	0	5	0					
Through Vol	0	476	225	0	0					
RT Vol	0	0	6	0	95					
Lane Flow Rate	114	517	251	5	103					
Geometry Grp	7	7	4	7	7					
Degree of Util (X)	0.177	0.729	0.37	0.011	0.168					
Departure Headway (Hd)	5.576	5.073	5.302	7.069	5.851					
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes					
Cap	640	709	673	503	608					
Service Time	3.334	2.83	3.37	4.856	3.637					
HCM Lane V/C Ratio	0.178	0.729	0.373	0.01	0.169					
HCM Control Delay	9.5	20.3	11.5	9.9	9.8					
HCM Lane LOS	A	C	B	A	A					
HCM 95th-tile Q	0.6	6.4	1.7	0	0.6					

Existing + Cumulative Projects + Project PM  
3: Rockwood Rd & Site Access

2334 - Safari Highlands Ranch  
9/7/2016

Intersection						
Int Delay, s/veh	7.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	438	43	38	0	0	193
Future Vol, veh/h	438	43	38	0	0	193
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	476	47	41	0	0	210
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	41	0	0	1040	41	
Stage 1	-	-	-	41	-	
Stage 2	-	-	-	999	-	
Critical Hdwy	4.12	-	-	6.42	6.22	
Critical Hdwy Stg 1	-	-	-	5.42	-	
Critical Hdwy Stg 2	-	-	-	5.42	-	
Follow-up Hdwy	2.218	-	-	3.518	3.318	
Pot Cap-1 Maneuver	1568	-	-	255	1030	
Stage 1	-	-	-	981	-	
Stage 2	-	-	-	356	-	
Platoon blocked, %	-	-	-	-	-	
Mov Cap-1 Maneuver	1568	-	-	175	1030	
Mov Cap-2 Maneuver	-	-	-	175	-	
Stage 1	-	-	-	981	-	
Stage 2	-	-	-	245	-	
Approach	EB	WB	SB			
HCM Control Delay, s	7.6	0	9.4			
HCM LOS			A			
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1568	-	-	-	1030	
HCM Lane V/C Ratio	0.304	-	-	-	0.204	
HCM Control Delay (s)	8.3	0	-	-	9.4	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	1.3	-	-	-	0.8	

Existing + Cumulative Projects + Project PM  
4: Centre City Pkwy & Felicita Rd

2334 - Safari Highlands Ranch  
9/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Traffic Volume (veh/h)	189	528	49	283	328	171	159	684	335	443	526	91
Future Volume (veh/h)	189	528	49	283	328	171	159	684	335	443	526	91
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	193	539	50	289	335	174	162	698	342	452	537	93
Adj No. of Lanes	2	2	0	2	2	1	2	2	1	2	2	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	260	812	75	351	972	422	227	1252	552	493	1526	671
Arrive On Green	0.08	0.25	0.25	0.10	0.27	0.27	0.07	0.35	0.35	0.14	0.43	0.43
Sat Flow, veh/h	3442	3271	303	3442	3539	1538	3442	3539	1560	3442	3539	1556
Grp Volume(v), veh/h	193	291	298	289	335	174	162	698	342	452	537	93
Grp Sat Flow(s), veh/h/ln	1721	1770	1804	1721	1770	1538	1721	1770	1560	1721	1770	1556
Q Serve(g_s), s	5.7	15.5	15.6	8.6	7.9	9.7	4.8	16.6	19.0	13.5	10.6	3.8
Cycle Q Clear(g_c), s	5.7	15.5	15.6	8.6	7.9	9.7	4.8	16.6	19.0	13.5	10.6	3.8
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	260	439	448	351	972	422	227	1252	552	493	1526	671
V/C Ratio(X)	0.74	0.66	0.67	0.82	0.34	0.41	0.71	0.56	0.62	0.92	0.35	0.14
Avail Cap(c_a), veh/h	362	626	638	362	1252	544	329	1252	552	493	1526	671
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.4	35.4	35.4	46.1	30.4	31.0	47.9	27.2	28.0	44.2	20.0	18.0
Incr Delay (d2), s/veh	5.1	1.7	1.7	14.0	0.2	0.6	4.1	1.8	5.2	21.9	0.6	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.9	7.7	8.0	4.8	3.9	4.2	2.4	8.5	8.9	8.0	5.4	1.7
LnGrp Delay(d), s/veh	52.5	37.1	37.1	60.1	30.6	31.7	52.0	29.0	33.1	66.1	20.6	18.4
LnGrp LOS	D	D	D	E	C	C	D	C	C	E	C	B
Approach Vol, veh/h	782			798			1202			1082		
Approach Delay, s/veh	40.9			41.5			33.3			39.4		
Approach LOS	D			D			C			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.0	41.0	14.7	30.0	10.9	49.1	11.9	32.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	15.0	37.0	11.0	37.0	10.0	42.0	11.0	37.0				
Max Q Clear Time (g_c+I1), s	15.5	21.0	10.6	17.6	6.8	12.6	7.7	11.7				
Green Ext Time (p_c), s	0.0	8.4	0.0	6.2	0.1	11.2	0.2	6.8				
Intersection Summary												
HCM 2010 Ctrl Delay	38.2											
HCM 2010 LOS	D											

Existing + Cumulative Projects + Project PM  
5: Escondido Blvd & Felicita Ave/Felicita Ave #1

2334 - Safari Highlands Ranch  
02/16/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↕	↔	↕	↕	↔	↕	↕
Traffic Volume (veh/h)	190	994	126	91	579	47	99	299	143	101	203	136
Future Volume (veh/h)	190	994	126	91	579	47	99	299	143	101	203	136
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	207	1080	137	99	629	51	108	325	155	110	221	148
Adj No. of Lanes	2	2	0	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	286	1532	194	111	1643	734	295	701	327	249	619	397
Arrive On Green	0.08	0.48	0.48	0.06	0.46	0.46	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	3442	3161	400	1774	3539	1580	1007	2342	1094	910	2068	1326
Grp Volume(v), veh/h	207	604	613	99	629	51	108	244	236	110	188	181
Grp Sat Flow(s),veh/h/ln	1721	1770	1792	1774	1770	1580	1007	1770	1667	910	1770	1624
Q Serve(g_s), s	5.2	23.5	23.6	4.9	10.2	1.6	8.3	9.9	10.2	9.9	7.3	7.7
Cycle Q Clear(g_c), s	5.2	23.5	23.6	4.9	10.2	1.6	16.1	9.9	10.2	20.0	7.3	7.7
Prop In Lane	1.00		0.22	1.00		1.00	1.00		0.66	1.00		0.82
Lane Grp Cap(c), veh/h	286	858	869	111	1643	734	295	530	499	249	530	486
V/C Ratio(X)	0.72	0.70	0.71	0.89	0.38	0.07	0.37	0.46	0.47	0.44	0.35	0.37
Avail Cap(c_a), veh/h	411	1217	1232	111	2232	997	342	613	578	292	613	563
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.3	17.7	17.7	41.0	15.4	13.1	30.7	25.1	25.2	33.4	24.2	24.3
Incr Delay (d2), s/veh	3.6	1.1	1.1	53.4	0.1	0.0	0.8	0.6	0.7	1.2	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%)veh/ln	2.6	11.7	11.8	4.0	5.0	0.7	2.4	4.9	4.8	2.6	3.6	3.5
LnGrp Delay(d),s/veh	42.9	18.8	18.8	94.4	15.5	13.1	31.4	25.7	25.9	34.6	24.6	24.8
LnGrp LOS	D	B	B	F	B	B	C	C	C	C	C	C
Approach Vol, veh/h	1424			779				588			479	
Approach Delay, s/veh	22.3			25.4				26.8			27.0	
Approach LOS	C			C				C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.8	10.0	47.2		30.8	11.8	45.3				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		30.5	5.5	60.5		30.5	10.5	55.5				
Max Q Clear Time (g_c+I1), s		18.1	6.9	25.6		22.0	7.2	12.2				
Green Ext Time (p_c), s		5.2	0.0	17.1		4.0	0.2	18.7				
Intersection Summary												
HCM 2010 Ctrl Delay	24.5											
HCM 2010 LOS	C											

Existing + Cumulative Projects + Project PM  
6: Juniper St & Felicita Ave #1/E 17th Ave #1

2334 - Safari Highlands Ranch  
02/16/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↕	↔	↕	↕	↔	↕	↕
Traffic Volume (veh/h)	276	820	78	14	420	42	52	176	18	73	209	194
Future Volume (veh/h)	276	820	78	14	420	42	52	176	18	73	209	194
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	300	891	85	15	457	46	57	191	20	79	227	211
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	351	1023	98	204	645	545	250	423	44	291	475	714
Arrive On Green	0.20	0.61	0.61	0.35	0.35	0.35	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1774	1675	160	574	1863	1574	944	1658	174	1166	1863	1571
Grp Volume(v), veh/h	300	0	976	15	457	46	57	0	211	79	227	211
Grp Sat Flow(s),veh/h/ln	1774	0	1834	574	1863	1574	944	0	1832	1166	1863	1571
Q Serve(g_s), s	11.0	0.0	29.7	1.5	14.3	1.3	3.7	0.0	6.5	4.1	6.9	5.7
Cycle Q Clear(g_c), s	11.0	0.0	29.7	13.4	14.3	1.3	10.6	0.0	6.5	10.6	6.9	5.7
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	351	0	1121	204	645	545	250	0	467	291	475	714
V/C Ratio(X)	0.85	0.00	0.87	0.07	0.71	0.08	0.23	0.00	0.45	0.27	0.48	0.30
Avail Cap(c_a), veh/h	462	0	1310	227	721	609	473	0	900	567	915	1085
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.0	0.0	10.9	23.8	19.0	14.8	25.7	0.0	21.1	25.5	21.2	11.6
Incr Delay (d2), s/veh	11.5	0.0	5.9	0.2	2.8	0.1	0.5	0.0	0.7	0.5	0.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%)veh/ln	6.5	0.0	16.5	0.2	7.7	0.6	1.0	0.0	3.4	1.4	3.6	2.5
LnGrp Delay(d),s/veh	37.6	0.0	16.8	24.0	21.9	14.9	26.2	0.0	21.8	26.0	22.0	11.8
LnGrp LOS	D		B	C	B	C	C		C	C	C	B
Approach Vol, veh/h	1276			518				268			517	
Approach Delay, s/veh	21.6			21.3				22.7			18.5	
Approach LOS	C			C				C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		21.6		45.6		21.6	17.8	27.8				
Change Period (Y+Rc), s		4.5		4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		33.0		48.0		33.0	17.5	26.0				
Max Q Clear Time (g_c+I1), s		12.6		31.7		12.6	13.0	16.3				
Green Ext Time (p_c), s		3.9		9.3		3.9	0.4	6.4				
Intersection Summary												
HCM 2010 Ctrl Delay	21.0											
HCM 2010 LOS	C											

Existing + Cumulative Projects + Project PM  
7: San Pasqual Valley Rd & E 17th Ave

2334 - Safari Highlands Ranch  
9/17/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	314	2	389	0	2	1	251	531	1	1	439	185
Future Volume (veh/h)	314	2	389	0	2	1	251	531	1	1	439	185
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	320	2	397	0	2	1	256	542	1	1	448	189
Adj No. of Lanes	0	1	1	0	1	0	1	1	0	1	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	416	3	373	0	7	3	282	1086	2	3	532	224
Arrive On Green	0.24	0.24	0.24	0.00	0.01	0.01	0.16	0.58	0.58	0.00	0.43	0.43
Sat Flow, veh/h	1764	11	1583	0	1173	586	1774	1859	3	1774	1245	525
Grp Volume(v), veh/h	322	0	397	0	0	3	256	0	543	1	0	637
Grp Sat Flow(s), veh/h/ln	1775	0	1583	0	0	1759	1774	0	1862	1774	0	1770
Q Serve(g_s), s	20.3	0.0	28.3	0.0	0.0	0.2	17.0	0.0	20.5	0.1	0.0	38.6
Cycle Q Clear(g_c), s	20.3	0.0	28.3	0.0	0.0	0.2	17.0	0.0	20.5	0.1	0.0	38.6
Prop In Lane	0.99	1.00	0.00			0.33	1.00		0.00	1.00		0.30
Lane Grp Cap(c), veh/h	419	0	373	0	0	10	282	0	1088	3	0	757
V/C Ratio(X)	0.77	0.00	1.06	0.00	0.00	0.31	0.91	0.00	0.50	0.29	0.00	0.84
Avail Cap(c_a), veh/h	419	0	373	0	0	359	285	0	1088	103	0	757
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.53	0.00	0.53	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.8	0.0	45.9	0.0	0.0	59.4	49.6	0.0	14.6	59.8	0.0	30.7
Incr Delay (d2), s/veh	4.6	0.0	51.9	0.0	0.0	16.8	30.7	0.0	1.6	42.3	0.0	11.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.5	0.0	17.7	0.0	0.0	0.1	10.7	0.0	11.1	0.1	0.0	21.1
LnGrp Delay(d), s/veh	47.4	0.0	97.8	0.0	0.0	76.2	80.3	0.0	16.3	102.1	0.0	41.7
LnGrp LOS	D		F			E	F		B	F		D
Approach Vol, veh/h	719			3			799			638		
Approach Delay, s/veh	75.2			76.2			36.8			41.8		
Approach LOS	E			E			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	33.7	57.1		5.8	4.9	75.9		33.4				
Change Period (Y+Rc), s	4.7	5.8		5.1	4.7	5.8		5.1				
Max Green Setting (Gmax), s	27.2			24.5	7	39.5		28.3				
Max Q Clear Time (g_c+I), s	40.6			2.2	2.1	22.5		30.3				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	6.8		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				51.1								
HCM 2010 LOS				D								
Notes												

