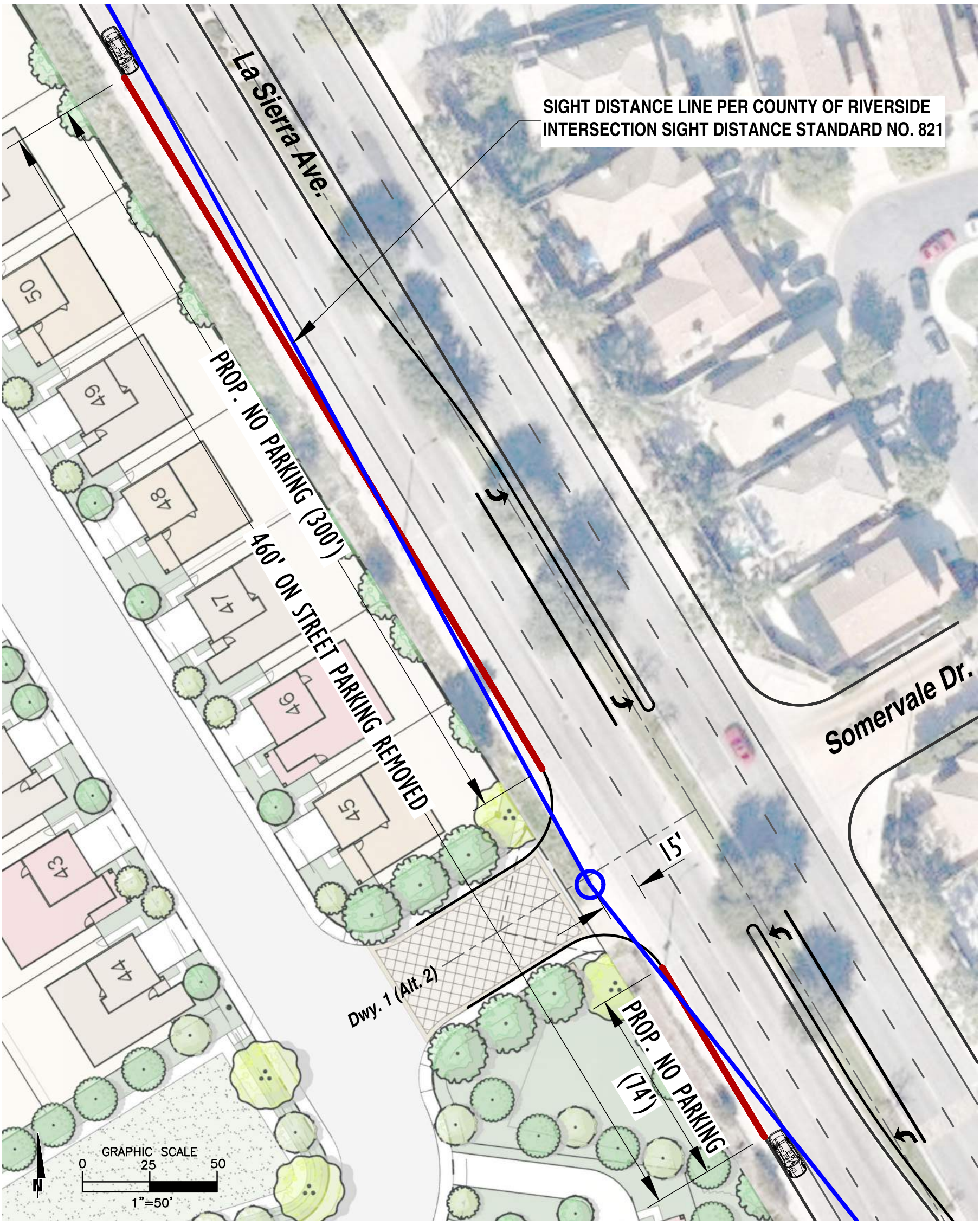
EXHIBIT 1-8 : CONCEPTUAL PLAN (ALTERNATIVE 2)



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APPENDIX 1.5: CONCEPTUAL PLAN (HIGH VISIBILITY CROSSWALK)

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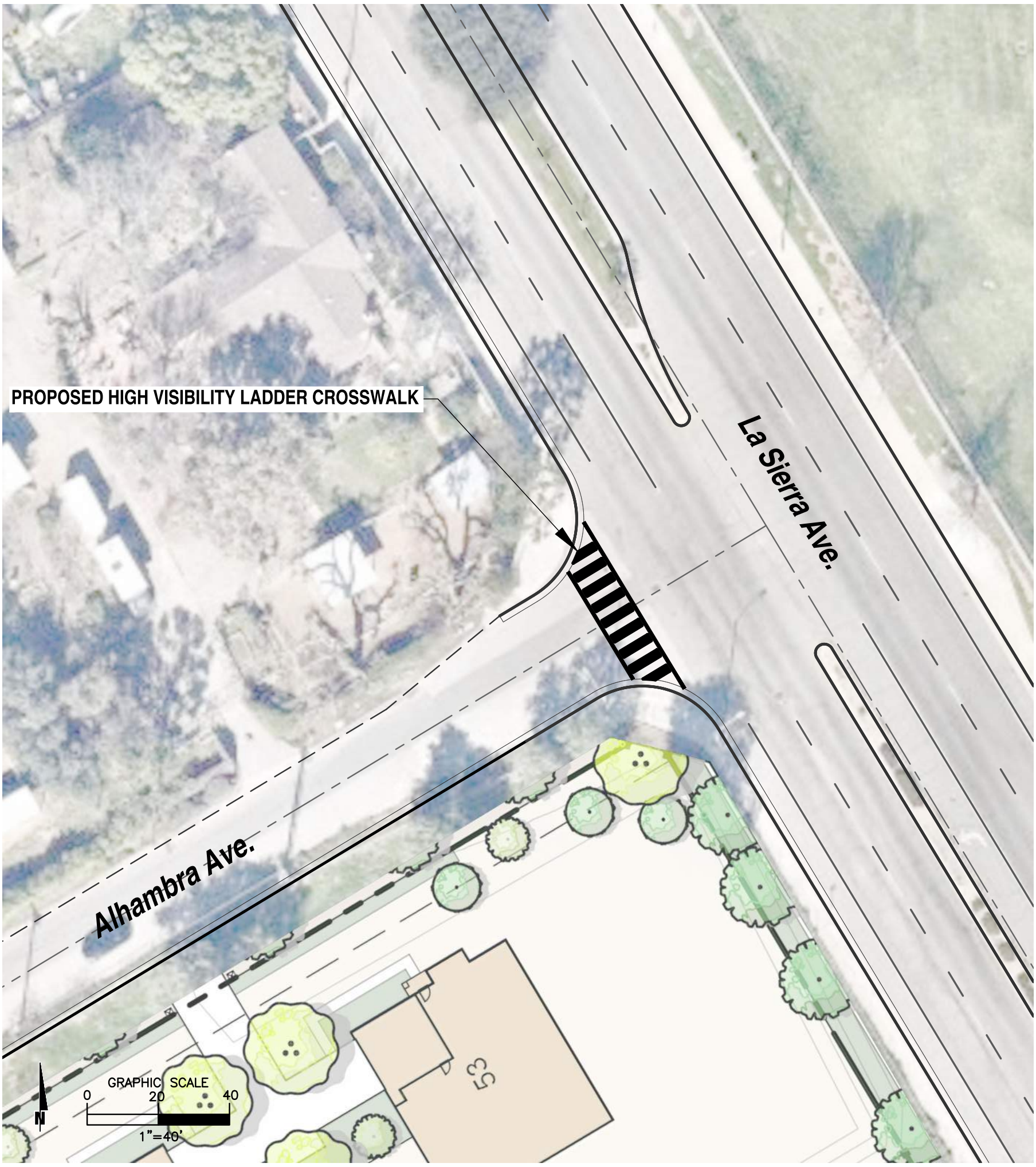
EXHIBIT 1-9 : CONCEPTUAL PLAN (HIGH VISIBILITY CROSSWALK)



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APPENDIX 3.1: TRAFFIC COUNTS

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Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Riverside
N/S: La Sierra Avenue
E/W: Alhambra Avenue
Weather: Clear

File Name : 02_RIV_LA_ALHA UAM
Site Code : 05124382
Start Date : 4/25/2024
Page No : 1

Groups Printed- Total Volume

	La Sierra Avenue Southbound				La Sierra Avenue Northbound					Alhambra Avenue Eastbound			
Start Time	Thru	Right	U-Turns	App. Total	Left	Thru	U-Turn Res	U-Turn Non-Res	App. Total	Left	Right	App. Total	Int. Total
07:00 AM	58	0	0	58	0	107	3	1	111	0	0	0	169
07:15 AM	71	1	0	72	0	138	1	0	139	2	0	2	213
07:30 AM	90	0	0	90	0	137	0	7	144	1	1	2	236
07:45 AM	105	1	0	106	0	175	2	27	204	3	1	4	314
Total	324	2	0	326	0	557	6	35	598	6	2	8	932
08:00 AM	77	2	1	80	4	208	2	40	254	2	3	5	339
08:15 AM	83	0	1	84	1	100	1	2	104	3	1	4	192
08:30 AM	67	2	0	69	0	66	1	0	67	0	0	0	136
08:45 AM	66	0	0	66	0	71	3	0	74	1	0	1	141
Total	293	4	2	299	5	445	7	42	499	6	4	10	808
Grand Total	617	6	2	625	5	1002	13	77	1097	12	6	18	1740
Apprch %	98.7	1	0.3		0.5	91.3	1.2	7		66.7	33.3		
Total %	35.5	0.3	0.1	35.9	0.3	57.6	0.7	4.4	63	0.7	0.3	1	

	La Sierra Avenue Southbound				La Sierra Avenue Northbound					Alhambra Avenue Eastbound			
Start Time	Thru	Right	U-Turns	App. Total	Left	Thru	U-Turn Res	U-Turn Non-Res	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:15 AM													
07:15 AM	71	1	0	72	0	138	1	0	139	2	0	2	213
07:30 AM	90	0	0	90	0	137	0	7	144	1	1	2	236
07:45 AM	105	1	0	106	0	175	2	27	204	3	1	4	314
08:00 AM	77	2	1	80	4	208	2	40	254	2	3	5	339
Total Volume	343	4	1	348	4	658	5	74	741	8	5	13	1102
% App. Total	98.6	1.1	0.3		0.5	88.8	0.7	10		61.5	38.5		
PHF	.817	.500	.250	.821	.250	.791	.625	.463	.729	.667	.417	.650	.813

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City of Riverside
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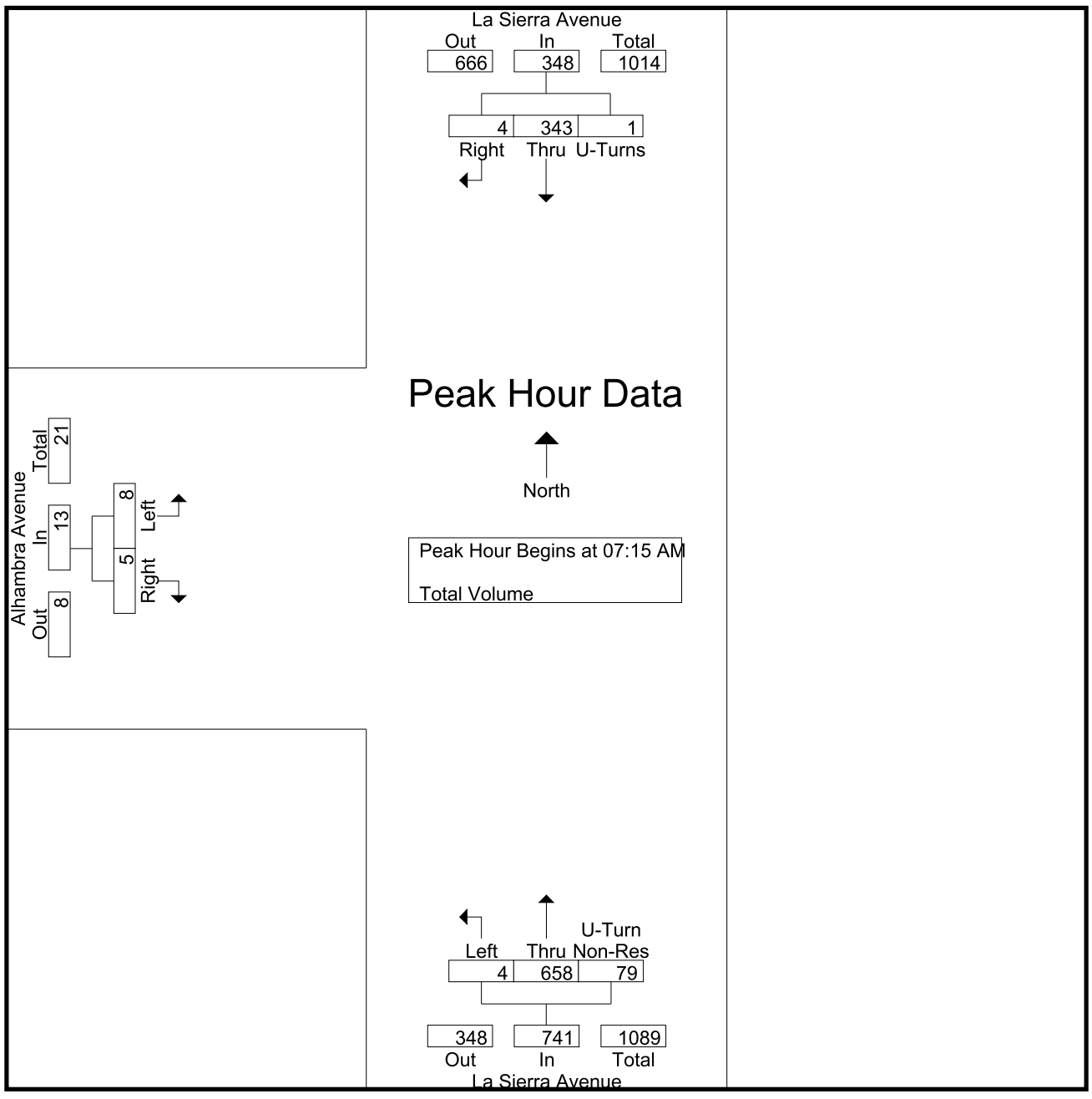
Weather: Clear

File Name : 02_RIV_LA_ALHA UAM
Site Code : 05124382
Start Date : 4/25/2024



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:30 AM				07:15 AM					07:30 AM		
+0 mins.	90	0	0	90	0	138	1	0	139	1	1	2
+15 mins.	105	1	0	106	0	137	0	7	144	3	1	4
+30 mins.	77	2	1	80	0	175	2	27	204	2	3	5
+45 mins.	83	0	1	84	4	208	2	40	254	3	1	4
Total Volume	355	3	2	360	4	658	5	74	741	9	6	15
% App. Total	98.6	0.8	0.6		0.5	88.8	0.7	10		60	40	
PHF	.845	.375	.500	.849	.250	.791	.625	.463	.729	.750	.500	.750

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City of Riverside
N/S: La Sierra Avenue
E/W: Alhambra Avenue
Weather: Clear

File Name : 02_RIV_LA_ALHA UMD
Site Code : 05124382
Start Date : 4/25/2024
Page No : 1

Groups Printed- Total Volume

	La Sierra Avenue Southbound				La Sierra Avenue Northbound					Alhambra Avenue Eastbound			
Start Time	Thru	Right	U-Turns	App. Total	Left	Thru	U-Turn Res	U-Turn Non-Res	App. Total	Left	Right	App. Total	Int. Total
02:00 PM	85	1	0	86	0	88	2	0	90	0	0	0	176
02:15 PM	97	2	0	99	0	111	2	0	113	2	1	3	215
02:30 PM	101	2	0	103	0	115	2	1	118	2	0	2	223
02:45 PM	129	3	0	132	1	105	1	9	116	1	0	1	249
Total	412	8	0	420	1	419	7	10	437	5	1	6	863
03:00 PM	186	3	0	189	5	146	0	50	201	3	1	4	394
03:15 PM	175	3	0	178	2	115	2	9	128	1	0	1	307
03:30 PM	154	3	0	157	0	112	0	0	112	0	1	1	270
03:45 PM	184	0	0	184	1	97	4	0	102	1	0	1	287
Total	699	9	0	708	8	470	6	59	543	5	2	7	1258
Grand Total	1111	17	0	1128	9	889	13	69	980	10	3	13	2121
Apprch %	98.5	1.5	0		0.9	90.7	1.3	7		76.9	23.1		
Total %	52.4	0.8	0	53.2	0.4	41.9	0.6	3.3	46.2	0.5	0.1	0.6	

	La Sierra Avenue Southbound				La Sierra Avenue Northbound					Alhambra Avenue Eastbound			
Start Time	Thru	Right	U-Turns	App. Total	Left	Thru	U-Turn Res	U-Turn Non-Res	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 03:00 PM													
03:00 PM	186	3	0	189	5	146	0	50	201	3	1	4	394
03:15 PM	175	3	0	178	2	115	2	9	128	1	0	1	307
03:30 PM	154	3	0	157	0	112	0	0	112	0	1	1	270
03:45 PM	184	0	0	184	1	97	4	0	102	1	0	1	287
Total Volume	699	9	0	708	8	470	6	59	543	5	2	7	1258
% App. Total	98.7	1.3	0		1.5	86.6	1.1	10.9		71.4	28.6		
PHF	.940	.750	.000	.937	.400	.805	.375	.295	.675	.417	.500	.438	.798