Existing + Cumulative Projects + Project PM  
8: Bear Valley Pkwy & San Pasqual Valley Rd

2334 - Safari Highlands Ranch  
9/17/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	41	741	82	109	574	79	133	723	213	75	361	49
Future Volume (veh/h)	41	741	82	109	574	79	133	723	213	75	361	49
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	44	797	88	117	617	85	143	777	229	81	388	53
Adj No. of Lanes	1	2	1	1	2	0	2	2	0	1	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	1030	461	157	997	137	340	812	239	148	898	122
Arrive On Green	0.06	0.29	0.29	0.09	0.32	0.32	0.10	0.30	0.30	0.08	0.29	0.29
Sat Flow, veh/h	1774	3539	1583	1774	3127	430	3442	2682	790	1774	3127	424
Grp Volume(v), veh/h	44	797	88	117	349	353	143	513	493	81	218	223
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1787	1721	1770	1703	1774	1770	1781
Q Serve(g_s), s	2.6	22.7	4.6	7.1	18.4	18.5	4.3	31.3	31.3	4.8	11.0	11.2
Cycle Q Clear(g_c), s	2.6	22.7	4.6	7.1	18.4	18.5	4.3	31.3	31.3	4.8	11.0	11.2
Prop In Lane	1.00	1.00	1.00			0.24	1.00		0.46	1.00		0.24
Lane Grp Cap(c), veh/h	107	1030	461	157	564	570	340	536	516	148	508	512
V/C Ratio(X)	0.41	0.77	0.19	0.75	0.62	0.62	0.42	0.96	0.96	0.55	0.43	0.44
Avail Cap(c_a), veh/h	145	1030	461	161	564	570	344	536	516	163	508	512
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.8	35.7	29.3	48.9	31.8	31.8	46.6	37.6	37.6	48.4	31.9	31.9
Incr Delay (d2), s/veh	2.5	5.7	0.9	16.8	5.0	5.0	0.8	29.5	30.3	3.1	2.6	2.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	4	11.9	2.1	4.2	9.8	9.9	2.1	19.6	19.0	2.5	5.8	5.9
LnGrp Delay(d), s/veh	52.3	41.3	30.2	65.7	36.8	36.8	47.4	67.2	67.9	51.6	34.5	34.6
LnGrp LOS	D	D	C	E	D	D	D	E	E	D	C	C
Approach Vol, veh/h	929			819			1149			522		
Approach Delay, s/veh	40.8			40.9			65.0			37.2		
Approach LOS	D			D			E			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	35.4	39.2	16.6	38.8	12.4	42.3	14.9	40.5				
Change Period (Y+Rc), s	5.7	7.2	5.7	7.2	5.7	7.2	5.7	7.2				
Max Green Setting (Gmax), s	31.6	11	31.6	11	31.6	11	31.6	11	31.6	11	31.6	11
Max Q Clear Time (g_c+I), s	24.7	6.3	13.2	4.6	20.5	6.8	33.3					
Green Ext Time (p_c), s	0.0	4.6	0.2	8.1	0.0	7.1	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				48.4								
HCM 2010 LOS				D								
Notes												

Existing + Cumulative Projects + Project PM  
9: San Pasqual Valley Rd & Citrus Avenue

2334 - Safari Highlands Ranch  
9/7/2016

Intersection						
Int Delay, s/veh	23					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	265	759	671	91	58	91
Future Vol, veh/h	265	759	671	91	58	91
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	115	-	-	-	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	288	825	729	99	63	99
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	828	0	-	0	2180	779
Stage 1	-	-	-	-	779	-
Stage 2	-	-	-	-	1401	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2,218	-	-	-	3,518	3,318
Pot Cap-1 Maneuver	803	-	-	-	- 51	396
Stage 1	-	-	-	-	452	-
Stage 2	-	-	-	-	228	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	803	-	-	-	- 33	396
Mov Cap-2 Maneuver	-	-	-	-	- 33	-
Stage 1	-	-	-	-	452	-
Stage 2	-	-	-	-	146	-
Approach	EB		WB		SB	
HCM Control Delay, s	3.1		0		278	
HCM LOS					F	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	803	-	-	-	33	396
HCM Lane V/C Ratio	0.359	-	-	-	1.91	0.25
HCM Control Delay (s)	12	-	-	-	687.4	17.1
HCM Lane LOS	B	-	-	-	F	C
HCM 95th %tile Q(veh)	1.6	-	-	-	7.1	1
Notes	-: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    *: All major volume in platoon					

Existing + Cumulative Projects + Project PM  
10: Summit Drive & San Pasqual Valley Rd (SR 78)

2334 - Safari Highlands Ranch  
02/16/2017

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔			↔	↔		↔	↔
Traffic Vol, veh/h	26	737	59	4	513	4	57	4	2	6	1	13
Future Vol, veh/h	26	737	59	4	513	4	57	4	2	6	1	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Stop	-	-	Stop
Storage Length	400	-	-	415	-	-	-	-	50	-	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	801	64	4	558	4	62	4	2	7	1	14
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	562	0	0	865	0	0	1459	1461	833	1460	1490	560
Stage 1	-	-	-	-	-	-	890	890	-	568	568	-
Stage 2	-	-	-	-	-	-	569	571	-	892	922	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2,218	-	-	2,218	-	-	3,518	4,018	3,318	3,518	4,018	3,318
Pot Cap-1 Maneuver	1009	-	-	778	-	-	107	129	369	107	124	528
Stage 1	-	-	-	-	-	-	337	361	-	508	506	-
Stage 2	-	-	-	-	-	-	507	505	-	337	349	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1009	-	-	778	-	-	101	125	369	101	120	528
Mov Cap-2 Maneuver	-	-	-	-	-	-	101	125	-	101	120	-
Stage 1	-	-	-	-	-	-	328	351	-	494	503	-
Stage 2	-	-	-	-	-	-	490	502	-	322	339	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0.1			87.7			22.7		
HCM LOS							F			C		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	102	369	1009	-	-	778	-	-	103	528		
HCM Lane V/C Ratio	0.65	0.006	0.028	-	-	0.006	-	-	0.074	0.027		
HCM Control Delay (s)	90.1	14.8	8.7	-	-	9.7	-	-	42.7	12		
HCM Lane LOS	F	B	A	-	-	A	-	-	E	B		
HCM 95th %tile Q(veh)	3.2	0	0.1	-	-	0	-	-	0.2	0.1		

Existing + Cumulative Projects + Project PM 2334 - Safari Highlands Ranch  
 11: San Pasqual Rd/Cloverdale Rd & San Pasqual Valley Rd 9/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔	
Traffic Volume (veh/h)	350	239	59	237	391	64	61	284	6	29	150	187	
Future Volume (veh/h)	350	239	59	237	391	64	61	284	6	29	150	187	
Number	5	2	12	1	6	16	3	8	18	7	4	14	
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	
Adj Flow Rate, veh/h	380	260	64	258	425	70	66	309	7	32	163	203	
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2	
Cap, veh/h	251	1375	602	245	1363	596	108	372	535	89	351	523	
Arrive On Green	0.14	0.39	0.39	0.14	0.39	0.39	0.06	0.20	0.20	0.05	0.19	0.19	
Sat Flow, veh/h	1774	3539	1549	1774	3539	1549	1774	1863	1583	1774	1863	1583	
Grp Volume(v), veh/h	380	260	64	258	425	70	66	309	7	32	163	203	
Grp Sat Flow(s), veh/h/ln	1774	1770	1549	1774	1770	1549	1774	1863	1583	1774	1863	1583	
Q Serve(g_s), s	16.3	5.6	3.0	15.9	9.7	3.3	4.2	18.3	0.3	2.0	8.9	11.3	
Cycle Q Clear(g_c), s	16.3	5.6	3.0	15.9	9.7	3.3	4.2	18.3	0.3	2.0	8.9	11.3	
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	251	1375	602	245	1363	596	108	372	535	89	351	523	
V/C Ratio(X)	1.51	0.19	0.11	1.05	0.31	0.12	0.61	0.83	0.01	0.36	0.46	0.39	
Avail Cap(c_a), veh/h	251	1375	602	245	1363	596	137	518	659	139	520	666	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	49.3	23.2	22.4	49.5	24.7	22.8	52.6	44.2	25.3	52.8	41.5	29.6	
Incr Delay (d2), s/veh	249.6	0.3	0.4	71.7	0.6	0.4	5.4	7.9	0.0	2.4	1.0	0.5	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%)veh/ln	25.4	2.8	1.3	12.7	4.8	1.5	2.2	10.3	0.1	1.0	4.7	5.0	
LnGrp Delay(d),s/veh	298.9	23.5	22.8	121.3	25.3	23.2	58.1	52.1	25.3	55.3	42.4	30.1	
LnGrp LOS	F	C	C	F	C	C	E	D	C	E	D	C	
Approach Vol, veh/h	704			753				382			398		
Approach Delay, s/veh	172.1			58.0				52.6			37.2		
Approach LOS	F			E				D			D		
Timer	1	2	3	4	5	6	7	8					
Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), s	21.6	52.2	12.7	28.5	22.0	51.8	11.5	29.8					
Change Period (Y+Rc), s	* 5.7	7.5	* 5.7	6.8	* 5.7	7.5	* 5.7	6.8					
Max Green Setting (Gmax), s	* 16	32.4	* 8.9	32.1	* 16	32.0	* 9	32.0					
Max Q Clear Time (g_c+I1), s	17.9	7.6	6.2	13.3	18.3	11.7	4.0	20.3					
Green Ext Time (p_c), s	0.0	4.5	0.0	3.2	0.0	4.3	0.0	2.6					
Intersection Summary													
HCM 2010 Ctrl Delay				89.3									
HCM 2010 LOS	F												
Notes													

Existing + Cumulative Projects + Project PM 2334 - Safari Highlands Ranch  
 12: San Pasqual Valley Rd & Safari Park Driveway 9/7/2016

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	8	325	356	1	19	229
Future Vol, veh/h	8	325	356	1	19	229
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Free
Storage Length	410	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	349	383	1	20	246
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	384	0	-	0	750	-
Stage 1	-	-	-	-	383	-
Stage 2	-	-	-	-	367	-
Critical Hdwy	4.14	-	-	-	6.63	-
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.22	-	-	-	3.519	-
Pot Cap-1 Maneuver	1171	-	-	-	363	0
Stage 1	-	-	-	-	660	0
Stage 2	-	-	-	-	700	0
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1171	-	-	-	360	-
Mov Cap-2 Maneuver	-	-	-	-	360	-
Stage 1	-	-	-	-	660	-
Stage 2	-	-	-	-	695	-
Approach	EB		WB		SB	
HCM Control Delay, s	0.2		0		15.6	
HCM LOS					C	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1171	-	-	-	360	-
HCM Lane V/C Ratio	0.007	-	-	-	0.057	-
HCM Control Delay (s)	8.1	-	-	-	15.6	0
HCM Lane LOS	A	-	-	-	C	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2	-

Existing + Cumulative Projects + Project PM  
13: Bear Valley Pkwy & San Pasqual Rd

2334 - Safari Highlands Ranch  
9/7/2016

Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	573	84	1444	658	109	775		
Future Volume (veh/h)	573	84	1444	658	109	775		
Number	3	18	2	12	1	6		
Initial Q (Ob), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	603	88	1520	693	115	816		
Adj No. of Lanes	2	1	2	1	1	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	770	354	1895	827	142	2368		
Arrive On Green	0.22	0.22	0.54	0.54	0.08	0.67		
Sat Flow, veh/h	3442	1583	3632	1544	1774	3632		
Grp Volume(v), veh/h	603	88	1520	693	115	816		
Grp Sat Flow(s), veh/h/ln	1721	1583	1770	1544	1774	1770		
Q Serve(g_s), s	12.3	3.4	26.1	28.3	4.8	7.4		
Cycle Q Clear(g_c), s	12.3	3.4	26.1	28.3	4.8	7.4		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	770	354	1895	827	142	2368		
V/C Ratio(X)	0.78	0.25	0.80	0.84	0.81	0.34		
Avail Cap(c_a), veh/h	1474	678	1895	827	142	2368		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	27.3	23.8	14.1	14.6	33.8	5.3		
Incr Delay (d2), s/veh	1.8	0.4	3.7	9.9	27.9	0.4		
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%), veh/ln	6.1	1.5	13.6	14.2	3.4	3.6		
LnGrp Delay(d), s/veh	29.1	24.2	17.8	24.6	61.7	5.7		
LnGrp LOS	C	C	B	C	E	A		
Approach Vol, veh/h	691		2213		931			
Approach Delay, s/veh	28.5		19.9		12.6			
Approach LOS	C		B		B			
<b>Timer</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	10.0	44.0				54.0		20.7
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	6.0	40.0				50.0		32.0
Max Q Clear Time (g_c+I1), s	6.8	30.3				9.4		14.3
Green Ext Time (p_c), s	0.0	8.8				29.4		2.4

Intersection Summary	
HCM 2010 Ctrl Delay	19.7
HCM 2010 LOS	B

Existing + Cumulative Projects + Project PM  
14: Via Rancho Pkwy/Bear Valley Pkwy & Del Lago Blvd/Beethoven Dr

2334 - Safari Highlands Ranch  
02/16/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	563	16	77	58	25	12	48	1731	116	10	871	318
Future Volume (veh/h)	563	16	77	58	25	12	48	1731	116	10	871	318
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	624	0	0	52	43	13	52	1882	126	11	947	346
Adj No. of Lanes	2	0	1	1	1	0	2	2	1	1	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	717	0	320	127	98	30	101	1938	867	18	2688	837
Arrive On Green	0.20	0.00	0.00	0.07	0.07	0.07	0.03	0.55	0.55	0.01	0.53	0.53
Sat Flow, veh/h	3548	0	1583	1774	1368	414	3442	3539	1583	1774	5085	1583
Grp Volume(v), veh/h	624	0	0	52	0	56	52	1882	126	11	947	346
Grp Sat Flow(s), veh/h/ln	1774	0	1583	1774	0	1781	1721	1770	1583	1774	1695	1583
Q Serve(g_s), s	18.2	0.0	0.0	3.0	0.0	3.2	1.6	54.9	4.2	0.7	11.5	14.1
Cycle Q Clear(g_c), s	18.2	0.0	0.0	3.0	0.0	3.2	1.6	54.9	4.2	0.7	11.5	14.1
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	717	0	320	127	0	127	101	1938	867	18	2688	837
V/C Ratio(X)	0.87	0.00	0.00	0.41	0.00	0.44	0.51	0.97	0.15	0.59	0.35	0.41
Avail Cap(c_a), veh/h	880	0	393	714	0	717	229	1938	867	66	2688	837
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.3	0.0	0.0	47.4	0.0	47.5	51.1	23.3	11.9	52.6	14.6	15.2
Incr Delay (d2), s/veh	8.1	0.0	0.0	2.1	0.0	2.4	4.0	14.7	0.4	26.9	0.4	1.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	9.7	0.0	0.0	1.5	0.0	1.7	0.8	30.6	1.9	0.5	5.4	6.5
LnGrp Delay(d), s/veh	49.4	0.0	0.0	49.5	0.0	49.9	55.1	38.0	12.2	79.5	15.0	16.7
LnGrp LOS	D			D		D	E	D	B	E	B	B
Approach Vol, veh/h	624			108			2060				1304	
Approach Delay, s/veh	49.4			49.7			36.9				16.0	
Approach LOS	D			D			D				B	
<b>Timer</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.6	63.0		26.1	7.6	61.0		12.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	4.0	58.5		26.5	7.1	55.4		43.0				
Max Q Clear Time (g_c+I1), s	2.7	56.9		20.2	3.6	16.1		5.2				
Green Ext Time (p_c), s	0.0	1.6		1.4	0.0	32.1		0.4				

Intersection Summary	
HCM 2010 Ctrl Delay	32.5
HCM 2010 LOS	C

Notes

Existing + Cumulative Projects + Project PM 2334 - Safari Highlands Ranch  
 15: I-15 NB Ramps/Westfield Mall Driveway & Bear Valley Pkwy 9/17/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔	
Traffic Volume (veh/h)	241	502	129	305	766	38	324	347	1124	31	234	247	
Future Volume (veh/h)	241	502	129	305	766	38	324	347	1124	31	234	247	
Number	5	2	12	1	6	16	3	8	18	7	4	14	
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	
Adj Flow Rate, veh/h	246	512	132	311	782	39	331	354	1147	32	239	252	
Adj No. of Lanes	2	2	1	2	3	1	2	2	2	1	2	1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2	
Cap, veh/h	408	1408	630	416	2034	632	379	1004	1127	210	1045	467	
Arrive On Green	0.12	0.40	0.40	0.12	0.40	0.40	0.11	0.28	0.28	0.12	0.30	0.30	
Sat Flow, veh/h	3442	3539	1583	3442	5085	1581	3442	3539	2787	1774	3539	1583	
Grp Volume(v), veh/h	246	512	132	311	782	39	331	354	1147	32	239	252	
Grp Sat Flow(s), veh/h/ln	1721	1770	1583	1721	1695	1581	1721	1770	1393	1774	1770	1583	
Q Serve(g_s), s	9.2	13.8	7.4	11.8	14.7	1.7	12.8	10.7	38.3	2.2	6.9	18.0	
Cycle Q Clear(g_c), s	9.2	13.8	7.4	11.8	14.7	1.7	12.8	10.7	38.3	2.2	6.9	18.0	
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	408	1408	630	416	2034	632	379	1004	1127	210	1045	467	
V/C Ratio(X)	0.60	0.36	0.21	0.75	0.38	0.06	0.87	0.35	1.02	0.15	0.23	0.54	
Avail Cap(c_a), veh/h	408	1408	630	416	2034	632	390	1004	1127	210	1045	467	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	56.5	28.6	26.7	57.4	28.7	16.6	59.2	38.5	28.0	53.4	36.0	39.9	
Incr Delay (d2), s/veh	6.5	0.7	0.8	11.7	0.6	0.2	18.9	1.0	31.3	1.5	0.5	4.4	
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%), veh/ln	7.7	6.8	3.4	6.3	7.0	0.8	7.1	5.4	4.9	1.2	3.5	8.4	
LnGrp Delay(d), s/veh	63.0	29.3	27.5	69.0	29.3	16.8	78.0	39.5	59.3	54.9	36.5	44.3	
LnGrp LOS	E	C	C	E	C	B	E	D	F	D	D	D	
Approach Vol, veh/h	890			1132				1832			523		
Approach Delay, s/veh	38.4			39.8				58.8			41.4		
Approach LOS	D			D				E			D		
Timer	1	2	3	4	5	6	7	8					
Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), s	22.0	60.5	20.6	45.9	21.7	60.8	22.1	44.4					
Change Period (Y+Rc), s	5.7	6.4	* 5.7	6.1	* 5.7	6.4	6.1	* 6.1					
Max Green Setting (Gmax), s	40.5	* 15	39.0	* 16	40.8	16.0	* 38						
Max Q Clear Time (g_c+M), s	15.8	14.8	20.0	11.2	16.7	4.2	40.3						
Green Ext Time (p_c), s	0.3	9.4	0.1	2.4	0.3	9.3	2.0	0.0					
Intersection Summary													
HCM 2010 Ctrl Delay				47.7									
HCM 2010 LOS				D									
Notes													

Existing + Cumulative Projects + Project PM 2334 - Safari Highlands Ranch  
 16: I-15 SB Ramps/Del Lago Blvd & Bear Valley Pkwy 9/17/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔	
Traffic Volume (veh/h)	119	256	260	945	305	61	119	125	500	116	157	137	
Future Volume (veh/h)	119	256	260	945	305	61	119	125	500	116	157	137	
Number	5	2	12	1	6	16	3	8	18	7	4	14	
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	
Adj Flow Rate, veh/h	121	261	265	964	311	62	121	128	510	118	160	140	
Adj No. of Lanes	1	2	2	2	2	1	1	2	1	1	2	1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2	
Cap, veh/h	212	812	401	1077	1513	799	142	774	842	147	793	350	
Arrive On Green	0.12	0.23	0.23	0.31	0.43	0.43	0.08	0.22	0.22	0.08	0.22	0.22	
Sat Flow, veh/h	1774	3539	1750	3442	3539	1562	1774	3539	1583	1774	3539	1561	
Grp Volume(v), veh/h	121	261	265	964	311	62	121	128	510	118	160	140	
Grp Sat Flow(s), veh/h/ln	1774	1770	1770	1770	1562	1774	1770	1583	1774	1770	1561	1561	
Q Serve(g_s), s	10.3	9.8	17.6	42.8	8.8	1.0	10.8	4.7	0.0	10.5	5.9	12.2	
Cycle Q Clear(g_c), s	10.3	9.8	17.6	42.8	8.8	1.0	10.8	4.7	0.0	10.5	5.9	12.2	
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	212	812	401	1077	1513	799	142	774	842	147	793	350	
V/C Ratio(X)	0.57	0.32	0.66	0.89	0.21	0.08	0.86	0.17	0.61	0.80	0.20	0.40	
Avail Cap(c_a), veh/h	212	812	401	1077	1513	799	162	774	842	195	841	371	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	66.6	51.3	35.7	52.4	28.8	7.5	72.7	50.7	25.9	72.1	50.4	52.9	
Incr Delay (d2), s/veh	10.7	1.0	8.3	9.8	0.1	0.0	30.8	0.5	3.2	16.3	0.1	0.7	
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%), veh/ln	7.7	4.9	4.7	21.8	4.3	0.7	6.5	2.3	16.3	5.8	2.9	5.4	
LnGrp Delay(d), s/veh	77.3	52.3	43.9	62.3	28.8	7.5	103.5	51.1	29.1	88.4	50.6	53.6	
LnGrp LOS	E	D	D	E	C	A	F	D	C	F	D	D	
Approach Vol, veh/h	647			1337				759			418		
Approach Delay, s/veh	53.6			52.0				44.7			62.3		
Approach LOS	D			D				D			E		
Timer	1	2	3	4	5	6	7	8					
Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), s	56.5	43.1	18.5	42.0	24.8	74.8	19.3	41.1					
Change Period (Y+Rc), s	6.4	* 6.4	* 5.7	6.1	* 5.7	6.4	6.1	* 6.1					
Max Green Setting (Gmax), s	40.5	* 37	* 15	38.0	* 19	40.8	17.6	* 35					
Max Q Clear Time (g_c+M), s	19.6	12.8	14.2	12.3	10.8	12.5	6.7						
Green Ext Time (p_c), s	1.2	2.3	0.0	1.7	0.1	6.6	0.8	2.8					
Intersection Summary													
HCM 2010 Ctrl Delay				51.9									
HCM 2010 LOS				D									
Notes													

Intersection												
Int Delay, s/veh 1.6												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↑	↗		↔			↔	
Traffic Vol, veh/h	50	682	37	3	313	0	25	2	6	0	2	28
Future Vol, veh/h	50	682	37	3	313	0	25	2	6	0	2	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	190	-	0	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	54	741	40	3	340	0	27	2	7	0	2	30

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	340	0	0	741	0	0	1213	1197	741	1201	1197	340
Stage 1	-	-	-	-	-	-	850	850	-	347	347	-
Stage 2	-	-	-	-	-	-	363	347	-	854	850	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1219	-	-	866	-	-	159	186	416	162	186	702
Stage 1	-	-	-	-	-	-	355	377	-	669	635	-
Stage 2	-	-	-	-	-	-	656	635	-	353	377	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1219	-	-	866	-	-	145	177	416	152	177	702
Mov Cap-2 Maneuver	-	-	-	-	-	-	145	177	-	152	177	-
Stage 1	-	-	-	-	-	-	339	360	-	639	633	-
Stage 2	-	-	-	-	-	-	623	633	-	330	360	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	32.4	11.5
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	167	1219	-	-	866	-	-	586
HCM Lane V/C Ratio	0.215	0.045	-	-	0.004	-	-	0.056
HCM Control Delay (s)	32.4	8.1	-	-	9.2	-	-	11.5
HCM Lane LOS	D	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.8	0.1	-	-	0	-	-	0.2

Intersection						
Int Delay, s/veh 1.8						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖		↑	↗	↖	↗
Traffic Vol, veh/h	80	28	383	266	7	347
Future Vol, veh/h	80	28	383	266	7	347
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	100	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	87	30	416	289	8	377