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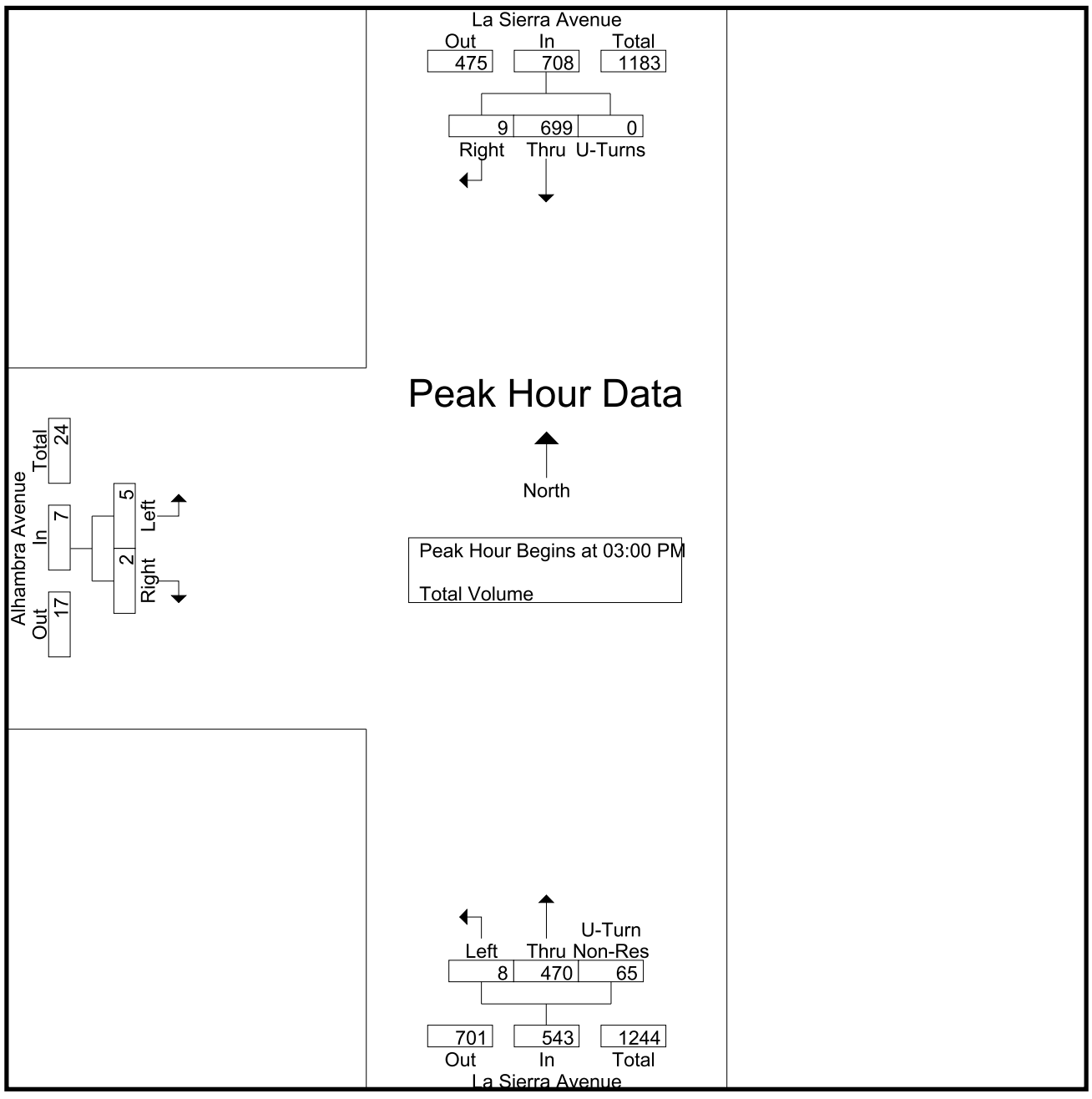
City of Riverside
N/S: La Sierra Avenue
E/W: Alhambra Avenue
Weather: Clear

File Name : 02_RIV_LA_ALHA UMD
Site Code : 05124382
Start Date : 4/25/2024
Page No : 2



Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	03:00 PM				02:30 PM					02:15 PM		
+0 mins.	186	3	0	189	0	115	2	1	118	2	1	3
+15 mins.	175	3	0	178	1	105	1	9	116	2	0	2
+30 mins.	154	3	0	157	5	146	0	50	201	1	0	1
+45 mins.	184	0	0	184	2	115	2	9	128	3	1	4
Total Volume	699	9	0	708	8	481	5	69	563	8	2	10
% App. Total	98.7	1.3	0		1.4	85.4	0.9	12.3		80	20	
PHF	.940	.750	.000	.937	.400	.824	.625	.345	.700	.667	.500	.625

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City of Riverside
N/S: La Sierra Avenue
E/W: Alhambra Avenue
Weather: Clear

File Name : 02_RIV_LA_ALHA UPM
Site Code : 05124382
Start Date : 4/25/2024
Page No : 1

Groups Printed- Total Volume

	La Sierra Avenue Southbound				La Sierra Avenue Northbound					Alhambra Avenue Eastbound			
Start Time	Thru	Right	U-Turns	App. Total	Left	Thru	U-Turn Res	U-Turn Non-Res	App. Total	Left	Right	App. Total	Int. Total
04:00 PM	169	4	0	173	1	108	1	0	110	0	0	0	283
04:15 PM	163	4	1	168	1	102	4	0	107	3	1	4	279
04:30 PM	130	1	0	131	0	111	1	1	113	0	0	0	244
04:45 PM	164	4	0	168	0	113	1	1	115	0	0	0	283
Total	626	13	1	640	2	434	7	2	445	3	1	4	1089
05:00 PM	181	1	1	183	4	99	2	0	105	0	0	0	288
05:15 PM	176	2	0	178	0	102	3	1	106	0	1	1	285
05:30 PM	148	5	1	154	0	111	0	0	111	4	0	4	269
05:45 PM	155	2	0	157	1	77	0	0	78	0	3	3	238
Total	660	10	2	672	5	389	5	1	400	4	4	8	1080
Grand Total	1286	23	3	1312	7	823	12	3	845	7	5	12	2169
Apprch %	98	1.8	0.2		0.8	97.4	1.4	0.4		58.3	41.7		
Total %	59.3	1.1	0.1	60.5	0.3	37.9	0.6	0.1	39	0.3	0.2	0.6	

	La Sierra Avenue Southbound				La Sierra Avenue Northbound					Alhambra Avenue Eastbound			
Start Time	Thru	Right	U-Turns	App. Total	Left	Thru	U-Turn Res	U-Turn Non-Res	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:45 PM													
04:45 PM	164	4	0	168	0	113	1	1	115	0	0	0	283
05:00 PM	181	1	1	183	4	99	2	0	105	0	0	0	288
05:15 PM	176	2	0	178	0	102	3	1	106	0	1	1	285
05:30 PM	148	5	1	154	0	111	0	0	111	4	0	4	269
Total Volume	669	12	2	683	4	425	6	2	437	4	1	5	1125
% App. Total	98	1.8	0.3		0.9	97.3	1.4	0.5		80	20		
PHF	.924	.600	.500	.933	.250	.940	.500	.500	.950	.250	.250	.313	.977

Counts Unlimited, Inc.
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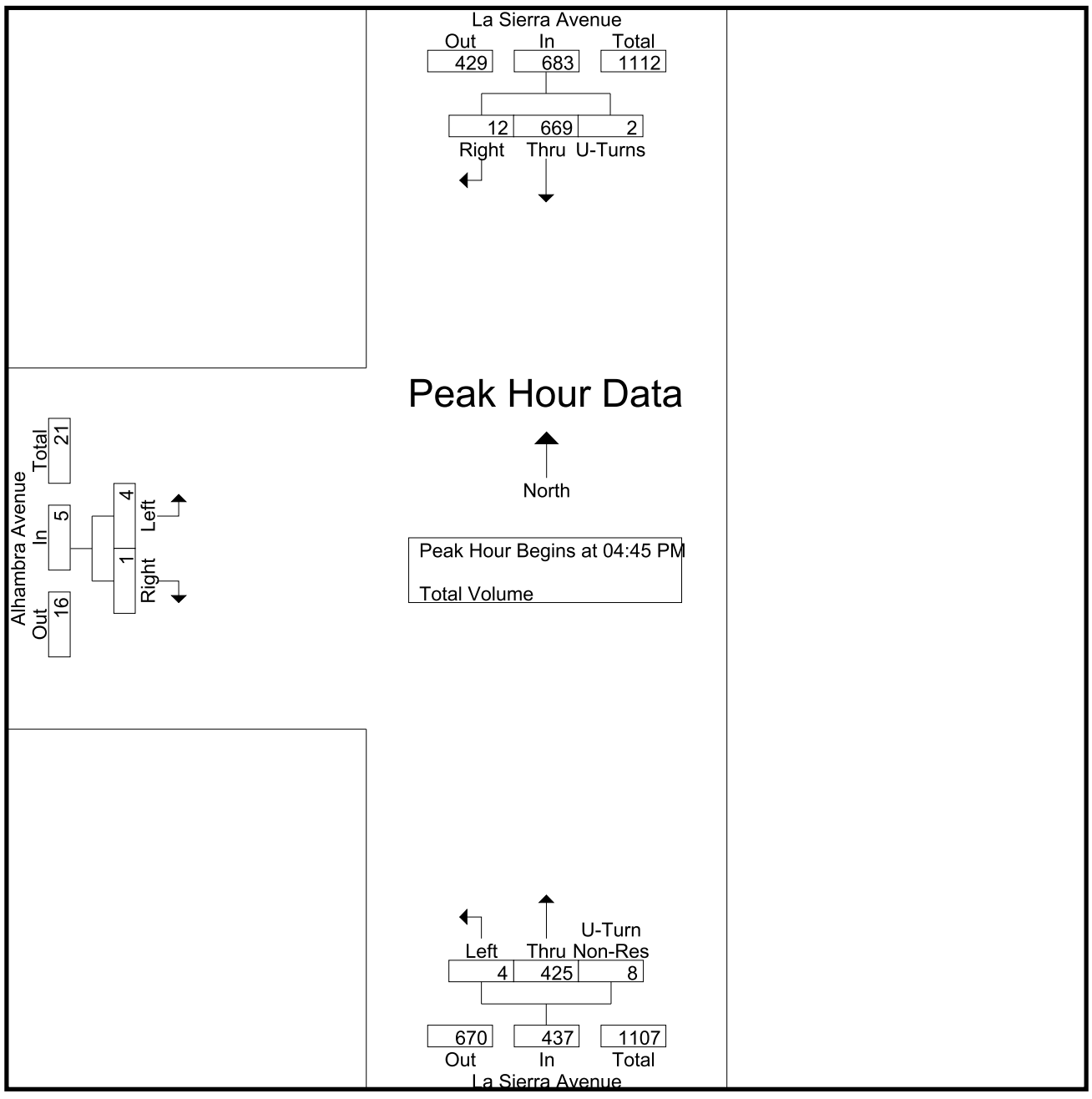
City of Riverside
N/S: La Sierra Avenue
E/W: Alhambra Avenue
Weather: Clear

File Name : 02_RIV_LA_ALHA UPM
Site Code : 05124382
Start Date : 4/25/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:45 PM				04:00 PM					05:00 PM		
+0 mins.	164	4	0	168	1	108	1	0	110	0	0	0
+15 mins.	181	1	1	183	1	102	4	0	107	0	1	1
+30 mins.	176	2	0	178	0	111	1	1	113	4	0	4
+45 mins.	148	5	1	154	0	113	1	1	115	0	3	3
Total Volume	669	12	2	683	2	434	7	2	445	4	4	8
% App. Total	98	1.8	0.3		0.4	97.5	1.6	0.4		50	50	
PHF	.924	.600	.500	.933	.500	.960	.438	.500	.967	.250	.333	.500

Location: Riverside
N/S: La Sierra Avenue
E/W: Alhambra Avenue

Date: 4/25/2024
Day: Thursday

PEDESTRIANS

	North Leg La Sierra Avenue	East Leg Dead End	South Leg La Sierra Avenue	West Leg Alhambra Avenue	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
7:00 AM	0	1	0	0	1
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	1	0	0	0	1
8:00 AM	0	0	0	1	1
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	1	1	0	1	3

	North Leg La Sierra Avenue	East Leg Dead End	South Leg La Sierra Avenue	West Leg Alhambra Avenue	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
2:00 PM	0	0	0	0	0
2:15 PM	0	0	0	0	0
2:30 PM	0	2	0	0	2
2:45 PM	0	1	0	0	1
3:00 PM	0	12	0	0	12
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	15	0	0	15

	North Leg La Sierra Avenue	East Leg Dead End	South Leg La Sierra Avenue	West Leg Alhambra Avenue	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	1	1
4:30 PM	0	1	0	0	1
4:45 PM	0	1	0	0	1
5:00 PM	0	1	0	0	1
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	1	0	0	1
TOTAL VOLUMES:	0	4	0	1	5

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Location: Riverside
N/S: La Sierra Avenue
E/W: Alhambra Avenue

Date: 4/25/2024
Day: Thursday

BICYCLES

	Southbound La Sierra Avenue			Westbound Dead End			Northbound La Sierra Avenue			Eastbound Alhambra Avenue			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	1	0	0	0	0	0	0	0	0	0	1

	Southbound La Sierra Avenue			Westbound Dead End			Northbound La Sierra Avenue			Eastbound Alhambra Avenue			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
2:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	2	0	0	0	0	2
TOTAL VOLUMES:	0	1	0	0	0	0	0	3	0	0	0	0	4

	Southbound La Sierra Avenue			Westbound Dead End			Northbound La Sierra Avenue			Eastbound Alhambra Avenue			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	1	0	2	0	0	3

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Corona, CA 92878
(951) 268-6268

City of Riverside
N/S: La Sierra Avenue
E/W: Somervale Drive
Weather: Clear

File Name : 03_RIV_LA_Som UAM
Site Code : 05124382
Start Date : 4/25/2024
Page No : 1

Groups Printed- Total Volume

	La Sierra Avenue Southbound				Somervale Drive Westbound				La Sierra Avenue Northbound				Private Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	63	0	63	0	0	4	4	0	111	1	112	0	0	1	1	180
07:15 AM	0	72	0	72	0	0	1	1	0	137	0	137	0	0	0	0	210
07:30 AM	0	92	1	93	0	0	4	4	0	145	3	148	0	0	0	0	245
07:45 AM	0	135	0	135	0	0	4	4	0	223	1	224	0	0	0	0	363
Total	0	362	1	363	0	0	13	13	0	616	5	621	0	0	1	1	998
08:00 AM	0	124	0	124	0	0	3	3	0	243	1	244	0	0	0	0	371
08:15 AM	0	86	0	86	0	0	4	4	0	102	0	102	0	0	0	0	192
08:30 AM	0	67	1	68	0	0	1	1	0	66	1	67	0	0	0	0	136
08:45 AM	0	69	0	69	0	0	2	2	0	73	2	75	0	0	0	0	146
Total	0	346	1	347	0	0	10	10	0	484	4	488	0	0	0	0	845
Grand Total	0	708	2	710	0	0	23	23	0	1100	9	1109	0	0	1	1	1843
Apprch %	0	99.7	0.3		0	0	100		0	99.2	0.8		0	0	100		
Total %	0	38.4	0.1	38.5	0	0	1.2	1.2	0	59.7	0.5	60.2	0	0	0.1	0.1	

	La Sierra Avenue Southbound				Somervale Drive Westbound				La Sierra Avenue Northbound				Private Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	72	0	72	0	0	1	1	0	137	0	137	0	0	0	0	210
07:30 AM	0	92	**1**	93	0	0	**4**	**4**	0	145	**3**	148	0	0	0	0	245
07:45 AM	0	**135**	0	**135**	0	0	4	4	0	223	1	224	0	0	0	0	363
08:00 AM	0	124	0	124	0	0	3	3	0	**243**	1	**244**	0	0	0	0	**371**
Total Volume	0	423	1	424	0	0	12	12	0	748	5	753	0	0	0	0	1189
% App. Total	0	99.8	0.2		0	0	100		0	99.3	0.7		0	0	0		
PHF	.000	.783	.250	.785	.000	.000	.750	.750	.000	.770	.417	.772	.000	.000	.000	.000	.801