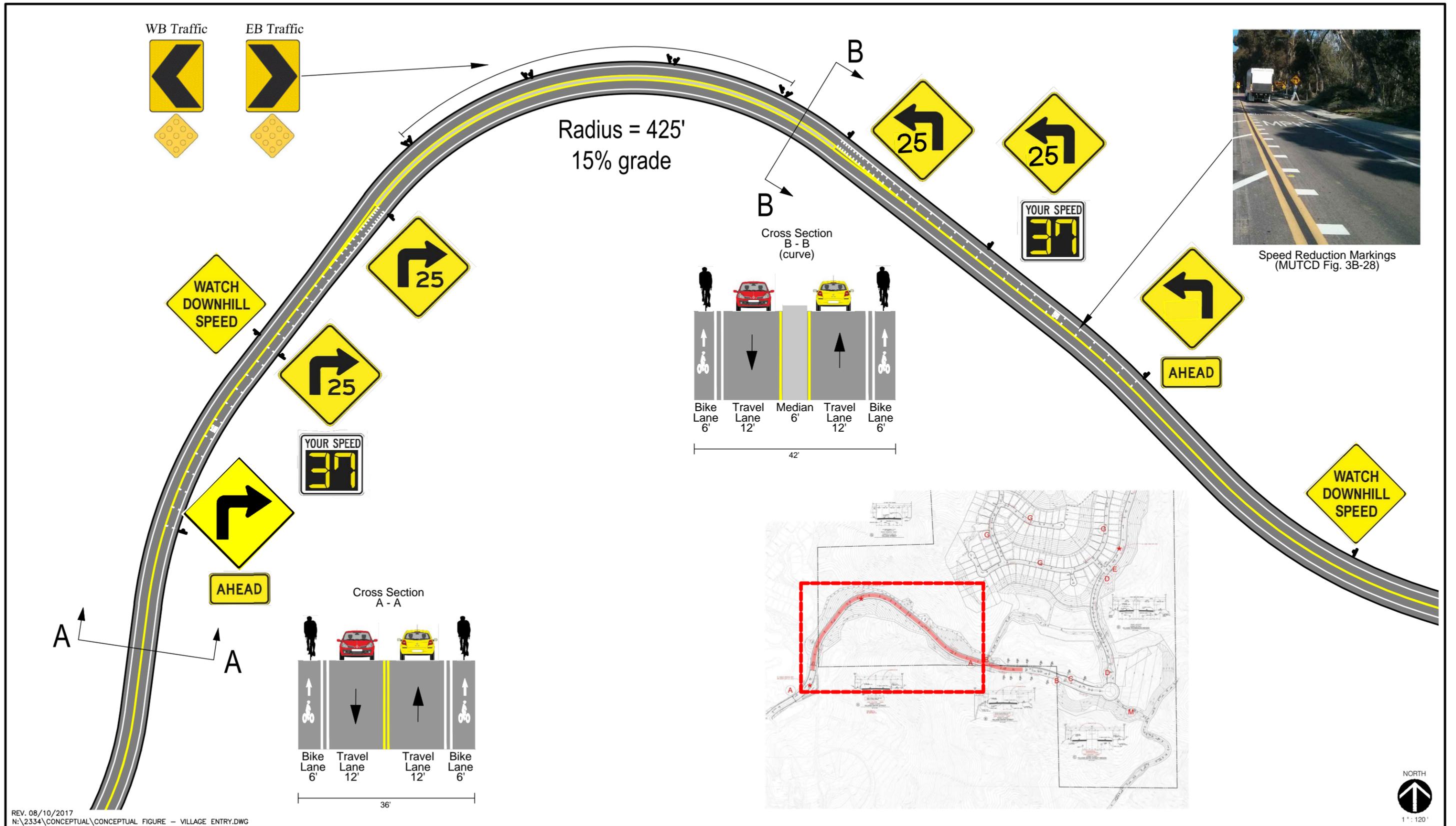
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	808	416	0	0	416	0
Stage 1	416	-	-	-	-	-
Stage 2	392	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	350	637	-	-	1143	-
Stage 1	666	-	-	-	-	-
Stage 2	683	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	347	637	-	-	1143	-
Mov Cap-2 Maneuver	347	-	-	-	-	-
Stage 1	666	-	-	-	-	-
Stage 2	677	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18	0	0.2
HCM LOS	C		

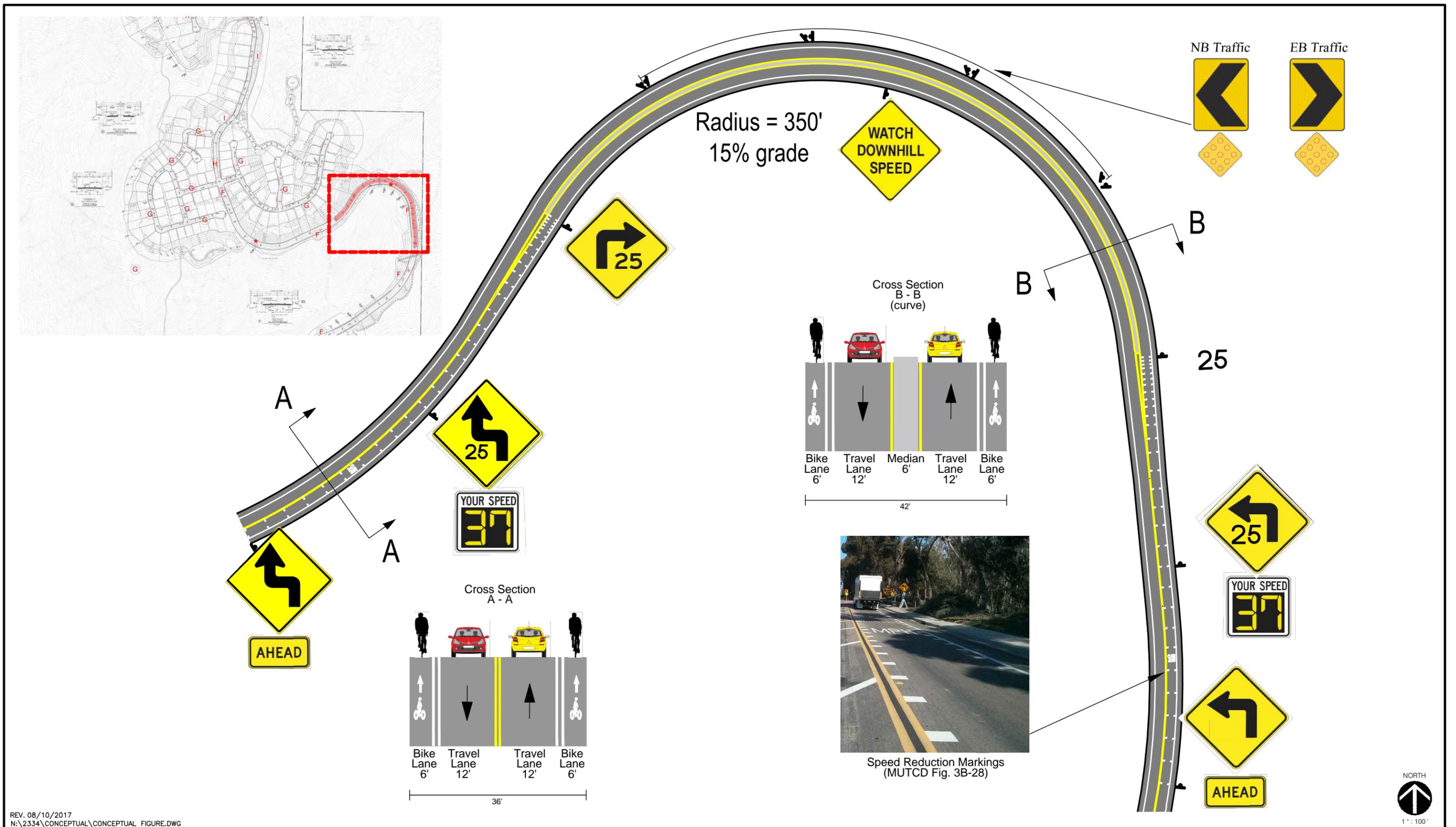
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	393	1143	-
HCM Lane V/C Ratio	-	-	0.299	0.007	-
HCM Control Delay (s)	-	-	18	8.2	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.2	0	-

**APPENDIX J**  
**TRAFFIC CALMING CONCEPTS**





**Figure 1**  
**Village Entry - Traffic Calming Concept Plan**



REV. 08/10/2017  
N:\2334\CONCEPTUAL\CONCEPTUAL FIGURE.DWG

Figure 2

Village Promenade - Traffic Calming Concept Plan

**APPENDIX K**  
**SWITRS ACCIDENT DATA**



CASEID	POINT_X	POINT_Y	YEAR_	LOCATION	DAYWEEK	CRASHSEV	VIOLCAT	KILLED	INJURED	WEATHER1
3585337	-117.0114247	33.11149979	2008	3711	6	4	8	0		1 A
5201751	-117.0077894	33.11142732	2011	3706	3	4	3	0		1 A
5394983	-117.0087526	33.1114168	2011	3706	4	4	8	0		1 A

PEDCOL	BICCOL	MCCOL	TRUCKCOL	TIMECAT	MONTH_	CRASHTYP	INVOLVE	PED	PRIMARYRD	SECONDRD
				1800	1	E	I	A	ROCKWOOD	CLOVERDALE
				900	5	E	I	A	ROCKWOOD DR	OLD RANCH RD
				1800	10	E	I	A	ROCKWOOD RD	OLD RANCH RD

DISTANCE	DIRECT	INTERSECT_	PROCDATE	JURIS	DATE_	TIME_	BADGE	JURIDIST	SHIFT	POP	
2112	E	N	7/22/2008	3711	1/19/2008	1529	4203			5	7
494	W	N	7/26/2012	3706	5/25/2011	740	275	ESPD		5	6
790	W	N	1/15/2013	3706	10/13/2011	1635	412	ESPD		5	6

PARTIES	PCF	VIOL	VIOLSUB	HITRUN	ROADSURF	RDCOND1	RDCOND2	LIGHTING	RIGHTWAY	CHPRDTYP
	1 A		22107	N	A	H	-	A	D	0
	1 A		22350	N	A	C	D	A	D	0
	1 A		22107	N	A	H	-	A	D	0

NOTPRIV	STFAULT	CHPFAULT	SEVINJ	OTHERINJ	COP	PEDKILL	PEDINJ	BICKILL	BICINJ	MCKILL
Y	-	-		0	0	1	0	0	0	0
Y	A		1	0	0	1	0	0	0	0
Y	A		1	0	0	1	0	0	0	0

MCINJURE	CITY	COUNTY	STATE	X_CHP	Y_CHP
0	SAN DIEGO	SAN DIEGO	CA	0	0
0	ESCONDIDO	SAN DIEGO	CA	0	0
0	ESCONDIDO	SAN DIEGO	CA	0	0



**APPENDIX L**  
**SIGNAL WARRANT ANALYSES**



## 1.0 TRAFFIC SIGNAL WARRANTS

The analysis of the following intersection indicated a significant project impact due to LOS D, E, or F operations in the Existing + Cumulative Projects + Project scenario.

- #1. Rockwood Road / Cloverdale Road

A traffic signal warrant analysis was completed to determine if signals would meet warrants under near-term conditions. As outlined in Chapter 4C, “Traffic Control Signal Needs Studies,” of the *2012 California Manual on Uniform Traffic Control Devices* (California MUTCD), the peak hour warrant (Warrant 3) was analyzed for the subject intersections to determine if traffic signals would be warranted under Existing + Cumulative Projects + Project conditions.

**Table A** below provides an overview of the geometric conditions at the intersections used in this analysis.

TABLE A  
PROPOSED LANE CONDITIONS

Intersection	Major Street	Number of Lanes per Approach	
		Major Street	Minor Street
#1. Rockwood Rd / Cloverdale Rd	Cloverdale Road	1	1

**Note:**

1. Per the MUTCD Section 4C.01(09), “site-specific traffic characteristics should dictate whether an approach is considered as one lane or two lanes. For example, for an approach with one lane for through and right-turning traffic plus a left-turn lane, if engineering judgment indicates that it should be considered a one-lane approach because the traffic using the left-turn lane is minor, the total traffic volume approaching the intersection should be applied against the signal warrants as a one-lane approach. The approach should be considered two lanes if approximately half of the traffic on the approach turns left and the left-turn lane is of sufficient length to accommodate all left-turn vehicles.”

**Table B** provides the hourly traffic volumes used in the analysis.

**TABLE B**  
**EXISTING + CUMULATIVE PROJECTS + PROJECT TRAFFIC VOLUMES**

Time of Day	Peak hour vehicles on major street (Total of both approaches)	Peak hour vehicles on minor-street approach		Total Entering Peak Hour Vehicles
		Higher volume approach	Lower volume approach	
<b>Int #1. Rockwood Road / Cloverdale Road</b>				
7:00-9:00 AM	538	636	—	1,174
4:00-6:00 PM	765	282	—	1,047

*Footnote:*

1. Volumes shown represent peak one-hour timeframe between the AM and PM peak periods.

### 1.1 Warrant 3 – Methodology

Warrant 3: Peak-Hour Vehicular Volume – The Peak-Hour Vehicular Volume signal Warrant is intended for use at a location where traffic conditions are such that for a minimum one hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street. The need for a traffic control signal shall be considered if an engineering study finds that the criteria in either Category A or Category B are met. Category A examines the peak hour volume and delay conditions for the same one hour of an average day. Category B compares the traffic volumes on the major and minor street approaches for one hour of an average day against a set threshold to consider installing a traffic signal. If either Category A or B is met, a signal is warranted.

**Category A.** If all of the three conditions exist for the same 1 hour (any four consecutive 15-minute periods) of an average day:

1. The total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 Vehicles-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and
2. The volume on the same-minor street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes, and
3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for the intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.

**Category B.** The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume on the minor street approach (one direction only) for 1 hour (or any four

consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 4C-3 for the existing combination of approach lanes.

If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, Figure 4C-4 may be used in place of Figure 4C-3 to satisfy the criteria in the second category. Since the posted speed on both major streets exceeds 40 mph, Figure 4C-3 was used in the analysis.

## 1.2 Calculations

**Table C** summarizes the Warrant 3 calculations. The full Category A calculation worksheets for Existing + Cumulative Projects + Project AM and PM peak hour conditions are included subsequent to this summary.

The unsignalized peak hour intersection analysis used to evaluate Category A-1 was completed using the HCM 2010 unsignalized intersection analysis methodology with the assistance of the *Synchro* (version 9) software. To calculate the total vehicle hours to assess Category A-1, the following formula was used:

$$\text{Total Vehicle Hours of Delay} = (\text{Average Delay} \times \text{Vehicles/Hour}) \div 3600 \text{ sec/hour}$$

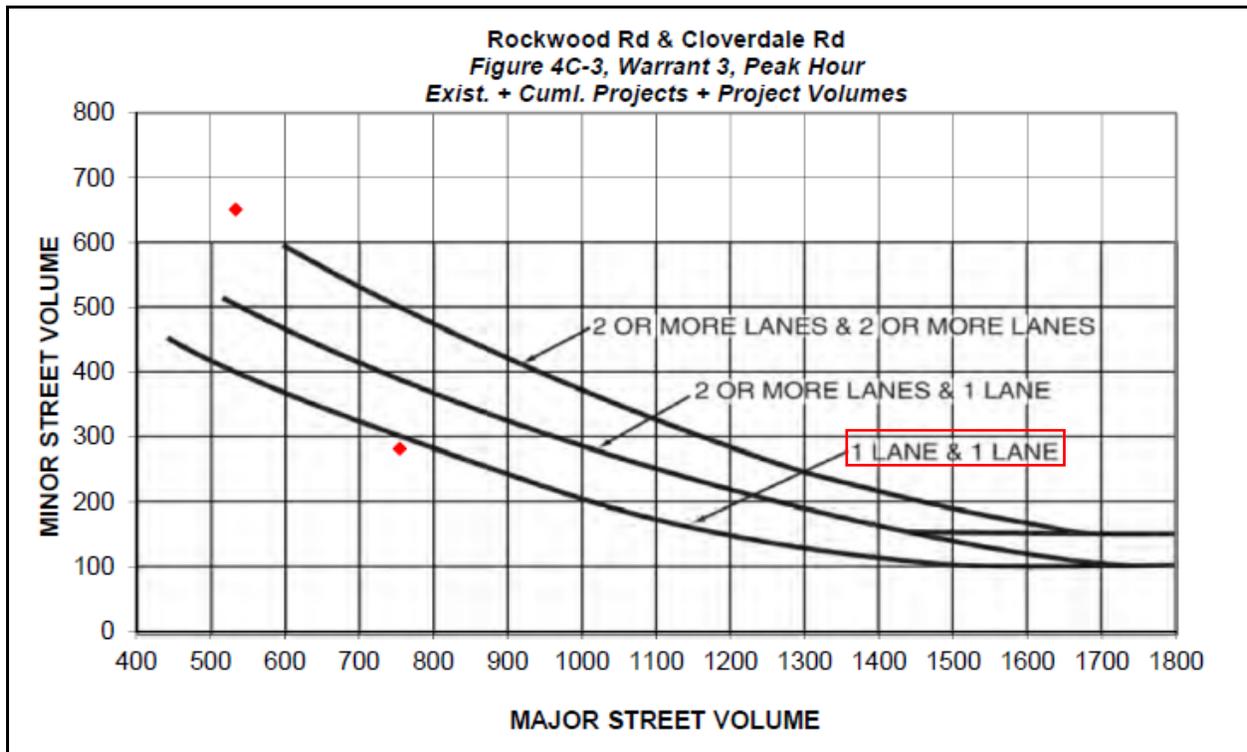
For Categories A-2 and A-3, the intersection approach geometry and volumes shown in *Tables A* and *B* were used to evaluate the volume thresholds.

For Category B, the peak hour volumes were plotted on Figure 4C-3 are noted above. The graphs depicting the Category B analysis are also included below.

As shown in *Table C*, Category A and Category B of Warrant 3 are both satisfied at intersection #1, thus **Warrant 3 is satisfied at this location** for Existing + Cumulative Projects + Project conditions.

**TABLE C**  
**WARRANT 3: PEAK HOUR – EXISTING + PROJECT + CUMULATIVE PROJECTS**

<b>Intersection</b>	<b>Warrant 3 Criteria Satisfied?</b>			
	1. Rockwood Rd / Cloverdale Rd			
<u>Category A or Category B Satisfied</u> *	Yes	✓	No	
<b>Category A</b>	Yes	✓	No	
<i>(All Parts 1, 2, and 3 below must be satisfied)</i>				
A-1	Yes	✓	No	
A-2	Yes	✓	No	
A-3	Yes	✓	No	
<b>Category B</b> <i>The plotted points fall above the applicable curve on Figure 4C-3.</i>	Yes	✓	No	



### 1.3 Summary

Based on the above in *Table C* and the calculations and graphs included above, **warrants are met** at the intersection of Rockwood Road at Cloverdale Road under Existing + Cumulative Projects + Project conditions.

*Table 14-3*, provided in the body of the report, provides results of the signalized intersection operations at this location.



# Warrant 3 Part A - Peak Hour Delay Warrant

## 1. Cloverdale Road & Rockwood Road Existing + Cumulative + Project AM

### Intersection Information

Delay on stop-controlled approach:	119.1 sec/veh
Total entering volumes:	1174 vehicles
Vehicles on stop-controlled approach:	636 vehicles
Number of lanes on stop-controlled approach:	1 Lanes
Total number of approaches:	3 approaches

### PART 1

Do total vehicle hours of delay equal or exceed four hours for a one lane approach or five hours for a two or more lane approach?

---

Vehicle Hours of Delay:	21.0 hours
<b>Part Satisfied?</b>	<b>Yes</b>

### PART 2

Volume on minor street equals or exceeds 100 vph for a one lane approach or 150 vph for a two lane approach?

---

Vehicles on stop controlled approach:	636 vehicles
<b>Part Satisfied?</b>	<b>Yes</b>

### PART 3

Volume entering intersection equals or exceeds 650 vph for intersections with three approaches or 800 vph for intersections with four or more approaches?

---

Total entering volumes:	1174 vehicles
<b>Part Satisfied?</b>	<b>Yes</b>

**Warrant Satisfied?      Yes**

# Warrant 3 Part A - Peak Hour Delay Warrant

## 1. Cloverdale Road / Rockwood Road Existing + Cumulative + Project PM

### Intersection Information

Delay on stop-controlled approach:	19.0 sec/veh
Total entering volumes:	1047 vehicles
Vehicles on stop-controlled approach:	282 vehicles
Number of lanes on stop-controlled approach:	1 Lanes
Total number of approaches:	3 approaches

### PART 1

Do total vehicle hours of delay equal or exceed four hours for a one lane approach or five hours for a two or more lane approach?

---

Vehicle Hours of Delay:	1.5 hours
<b>Part Satisfied?</b>	<b>No</b>

### PART 2

Volume on minor street equals or exceeds 100 vph for a one lane approach or 150 vph for a two lane approach?

---

Vehicles on stop controlled approach:	282 vehicles
<b>Part Satisfied?</b>	<b>Yes</b>

### PART 3

Volume entering intersection equals or exceeds 650 vph for intersections with three approaches or 800 vph for intersections with four or more approaches?

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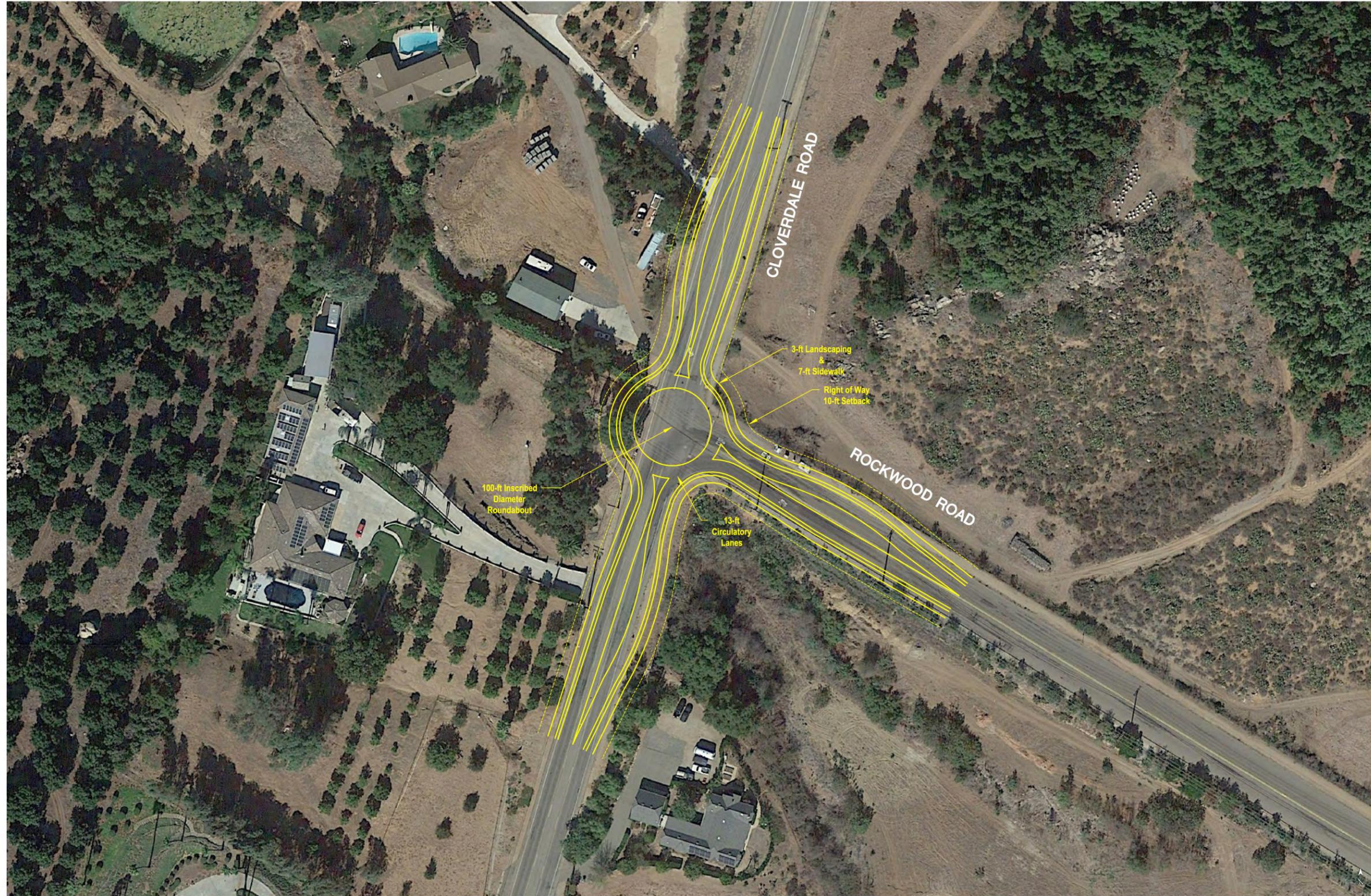
Total entering volumes:	1047 vehicles
<b>Part Satisfied?</b>	<b>Yes</b>

**Warrant Satisfied?                      No**



**APPENDIX M**  
**ROUNDBOUT MITIGATION CONCEPT & ANALYSIS**





1" = 40'

Figure 2 - 100-ft Diameter Roundabout  
CONCEPTUAL ONLY



# MOVEMENT SUMMARY

 Site: Ex + Proj + Cuml AM

Rockwood Rd / Cloverdale Rd  
Roundabout

Movement Performance - Vehicles												
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph	
South: Cloverdale Rd												
8	T1	37	3.0	0.394	7.2	LOS A	3.1	80.5	0.33	0.16	33.0	
18	R2	406	3.0	0.394	7.2	LOS A	3.1	80.5	0.33	0.16	32.3	
Approach		443	3.0	0.394	7.2	LOS A	3.1	80.5	0.33	0.16	32.4	
East: Rockwood Rd												
1	L2	723	3.0	0.642	11.7	LOS B	7.3	186.0	0.35	0.14	29.3	
16	R2	26	3.0	0.642	11.7	LOS B	7.3	186.0	0.35	0.14	28.8	
Approach		749	3.0	0.642	11.7	LOS B	7.3	186.0	0.35	0.14	29.2	
North: Cloverdale Rd												
7	L2	61	3.0	0.283	9.9	LOS A	1.7	44.0	0.78	0.74	31.0	
4	T1	107	3.0	0.283	9.9	LOS A	1.7	44.0	0.78	0.74	31.1	
Approach		168	3.0	0.283	9.9	LOS A	1.7	44.0	0.78	0.74	31.1	
All Vehicles		1360	3.0	0.642	10.0	LOS A	7.3	186.0	0.40	0.22	30.4	