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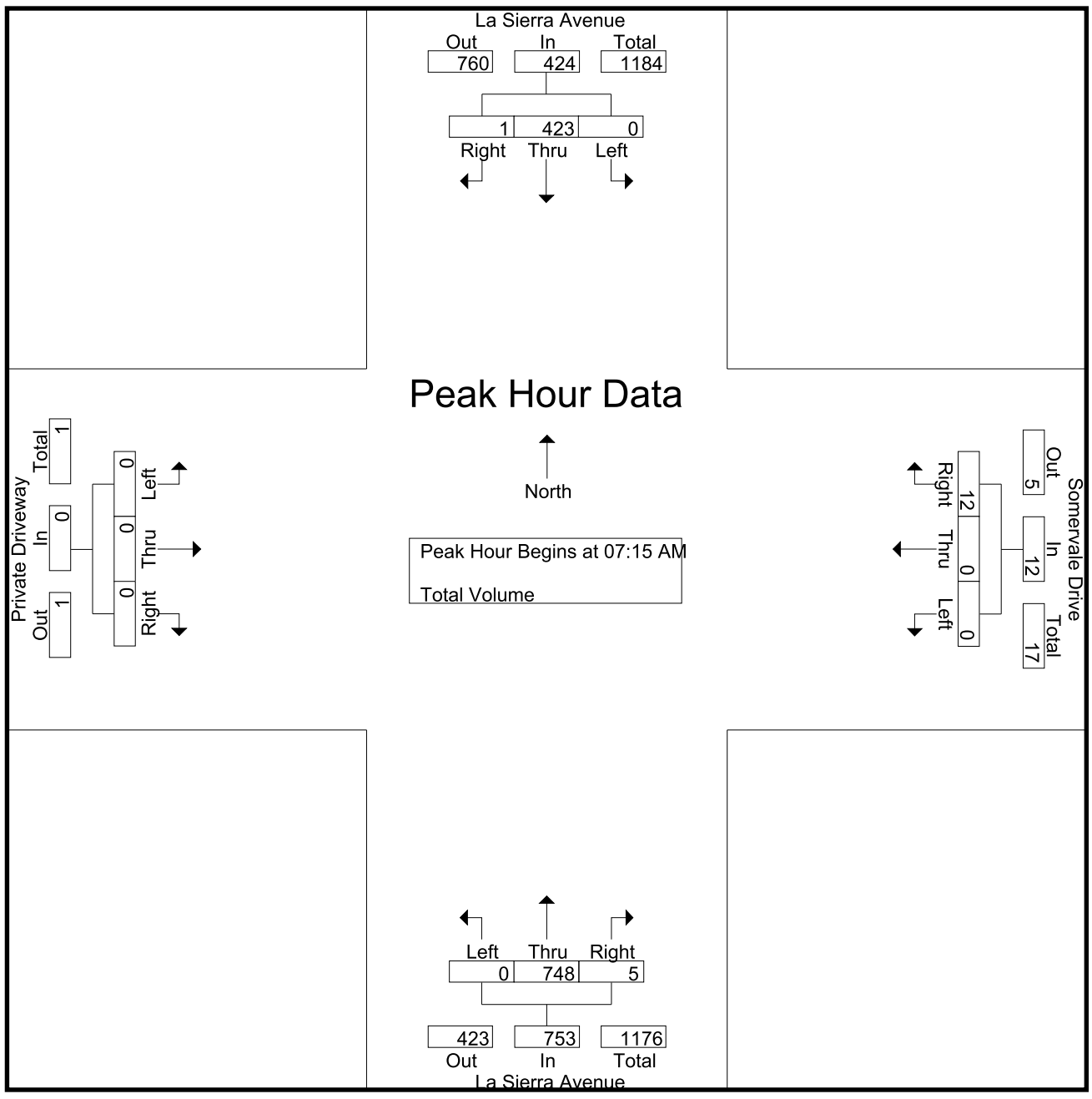
City of Riverside
N/S: La Sierra Avenue
E/W: Somervale Drive
Weather: Clear

File Name : 03_RIV_LA_Som UAM
Site Code : 05124382
Start Date : 4/25/2024
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:15 AM				07:00 AM			
+0 mins.	0	92	**1**	93	0	0	**4**	**4**	0	137	0	137	0	0	**1**	**1**
+15 mins.	0	**135**	0	**135**	0	0	4	4	0	145	**3**	148	0	0	0	0
+30 mins.	0	124	0	124	0	0	3	3	0	223	1	224	0	0	0	0
+45 mins.	0	86	0	86	0	0	4	4	0	**243**	1	**244**	0	0	0	0
Total Volume	0	437	1	438	0	0	15	15	0	748	5	753	0	0	1	1
% App. Total	0	99.8	0.2		0	0	100		0	99.3	0.7		0	0	100	
PHF	.000	.809	.250	.811	.000	.000	.938	.938	.000	.770	.417	.772	.000	.000	.250	.250

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Corona, CA 92878
(951) 268-6268

City of Riverside
N/S: La Sierra Avenue
E/W: Somervale Drive
Weather: Clear

File Name : 03_RIV_LA_Som UMD
Site Code : 05124382
Start Date : 4/25/2024
Page No : 1

Groups Printed- Total Volume

	La Sierra Avenue Southbound				Somervale Drive Westbound				La Sierra Avenue Northbound				Private Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
02:00 PM	0	87	0	87	0	0	3	3	0	93	3	96	0	0	1	1	187
02:15 PM	0	97	2	99	0	0	0	0	0	125	3	128	0	0	0	0	227
02:30 PM	0	101	0	101	0	0	1	1	0	125	3	128	0	0	0	0	230
02:45 PM	0	134	0	134	0	0	3	3	0	113	1	114	0	0	0	0	251
Total	0	419	2	421	0	0	7	7	0	456	10	466	0	0	1	1	895
03:00 PM	0	242	0	242	0	0	2	2	0	186	3	189	0	0	1	1	434
03:15 PM	0	183	0	183	0	0	5	5	0	123	3	126	0	0	0	0	314
03:30 PM	0	156	0	156	0	0	0	0	0	111	2	113	0	0	0	0	269
03:45 PM	0	183	1	184	0	0	4	4	0	97	1	98	0	0	0	0	286
Total	0	764	1	765	0	0	11	11	0	517	9	526	0	0	1	1	1303
Grand Total	0	1183	3	1186	0	0	18	18	0	973	19	992	0	0	2	2	2198
Apprch %	0	99.7	0.3		0	0	100		0	98.1	1.9		0	0	100		
Total %	0	53.8	0.1	54	0	0	0.8	0.8	0	44.3	0.9	45.1	0	0	0.1	0.1	

	La Sierra Avenue Southbound				Somervale Drive Westbound				La Sierra Avenue Northbound				Private Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	0	**242**	0	**242**	0	0	2	2	0	**186**	**3**	**189**	0	0	**1**	**1**	**434**
03:15 PM	0	183	0	183	0	0	**5**	**5**	0	123	3	126	0	0	0	0	314
03:30 PM	0	156	0	156	0	0	0	0	0	111	2	113	0	0	0	0	269
03:45 PM	0	183	**1**	184	0	0	4	4	0	97	1	98	0	0	0	0	286
Total Volume	0	764	1	765	0	0	11	11	0	517	9	526	0	0	1	1	1303
% App. Total	0	99.9	0.1		0	0	100		0	98.3	1.7		0	0	100		
PHF	.000	.789	.250	.790	.000	.000	.550	.550	.000	.695	.750	.696	.000	.000	.250	.250	.751

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City of Riverside
N/S: La Sierra Avenue
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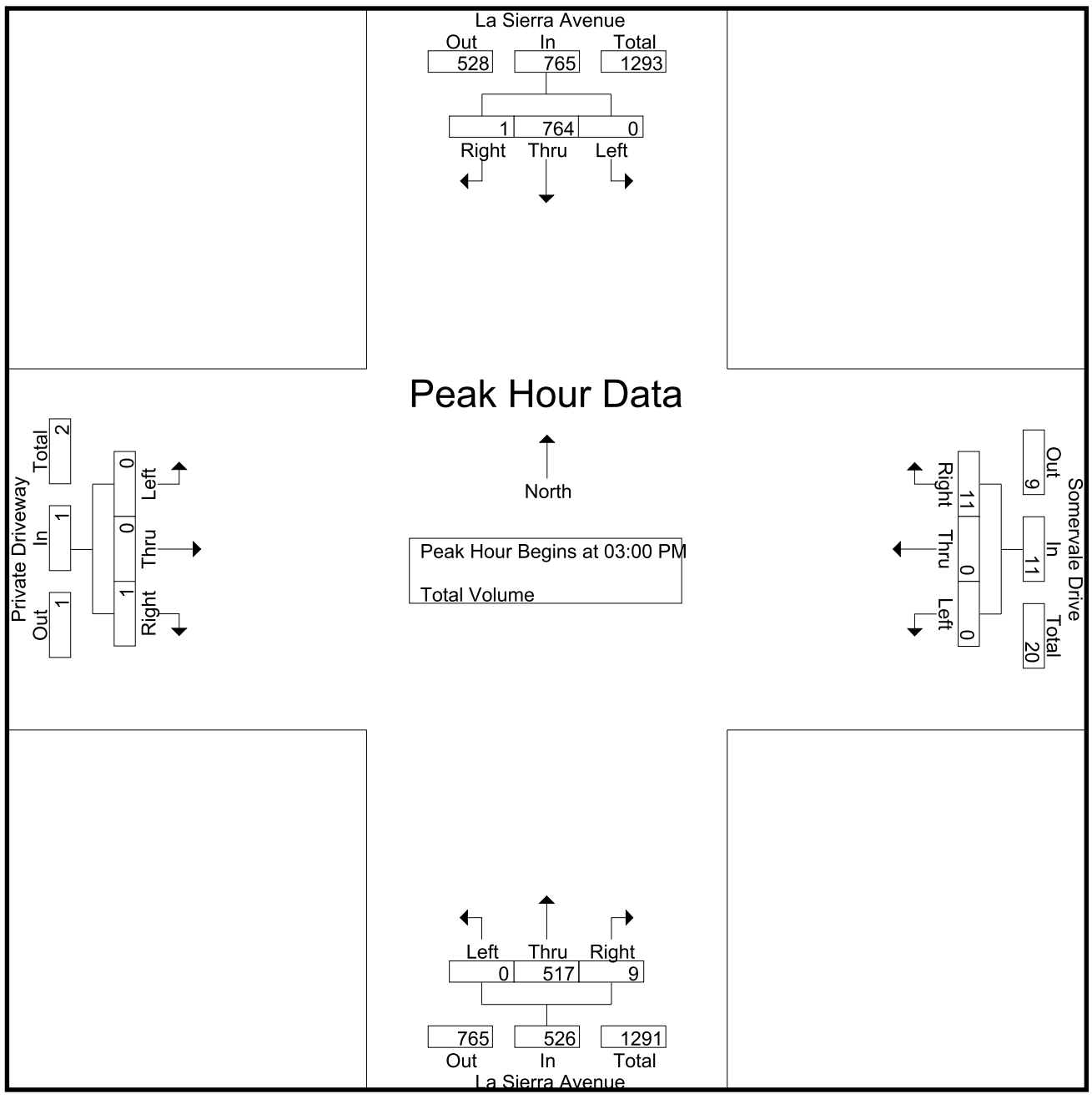
Weather: Clear

File Name : 03_RIV_LA_Som UMD
Site Code : 05124382
Start Date : 4/25/2024
Page No : 2



Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	03:00 PM				02:30 PM				02:15 PM				02:00 PM			
+0 mins.	0	**242**	0	**242**	0	0	1	1	0	125	**3**	128	0	0	**1**	**1**
+15 mins.	0	183	0	183	0	0	3	3	0	125	3	128	0	0	0	0
+30 mins.	0	156	0	156	0	0	2	2	0	113	1	114	0	0	0	0
+45 mins.	0	183	**1**	184	0	0	**5**	**5**	0	**186**	3	**189**	0	0	0	0
Total Volume	0	764	1	765	0	0	11	11	0	549	10	559	0	0	1	1
% App. Total	0	99.9	0.1		0	0	100		0	98.2	1.8		0	0	100	
PHF	.000	.789	.250	.790	.000	.000	.550	.550	.000	.738	.833	.739	.000	.000	.250	.250

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City of Riverside
N/S: La Sierra Avenue
E/W: Somervale Drive
Weather: Clear

File Name : 03_RIV_LA_Som UPM
Site Code : 05124382
Start Date : 4/25/2024
Page No : 1

Groups Printed- Total Volume

	La Sierra Avenue Southbound				Somervale Drive Westbound				La Sierra Avenue Northbound				Private Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	169	1	170	0	0	3	3	0	113	5	118	0	0	0	0	291
04:15 PM	0	168	0	168	0	0	3	3	0	107	4	111	0	0	0	0	282
04:30 PM	0	131	1	132	0	0	3	3	0	105	2	107	0	0	0	0	242
04:45 PM	0	162	0	162	0	0	1	1	0	113	2	115	0	0	0	0	278
Total	0	630	2	632	0	0	10	10	0	438	13	451	0	0	0	0	1093
05:00 PM	0	185	0	185	0	0	4	4	0	106	3	109	0	0	0	0	298
05:15 PM	0	182	0	182	0	0	5	5	0	103	1	104	0	0	1	1	292
05:30 PM	0	147	0	147	0	0	1	1	0	112	1	113	0	0	2	2	263
05:45 PM	0	157	1	158	0	0	1	1	0	82	5	87	0	0	0	0	246
Total	0	671	1	672	0	0	11	11	0	403	10	413	0	0	3	3	1099
Grand Total	0	1301	3	1304	0	0	21	21	0	841	23	864	0	0	3	3	2192
Apprch %	0	99.8	0.2		0	0	100		0	97.3	2.7		0	0	100		
Total %	0	59.4	0.1	59.5	0	0	1	1	0	38.4	1	39.4	0	0	0.1	0.1	

	La Sierra Avenue Southbound				Somervale Drive Westbound				La Sierra Avenue Northbound				Private Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	162	0	162	0	0	1	1	0	**113**	2	**115**	0	0	0	0	278
05:00 PM	0	**185**	0	**185**	0	0	4	4	0	106	**3**	109	0	0	0	0	**298**
05:15 PM	0	182	0	182	0	0	**5**	**5**	0	103	1	104	0	0	1	1	292
05:30 PM	0	147	0	147	0	0	1	1	0	112	1	113	0	0	**2**	**2**	263
Total Volume	0	676	0	676	0	0	11	11	0	434	7	441	0	0	3	3	1131
% App. Total	0	100	0		0	0	100		0	98.4	1.6		0	0	100		
PHF	.000	.914	.000	.914	.000	.000	.550	.550	.000	.960	.583	.959	.000	.000	.375	.375	.949

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City of Riverside
N/S: La Sierra Avenue
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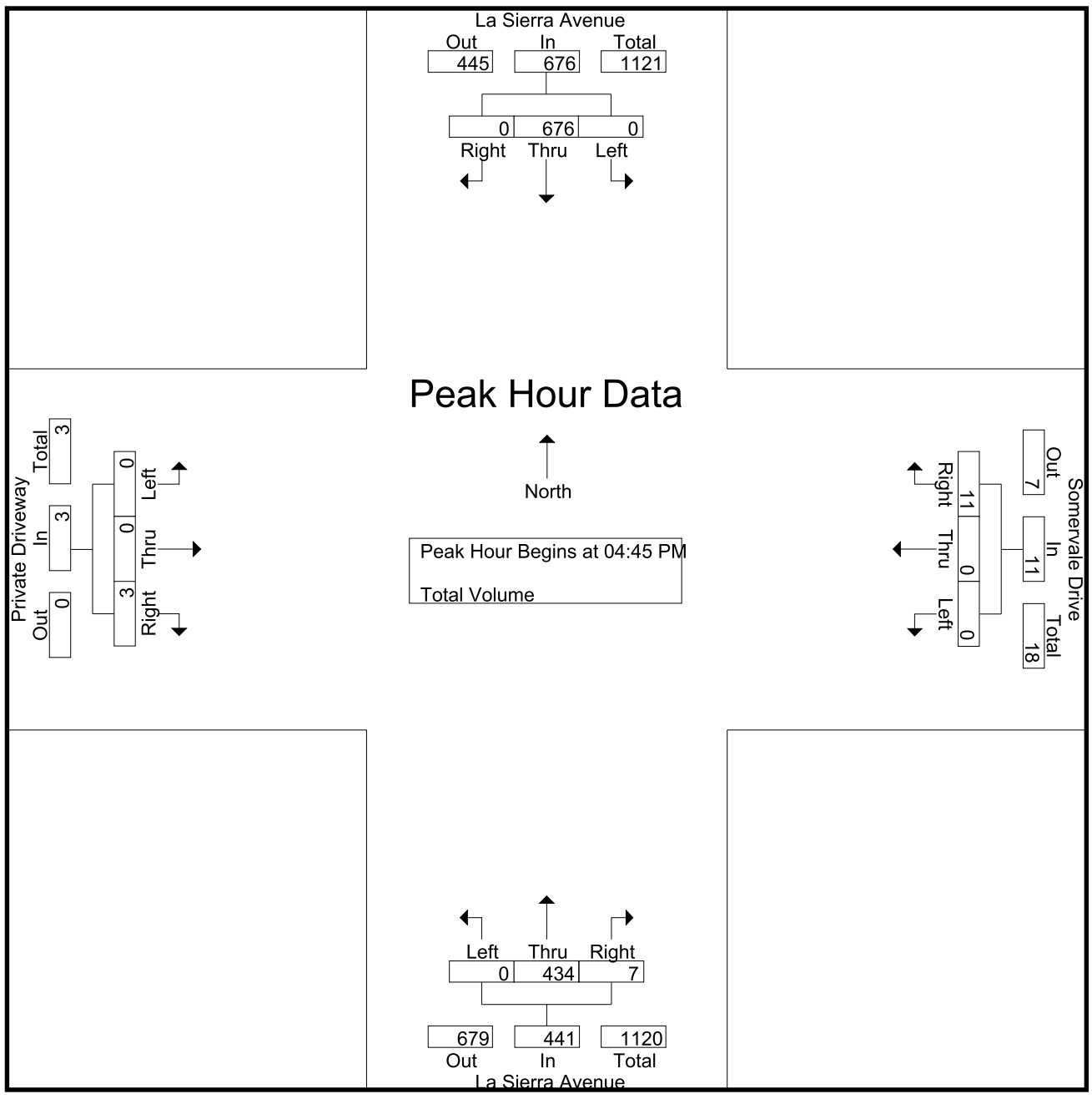
Weather: Clear

File Name : 03_RIV_LA_Som UPM
Site Code : 05124382
Start Date : 4/25/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:45 PM				04:30 PM				04:00 PM				04:45 PM			
+0 mins.	0	162	0	162	0	0	3	3	0	**113**	**5**	**118**	0	0	0	0
+15 mins.	0	**185**	0	**185**	0	0	1	1	0	107	4	111	0	0	0	0
+30 mins.	0	182	0	182	0	0	4	4	0	105	2	107	0	0	1	1
+45 mins.	0	147	0	147	0	0	**5**	**5**	0	113	2	115	0	0	**2**	**2**
Total Volume	0	676	0	676	0	0	13	13	0	438	13	451	0	0	3	3
% App. Total	0	100	0		0	0	100		0	97.1	2.9		0	0	100	
PHF	.000	.914	.000	.914	.000	.000	.650	.650	.000	.969	.650	.956	.000	.000	.375	.375

Location: Riverside
N/S: La Sierra Avenue
E/W: Somervale Drive

Date: 4/25/2024
Day: Thursday

PEDESTRIANS

	North Leg La Sierra Avenue	East Leg Somervale Drive	South Leg La Sierra Avenue	West Leg Private Driveway	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	1	0	0	1
7:45 AM	0	4	0	0	4
8:00 AM	0	7	0	1	8
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	0	12	0	1	13

	North Leg La Sierra Avenue	East Leg Somervale Drive	South Leg La Sierra Avenue	West Leg Private Driveway	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
2:00 PM	0	0	0	0	0
2:15 PM	0	1	0	0	1
2:30 PM	0	0	0	0	0
2:45 PM	0	10	0	0	10
3:00 PM	0	101	0	0	101
3:15 PM	0	1	0	0	1
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	113	0	0	113

	North Leg La Sierra Avenue	East Leg Somervale Drive	South Leg La Sierra Avenue	West Leg Private Driveway	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	1	1
4:30 PM	0	1	0	0	1
4:45 PM	0	1	0	0	1
5:00 PM	0	1	0	0	1
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	3	0	1	4

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Location: Riverside
N/S: La Sierra Avenue
E/W: Somervale Drive

Date: 4/25/2024
Day: Thursday

BICYCLES

	Southbound La Sierra Avenue			Westbound Somervale Drive			Northbound La Sierra Avenue			Eastbound Private Driveway			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	1	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	1	0	0	0	0	1	0	0	0	2

	Southbound La Sierra Avenue			Westbound Somervale Drive			Northbound La Sierra Avenue			Eastbound Private Driveway			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
TOTAL VOLUMES:	0	0	0	0	0	0	0	2	0	0	0	0	2

	Southbound La Sierra Avenue			Westbound Somervale Drive			Northbound La Sierra Avenue			Eastbound Private Driveway			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	2	0	0	0	0	0	0	2
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	2	0	1	0	0	0	0	3

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City of Riverside
N/S: La Sierra Avenue
E/W: Francisco Place
Weather: Clear

File Name : 04_RIV_LA_FRAN UAM
Site Code : 05124382
Start Date : 4/25/2024
Page No : 1

Groups Printed- Total Volume

	La Sierra Avenue Southbound						Francisco Place Westbound				La Sierra Avenue Northbound				Francisco Place Eastbound				
Start Time	Left	Thru	Right	U-turn Res	U-Turn Non-Res	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	61	0	3	0	65	1	0	2	3	1	104	2	107	3	0	3	6	181
07:15 AM	0	69	0	1	1	71	2	0	1	3	0	131	1	132	3	0	2	5	211
07:30 AM	1	96	0	0	0	97	3	0	3	6	3	140	1	144	2	0	5	7	254
07:45 AM	1	130	2	2	1	136	1	0	0	1	3	220	2	225	3	0	5	8	370
Total	3	356	2	6	2	369	7	0	6	13	7	595	6	608	11	0	15	26	1016
08:00 AM	0	122	2	2	0	126	1	0	0	1	6	239	1	246	4	0	2	6	379
08:15 AM	0	85	1	1	0	87	1	0	3	4	1	97	1	99	1	0	4	5	195
08:30 AM	2	63	1	1	0	67	2	0	0	2	2	65	1	68	1	0	2	3	140
08:45 AM	1	65	1	3	0	70	0	0	0	0	4	67	0	71	6	0	3	9	150
Total	3	335	5	7	0	350	4	0	3	7	13	468	3	484	12	0	11	23	864
Grand Total	6	691	7	13	2	719	11	0	9	20	20	1063	9	1092	23	0	26	49	1880
Apprch %	0.8	96.1	1	1.8	0.3		55	0	45		1.8	97.3	0.8		46.9	0	53.1		
Total %	0.3	36.8	0.4	0.7	0.1	38.2	0.6	0	0.5	1.1	1.1	56.5	0.5	58.1	1.2	0	1.4	2.6	

	La Sierra Avenue Southbound						Francisco Place Westbound				La Sierra Avenue Northbound				Francisco Place Eastbound				
Start Time	Left	Thru	Right	U-turn Res	U-Turn Non-Res	App.	Left	Thr	Rig	App.	Left	Thr	Rig	App.	Left	Thr	Rig	App.	Int.
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 07:15 AM																			
07:15 AM	0	69	0	1	1	71	2	0	1	3	0	131	1	132	3	0	2	5	211
07:30 AM	1	96	0	0	0	97	3	0	3	6	3	140	1	144	2	0	5	7	254
07:45 AM	1	130	2	2	1	136	1	0	0	1	3	220	2	225	3	0	5	8	370
08:00 AM	0	122	2	2	0	126	1	0	0	1	6	239	1	246	4	0	2	6	379
Total Volume	2	417	4	5	2	430	7	0	4	11	12	730	5	747	12	0	14	26	1214
% App. Total	0.5	97	0.9	1.2	0.5		63.6	0	36.4		1.6	97.7	0.7		46.2	0	53.8		
PHF	.500	.802	.500	.625	.500	.790	.583	.000	.333	.458	.500	.764	.625	.759	.750	.000	.700	.813	.801

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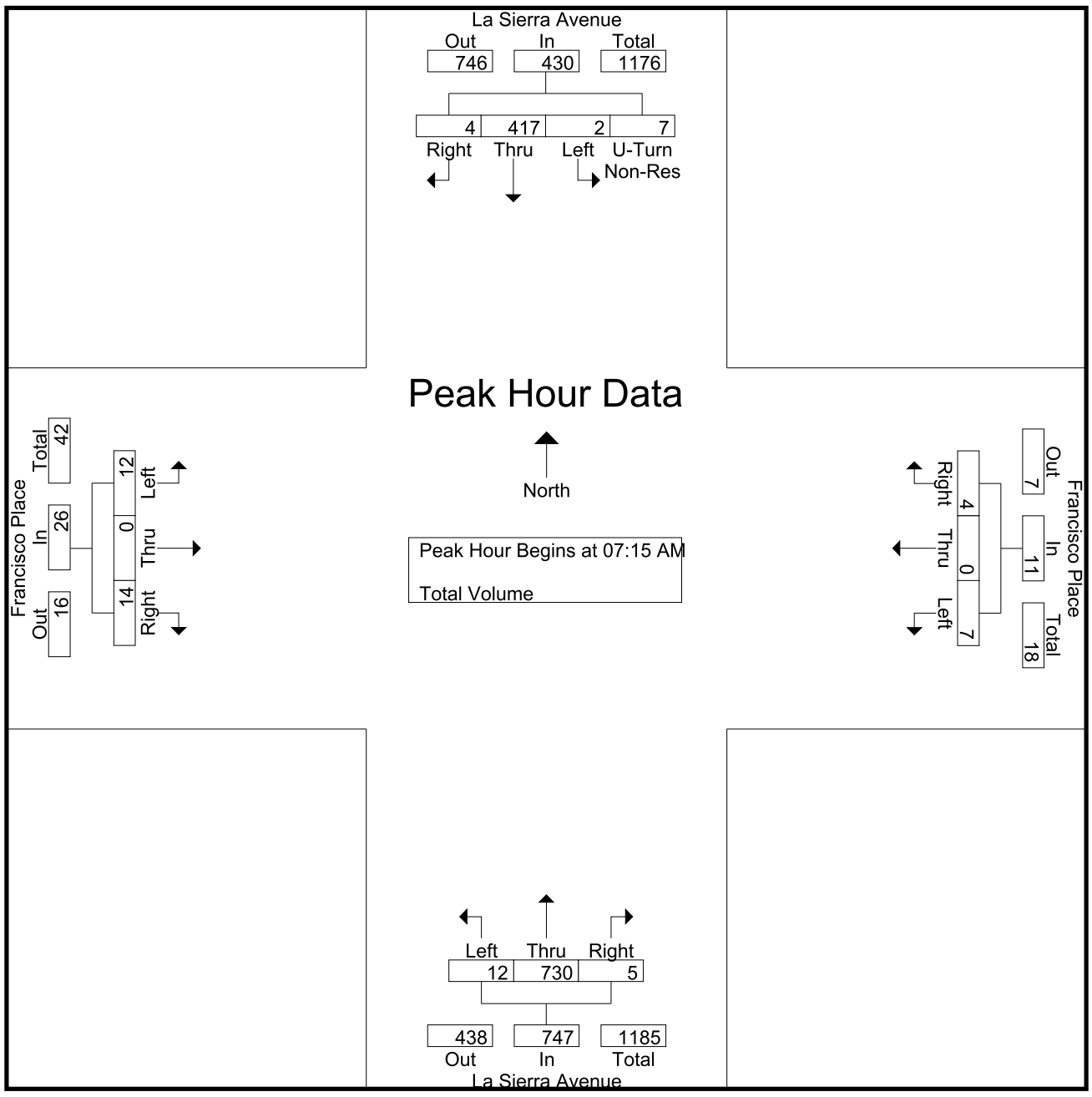

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:30 AM						07:00 AM				07:15 AM				07:00 AM			
+0 mins.	1	96	0	0	0	97	1	0	2	3	0	131	1	132	3	0	3	6
+15 mins.	1	130	2	2	1	136	2	0	1	3	3	140	1	144	3	0	2	5
+30 mins.	0	122	2	2	0	126	3	0	3	6	3	220	2	225	2	0	5	7
+45 mins.	0	85	1	1	0	87	1	0	0	1	6	239	1	246	3	0	5	8
Total Volume	2	433	5	5	1	446	7	0	6	13	12	730	5	747	11	0	15	26
% App. Total	0.4	97.1	1.1	1.1	0.2		53.8	0	46.2		1.6	97.7	0.7		42.3	0	57.7	
PHF	.500	.833	.625	.625	.250	.820	.583	.000	.500	.542	.500	.764	.625	.759	.917	.000	.750	.813

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City of Riverside
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File Name : 04_RIV_LA_FRAN UMD
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Start Date : 4/25/2024
Page No : 1

Groups Printed- Total Volume

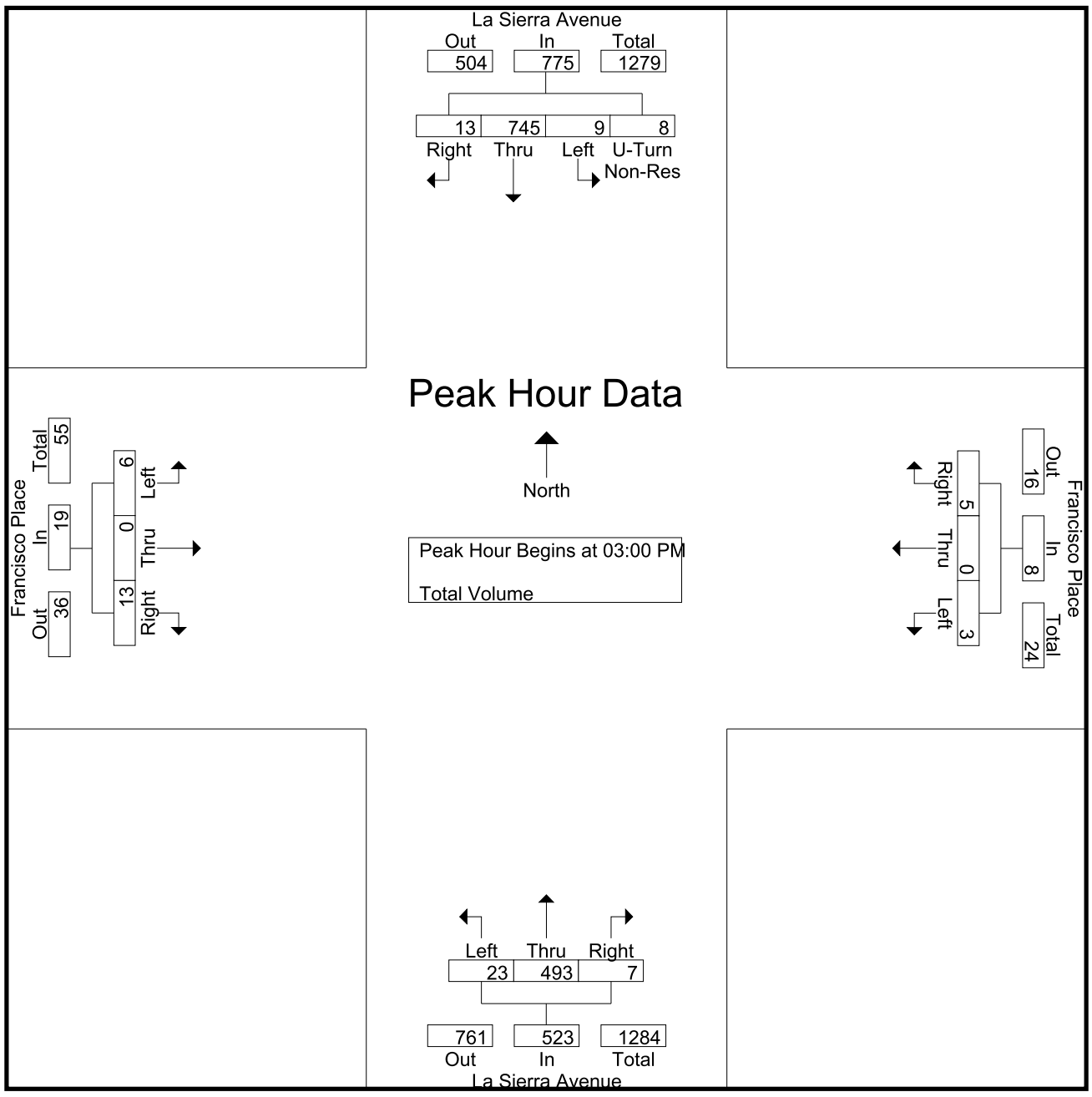
	La Sierra Avenue Southbound						Francisco Place Westbound				La Sierra Avenue Northbound				Francisco Place Eastbound				
Start Time	Left	Thru	Right	U-Turn Res	U-Turn Non-Res	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
02:00 PM	1	86	0	2	4	93	1	0	0	1	3	85	1	89	2	0	5	7	190
02:15 PM	2	92	3	2	0	99	2	0	0	2	4	125	3	132	1	0	4	5	238
02:30 PM	0	98	3	2	0	103	2	0	0	2	1	129	3	133	3	0	2	5	243
02:45 PM	2	127	0	1	2	132	1	0	2	3	1	118	1	120	1	0	1	2	257
Total	5	403	6	7	6	427	6	0	2	8	9	457	8	474	7	0	12	19	928
03:00 PM	1	239	2	0	2	244	0	0	1	1	11	169	2	182	3	0	4	7	434
03:15 PM	2	178	4	2	0	186	1	0	0	1	3	119	0	122	1	0	3	4	313
03:30 PM	2	152	5	0	0	159	1	0	4	5	5	109	1	115	2	0	1	3	282
03:45 PM	4	176	2	4	0	186	1	0	0	1	4	96	4	104	0	0	5	5	296
Total	9	745	13	6	2	775	3	0	5	8	23	493	7	523	6	0	13	19	1325
Grand Total	14	1148	19	13	8	1202	9	0	7	16	32	950	15	997	13	0	25	38	2253
Apprch %	1.2	95.5	1.6	1.1	0.7		56.2	0	43.8		3.2	95.3	1.5		34.2	0	65.8		
Total %	0.6	51	0.8	0.6	0.4	53.4	0.4	0	0.3	0.7	1.4	42.2	0.7	44.3	0.6	0	1.1	1.7	

	La Sierra Avenue Southbound						Francisco Place Westbound				La Sierra Avenue Northbound				Francisco Place Eastbound				
Start Time	Left	Thru	Right	U-Turn Res	U-Turn Non-Res	App.	Left	Thr	Rig	App.	Left	Thr	Rig	App.	Left	Thr	Rig	App.	Int.
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 03:00 PM																			
03:00 PM	1	239	2	0	2	244	0	0	1	1	11	169	2	182	3	0	4	7	434
03:15 PM	2	178	4	2	0	186	1	0	0	1	3	119	0	122	1	0	3	4	313
03:30 PM	2	152	5	0	0	159	1	0	4	5	5	109	1	115	2	0	1	3	282
03:45 PM	4	176	2	4	0	186	1	0	0	1	4	96	4	104	0	0	5	5	296
Total Volume	9	745	13	6	2	775	3	0	5	8	23	493	7	523	6	0	13	19	1325
% App. Total	1.2	96.1	1.7	0.8	0.3		37.5	0	62.5		4.4	94.3	1.3		31.6	0	68.4		
PHF	.563	.779	.650	.375	.250	.794	.750	.000	.313	.400	.523	.729	.438	.718	.500	.000	.650	.679	.763

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Riverside
N/S: La Sierra Avenue
E/W: Francisco Place
Weather: Clear

File Name : 04_RIV_LA_FRAN UMD
Site Code : 05124382
Start Date : 4/25/2024
Page No : 2



Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	03:00 PM						02:45 PM				02:15 PM				02:00 PM			
+0 mins.	1	239	2	0	2	244	1	0	2	3	4	125	3	132	2	0	5	7
+15 mins.	2	178	4	2	0	186	0	0	1	1	1	129	3	133	1	0	4	5
+30 mins.	2	152	5	0	0	159	1	0	0	1	1	118	1	120	3	0	2	5
+45 mins.	4	176	2	4	0	186	1	0	4	5	11	169	2	182	1	0	1	2
Total Volume	9	745	13	6	2	775	3	0	7	10	17	541	9	567	7	0	12	19
% App. Total	1.2	96.1	1.7	0.8	0.3		30	0	70		3	95.4	1.6		36.8	0	63.2	
PHF	.563	.779	.650	.375	.250	.794	.750	.000	.438	.500	.386	.800	.750	.779	.583	.000	.600	.679