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

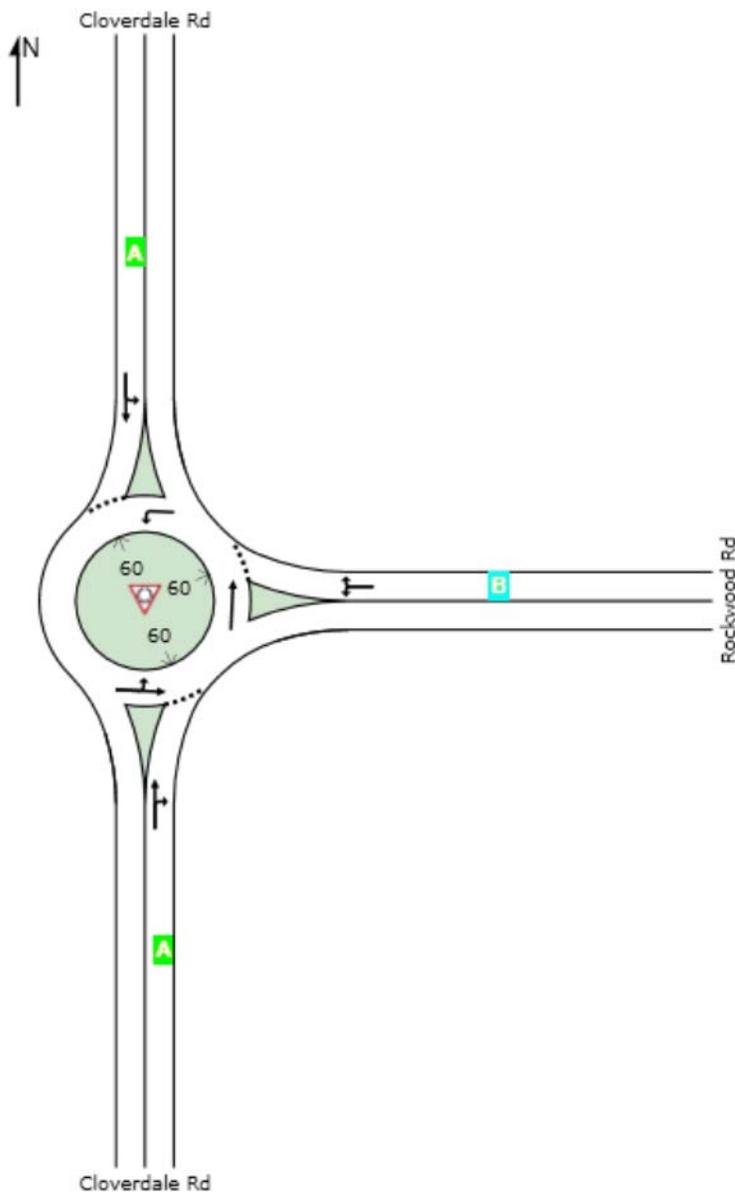
# LEVEL OF SERVICE

 Site: Ex + Proj + Cuml AM

Rockwood Rd / Cloverdale Rd  
Roundabout

## All Movement Classes

	South	East	North	Intersection
LOS	A	B	A	A



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

# MOVEMENT SUMMARY

 Site: Ex + Proj + Cuml PM

Rockwood Rd / Cloverdale Rd  
Roundabout

Movement Performance - Vehicles												
Mov ID	OD Mov	Demand Total	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph	
South: Cloverdale Rd												
8	T1	120	3.0	0.633	11.1	LOS B	7.8	200.3	0.12	0.02	31.2	
18	R2	647	3.0	0.633	11.1	LOS B	7.8	200.3	0.12	0.02	30.6	
Approach		766	3.0	0.633	11.1	LOS B	7.8	200.3	0.12	0.02	30.7	
East: Rockwood Rd												
1	L2	307	3.0	0.291	6.2	LOS A	1.7	44.1	0.36	0.21	31.4	
16	R2	5	3.0	0.291	6.2	LOS A	1.7	44.1	0.36	0.21	30.9	
Approach		312	3.0	0.291	6.2	LOS A	1.7	44.1	0.36	0.21	31.4	
North: Cloverdale Rd												
7	L2	5	3.0	0.074	4.7	LOS A	0.4	9.6	0.48	0.33	33.9	
4	T1	60	3.0	0.074	4.7	LOS A	0.4	9.6	0.48	0.33	34.0	
Approach		65	3.0	0.074	4.7	LOS A	0.4	9.6	0.48	0.33	34.0	
All Vehicles		1143	3.0	0.633	9.4	LOS A	7.8	200.3	0.21	0.09	31.1	

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

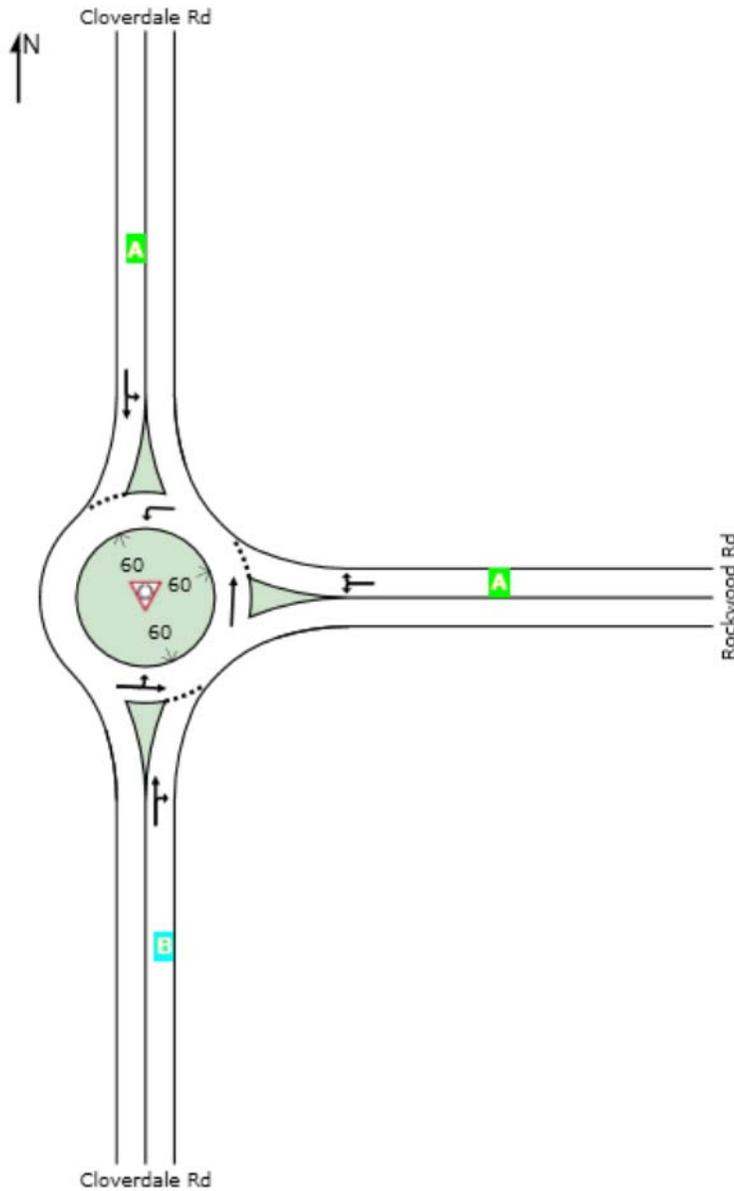
# LEVEL OF SERVICE

 **Site: Ex + Proj + Cuml PM**

Rockwood Rd / Cloverdale Rd  
Roundabout

## All Movement Classes

	South	East	North	Intersection
LOS	B	A	A	A



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

# APPENDIX N

## POST-MITIGATION ANALYSIS SHEETS & REROUTED CITRUS AVENUE TRAFFIC VOLUMES



# HCM 2010 Signalized Intersection Summary

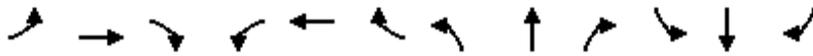
## 1: Cloverdale Rd & Rockwood Rd

07/17/2017

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations	 							
Traffic Volume (veh/h)	636	23	33	357	54	94		
Future Volume (veh/h)	636	23	33	357	54	94		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		0.99	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1900	1863	1863		
Adj Flow Rate, veh/h	714	0	36	388	59	102		
Adj No. of Lanes	2	1	1	0	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	0	2	2	2	2		
Cap, veh/h	1147	522	52	563	389	719		
Arrive On Green	0.32	0.00	0.39	0.39	0.39	0.39		
Sat Flow, veh/h	3548	1615	135	1459	957	1863		
Grp Volume(v), veh/h	714	0	0	424	59	102		
Grp Sat Flow(s),veh/h/ln	1774	1615	0	1594	957	1863		
Q Serve(g_s), s	5.3	0.0	0.0	6.9	1.7	1.1		
Cycle Q Clear(g_c), s	5.3	0.0	0.0	6.9	8.6	1.1		
Prop In Lane	1.00	1.00		0.92	1.00			
Lane Grp Cap(c), veh/h	1147	522	0	615	389	719		
V/C Ratio(X)	0.62	0.00	0.00	0.69	0.15	0.14		
Avail Cap(c_a), veh/h	4756	2165	0	2549	1550	2978		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	8.9	0.0	0.0	8.0	11.5	6.2		
Incr Delay (d2), s/veh	0.6	0.0	0.0	1.4	0.2	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.7	0.0	0.0	3.2	0.5	0.6		
LnGrp Delay(d),s/veh	9.4	0.0	0.0	9.3	11.7	6.3		
LnGrp LOS	A			A	B	A		
Approach Vol, veh/h	714		424			161		
Approach Delay, s/veh	9.4		9.3			8.3		
Approach LOS	A		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		16.4				16.4		14.5
Change Period (Y+Rc), s		4.5				4.5		4.5
Max Green Setting (Gmax), s		49.5				49.5		41.5
Max Q Clear Time (g_c+I1), s		8.9				10.6		7.3
Green Ext Time (p_c), s		2.9				0.8		2.8
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			9.3					
HCM 2010 LOS			A					
<b>Notes</b>								

HCM 2010 Signalized Intersection Summary  
 8: Bear Valley Pkwy & San Pasqual Valley Rd

07/17/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	479	113	195	695	77	112	318	109	219	622	35
Future Volume (veh/h)	27	479	113	195	695	77	112	318	109	219	622	35
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	29	521	123	212	755	84	122	346	118	238	676	38
Adj No. of Lanes	1	2	1	1	2	0	2	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	82	935	418	217	1093	122	310	683	230	241	1050	59
Arrive On Green	0.05	0.26	0.26	0.12	0.34	0.34	0.09	0.26	0.26	0.14	0.31	0.31
Sat Flow, veh/h	1774	3539	1583	1774	3212	357	3442	2604	874	1774	3407	191
Grp Volume(v), veh/h	29	521	123	212	416	423	122	233	231	238	351	363
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1800	1721	1770	1708	1774	1770	1829
Q Serve(g_s), s	1.9	15.2	7.4	14.3	24.3	24.3	4.0	13.4	13.8	16.1	20.5	20.6
Cycle Q Clear(g_c), s	1.9	15.2	7.4	14.3	24.3	24.3	4.0	13.4	13.8	16.1	20.5	20.6
Prop In Lane	1.00		1.00	1.00		0.20	1.00		0.51	1.00		0.10
Lane Grp Cap(c), veh/h	82	935	418	217	602	612	310	465	448	241	545	564
V/C Ratio(X)	0.35	0.56	0.29	0.98	0.69	0.69	0.39	0.50	0.51	0.99	0.64	0.64
Avail Cap(c_a), veh/h	133	935	418	217	602	612	315	465	448	241	545	564
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.5	38.1	35.2	52.5	34.1	34.2	51.5	37.6	37.7	51.7	35.8	35.8
Incr Delay (d2), s/veh	2.5	2.4	1.8	53.9	6.4	6.3	0.8	3.8	4.2	54.3	5.7	5.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.8	3.5	10.3	13.0	13.2	1.9	7.0	7.1	11.5	10.9	11.3
LnGrp Delay(d),s/veh	58.0	40.5	37.0	106.3	40.5	40.4	52.3	41.4	41.9	106.1	41.6	41.4
LnGrp LOS	E	D	D	F	D	D	D	D	D	F	D	D
Approach Vol, veh/h		673			1051			586			952	
Approach Delay, s/veh		40.6			53.8			43.9			57.6	
Approach LOS		D			D			D			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.4	38.9	16.5	44.2	11.3	48.0	22.0	38.7				
Change Period (Y+Rc), s	5.7	7.2	* 5.7	7.2	* 5.7	7.2	* 5.7	7.2				
Max Green Setting (Gmax), s	5	31.7	* 11	36.8	* 9	37.4	* 16	31.5				
Max Q Clear Time (g_c+M), s	10	17.2	6.0	22.6	3.9	26.3	18.1	15.8				
Green Ext Time (p_c), s	0.0	3.1	0.1	3.3	0.0	3.6	0.0	2.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				50.4								
HCM 2010 LOS				D								
<b>Notes</b>												

HCM 2010 TWSC  
 9: San Pasqual Valley Rd & Citrus Avenue

07/17/2017

**Intersection**

Int Delay, s/veh 4.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↑	↑	↑			↑
Traffic Vol, veh/h	117	579	755	62	0	212
Future Vol, veh/h	117	579	755	62	0	212
Conflicting Peds, #/hr	0	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	115	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	127	629	821	67	0	230

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	889	0	856
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	6.22
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	3.318
Pot Cap-1 Maneuver	762	-	357
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	761	-	357
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	31.7
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	761	-	-	-	357
HCM Lane V/C Ratio	0.167	-	-	-	0.645
HCM Control Delay (s)	10.7	-	-	-	31.7
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0.6	-	-	-	4.3

HCM 2010 Signalized Intersection Summary  
 10: Summit Drive & San Pasqual Valley Rd (SR 78)

07/17/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	487	216	10	636	4	91	7	8	119	33	25
Future Volume (veh/h)	10	487	216	10	636	4	91	7	8	119	33	25
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	11	529	235	11	691	4	99	8	9	129	36	27
Adj No. of Lanes	1	1	0	1	1	0	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	20	587	261	20	888	5	156	13	150	180	50	203
Arrive On Green	0.01	0.48	0.48	0.01	0.48	0.48	0.09	0.09	0.09	0.13	0.13	0.13
Sat Flow, veh/h	1774	1223	543	1774	1850	11	1647	133	1583	1402	391	1583
Grp Volume(v), veh/h	11	0	764	11	0	695	107	0	9	165	0	27
Grp Sat Flow(s),veh/h/ln	1774	0	1767	1774	0	1861	1780	0	1583	1793	0	1583
Q Serve(g_s), s	0.4	0.0	25.0	0.4	0.0	19.5	3.6	0.0	0.3	5.6	0.0	1.0
Cycle Q Clear(g_c), s	0.4	0.0	25.0	0.4	0.0	19.5	3.6	0.0	0.3	5.6	0.0	1.0
Prop In Lane	1.00		0.31	1.00		0.01	0.93		1.00	0.78		1.00
Lane Grp Cap(c), veh/h	20	0	848	20	0	893	169	0	150	230	0	203
V/C Ratio(X)	0.56	0.00	0.90	0.56	0.00	0.78	0.63	0.00	0.06	0.72	0.00	0.13
Avail Cap(c_a), veh/h	113	0	996	113	0	1049	467	0	415	456	0	402
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.0	0.0	15.0	31.0	0.0	13.6	27.4	0.0	25.9	26.3	0.0	24.3
Incr Delay (d2), s/veh	22.3	0.0	10.0	22.3	0.0	3.2	3.9	0.0	0.2	4.1	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	14.5	0.3	0.0	10.6	2.0	0.0	0.1	3.0	0.0	0.4
LnGrp Delay(d),s/veh	53.3	0.0	25.1	53.3	0.0	16.8	31.3	0.0	26.1	30.5	0.0	24.6
LnGrp LOS	D		C	D		B	C		C	C		C
Approach Vol, veh/h		775			706			116			192	
Approach Delay, s/veh		25.5			17.4			30.9			29.6	
Approach LOS		C			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		10.5	5.2	34.7		12.6	5.2	34.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		16.5	4.0	35.5		16.0	4.0	35.5				
Max Q Clear Time (g_c+I1), s		5.6	2.4	27.0		7.6	2.4	21.5				
Green Ext Time (p_c), s		0.3	0.0	3.2		0.5	0.0	3.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			23.1									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary  
 11: San Pasqual Rd/Cloverdale Rd & San Pasqual Valley Rd

07/17/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↖↖	↖	↖	↖↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (veh/h)	228	260	40	14	272	48	35	120	131	59	279	387
Future Volume (veh/h)	228	260	40	14	272	48	35	120	131	59	279	387
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	248	283	43	15	296	52	38	130	142	64	303	421
Adj No. of Lanes	2	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	583	916	410	77	469	210	106	448	449	162	507	699
Arrive On Green	0.17	0.26	0.26	0.04	0.13	0.13	0.06	0.24	0.24	0.09	0.27	0.27
Sat Flow, veh/h	3442	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	248	283	43	15	296	52	38	130	142	64	303	421
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	4.5	4.5	1.5	0.6	5.6	2.1	1.4	4.0	5.0	2.4	9.9	14.2
Cycle Q Clear(g_c), s	4.5	4.5	1.5	0.6	5.6	2.1	1.4	4.0	5.0	2.4	9.9	14.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	583	916	410	77	469	210	106	448	449	162	507	699
V/C Ratio(X)	0.43	0.31	0.10	0.20	0.63	0.25	0.36	0.29	0.32	0.39	0.60	0.60
Avail Cap(c_a), veh/h	691	1794	803	303	1688	755	202	849	790	245	894	1028
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.1	21.0	19.8	32.4	28.8	27.3	31.7	21.8	19.8	30.1	22.2	14.9
Incr Delay (d2), s/veh	0.5	0.2	0.1	1.2	1.4	0.6	2.0	0.4	0.4	1.6	1.1	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	2.2	0.6	0.3	2.8	0.9	0.8	2.1	2.2	1.2	5.2	6.3
LnGrp Delay(d),s/veh	26.6	21.2	19.9	33.6	30.2	27.9	33.8	22.1	20.2	31.6	23.3	15.7
LnGrp LOS	C	C	B	C	C	C	C	C	C	C	C	B
Approach Vol, veh/h		574			363			310			788	
Approach Delay, s/veh		23.4			30.0			22.7			20.0	
Approach LOS		C			C			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.7	25.7	9.9	25.9	17.6	16.8	12.1	23.7				
Change Period (Y+Rc), s	5.7	7.5	* 5.7	6.8	* 5.7	7.5	* 5.7	6.8				
Max Green Setting (Gmax), s	35.6	* 8	33.7	* 14	33.5	* 9.7	32.0					
Max Q Clear Time (g_c+1), s	6.5	3.4	16.2	6.5	7.6	4.4	7.0					
Green Ext Time (p_c), s	0.0	1.8	0.0	2.9	0.5	1.8	0.0	1.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			23.1									
HCM 2010 LOS			C									
<b>Notes</b>												

HCM 2010 Signalized Intersection Summary  
 17: Sierra Linda Dr/Ryan Dr & San Pasqual Rd

07/17/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	207	19	1	724	3	39	0	4	2	1	63
Future Volume (veh/h)	22	207	19	1	724	3	39	0	4	2	1	63
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	24	225	21	1	787	3	42	0	4	2	1	68
Adj No. of Lanes	1	1	1	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	37	1402	1192	2	1359	5	187	4	9	51	3	101
Arrive On Green	0.02	0.75	0.75	0.00	0.73	0.73	0.07	0.00	0.07	0.07	0.07	0.07
Sat Flow, veh/h	1774	1863	1583	1774	1854	7	1428	64	142	23	44	1520
Grp Volume(v), veh/h	24	225	21	1	0	790	46	0	0	71	0	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1861	1633	0	0	1587	0	0
Q Serve(g_s), s	1.0	2.6	0.2	0.0	0.0	14.8	0.0	0.0	0.0	0.8	0.0	0.0
Cycle Q Clear(g_c), s	1.0	2.6	0.2	0.0	0.0	14.8	1.9	0.0	0.0	3.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	0.91		0.09	0.03		0.96
Lane Grp Cap(c), veh/h	37	1402	1192	2	0	1364	200	0	0	155	0	0
V/C Ratio(X)	0.64	0.16	0.02	0.42	0.00	0.58	0.23	0.00	0.00	0.46	0.00	0.00
Avail Cap(c_a), veh/h	130	1402	1192	95	0	1364	398	0	0	387	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	36.5	2.6	2.3	37.5	0.0	4.7	33.6	0.0	0.0	34.2	0.0	0.0
Incr Delay (d2), s/veh	17.1	0.2	0.0	89.7	0.0	1.8	0.6	0.0	0.0	2.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.4	0.1	0.1	0.0	8.1	0.9	0.0	0.0	1.5	0.0	0.0
LnGrp Delay(d),s/veh	53.6	2.9	2.4	127.2	0.0	6.5	34.2	0.0	0.0	36.3	0.0	0.0
LnGrp LOS	D	A	A	F		A	C			D		
Approach Vol, veh/h		270			791			46			71	
Approach Delay, s/veh		7.3			6.6			34.1			36.3	
Approach LOS		A			A			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.6	61.0		9.5	6.1	59.5		9.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	4.6	56.5		16.0	5.5	55.0		16.0				
Max Q Clear Time (g_c+1), s	4.6	4.6		5.3	3.0	16.8		3.9				
Green Ext Time (p_c), s	0.0	1.4		0.2	0.0	6.7		0.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				9.6								
HCM 2010 LOS				A								

# HCM 2010 Signalized Intersection Summary

## 1: Cloverdale Rd & Rockwood Rd

07/17/2017

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations	 							
Traffic Volume (veh/h)	282	5	110	595	5	55		
Future Volume (veh/h)	282	5	110	595	5	55		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1900	1863	1863		
Adj Flow Rate, veh/h	312	0	120	647	5	60		
Adj No. of Lanes	2	1	1	0	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	0	2	2	2	2		
Cap, veh/h	782	356	146	789	300	1074		
Arrive On Green	0.22	0.00	0.58	0.58	0.58	0.58		
Sat Flow, veh/h	3548	1615	254	1368	698	1863		
Grp Volume(v), veh/h	312	0	0	767	5	60		
Grp Sat Flow(s),veh/h/ln	1774	1615	0	1621	698	1863		
Q Serve(g_s), s	3.3	0.0	0.0	16.9	0.3	0.6		
Cycle Q Clear(g_c), s	3.3	0.0	0.0	16.9	17.1	0.6		
Prop In Lane	1.00	1.00		0.84	1.00			
Lane Grp Cap(c), veh/h	782	356	0	935	300	1074		
V/C Ratio(X)	0.40	0.00	0.00	0.82	0.02	0.06		
Avail Cap(c_a), veh/h	1719	782	0	2539	990	2917		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	14.8	0.0	0.0	7.5	14.4	4.1		
Incr Delay (d2), s/veh	0.3	0.0	0.0	1.9	0.0	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.6	0.0	0.0	7.7	0.1	0.3		
LnGrp Delay(d),s/veh	15.1	0.0	0.0	9.4	14.4	4.1		
LnGrp LOS	B			A	B	A		
Approach Vol, veh/h	312		767			65		
Approach Delay, s/veh	15.1		9.4			4.9		
Approach LOS	B		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		30.1				30.1		14.3
Change Period (Y+Rc), s		4.5				4.5		4.5
Max Green Setting (Gmax), s		69.5				69.5		21.5
Max Q Clear Time (g_c+I1), s		18.9				19.1		5.3
Green Ext Time (p_c), s		6.7				0.3		0.9
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			10.7					
HCM 2010 LOS			B					
<b>Notes</b>								

HCM 2010 Signalized Intersection Summary  
 8: Bear Valley Pkwy & San Pasqual Valley Rd

07/17/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	741	82	109	574	79	133	723	213	104	361	49
Future Volume (veh/h)	41	741	82	109	574	79	133	723	213	104	361	49
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	44	797	88	117	617	85	143	777	229	112	388	53
Adj No. of Lanes	1	2	1	1	2	0	2	2	0	1	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	1030	461	157	997	137	340	799	236	156	898	122
Arrive On Green	0.06	0.29	0.29	0.09	0.32	0.32	0.10	0.30	0.30	0.09	0.29	0.29
Sat Flow, veh/h	1774	3539	1583	1774	3127	430	3442	2682	790	1774	3127	424
Grp Volume(v), veh/h	44	797	88	117	349	353	143	513	493	112	218	223
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1787	1721	1770	1703	1774	1770	1781
Q Serve(g_s), s	2.6	22.7	4.6	7.1	18.4	18.5	4.3	31.5	31.5	6.8	11.0	11.2
Cycle Q Clear(g_c), s	2.6	22.7	4.6	7.1	18.4	18.5	4.3	31.5	31.5	6.8	11.0	11.2
Prop In Lane	1.00		1.00	1.00		0.24	1.00		0.46	1.00		0.24
Lane Grp Cap(c), veh/h	107	1030	461	157	564	570	340	527	508	156	508	512
V/C Ratio(X)	0.41	0.77	0.19	0.75	0.62	0.62	0.42	0.97	0.97	0.72	0.43	0.44
Avail Cap(c_a), veh/h	145	1030	461	161	564	570	344	527	508	161	508	512
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.8	35.7	29.3	48.9	31.8	31.8	46.6	38.2	38.2	48.8	31.9	31.9
Incr Delay (d2), s/veh	2.5	5.7	0.9	16.8	5.0	5.0	0.8	32.8	33.6	13.8	2.6	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4	11.9	2.1	4.2	9.8	9.9	2.1	20.2	19.5	3.9	5.8	5.9
LnGrp Delay(d),s/veh	52.3	41.3	30.2	65.7	36.8	36.8	47.4	71.0	71.7	62.6	34.5	34.6
LnGrp LOS	D	D	C	E	D	D	D	E	E	E	C	C
Approach Vol, veh/h		929			819			1149			553	
Approach Delay, s/veh		40.8			40.9			68.4			40.2	
Approach LOS		D			D			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.4	39.2	16.6	38.8	12.4	42.3	15.4	40.0				
Change Period (Y+Rc), s	5.7	7.2	* 5.7	7.2	* 5.7	7.2	* 5.7	7.2				
Max Green Setting (Gmax), s	31.6	* 11	31.6	* 9	32.6	* 10	32.6					
Max Q Clear Time (g_c+1), s	24.7	6.3	13.2	4.6	20.5	8.8	33.5					
Green Ext Time (p_c), s	0.0	2.9	0.2	2.1	0.0	3.1	0.0	0.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			49.9									
HCM 2010 LOS			D									
<b>Notes</b>												

HCM 2010 TWSC  
 9: San Pasqual Valley Rd & Citrus Avenue

07/17/2017

**Intersection**

Int Delay, s/veh 2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↖			↗
Traffic Vol, veh/h	265	759	671	91	0	91
Future Vol, veh/h	265	759	671	91	0	91
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	115	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	288	825	729	99	0	99

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	828	0	779
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	6.22
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	3.318
Pot Cap-1 Maneuver	803	-	396
Stage 1	-	-	0
Stage 2	-	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	803	-	396
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	3.1	0	17.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	803	-	-	-	396
HCM Lane V/C Ratio	0.359	-	-	-	0.25
HCM Control Delay (s)	12	-	-	-	17.1
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	1.6	-	-	-	1

HCM 2010 Signalized Intersection Summary  
 10: Summit Drive & San Pasqual Valley Rd (SR 78)