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City of Riverside
N/S: La Sierra Avenue
E/W: Francisco Place
Weather: Clear

File Name : 04_RIV_LA_FRAN UPM
Site Code : 05124382
Start Date : 4/25/2024
Page No : 1

Groups Printed- Total Volume

	La Sierra Avenue Southbound						Francisco Place Westbound				La Sierra Avenue Northbound				Francisco Place Eastbound				
Start Time	Left	Thru	Right	U-Turn Res	U-Turn Non-Res	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	3	163	3	1	0	170	1	0	1	2	3	115	1	119	1	0	3	4	295
04:15 PM	1	170	3	4	0	178	0	0	1	1	0	110	2	112	0	0	4	4	295
04:30 PM	0	130	2	1	0	133	1	1	0	2	6	112	2	120	3	0	2	5	260
04:45 PM	1	162	0	1	0	164	0	0	1	1	0	112	5	117	0	0	3	3	285
Total	5	625	8	7	0	645	2	1	3	6	9	449	10	468	4	0	12	16	1135
05:00 PM	2	180	4	2	1	189	1	0	1	2	5	105	0	110	0	0	2	2	303
05:15 PM	0	173	9	3	0	185	1	0	1	2	7	101	3	111	1	0	4	5	303
05:30 PM	0	149	4	0	0	153	0	0	2	2	3	106	1	110	4	0	4	8	273
05:45 PM	4	151	2	0	1	158	2	0	1	3	9	82	1	92	2	0	2	4	257
Total	6	653	19	5	2	685	4	0	5	9	24	394	5	423	7	0	12	19	1136
Grand Total	11	1278	27	12	2	1330	6	1	8	15	33	843	15	891	11	0	24	35	2271
Apprch %	0.8	96.1	2	0.9	0.2		40	6.7	53.3		3.7	94.6	1.7		31.4	0	68.6		
Total %	0.5	56.3	1.2	0.5	0.1	58.6	0.3	0	0.4	0.7	1.5	37.1	0.7	39.2	0.5	0	1.1	1.5	

	La Sierra Avenue Southbound						Francisco Place Westbound				La Sierra Avenue Northbound				Francisco Place Eastbound				
Start Time	Left	Thru	Right	U-Turn Res	U-Turn Non-Res	App.	Left	Thr	Rig	App.	Left	Thr	Rig	App.	Left	Thr	Rig	App.	Int.
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 04:45 PM																			
04:45 PM	1	162	0	1	0	164	0	0	1	1	0	112	5	117	0	0	3	3	285
05:00 PM	2	180	4	2	1	189	1	0	1	2	5	105	0	110	0	0	2	2	303
05:15 PM	0	173	9	3	0	185	1	0	1	2	7	101	3	111	1	0	4	5	303
05:30 PM	0	149	4	0	0	153	0	0	2	2	3	106	1	110	4	0	4	8	273
Total Volume	3	664	17	6	1	691	2	0	5	7	15	424	9	448	5	0	13	18	1164
% App. Total	0.4	96.1	2.5	0.9	0.1		28.6	0	71.4		3.3	94.6	2		27.8	0	72.2		
PHF	.375	.922	.472	.500	.250	.914	.500	.000	.625	.875	.536	.946	.450	.957	.313	.000	.813	.563	.960

Counts Unlimited, Inc.
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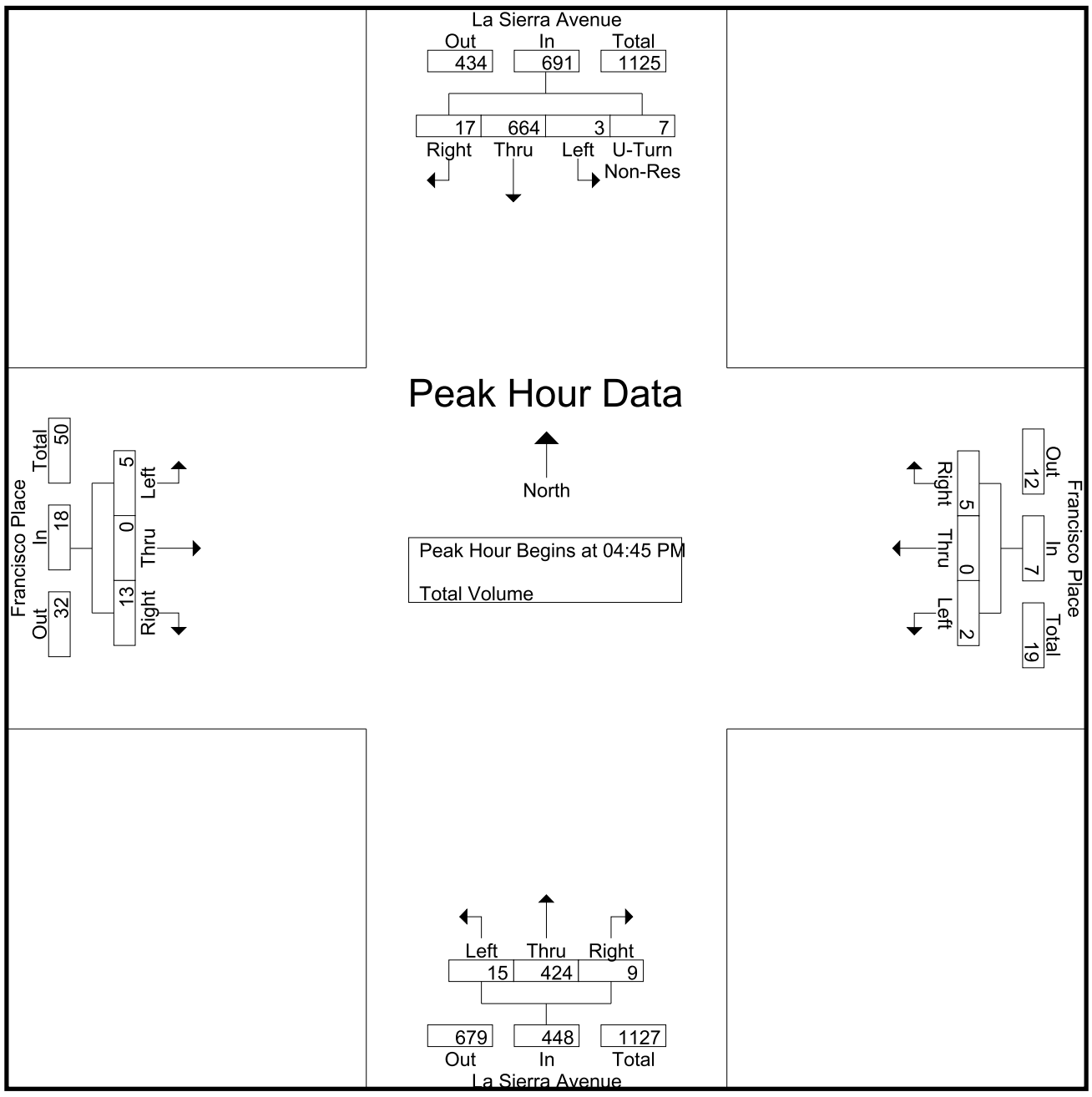
(951) 268-6268

City of Riverside
N/S: La Sierra Avenue
E/W: Francisco Place
Weather: Clear

File Name : 04_RIV_LA_FRAN UPM
Site Code : 05124382
Start Date : 4/25/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:45 PM						05:00 PM				04:00 PM				05:00 PM			
+0 mins.	1	162	0	1	0	164	1	0	1	2	3	115	1	119	0	0	2	2
+15 mins.	2	180	4	2	1	189	1	0	1	2	0	110	2	112	1	0	4	5
+30 mins.	0	173	9	3	0	185	0	0	2	2	6	112	2	120	4	0	4	8
+45 mins.	0	149	4	0	0	153	2	0	1	3	0	112	5	117	2	0	2	4
Total Volume	3	664	17	6	1	691	4	0	5	9	9	449	10	468	7	0	12	19
% App. Total	0.4	96.1	2.5	0.9	0.1		44.4	0	55.6		1.9	95.9	2.1		36.8	0	63.2	
PHF	.375	.922	.472	.500	.250	.914	.500	.000	.625	.750	.375	.976	.500	.975	.438	.000	.750	.594

Location: Riverside
N/S: La Sierra Avenue
E/W: Francisco Place

Date: 4/25/2024
Day: Thursday

PEDESTRIANS

	North Leg La Sierra Avenue	East Leg Francisco Place	South Leg La Sierra Avenue	West Leg Francisco Place	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
7:00 AM	0	1	0	0	1
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	3	0	0	3
8:00 AM	1	1	0	0	2
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	1	5	0	0	6

	North Leg La Sierra Avenue	East Leg Francisco Place	South Leg La Sierra Avenue	West Leg Francisco Place	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
2:00 PM	0	0	0	0	0
2:15 PM	0	1	0	0	1
2:30 PM	0	0	0	0	0
2:45 PM	0	1	0	0	1
3:00 PM	0	46	0	0	46
3:15 PM	0	1	0	0	1
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	49	0	0	49

	North Leg La Sierra Avenue	East Leg Francisco Place	South Leg La Sierra Avenue	West Leg Francisco Place	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	1	1
4:30 PM	1	1	0	0	2
4:45 PM	0	1	0	0	1
5:00 PM	0	1	0	0	1
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	1	3	0	1	5

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
951-268-6268

Location: Riverside
N/S: La Sierra Avenue
E/W: Francisco Place

Date: 4/25/2024
Day: Thursday

BICYCLES

	Southbound La Sierra Avenue			Westbound Francisco Place			Northbound La Sierra Avenue			Eastbound Francisco Place			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	1	0	0	0	0	0	1	0	0	0	0	2

	Southbound La Sierra Avenue			Westbound Francisco Place			Northbound La Sierra Avenue			Eastbound Francisco Place			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	2	0	0	0	0	2
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	2	0	0	0	0	2
TOTAL VOLUMES:	0	0	0	0	0	0	0	4	0	0	0	0	4

	Southbound La Sierra Avenue			Westbound Francisco Place			Northbound La Sierra Avenue			Eastbound Francisco Place			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	1	0	0	0	0	0	0	1

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
951-268-6268

City of Riverside
N/S: La Sierra Avenue
E/W: Alhambra Avenue
24 Hour Entering Volume Count

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
Phone: (951) 268-6268
email: counts@countsunlimited.com

RIV002EW
Site Code: 051-24382

Start Time	4/25/24 Thu	Eastbound Morning	Eastbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon	Morning	Afternoon
12:00		0	4			0	0				
12:15		0	0			0	0				
12:30		0	1			0	0				
12:45		0	5	0	10	0	0	0	0	0	10
01:00		0	0			0	0				
01:15		0	2			0	0				
01:30		0	2			0	0				
01:45		0	1	0	5	0	0	0	0	0	5
02:00		1	0			0	0				
02:15		0	3			0	0				
02:30		0	2			0	0				
02:45		0	1	1	6	0	0	0	0	1	6
03:00		0	4			0	0				
03:15		0	1			0	0				
03:30		0	1			0	0				
03:45		0	1	0	7	0	0	0	0	0	7
04:00		1	0			0	0				
04:15		1	4			0	0				
04:30		2	0			0	0				
04:45		0	0	4	4	0	0	0	0	4	4
05:00		1	0			0	0				
05:15		2	1			0	0				
05:30		1	**4**			0	0				
05:45		3	**3**	7	8	0	0	0	0	7	8
06:00		0	**4**			0	0				
06:15		1	**5**			0	0				
06:30		1	3			0	0				
06:45		0	0	2	12	0	0	0	0	2	12
07:00		0	0			0	0				
07:15		2	2			0	0				
07:30		**2**	0			0	0				
07:45		**4**	1	8	3	0	0	0	0	8	3
08:00		**5**	1			0	0				
08:15		**4**	0			0	0				
08:30		0	1			0	0				
08:45		1	1	10	3	0	0	0	0	10	3
09:00		2	1			0	0				
09:15		2	0			0	0				
09:30		2	0			0	0				
09:45		1	1	7	2	0	0	0	0	7	2
10:00		3	0			0	0				
10:15		1	0			0	0				
10:30		2	0			0	0				
10:45		3	0	9	0	0	0	0	0	9	0
11:00		3	0			0	0				
11:15		1	0			0	0				
11:30		4	0			0	0				
11:45		3	1	11	1	0	0	0	0	11	1
Total		59	61	59	61	0	0	0	0	59	61
Combined Total		120		120		0		0		120	
AM Peak	-	07:30	-	-	-	-	-	-	-	-	-
Vol.	-	15	-	-	-	-	-	-	-	-	-
P.H.F.		0.750									
PM Peak	-	-	05:30	-	-	-	-	-	-	-	-
Vol.	-	-	16	-	-	-	-	-	-	-	-
P.H.F.			0.800								
Percentage		49.2%	50.8%			0.0%	0.0%				

ADT/AADT	ADT 120	AADT 120

Counts Unlimited, Inc.

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City of Riverside
N/S: La Sierra Avenue
E/W: Alhambra Avenue
24 Hour Entering Volume Count

RIV002NS
Site Code: 051-24382

Start Time	4/25/24 Thu	Northbound Morning	Northbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Southbound Morning	Southbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		8	67			5	74				
12:15		11	86			5	77				
12:30		7	55			7	91				
12:45		6	72	32	280	8	82	25	324	57	604
01:00		4	64			10	80				
01:15		5	75			7	74				
01:30		5	67			3	88				
01:45		1	95	15	301	6	72	26	314	41	615
02:00		3	90			5	86				
02:15		8	113			3	99				
02:30		8	**118**			4	103				
02:45		6	**116**	25	437	4	132	16	420	41	857
03:00		12	**201**			6	**189**				
03:15		10	**128**			19	**178**				
03:30		18	112			5	**157**				
03:45		13	102	53	543	13	**184**	43	708	96	1251
04:00		11	110			12	173				
04:15		29	107			21	168				
04:30		34	113			37	131				
04:45		22	115	96	445	26	168	96	640	192	1085
05:00		38	105			31	183				
05:15		55	106			32	178				
05:30		69	112			49	154				
05:45		64	79	226	402	47	157	159	672	385	1074
06:00		59	97			34	129				
06:15		92	89			47	144				
06:30		86	98			42	106				
06:45		103	74	340	358	54	104	177	483	517	841
07:00		111	68			58	72				
07:15		**139**	75			72	91				
07:30		**144**	70			**90**	86				
07:45		**204**	48	598	261	**106**	73	326	322	924	583
08:00		**254**	63			**80**	53				
08:15		104	71			**84**	62				
08:30		67	52			69	62				
08:45		74	46	499	232	66	53	299	230	798	462
09:00		64	52			64	51				
09:15		65	50			71	38				
09:30		47	41			50	40				
09:45		66	32	242	175	59	36	244	165	486	340
10:00		67	28			57	36				
10:15		61	35			61	35				
10:30		59	29			58	20				
10:45		53	16	240	108	58	17	234	108	474	216
11:00		58	13			65	23				
11:15		70	19			53	16				
11:30		82	13			73	16				
11:45		57	15	267	60	83	11	274	66	541	126
Total		2633	3602	2633	3602	1919	4452	1919	4452	4552	8054
Combined Total		6235		6235		6371		6371		12606	
AM Peak	-	07:15	-	-	-	07:30	-	-	-	-	-
Vol.	-	741	-	-	-	360	-	-	-	-	-
P.H.F.		0.729				0.849					
PM Peak	-	-	02:30	-	-	-	03:00	-	-	-	-
Vol.	-	-	563	-	-	-	708	-	-	-	-
P.H.F.			0.700				0.937				
Percentage		42.2%	57.8%			30.1%	69.9%				

ADT/AADT ADT 12,606 AADT 12,606

City of Riverside
N/S: La Sierra Avenue
E/W: Francisco Place
24 Hour Entering Volume Count

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
Phone: (951) 268-6268
email: counts@countsunlimited.com

RIV003EW
Site Code: 051-24382

Start Time	4/25/24 Thu	Eastbound Morning	Eastbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Westbound Morning	Westbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		0	4			0	2				
12:15		0	4			1	0				
12:30		1	5			1	1				
12:45		0	5	1	18	0	1	2	4	3	22
01:00		0	3			0	1				
01:15		0	0			0	3				
01:30		0	2			0	2				
01:45		0	**7**	0	12	0	3	0	9	0	21
02:00		0	**7**			0	1				
02:15		0	**5**			0	2				
02:30		0	**5**			0	2				
02:45		0	2	0	19	0	**3**	0	8	0	27
03:00		0	7			0	**1**				
03:15		0	4			0	**1**				
03:30		1	3			1	**5**				
03:45		1	5	2	19	1	1	2	8	4	27
04:00		0	4			1	2				
04:15		1	4			3	1				
04:30		4	5			3	2				
04:45		1	3	6	16	2	1	9	6	15	22
05:00		2	2			1	2				
05:15		1	5			1	2				
05:30		2	8			2	2				
05:45		2	4	7	19	0	3	4	9	11	28
06:00		2	2			4	1				
06:15		4	5			1	3				
06:30		2	4			1	2				
06:45		1	6	9	17	**1**	1	7	7	16	24
07:00		**6**	4			**3**	0				
07:15		**5**	2			**3**	0				
07:30		**7**	2			**6**	2				
07:45		**8**	1	26	9	1	2	13	4	39	13
08:00		6	4			1	1				
08:15		5	5			4	0				
08:30		3	2			2	1				
08:45		9	2	23	13	0	3	7	5	30	18
09:00		4	2			1	2				
09:15		4	3			3	2				
09:30		6	0			4	0				
09:45		6	2	20	7	3	1	11	5	31	12
10:00		4	2			2	0				
10:15		2	0			0	0				
10:30		2	1			0	0				
10:45		2	2	10	5	0	1	2	1	12	6
11:00		2	0			3	0				
11:15		2	0			0	1				
11:30		4	0			3	1				
11:45		1	2	9	2	2	0	8	2	17	4
Total		113	156	113	156	65	68	65	68	178	224
Combined Total		269		269		133		133		402	
AM Peak	-	07:00	-	-	-	06:45	-	-	-	-	-
Vol.	-	26	-	-	-	13	-	-	-	-	-
P.H.F.		0.813				0.542					
PM Peak	-	-	01:45	-	-	-	02:45	-	-	-	-
Vol.	-	-	24	-	-	-	10	-	-	-	-
P.H.F.			0.857				0.500				
Percentage		42.0%	58.0%			48.9%	51.1%				

ADT/AADT ADT 402 AADT 402

Counts Unlimited, Inc.

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Corona, CA 92878
Phone: (951) 268-6268
email: counts@countsunlimited.com

City of Riverside
N/S: La Sierra Avenue
E/W: Francisco Place
24 Hour Entering Volume Count

RIV003NS
Site Code: 051-24382

Start Time	4/25/24 Thu	Northbound Morning	Northbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Southbound Morning	Southbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		10	91			12	83				
12:15		9	64			17	92				
12:30		8	75			10	78				
12:45		8	79	35	309	7	80	46	333	81	642
01:00		8	76			11	84				
01:15		5	95			2	99				
01:30		5	89			4	120				
01:45		3	82	21	342	1	98	18	401	39	743
02:00		6	89			9	93				
02:15		9	**132**			5	98				
02:30		6	**133**			6	103				
02:45		5	**120**	26	474	5	132	25	426	51	900
03:00		11	**182**			9	**244**				
03:15		10	122			5	**185**				
03:30		15	115			9	**160**				
03:45		17	104	53	523	12	**182**	35	771	88	1294
04:00		15	119			14	169				
04:15		26	112			23	175				
04:30		37	120			28	132				
04:45		22	117	100	468	26	163	91	639	191	1107
05:00		31	110			33	189				
05:15		46	111			26	183				
05:30		69	110			37	153				
05:45		54	92	200	423	36	158	132	683	332	1106
06:00		61	124			33	127				
06:15		92	78			46	112				
06:30		64	89			45	123				
06:45		70	80	287	371	47	84	171	446	458	817
07:00		107	93			63	78				
07:15		**132**	97			69	73				
07:30		**144**	74			**97**	93				
07:45		**225**	65	608	329	**134**	86	363	330	971	659
08:00		**246**	77			**126**	120				
08:15		99	60			**86**	200				
08:30		68	76			67	163				
08:45		71	50	484	263	67	60	346	543	830	806
09:00		81	53			55	46				
09:15		95	62			83	51				
09:30		61	38			85	52				
09:45		81	43	318	196	74	46	297	195	615	391
10:00		77	27			73	43				
10:15		57	23			58	47				
10:30		62	28			82	27				
10:45		91	27	287	105	98	18	311	135	598	240
11:00		52	23			123	19				
11:15		63	26			77	20				
11:30		81	23			99	24				
11:45		69	19	265	91	90	20	389	83	654	174
Total		2684	3894	2684	3894	2224	4985	2224	4985	4908	8879
Combined Total		6578		6578		7209		7209		13787	
AM Peak	-	07:15	-	-	-	07:30	-	-	-	-	-
Vol.	-	747	-	-	-	443	-	-	-	-	-
P.H.F.		0.759				0.826					
PM Peak	-	-	02:15	-	-	-	03:00	-	-	-	-
Vol.	-	-	567	-	-	-	771	-	-	-	-
P.H.F.			0.779				0.790				
Percentage		40.8%	59.2%			30.9%	69.1%				

ADT/AADT ADT 13,787 AADT 13,787

Counts Unlimited, Inc.

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Corona, CA 92878
Phone: (951) 268-6268
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City of Riverside
La Sierra Avenue
N/ Somervale Drive
24 Hour Directional Volume Count

RIV001
Site Code: 051-24382

Start Time	5/1/2024 Wed	Northbound Morning	Northbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Southbound Morning	Southbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		11	67			7	75				
12:15		11	82			4	81				
12:30		7	57			7	87				
12:45		6	72	35	278	9	87	27	330	62	608
01:00		5	62			10	74				
01:15		5	75			6	77				
01:30		4	67			3	88				
01:45		1	99	15	303	7	78	26	317	41	620
02:00		3	96			4	87				
02:15		8	125			3	99				
02:30		10	**126**			7	101				
02:45		7	**116**	28	463	3	134	17	421	45	884
03:00		12	**188**			8	**242**				
03:15		10	**128**			19	**183**				
03:30		18	111			6	**156**				
03:45		13	101	53	528	13	**184**	46	765	99	1293
04:00		13	116			12	170				
04:15		28	110			24	168				
04:30		33	108			39	132				
04:45		23	114	97	448	27	162	102	632	199	1080
05:00		38	110			31	185				
05:15		55	108			31	182				
05:30		67	113			49	147				
05:45		64	83	224	414	50	158	161	672	385	1086
06:00		62	83			32	132				
06:15		88	88			46	146				
06:30		87	100			43	102				
06:45		103	74	340	345	53	102	174	482	514	827
07:00		115	68			63	72				
07:15		**138**	75			72	92				
07:30		**149**	70			**93**	82				
07:45		**227**	50	629	263	**135**	73	363	319	992	582
08:00		**246**	62			**124**	53				
08:15		106	72			**86**	61				
08:30		67	51			68	62				
08:45		75	46	494	231	69	54	347	230	841	461
09:00		64	51			63	48				
09:15		66	50			69	42				
09:30		50	41			50	41				
09:45		62	32	242	174	58	37	240	168	482	342
10:00		67	28			58	37				
10:15		62	35			61	35				
10:30		58	29			56	19				
10:45		53	15	240	107	62	16	237	107	477	214
11:00		58	13			66	21				
11:15		70	20			57	17				
11:30		82	13			74	16				
11:45		58	15	268	61	86	10	283	64	551	125
Total		2665	3615	2665	3615	2023	4507	2023	4507	4688	8122
Combined Total		6280		6280		6530		6530		12810	
AM Peak	-	07:15	-	-	-	07:30	-	-	-	-	-
Vol.	-	760	-	-	-	438	-	-	-	-	-
P.H.F.		0.772				0.811					
PM Peak	-	-	02:30	-	-	-	03:00	-	-	-	-
Vol.	-	-	558	-	-	-	765	-	-	-	-
P.H.F.			0.742				0.790				
Percentage		42.4%	57.6%			31.0%	69.0%				

ADT/AADT ADT 12,810 AADT 12,810

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APPENDIX 3.2: SPEED SURVEY

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City of Riverside

Radar Speed Survey

Speed	NB	SB	MPH	Vehicles Surveyed	TOT. VEH.	
				Northbound / Southbound		
65	0	0	65		0	
64	0	0	64		0	
63	0	0	63		0	
62	0	0	62		0	
61	0	0	61		0	
60	0	0	60		0	
59	0	0	59		0	
58	0	0	58		0	
57	0	0	57		0	
56	1	2	56	X / X X	3	
55	1	1	55	X / X	2	
54	0	0	54		0	
53	0	3	53	/ X X X	3	
52	2	2	52	X X / X X	4	
51	1	1	51	X / X	2	
50	0	3	50	/ X X X	3	
49	8	5	49	X X X X X X X X / X X X X X	13	*
48	0	4	48	/ X X X X	4	*
47	3	3	47	X X X / X X X	6	*
46	2	4	46	X X / X X X X	6	P
45	4	2	45	X X X X / X X	6	A
44	4	2	44	X X X X / X X	6	C
43	10	4	43	X X X X X X X X X X / X X X X	14	E
42	2	6	42	X X / X X X X X X	8	*
41	2	3	41	X X / X X X	5	*
40	5	3	40	X X X X X / X X X	8	*
39	2	1	39	X X / X	3	
38	1	1	38	X / X	2	
37	0	0	37		0	
36	1	0	36	X	1	
35	1	0	35	X	1	
34	0	0	34		0	
33	0	0	33		0	
32	0	0	32		0	
31	0	0	31		0	
30	0	0	30		0	
29	0	0	29		0	
28	0	0	28		0	
27	0	0	27		0	
26	0	0	26		0	
25	0	0	25		0	
24	0	0	24		0	
23	0	0	23		0	
22	0	0	22		0	
21	0	0	21		0	
20	0	0	20		0	
19	0	0	19		0	
18	0	0	18		0	
17	0	0	17		0	
16	0	0	16		0	
15	0	0	15		0	
Total	50	50		GRAND TOTALS	100	

Location: La Sierra Avenue

Between: Arlington Avenue - South of Francisco Place

Weather: Clear

Date: 4/25/24

Time From: 10:30

Time To: 11:00

Existing Speed Limit: 45 MPH

	Northbound	Southbound	Combined Statistics
% Over Pace:	10%	18%	17%
% In Pace:	80%	72%	76%
% Under Pace:	10%	10%	7%
Average Speed:	45 MPH	46 MPH	45 MPH
Pace Speed:	40 - 49 MPH	41 - 50 MPH	40 - 49 MPH
15th Percentile / Critical Speed:	40 MPH	41 MPH	40 MPH
50th Percentile / Critical Speed:	44 MPH	46 MPH	45 MPH
85th Percentile / Critical Speed:	49 MPH	52 MPH	50 MPH

Radar Survey Conducted By:

Counts Unlimited, Inc.

PO Box 1178

Corona, CA 92880

T 951-268-6268 F 951-268-6267

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APPENDIX 3.3: EXISTING (2024) CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations								
Traffic Vol, veh/h	8	5	79	4	658	1	347	4
Future Vol, veh/h	8	5	79	4	658	1	347	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	-	None
Storage Length	0	-	-	150	-	-	-	-
Veh in Median Storage, #	1	-	-	-	0	-	0	-
Grade, %	0	-	-	-	0	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	10	6	98	5	812	1	428	5

Major/Minor	Minor2		Major1			Major2		
Conflicting Flow All	1044	217	433	433	0	812	-	0
Stage 1	433	-	-	-	-	-	-	-
Stage 2	611	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.44	4.14	-	6.44	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.52	2.22	-	2.52	-	-
Pot Cap-1 Maneuver	224	788	763	1123	-	438	-	-
Stage 1	621	-	-	-	-	-	-	-
Stage 2	504	-	-	-	-	-	-	-
Platoon blocked, %					-		-	-
Mov Cap-1 Maneuver	194	788	769	769	-	438	-	-
Mov Cap-2 Maneuver	325	-	-	-	-	-	-	-
Stage 1	538	-	-	-	-	-	-	-
Stage 2	502	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	13.91	1.16	0.04
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	769	-	420	-	-
HCM Lane V/C Ratio	0.133	-	0.038	-	-
HCM Control Delay (s/veh)	10.4	-	13.9	-	-
HCM Lane LOS	B	-	B	-	-
HCM 95th %tile Q(veh)	0.5	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	12	748	5	0	430
Future Vol, veh/h	0	12	748	5	0	430
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	15	935	6	0	538

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	471	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	539	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	539	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	11.86	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	539	-
HCM Lane V/C Ratio	-	-	0.028	-
HCM Control Delay (s/veh)	-	-	11.9	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	12	0	14	7	0	4	12	730	5	7	2	417	4
Future Vol, veh/h	12	0	14	7	0	4	12	730	5	7	2	417	4
Conflicting Peds, #/hr	0	0	0	0	0	3	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	140	-	-	-	120	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	0	18	9	0	5	15	913	6	9	3	521	5

Major/Minor	Minor2			Minor1			Major1			Major2			
Conflicting Flow All	1036	1495	263	1229	1494	462	526	0	0	919	919	0	0
Stage 1	546	546	-	946	946	-	-	-	-	-	-	-	-
Stage 2	489	949	-	283	549	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	186	122	735	134	122	546	1037	-	-	374	738	-	-
Stage 1	489	516	-	281	338	-	-	-	-	-	-	-	-
Stage 2	529	337	-	700	515	-	-	-	-	-	-	-	-
Platoon blocked, %								-	-			-	-
Mov Cap-1 Maneuver	176	117	735	125	117	545	1037	-	-	417	417	-	-
Mov Cap-2 Maneuver	304	229	-	222	231	-	-	-	-	-	-	-	-
Stage 1	476	502	-	277	333	-	-	-	-	-	-	-	-
Stage 2	515	332	-	665	501	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	13.75	18.37	0.14	0.29
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1037	-	-	444	283	417	-	-
HCM Lane V/C Ratio	0.014	-	-	0.073	0.049	0.027	-	-
HCM Control Delay (s/veh)	8.5	-	-	13.7	18.4	13.9	-	-
HCM Lane LOS	A	-	-	B	C	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	5	2	65	8	470	708	9
Future Vol, veh/h	5	2	65	8	470	708	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	0	-	-	150	-	-	-
Veh in Median Storage, #	1	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	6	3	81	10	588	885	11

Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	1367	448	896	896	0	-	0
Stage 1	891	-	-	-	-	-	-
Stage 2	476	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.44	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.52	2.22	-	-	-
Pot Cap-1 Maneuver	138	558	387	753	-	-	-
Stage 1	361	-	-	-	-	-	-
Stage 2	591	-	-	-	-	-	-
Platoon blocked, %					-	-	-
Mov Cap-1 Maneuver	107	558	407	407	-	-	-
Mov Cap-2 Maneuver	214	-	-	-	-	-	-
Stage 1	280	-	-	-	-	-	-
Stage 2	591	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	19.3	2.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	407	-	260	-	-
HCM Lane V/C Ratio	0.224	-	0.034	-	-
HCM Control Delay (s/veh)	16.4	-	19.3	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	0.8	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	11	517	9	0	774
Future Vol, veh/h	0	11	517	9	0	774
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	15	689	12	0	1032

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	351	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	646	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	646	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	10.71	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	646	-
HCM Lane V/C Ratio	-	-	0.023	-
HCM Control Delay (s/veh)	-	-	10.7	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	6	0	13	3	0	5	23	507	7	8	9	745	13
Future Vol, veh/h	6	0	13	3	0	5	23	507	7	8	9	745	13
Conflicting Peds, #/hr	0	0	0	0	0	3	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	140	-	-	-	120	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	17	4	0	7	30	667	9	11	12	980	17

Major/Minor	Minor2			Minor1			Major1			Major2			
Conflicting Flow All	1431	1770	499	1267	1774	341	997	0	0	676	676	0	0
Stage 1	1034	1034	-	732	732	-	-	-	-	-	-	-	-
Stage 2	397	737	-	535	1042	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	95	82	517	126	82	655	690	-	-	535	911	-	-
Stage 1	249	308	-	379	425	-	-	-	-	-	-	-	-
Stage 2	600	423	-	497	305	-	-	-	-	-	-	-	-
Platoon blocked, %								-	-			-	-
Mov Cap-1 Maneuver	87	76	517	112	76	653	690	-	-	680	680	-	-
Mov Cap-2 Maneuver	184	187	-	231	179	-	-	-	-	-	-	-	-
Stage 1	240	298	-	362	406	-	-	-	-	-	-	-	-
Stage 2	566	404	-	465	295	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	16.83	14.55	0.45	0.23
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	690	-	-	329	387	680	-	-
HCM Lane V/C Ratio	0.044	-	-	0.076	0.027	0.033	-	-
HCM Control Delay (s/veh)	10.5	-	-	16.8	14.6	10.5	-	-
HCM Lane LOS	B	-	-	C	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations								
Traffic Vol, veh/h	4	1	8	4	425	2	679	12
Future Vol, veh/h	4	1	8	4	425	2	679	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	-	None
Storage Length	0	-	-	150	-	-	-	-
Veh in Median Storage, #	1	-	-	-	0	-	0	-
Grade, %	0	-	-	-	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	4	1	8	4	434	2	693	12

Major/Minor	Minor2		Major1			Major2		
Conflicting Flow All	944	353	705	705	0	434	-	0
Stage 1	703	-	-	-	-	-	-	-
Stage 2	241	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.44	4.14	-	6.44	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.52	2.22	-	2.52	-	-
Pot Cap-1 Maneuver	260	644	513	889	-	762	-	-
Stage 1	452	-	-	-	-	-	-	-
Stage 2	776	-	-	-	-	-	-	-
Platoon blocked, %					-		-	-
Mov Cap-1 Maneuver	254	644	596	596	-	762	-	-
Mov Cap-2 Maneuver	358	-	-	-	-	-	-	-
Stage 1	443	-	-	-	-	-	-	-
Stage 2	774	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	14.28	0.31	0.03
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	596	-	393	-	-
HCM Lane V/C Ratio	0.021	-	0.013	-	-
HCM Control Delay (s/veh)	11.2	-	14.3	-	-
HCM Lane LOS	B	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	11	434	7	0	688
Future Vol, veh/h	0	11	434	7	0	688
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	12	457	7	0	724

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	232	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	770	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	770	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.75	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	770	-
HCM Lane V/C Ratio	-	-	0.015	-
HCM Control Delay (s/veh)	-	-	9.7	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	5	0	13	2	0	5	15	424	9	7	3	664	17
Future Vol, veh/h	5	0	13	2	0	5	15	424	9	7	3	664	17
Conflicting Peds, #/hr	0	0	0	0	0	3	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	140	-	-	-	120	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	14	2	0	5	16	442	9	7	3	692	18