07/17/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	737	59	4	513	4	57	4	2	35	1	13
Future Volume (veh/h)	26	737	59	4	513	4	57	4	2	35	1	13
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	28	801	64	4	558	4	62	4	2	38	1	14
Adj No. of Lanes	1	1	0	1	1	0	0	1	1	0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	45	900	72	8	937	7	124	8	118	124	3	113
Arrive On Green	0.03	0.53	0.53	0.00	0.51	0.51	0.07	0.07	0.07	0.07	0.07	0.07
Sat Flow, veh/h	1774	1703	136	1774	1847	13	1671	108	1583	1731	46	1583
Grp Volume(v), veh/h	28	0	865	4	0	562	66	0	2	39	0	14
Grp Sat Flow(s),veh/h/ln	1774	0	1839	1774	0	1860	1779	0	1583	1776	0	1583
Q Serve(g_s), s	0.9	0.0	23.5	0.1	0.0	11.9	2.0	0.0	0.1	1.2	0.0	0.5
Cycle Q Clear(g_c), s	0.9	0.0	23.5	0.1	0.0	11.9	2.0	0.0	0.1	1.2	0.0	0.5
Prop In Lane	1.00		0.07	1.00		0.01	0.94		1.00	0.97		1.00
Lane Grp Cap(c), veh/h	45	0	972	8	0	944	132	0	118	127	0	113
V/C Ratio(X)	0.63	0.00	0.89	0.52	0.00	0.60	0.50	0.00	0.02	0.31	0.00	0.12
Avail Cap(c_a), veh/h	130	0	1166	127	0	1176	524	0	466	507	0	452
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.0	0.0	11.8	27.8	0.0	9.7	24.9	0.0	24.0	24.7	0.0	24.4
Incr Delay (d2), s/veh	13.5	0.0	7.7	46.0	0.0	0.6	2.9	0.0	0.1	1.4	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	13.9	0.2	0.0	6.2	1.1	0.0	0.0	0.6	0.0	0.2
LnGrp Delay(d),s/veh	40.5	0.0	19.5	73.8	0.0	10.3	27.8	0.0	24.1	26.0	0.0	24.8
LnGrp LOS	D		B	E		B	C		C	C		C
Approach Vol, veh/h		893			566			68			53	
Approach Delay, s/veh		20.2			10.8			27.7			25.7	
Approach LOS		C			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		8.7	4.7	34.1		8.5	5.9	32.9				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		16.5	4.0	35.5		16.0	4.1	35.4				
Max Q Clear Time (g_c+I1), s		4.0	2.1	25.5		3.2	2.9	13.9				
Green Ext Time (p_c), s		0.2	0.0	4.1		0.1	0.0	3.3				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				17.3								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary  
 11: San Pasqual Rd/Cloverdale Rd & San Pasqual Valley Rd

07/17/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑	↗	↗	↑↑	↗	↗	↑	↗	↗	↑	↗
Traffic Volume (veh/h)	350	239	59	237	391	64	61	284	6	29	150	187
Future Volume (veh/h)	350	239	59	237	391	64	61	284	6	29	150	187
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	380	260	64	258	425	70	66	309	7	32	163	203
Adj No. of Lanes	2	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	603	636	278	309	632	279	148	392	609	106	348	573
Arrive On Green	0.18	0.18	0.18	0.17	0.18	0.18	0.08	0.21	0.21	0.06	0.19	0.19
Sat Flow, veh/h	3442	3539	1545	1774	3539	1560	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	380	260	64	258	425	70	66	309	7	32	163	203
Grp Sat Flow(s),veh/h/ln	1721	1770	1545	1774	1770	1560	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	7.0	4.4	2.4	9.6	7.7	2.6	2.4	10.7	0.2	1.2	5.3	6.4
Cycle Q Clear(g_c), s	7.0	4.4	2.4	9.6	7.7	2.6	2.4	10.7	0.2	1.2	5.3	6.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	603	636	278	309	632	279	148	392	609	106	348	573
V/C Ratio(X)	0.63	0.41	0.23	0.84	0.67	0.25	0.45	0.79	0.01	0.30	0.47	0.35
Avail Cap(c_a), veh/h	790	1655	723	423	1686	744	207	871	1016	233	898	1041
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.2	24.8	24.0	27.3	26.2	24.2	29.8	25.6	13.0	30.8	24.8	16.0
Incr Delay (d2), s/veh	1.1	0.4	0.4	10.1	1.3	0.5	2.1	3.6	0.0	1.6	1.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	2.2	1.1	5.6	3.8	1.2	1.3	5.9	0.1	0.6	2.8	2.9
LnGrp Delay(d),s/veh	27.2	25.3	24.4	37.4	27.5	24.6	31.9	29.1	13.0	32.4	25.8	16.3
LnGrp LOS	C	C	C	D	C	C	C	C	B	C	C	B
Approach Vol, veh/h		704			753			382			398	
Approach Delay, s/veh		26.3			30.6			29.3			21.5	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.6	19.8	11.4	19.6	17.7	19.7	9.8	21.2				
Change Period (Y+Rc), s	5.7	7.5	* 5.7	6.8	* 5.7	7.5	* 5.7	6.8				
Max Green Setting (Gmax), s	32.0	32.0	* 8	33.0	* 16	32.6	* 9	32.0				
Max Q Clear Time (g_c+M), s	6.4	6.4	4.4	8.4	9.0	9.7	3.2	12.7				
Green Ext Time (p_c), s	0.3	1.7	0.0	1.4	0.8	2.6	0.0	1.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				27.4								
HCM 2010 LOS				C								
<b>Notes</b>												

HCM 2010 Signalized Intersection Summary  
 17: Sierra Linda Dr/Ryan Dr & San Pasqual Rd

07/17/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	682	37	3	313	0	25	2	6	0	2	28
Future Volume (veh/h)	50	682	37	3	313	0	25	2	6	0	2	28
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	54	741	40	3	340	0	27	2	7	0	2	30
Adj No. of Lanes	1	1	1	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	68	1417	1205	6	1351	0	121	5	10	0	5	79
Arrive On Green	0.04	0.76	0.76	0.00	0.73	0.00	0.05	0.05	0.05	0.00	0.05	0.05
Sat Flow, veh/h	1774	1863	1583	1774	1863	0	677	102	188	0	100	1498
Grp Volume(v), veh/h	54	741	40	3	340	0	36	0	0	0	0	32
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	0	968	0	0	0	0	1598
Q Serve(g_s), s	2.2	11.6	0.5	0.1	4.5	0.0	1.7	0.0	0.0	0.0	0.0	1.4
Cycle Q Clear(g_c), s	2.2	11.6	0.5	0.1	4.5	0.0	3.1	0.0	0.0	0.0	0.0	1.4
Prop In Lane	1.00		1.00	1.00		0.00	0.75		0.19	0.00		0.94
Lane Grp Cap(c), veh/h	68	1417	1205	6	1351	0	136	0	0	0	0	84
V/C Ratio(X)	0.79	0.52	0.03	0.52	0.25	0.00	0.26	0.00	0.00	0.00	0.00	0.38
Avail Cap(c_a), veh/h	181	1417	1205	108	1351	0	372	0	0	0	0	347
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	35.1	3.5	2.2	36.6	3.4	0.0	35.0	0.0	0.0	0.0	0.0	33.7
Incr Delay (d2), s/veh	18.0	1.4	0.1	58.4	0.4	0.0	1.0	0.0	0.0	0.0	0.0	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4	6.3	0.2	0.2	2.4	0.0	0.8	0.0	0.0	0.0	0.0	0.7
LnGrp Delay(d),s/veh	53.1	4.9	2.2	95.1	3.8	0.0	36.0	0.0	0.0	0.0	0.0	36.5
LnGrp LOS	D	A	A	F	A		D					D
Approach Vol, veh/h		835			343			36			32	
Approach Delay, s/veh		7.9			4.6			36.0			36.5	
Approach LOS		A			A			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.7	60.5		8.4	7.3	57.9		8.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	4.5	56.0		16.0	7.5	53.0		16.0				
Max Q Clear Time (g_c+1/2), s	4.5	13.6		3.4	4.2	6.5		5.1				
Green Ext Time (p_c), s	0.0	6.2		0.1	0.0	2.2		0.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				8.5								
HCM 2010 LOS				A								

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**Arterial Level of Service: EB E. 17th Ave #1**


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Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
San Pasqual Valley R	II	40	68.2	62.9	131.1	0.76	20.8	D
Total	II		68.2	62.9	131.1	0.76	20.8	D

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**Arterial Level of Service: WB E. 17th Ave #1**


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Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Juniper St	II	40	68.2	47.1	115.3	0.76	23.7	C
Total	II		68.2	47.1	115.3	0.76	23.7	C

**Arterial Level of Service: EB E. 17th Ave #1**

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
San Pasqual Valley R	II	40	68.2	60.8	129.0	0.76	21.2	D
Total	II		68.2	60.8	129.0	0.76	21.2	D

**Arterial Level of Service: WB E. 17th Ave #1**

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Juniper St	II	40	68.2	32.2	100.4	0.76	27.2	C
Total	II		68.2	32.2	100.4	0.76	27.2	C

**Arterial Level of Service: EB E 17th Ave #1**

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
San Pasqual Valley R	II	40	68.2	67.8	136.0	0.76	20.1	D
Total	II		68.2	67.8	136.0	0.76	20.1	D

**Arterial Level of Service: WB E 17th Ave #1**

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Juniper St	II	40	68.2	46.6	114.8	0.76	23.8	C
Total	II		68.2	46.6	114.8	0.76	23.8	C

**Arterial Level of Service: EB E 17th Ave #1**

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
San Pasqual Valley R	II	40	68.2	61.0	129.2	0.76	21.1	D
Total	II		68.2	61.0	129.2	0.76	21.1	D

**Arterial Level of Service: WB E 17th Ave #1**

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Juniper St	II	40	68.2	29.0	97.2	0.76	28.1	B
Total	II		68.2	29.0	97.2	0.76	28.1	B

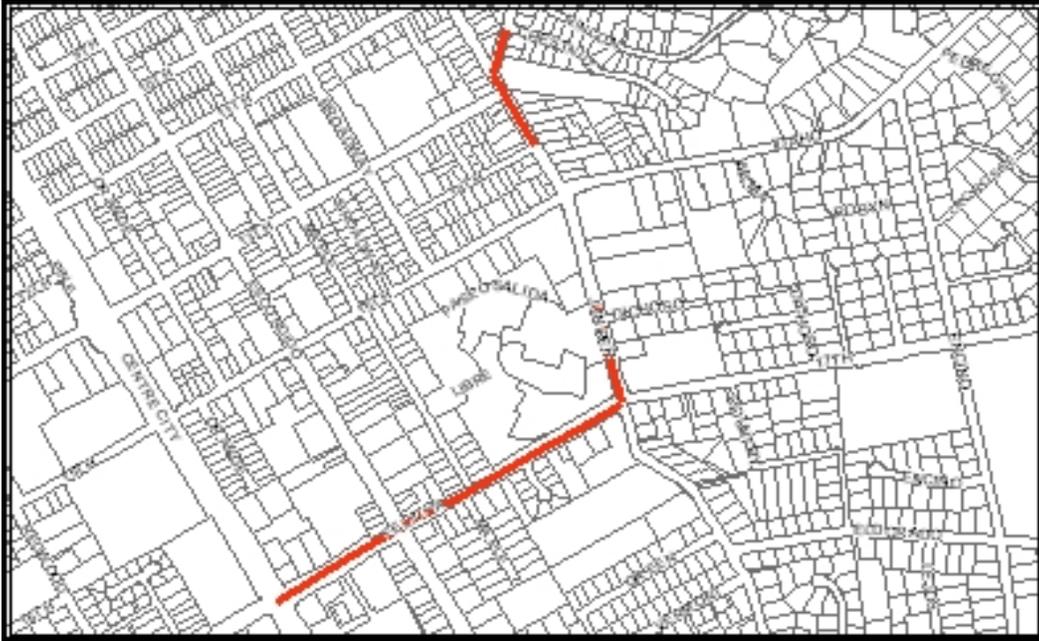
# APPENDIX O

## CITY OF ESCONDIDO CAPITAL IMPROVEMENT PROJECT FY 2008/2009 EXCEPT, AND FAIR SHARE CALCULATIONS



CITY OF ESCONDIDO  
 FIVE-YEAR CAPITAL IMPROVEMENT PROGRAM AND BUDGET  
 FISCAL YEARS 2008/09 - 2012/13

**STREETS CIP FUNDING - Construction Project Details**



**Project Type:** STREET CONSTRUCTION

**Project Title:** Felicity and Juniper from Escondido to Chestnut

**Description:** Widen Felicity Avenue from Escondido Boulevard to Juniper Street and widen Juniper Street from Felicity Avenue to Chestnut Street. Construction to include new pavement, curbs and gutters, sidewalks, and traffic signals. Re-start of construction work which had been delayed due to other funding priorities. Previously completed traffic signal and improvements at 15th Avenue and Juniper.

<b>Project Cost:</b>	<b>FY 2008/09</b>					<b>Prior Years Appropriated</b>	<b>Estimated Total</b>
	<b>Approved Budget</b>	<b>09/10 Projected</b>	<b>10/11 Projected</b>	<b>11/12 Projected</b>	<b>12/13 Projected</b>		
Streets	\$ 1,300,000					\$ 2,911,176	\$ 4,211,176
Direct/Indirect Costs	200,000						200,000
<b>Totals</b>	<b>\$ 1,500,000</b>					<b>\$ 2,911,176</b>	<b>\$ 4,411,176</b>

**FY 08/09 Source:** Proposition-1B State Grant



**SAFARI HIGHLANDS RANCH  
FAIR SHARE CALCULATIONS FOR CUMULATIVE TRAFFIC IMPACTS  
SEPTEMBER 5, 2017 TRAFFIC IMPACT STUDY**

*Formula:*

$$\text{Fair Share \%} = \frac{\text{Project Traffic Volumes}}{\text{Year 2035 With Project Traffic Volumes}}$$

**TRA-6**

Felicita Avenue/17<sup>th</sup> Avenue: Escondido Boulevard to Juniper Street

$$\frac{866}{32,666} = 2.71 \%$$



END OF APPENDICES