Major/Minor	Minor2			Minor1			Major1			Major2			
Conflicting Flow All	976	1204	355	844	1208	229	709	0	0	451	451	0	0
Stage 1	721	721	-	478	478	-	-	-	-	-	-	-	-
Stage 2	255	482	-	367	730	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	205	183	642	256	182	774	886	-	-	743	1106	-	-
Stage 1	384	430	-	538	554	-	-	-	-	-	-	-	-
Stage 2	727	551	-	625	426	-	-	-	-	-	-	-	-
Platoon blocked, %								-	-			-	-
Mov Cap-1 Maneuver	197	177	642	243	176	772	886	-	-	820	820	-	-
Mov Cap-2 Maneuver	302	295	-	365	290	-	-	-	-	-	-	-	-
Stage 1	380	424	-	528	544	-	-	-	-	-	-	-	-
Stage 2	707	542	-	604	420	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	12.66	11.23	0.31	0.14
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	886	-	-	489	585	820	-	-
HCM Lane V/C Ratio	0.018	-	-	0.038	0.012	0.013	-	-
HCM Control Delay (s/veh)	9.1	-	-	12.7	11.2	9.4	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0	0	-	-

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APPENDIX 3.4: EXISTING (2024) CONDITIONS WARRANT ANALYSIS WORKSHEETS

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Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)

COUNT DATE 4/25/2024

CALC RV DATE 8/27/24

CHK RV DATE 8/27/24

DIST CO RTE PM

Major St: La Sierra Avenue — Critical Approach Speed 45 mph

Minor St: Alhambra Avenue — Critical Approach Speed 25 mph

Speed limit or critical speed on major street traffic > 40 mph..... ☑ or

In built up area of isolated community of < 10,000 population..... ☐ } **RURAL (R)**

☐ **URBAN (U)**

WARRANT 1 - Eight Hour Vehicular Volume **SATISFIED YES ☐ NO ☑**
(Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume **100% SATISFIED YES ☐ NO ☑**
80% SATISFIED YES ☐ NO ☑

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)			
	U	R	U	R
APPROACH LANES	1		2 or More	
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)

Hour

Minor street volume does not exceed 13 peak hour trips in any hour

Condition B - Interruption of Continuous Traffic **100% SATISFIED YES ☐ NO ☑**
80% SATISFIED YES ☐ NO ☑

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)			
	U	R	U	R
APPROACH LANES	1		2 or More	
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)

Hour

Minor street volume does not exceed 13 peak hour trips in any hour

Combination of Conditions A & B **SATISFIED YES ☐ NO ☑**

REQUIREMENT	CONDITION	✓	FULFILLED
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME		Yes ☐ No ☑
	AND, B. INTERRUPTION OF CONTINUOUS TRAFFIC		
AND, AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			Yes ☐ No ☑

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☑**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	Hour			
Both Approaches - Major Street						
Higher Approach - Minor Street	Minor street volume does not exceed 13 peak hour trips in any hour					

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐ No ☑
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐ No ☑

WARRANT 3 - Peak Hour **SATISFIED YES ☐ NO ☑**
(Part A or Part B must be satisfied)

PART A **SATISFIED YES ☐ NO ☑**

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐ No ☑
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☐ No ☑
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☐ No ☑

PART B **SATISFIED YES ☐ NO ☑**

APPROACH LANES	One	2 or More	Hour
Both Approaches - Major Street			
Higher Approach - Minor Street	Minor street volume does not exceed 13 peak hour trips in any hour		

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐ No ☑
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐ No ☑

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 3 of 5)

WARRANT 4 - Pedestrian Volume
(Parts 1 and 2 Must Be Satisfied)

SATISFIED YES ☐ NO ☑

Part 1 (Parts A or B must be satisfied)

	Hours - - ->				
A.	Vehicles per hour for any 4 hours				
	Pedestrians per hour for any 4 hours				

Figure 4C-5 or Figure 4C-6
SATISFIED YES ☐ NO ☐

	Hours - - ->	07:15 08:15	14:30 15:30	16:15 17:15	17:00 18:00
B.	Vehicles per hour for any 1 hour	1102	1173	1094	1080
	Pedestrians per hour for any 1 hour	2	15	4	2

Figure 4C-7 or Figure 4C-8
SATISFIED YES ☐ NO ☑

Part 2 **SATISFIED YES ☑ NO ☐**

AND, The distance to the nearest traffic signal along the major street is greater than 300 ft	Yes ☑ No ☐
OR, The proposed traffic signal will not restrict progressive traffic flow along the major street.	Yes ☑ No ☐

WARRANT 5 - School Crossing
(Parts A and B Must Be Satisfied)

SATISFIED YES ☐ NO ☑

Part A
Gap/Minutes and # of Children

SATISFIED YES ☐ NO ☑

		Hour
Gaps vs Minutes	Minutes Children Using Crossing	
	Number of Adequate Gaps	
School Age Pedestrians Crossing Street / hr		<20

Gaps < Minutes YES ☐ NO ☐
AND Children > 20/hr YES ☐ NO ☑

AND, Consideration has been given to less restrictive remedial measures.	Yes ☐ No ☐

Part B **SATISFIED YES ☑ NO ☐**

The distance to the nearest traffic signal along the major street is greater than 300 ft	Yes ☑ No ☐
OR, The proposed signal will not restrict the progressive movement of traffic.	Yes ☑ No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 4 of 5)

WARRANT 6 - Coordinated Signal System
(All Parts Must Be Satisfied)

SATISFIED YES ☐ NO ☑

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	
≥ 1000 ft	N 550 ft, S _____ ft, E _____ ft, W _____ ft	Yes ☐ No ☑
On a one-way street or a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning.		Yes ☐ No ☑
OR, On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation.		

WARRANT 7 - Crash Experience Warrant
(All Parts Must Be Satisfied)

SATISFIED YES ☐ NO ☑

Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency.			Yes ☐ No ☐
REQUIREMENTS	Number of crashes reported within a 12 month period susceptible to correction by a traffic signal, and involving injury or damage exceeding the requirements for a reportable crash.		Yes ☐ No ☑
5 OR MORE	0 collisions in the last 5 years		
REQUIREMENTS	CONDITIONS	✓	Yes ☐ No ☐
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume		
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic		
	OR, Warrant 4, Pedestrian Volume Condition Ped Vol ≥ 80% of Figure 4C-5 through Figure 4C-8		

WARRANT 8 - Roadway Network
(All Parts Must Be Satisfied)

SATISFIED YES ☐ NO ☑

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES	✓	FULFILLED
1000 Veh/Hr	During Typical Weekday Peak Hour _____ Veh/Hr and has 5-year projected traffic volumes that meet one or more of Warrants 1, 2, and 3 during an average weekday.		Yes ☐ No ☑
	OR During Each of Any 5 Hrs. of a Sat. or Sun _____ Veh/Hr		

CHARACTERISTICS OF MAJOR ROUTES	MAJOR ROUTE A	MAJOR ROUTE B	
Hwy. System Serving as Principal Network for Through Traffic			
Rural or Suburban Highway Outside Of, Entering, or Traversing a City			
Appears as Major Route on an Official Plan			
Any Major Route Characteristics Met, Both Streets			Yes ☐ No ☑

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 5 of 5)

WARRANT 9 - Intersection Near a Grade Crossing **SATISFIED YES ☐ NO ☑**
(Both Parts A and B Must Be Satisfied)

PART A A grade crossing exists on an approach controlled by a STOP or YIELD sign and the center of the track nearest to the intersection is within 140 feet of the stop line or yield line on the approach. Track Center Line to Limit Line _____ ft	Yes ☐ No ☑
PART B **There is one minor street approach lane at the track crossing -** During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point falls above the applicable curve in Figure 4C-9. Major Street - Total of both approaches: _____ VPH Minor Street - Crosses the track (one direction only, approaching the intersection): _____ VPH X AF (Use Tables 4C-2, 3, & 4 below to calculate AF) = _____ VPH	Yes ☐ No ☑
OR, There are two or more minor street approach lanes at the track crossing - During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point falls above the applicable curve in Figure 4C-10. Major Street - Total of both approaches : _____ VPH Minor Street - Crosses the track (one direction only, approaching the intersection): _____ VPH X AF (Use Tables 4C-2, 3, & 4 below to calcualte AF) = _____ VPH	

The minor street approach volume may be multiplied by up to three following adjustment factors (AF) as described in Section 4C.10.

1- Number of Rail Traffic per Day_____ Adjustment factor from table 4C-2____

2- Percentage of High-Occupancy Buses on Minor Street Approach_____ Adjustment factor from table 4C-3____

3- Percentage of Tractor-Trailer Trucks on Minor Street Approach_____ Adjustment factor from table 4C-4____

NOTE: If no data is availale or known, then use AF = 1 (no adjustment)

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)

COUNT DATE 4/25/2024

____ ____ ____ ____
DIST CO RTE PM

CALC RV DATE 8/27/24

CHK RV DATE 8/27/24

Major St: La Sierra Avenue — Critical Approach Speed 45 mph

Minor St: Francisco Place — Critical Approach Speed 25 mph

Speed limit or critical speed on major street traffic > 40 mph..... ☑
or
In built up area of isolated community of < 10,000 population..... ☐
} RURAL (R)

☐ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume SATISFIED YES ☐ NO ☑
(Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume 100% SATISFIED YES ☐ NO ☑
80% SATISFIED YES ☐ NO ☑

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)			
	U	R	U	R
APPROACH LANES	1		2 or More	
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)

Hour

Minor street volume does not exceed 26 peak hour trips in any hour

Condition B - Interruption of Continuous Traffic 100% SATISFIED YES ☐ NO ☑
80% SATISFIED YES ☐ NO ☑

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)			
	U	R	U	R
APPROACH LANES	1		2 or More	
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)

Hour

Minor street volume does not exceed 26 peak hour trips in any hour

Combination of Conditions A & B SATISFIED YES ☐ NO ☑

REQUIREMENT	CONDITION	✓	FULFILLED
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME		Yes ☐ No ☑
	AND, B. INTERRUPTION OF CONTINUOUS TRAFFIC		
AND, AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			Yes ☐ No ☑

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☑**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	Hour			
Both Approaches - Major Street						
Higher Approach - Minor Street	Minor street volume does not exceed 26 peak hour trips in any hour					

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐	No ☑
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐	No ☑

WARRANT 3 - Peak Hour **SATISFIED YES ☐ NO ☑**
(Part A or Part B must be satisfied)

PART A **SATISFIED YES ☐ NO ☑**

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐	No ☑
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☐	No ☑
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☐	No ☑

PART B **SATISFIED YES ☐ NO ☑**

APPROACH LANES	One	2 or More	Hour
Both Approaches - Major Street			
Higher Approach - Minor Street	Minor street volume does not exceed 26 peak hour trips in any hour		

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐	No ☑
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐	No ☑

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 3 of 5)

WARRANT 4 - Pedestrian Volume
(Parts 1 and 2 Must Be Satisfied)

SATISFIED YES ☐ NO ☑

Part 1 (Parts A or B must be satisfied)

	Hours - - ->				
A.	Vehicles per hour for any 4 hours				
	Pedestrians per hour for any 4 hours				

Figure 4C-5 or Figure 4C-6
SATISFIED YES ☐ NO ☐

	Hours - - ->	07:15 08:15	14:30 15:30	16:15 17:15	17:00 18:00
B.	Vehicles per hour for any 1 hour	1214	1247	1143	1136
	Pedestrians per hour for any 1 hour	5	48	5	1

Figure 4C-7 or Figure 4C-8
SATISFIED YES ☐ NO ☑

Part 2 **SATISFIED YES ☑ NO ☐**

AND, The distance to the nearest traffic signal along the major street is greater than 300 ft	Yes ☑ No ☐
OR, The proposed traffic signal will not restrict progressive traffic flow along the major street.	Yes ☑ No ☐

WARRANT 5 - School Crossing
(Parts A and B Must Be Satisfied)

SATISFIED YES ☐ NO ☑

Part A
Gap/Minutes and # of Children

SATISFIED YES ☐ NO ☑

		Hour
Gaps vs Minutes	Minutes Children Using Crossing	60
	Number of Adequate Gaps	>60
School Age Pedestrians Crossing Street / hr		48

Gaps < Minutes YES ☐ NO ☑
AND Children > 20/hr YES ☑ NO ☐

AND, Consideration has been given to less restrictive remedial measures.	Yes ☐ No ☐

Part B **SATISFIED YES ☑ NO ☐**

The distance to the nearest traffic signal along the major street is greater than 300 ft	Yes ☑ No ☐
OR, The proposed signal will not restrict the progressive movement of traffic.	Yes ☑ No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 4 of 5)

WARRANT 6 - Coordinated Signal System
(All Parts Must Be Satisfied)

SATISFIED YES ☐ NO ☑

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	
≥ 1000 ft	N 1500 ft, S _____ ft, E _____ ft, W _____ ft	Yes ☑ No ☐
On a one-way street or a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning.		Yes ☐ No ☑
OR, On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation.		

WARRANT 7 - Crash Experience Warrant
(All Parts Must Be Satisfied)

SATISFIED YES ☐ NO ☑

Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency.			Yes ☐ No ☐
REQUIREMENTS	Number of crashes reported within a 12 month period susceptible to correction by a traffic signal, and involving injury or damage exceeding the requirements for a reportable crash.		Yes ☐ No ☑
5 OR MORE	2 collisions in the last 5 years		
REQUIREMENTS	CONDITIONS	✓	
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume		Yes ☐ No ☐
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic		
	OR, Warrant 4, Pedestrian Volume Condition Ped Vol ≥ 80% of Figure 4C-5 through Figure 4C-8		

WARRANT 8 - Roadway Network
(All Parts Must Be Satisfied)

SATISFIED YES ☐ NO ☑

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES	✓	FULFILLED
1000 Veh/Hr	During Typical Weekday Peak Hour _____ Veh/Hr and has 5-year projected traffic volumes that meet one or more of Warrants 1, 2, and 3 during an average weekday.		Yes ☐ No ☑
	OR During Each of Any 5 Hrs. of a Sat. or Sun _____ Veh/Hr		

CHARACTERISTICS OF MAJOR ROUTES	MAJOR ROUTE A	MAJOR ROUTE B	
Hwy. System Serving as Principal Network for Through Traffic			
Rural or Suburban Highway Outside Of, Entering, or Traversing a City			
Appears as Major Route on an Official Plan			
Any Major Route Characteristics Met, Both Streets			Yes ☐ No ☑

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 5 of 5)

WARRANT 9 - Intersection Near a Grade Crossing **SATISFIED YES ☐ NO ☑**
(Both Parts A and B Must Be Satisfied)

PART A A grade crossing exists on an approach controlled by a STOP or YIELD sign and the center of the track nearest to the intersection is within 140 feet of the stop line or yield line on the approach. Track Center Line to Limit Line _____ ft	Yes ☐ No ☑
PART B **There is one minor street approach lane at the track crossing -** During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point falls above the applicable curve in Figure 4C-9. Major Street - Total of both approaches: _____ VPH Minor Street - Crosses the track (one direction only, approaching the intersection): _____ VPH X AF (Use Tables 4C-2, 3, & 4 below to calculate AF) = _____ VPH	Yes ☐ No ☑
OR, There are two or more minor street approach lanes at the track crossing - During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point falls above the applicable curve in Figure 4C-10. Major Street - Total of both approaches : _____ VPH Minor Street - Crosses the track (one direction only, approaching the intersection): _____ VPH X AF (Use Tables 4C-2, 3, & 4 below to calcualte AF) = _____ VPH	

The minor street approach volume may be multiplied by up to three following adjustment factors (AF) as described in Section 4C.10.

1- Number of Rail Traffic per Day_____ Adjustment factor from table 4C-2____

2- Percentage of High-Occupancy Buses on Minor Street Approach_____ Adjustment factor from table 4C-3____

3- Percentage of Tractor-Trailer Trucks on Minor Street Approach_____ Adjustment factor from table 4C-4____

NOTE: If no data is availale or known, then use AF = 1 (no adjustment)

APPENDIX 5.1: BACKGROUND (NEAR-TERM) (2028) WITHOUT CUMULATIVE PROJECTS AND WITHOUT PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations								
Traffic Vol, veh/h	9	5	86	4	712	1	376	4
Future Vol, veh/h	9	5	86	4	712	1	376	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	-	None
Storage Length	0	-	-	150	-	-	-	-
Veh in Median Storage, #	1	-	-	-	0	-	0	-
Grade, %	0	-	-	-	0	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	11	6	106	5	879	1	464	5

Major/Minor	Minor2		Major1			Major2		
Conflicting Flow All	1131	235	469	469	0	879	-	0
Stage 1	469	-	-	-	-	-	-	-
Stage 2	662	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.44	4.14	-	6.44	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.52	2.22	-	2.52	-	-
Pot Cap-1 Maneuver	197	767	724	1089	-	397	-	-
Stage 1	596	-	-	-	-	-	-	-
Stage 2	475	-	-	-	-	-	-	-
Platoon blocked, %					-		-	-
Mov Cap-1 Maneuver	167	767	729	729	-	397	-	-
Mov Cap-2 Maneuver	299	-	-	-	-	-	-	-
Stage 1	505	-	-	-	-	-	-	-
Stage 2	473	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	14.87	1.21	0.04
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	729	-	382	-	-
HCM Lane V/C Ratio	0.152	-	0.045	-	-
HCM Control Delay (s/veh)	10.8	-	14.9	-	-
HCM Lane LOS	B	-	B	-	-
HCM 95th %tile Q(veh)	0.5	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	13	810	5	0	465
Future Vol, veh/h	0	13	810	5	0	465
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	16	1013	6	0	581

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	509	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	509	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	509	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	12.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	509	-
HCM Lane V/C Ratio	-	-	0.032	-
HCM Control Delay (s/veh)	-	-	12.3	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	13	0	15	8	0	4	13	790	5	8	2	451	4
Future Vol, veh/h	13	0	15	8	0	4	13	790	5	8	2	451	4
Conflicting Peds, #/hr	0	0	0	0	0	3	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	140	-	-	-	120	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	0	19	10	0	5	16	988	6	10	3	564	5

Major/Minor	Minor2			Minor1			Major1			Major2			
Conflicting Flow All	1121	1618	284	1330	1617	500	569	0	0	994	994	0	0
Stage 1	591	591	-	1023	1023	-	-	-	-	-	-	-	-
Stage 2	529	1026	-	307	594	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	161	102	712	113	103	516	1000	-	-	335	692	-	-
Stage 1	460	493	-	252	311	-	-	-	-	-	-	-	-
Stage 2	501	310	-	678	491	-	-	-	-	-	-	-	-
Platoon blocked, %								-	-			-	-
Mov Cap-1 Maneuver	151	97	712	104	97	515	1000	-	-	370	370	-	-
Mov Cap-2 Maneuver	278	206	-	198	210	-	-	-	-	-	-	-	-
Stage 1	445	476	-	248	306	-	-	-	-	-	-	-	-
Stage 2	487	305	-	638	475	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	14.52	20.38	0.14	0.32
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1000	-	-	413	249	370	-	-
HCM Lane V/C Ratio	0.016	-	-	0.085	0.06	0.034	-	-
HCM Control Delay (s/veh)	8.7	-	-	14.5	20.4	15.1	-	-
HCM Lane LOS	A	-	-	B	C	C	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	5	2	70	9	509	766	10
Future Vol, veh/h	5	2	70	9	509	766	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	0	-	-	150	-	-	-
Veh in Median Storage, #	1	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	6	3	88	11	636	958	13

Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	1479	485	970	970	0	-	0
Stage 1	964	-	-	-	-	-	-
Stage 2	516	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.44	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.52	2.22	-	-	-
Pot Cap-1 Maneuver	116	528	347	706	-	-	-
Stage 1	331	-	-	-	-	-	-
Stage 2	564	-	-	-	-	-	-
Platoon blocked, %					-	-	-
Mov Cap-1 Maneuver	85	528	367	367	-	-	-
Mov Cap-2 Maneuver	185	-	-	-	-	-	-
Stage 1	242	-	-	-	-	-	-
Stage 2	564	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	21.45	2.47	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	367	-	228	-	-
HCM Lane V/C Ratio	0.269	-	0.038	-	-
HCM Control Delay (s/veh)	18.4	-	21.5	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	1.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	12	560	10	0	838
Future Vol, veh/h	0	12	560	10	0	838
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	16	747	13	0	1117

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	380	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	618	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	618	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	10.98	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	618	-
HCM Lane V/C Ratio	-	-	0.026	-
HCM Control Delay (s/veh)	-	-	11	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	6	0	14	3	0	5	25	549	8	9	10	806	14
Future Vol, veh/h	6	0	14	3	0	5	25	549	8	9	10	806	14
Conflicting Peds, #/hr	0	0	0	0	0	3	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	140	-	-	-	120	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	18	4	0	7	33	722	11	12	13	1061	18

Major/Minor	Minor2			Minor1			Major1			Major2			
Conflicting Flow All	1550	1918	539	1374	1922	369	1079	0	0	733	733	0	0
Stage 1	1120	1120	-	793	793	-	-	-	-	-	-	-	-
Stage 2	430	799	-	580	1129	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	77	67	486	105	66	628	642	-	-	492	868	-	-
Stage 1	220	280	-	348	398	-	-	-	-	-	-	-	-
Stage 2	574	396	-	467	277	-	-	-	-	-	-	-	-
Platoon blocked, %								-	-			-	-
Mov Cap-1 Maneuver	70	61	486	92	60	626	642	-	-	633	633	-	-
Mov Cap-2 Maneuver	162	166	-	206	157	-	-	-	-	-	-	-	-
Stage 1	211	269	-	330	378	-	-	-	-	-	-	-	-
Stage 2	537	376	-	432	266	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	17.99	15.45	0.47	0.25
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	642	-	-	303	355	633	-	-
HCM Lane V/C Ratio	0.051	-	-	0.087	0.03	0.039	-	-
HCM Control Delay (s/veh)	10.9	-	-	18	15.5	10.9	-	-
HCM Lane LOS	B	-	-	C	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations								
Traffic Vol, veh/h	4	1	9	4	460	2	735	13
Future Vol, veh/h	4	1	9	4	460	2	735	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	-	None
Storage Length	0	-	-	150	-	-	-	-
Veh in Median Storage, #	1	-	-	-	0	-	0	-
Grade, %	0	-	-	-	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	4	1	9	4	469	2	750	13

Major/Minor	Minor2		Major1			Major2		
Conflicting Flow All	1022	382	763	763	0	469	-	0
Stage 1	761	-	-	-	-	-	-	-
Stage 2	261	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.44	4.14	-	6.44	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.52	2.22	-	2.52	-	-
Pot Cap-1 Maneuver	232	616	471	845	-	724	-	-
Stage 1	422	-	-	-	-	-	-	-
Stage 2	759	-	-	-	-	-	-	-
Platoon blocked, %					-		-	-
Mov Cap-1 Maneuver	226	616	544	544	-	724	-	-
Mov Cap-2 Maneuver	332	-	-	-	-	-	-	-
Stage 1	412	-	-	-	-	-	-	-
Stage 2	756	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	14.99	0.32	0.03
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	544	-	365	-	-
HCM Lane V/C Ratio	0.024	-	0.014	-	-
HCM Control Delay (s/veh)	11.8	-	15	-	-
HCM Lane LOS	B	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	12	470	8	0	745
Future Vol, veh/h	0	12	470	8	0	745
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	13	495	8	0	784

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	252	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	748	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	748	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	748	-
HCM Lane V/C Ratio	-	-	0.017	-
HCM Control Delay (s/veh)	-	-	9.9	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	5	0	14	2	0	5	16	459	10	8	3	719	18
Future Vol, veh/h	5	0	14	2	0	5	16	459	10	8	3	719	18
Conflicting Peds, #/hr	0	0	0	0	0	3	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	140	-	-	-	120	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	15	2	0	5	17	478	10	8	3	749	19

Major/Minor	Minor2			Minor1			Major1			Major2			
Conflicting Flow All	1057	1303	384	914	1307	247	768	0	0	489	489	0	0
Stage 1	781	781	-	517	517	-	-	-	-	-	-	-	-
Stage 2	275	522	-	397	791	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	179	159	614	228	158	753	842	-	-	704	1071	-	-
Stage 1	354	403	-	510	532	-	-	-	-	-	-	-	-
Stage 2	707	529	-	600	399	-	-	-	-	-	-	-	-
Platoon blocked, %								-	-			-	-
Mov Cap-1 Maneuver	172	154	614	215	153	751	842	-	-	772	772	-	-
Mov Cap-2 Maneuver	276	272	-	339	267	-	-	-	-	-	-	-	-
Stage 1	349	397	-	499	522	-	-	-	-	-	-	-	-
Stage 2	687	519	-	577	393	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	13.09	11.55	0.31	0.14
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	842	-	-	465	557	772	-	-
HCM Lane V/C Ratio	0.02	-	-	0.043	0.013	0.015	-	-
HCM Control Delay (s/veh)	9.4	-	-	13.1	11.5	9.7	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0	0	-	-

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APPENDIX 5.2: BACKGROUND (NEAR-TERM) (2028) WITH CUMULATIVE PROJECTS AND WITHOUT PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations								
Traffic Vol, veh/h	9	5	86	4	716	1	380	4
Future Vol, veh/h	9	5	86	4	716	1	380	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	-	None
Storage Length	0	-	-	150	-	-	-	-
Veh in Median Storage, #	1	-	-	-	0	-	0	-
Grade, %	0	-	-	-	0	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	11	6	106	5	884	1	469	5

Major/Minor	Minor2		Major1			Major2		
Conflicting Flow All	1138	237	474	474	0	884	-	0
Stage 1	474	-	-	-	-	-	-	-
Stage 2	664	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.44	4.14	-	6.44	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.52	2.22	-	2.52	-	-
Pot Cap-1 Maneuver	195	764	719	1084	-	394	-	-
Stage 1	592	-	-	-	-	-	-	-
Stage 2	473	-	-	-	-	-	-	-
Platoon blocked, %					-		-	-
Mov Cap-1 Maneuver	164	764	724	724	-	394	-	-
Mov Cap-2 Maneuver	297	-	-	-	-	-	-	-
Stage 1	501	-	-	-	-	-	-	-
Stage 2	472	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	14.94	1.21	0.04
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	724	-	379	-	-
HCM Lane V/C Ratio	0.153	-	0.046	-	-
HCM Control Delay (s/veh)	10.9	-	14.9	-	-
HCM Lane LOS	B	-	B	-	-
HCM 95th %tile Q(veh)	0.5	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	13	814	5	0	469
Future Vol, veh/h	0	13	814	5	0	469
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	16	1018	6	0	586

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	512	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	507	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	507	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	12.33	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	507	-
HCM Lane V/C Ratio	-	-	0.032	-
HCM Control Delay (s/veh)	-	-	12.3	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	13	0	15	8	0	4	13	794	5	8	2	455	4
Future Vol, veh/h	13	0	15	8	0	4	13	794	5	8	2	455	4
Conflicting Peds, #/hr	0	0	0	0	0	3	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	140	-	-	-	120	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	0	19	10	0	5	16	993	6	10	3	569	5

Major/Minor	Minor2			Minor1			Major1			Major2			
Conflicting Flow All	1128	1628	287	1338	1627	502	574	0	0	999	999	0	0
Stage 1	596	596	-	1028	1028	-	-	-	-	-	-	-	-
Stage 2	532	1031	-	309	599	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	159	101	710	111	101	514	995	-	-	333	689	-	-
Stage 1	457	490	-	250	309	-	-	-	-	-	-	-	-
Stage 2	499	308	-	676	489	-	-	-	-	-	-	-	-
Platoon blocked, %								-	-			-	-
Mov Cap-1 Maneuver	149	96	710	103	96	513	995	-	-	368	368	-	-
Mov Cap-2 Maneuver	276	205	-	196	208	-	-	-	-	-	-	-	-
Stage 1	441	473	-	246	304	-	-	-	-	-	-	-	-
Stage 2	485	303	-	635	472	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	14.58	20.49	0.14	0.32
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	995	-	-	411	247	368	-	-
HCM Lane V/C Ratio	0.016	-	-	0.085	0.061	0.034	-	-
HCM Control Delay (s/veh)	8.7	-	-	14.6	20.5	15.1	-	-
HCM Lane LOS	A	-	-	B	C	C	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	5	3	70	10	516	775	10
Future Vol, veh/h	5	3	70	10	516	775	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	0	-	-	150	-	-	-
Veh in Median Storage, #	1	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	6	4	88	13	645	969	13

Major/Minor	Minor2		Major1			Major2	
Conflicting Flow All	1498	491	981	981	0	-	0
Stage 1	975	-	-	-	-	-	-
Stage 2	523	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.44	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.52	2.22	-	-	-
Pot Cap-1 Maneuver	113	524	341	699	-	-	-
Stage 1	326	-	-	-	-	-	-
Stage 2	560	-	-	-	-	-	-
Platoon blocked, %					-	-	-
Mov Cap-1 Maneuver	82	524	362	362	-	-	-
Mov Cap-2 Maneuver	181	-	-	-	-	-	-
Stage 1	236	-	-	-	-	-	-
Stage 2	560	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	20.64	2.51	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	362	-	240	-	-
HCM Lane V/C Ratio	0.276	-	0.042	-	-
HCM Control Delay (s/veh)	18.7	-	20.6	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	1.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	12	568	10	0	848
Future Vol, veh/h	0	12	568	10	0	848
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	16	757	13	0	1131

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	385	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	613	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	613	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	11.03	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	613	-
HCM Lane V/C Ratio	-	-	0.026	-
HCM Control Delay (s/veh)	-	-	11	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	6	0	15	3	0	5	26	557	8	9	10	816	14
Future Vol, veh/h	6	0	15	3	0	5	26	557	8	9	10	816	14
Conflicting Peds, #/hr	0	0	0	0	0	3	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	140	-	-	-	120	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	20	4	0	7	34	733	11	12	13	1074	18

Major/Minor	Minor2			Minor1			Major1			Major2			
Conflicting Flow All	1571	1945	546	1393	1949	375	1092	0	0	743	743	0	0
Stage 1	1133	1133	-	807	807	-	-	-	-	-	-	-	-
Stage 2	438	812	-	587	1142	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	75	64	482	101	64	623	635	-	-	485	860	-	-
Stage 1	216	276	-	342	393	-	-	-	-	-	-	-	-
Stage 2	567	390	-	463	273	-	-	-	-	-	-	-	-
Platoon blocked, %								-	-			-	-
Mov Cap-1 Maneuver	67	58	482	88	58	621	635	-	-	625	625	-	-
Mov Cap-2 Maneuver	158	163	-	201	154	-	-	-	-	-	-	-	-
Stage 1	207	265	-	323	371	-	-	-	-	-	-	-	-
Stage 2	530	369	-	426	262	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	18.02	15.65	0.48	0.25
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	635	-	-	304	349	625	-	-
HCM Lane V/C Ratio	0.054	-	-	0.091	0.03	0.04	-	-
HCM Control Delay (s/veh)	11	-	-	18	15.6	11	-	-
HCM Lane LOS	B	-	-	C	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations								
Traffic Vol, veh/h	4	1	9	5	467	2	740	13
Future Vol, veh/h	4	1	9	5	467	2	740	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	-	None
Storage Length	0	-	-	150	-	-	-	-
Veh in Median Storage, #	1	-	-	-	0	-	0	-
Grade, %	0	-	-	-	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	4	1	9	5	477	2	755	13

Major/Minor	Minor2		Major1			Major2		
Conflicting Flow All	1033	384	768	768	0	477	-	0
Stage 1	766	-	-	-	-	-	-	-
Stage 2	267	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.44	4.14	-	6.44	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.52	2.22	-	2.52	-	-
Pot Cap-1 Maneuver	228	614	467	841	-	716	-	-
Stage 1	419	-	-	-	-	-	-	-
Stage 2	754	-	-	-	-	-	-	-
Platoon blocked, %					-		-	-
Mov Cap-1 Maneuver	222	614	555	555	-	716	-	-
Mov Cap-2 Maneuver	328	-	-	-	-	-	-	-
Stage 1	409	-	-	-	-	-	-	-
Stage 2	751	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	15.09	0.34	0.03
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	555	-	362	-	-
HCM Lane V/C Ratio	0.026	-	0.014	-	-
HCM Control Delay (s/veh)	11.7	-	15.1	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	12	477	8	0	750
Future Vol, veh/h	0	12	477	8	0	750
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	13	502	8	0	789

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	255	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	744	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	744	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.92	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	744	-
HCM Lane V/C Ratio	-	-	0.017	-
HCM Control Delay (s/veh)	-	-	9.9	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	5	0	14	2	0	5	17	466	10	8	3	724	18
Future Vol, veh/h	5	0	14	2	0	5	17	466	10	8	3	724	18
Conflicting Peds, #/hr	0	0	0	0	0	3	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	140	-	-	-	120	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	15	2	0	5	18	485	10	8	3	754	19

Major/Minor	Minor2			Minor1			Major1			Major2			
Conflicting Flow All	1068	1318	386	926	1322	251	773	0	0	496	496	0	0
Stage 1	786	786	-	526	526	-	-	-	-	-	-	-	-
Stage 2	281	531	-	400	796	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	176	156	612	224	155	749	838	-	-	696	1064	-	-
Stage 1	351	401	-	503	527	-	-	-	-	-	-	-	-
Stage 2	702	524	-	597	397	-	-	-	-	-	-	-	-
Platoon blocked, %								-	-			-	-
Mov Cap-1 Maneuver	168	151	612	210	150	747	838	-	-	765	765	-	-
Mov Cap-2 Maneuver	273	269	-	334	263	-	-	-	-	-	-	-	-
Stage 1	346	395	-	492	516	-	-	-	-	-	-	-	-
Stage 2	680	513	-	575	391	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	13.15	11.61	0.32	0.14
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	838	-	-	461	552	765	-	-
HCM Lane V/C Ratio	0.021	-	-	0.043	0.013	0.015	-	-
HCM Control Delay (s/veh)	9.4	-	-	13.2	11.6	9.8	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0	0	-	-

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APPENDIX 5.3: BACKGROUND (NEAR-TERM) (2028) WITH CUMULATIVE PROJECTS AND WITH PROJECT CONDITIONS (ALTERNATIVE 1) INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations								
Traffic Vol, veh/h	10	6	93	4	723	1	383	4
Future Vol, veh/h	10	6	93	4	723	1	383	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	-	None
Storage Length	0	-	-	150	-	-	-	-
Veh in Median Storage, #	1	-	-	-	0	-	0	-
Grade, %	0	-	-	-	0	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	12	7	115	5	893	1	473	5

Major/Minor	Minor2		Major1			Major2		
Conflicting Flow All	1164	239	478	478	0	893	-	0
Stage 1	478	-	-	-	-	-	-	-
Stage 2	686	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.44	4.14	-	6.44	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.52	2.22	-	2.52	-	-
Pot Cap-1 Maneuver	188	762	715	1081	-	389	-	-
Stage 1	590	-	-	-	-	-	-	-
Stage 2	461	-	-	-	-	-	-	-
Platoon blocked, %					-		-	-
Mov Cap-1 Maneuver	156	762	718	718	-	389	-	-
Mov Cap-2 Maneuver	288	-	-	-	-	-	-	-
Stage 1	491	-	-	-	-	-	-	-
Stage 2	460	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	15.13	1.3	0.04
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	718	-	375	-	-
HCM Lane V/C Ratio	0.167	-	0.053	-	-
HCM Control Delay (s/veh)	11	-	15.1	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.6	-	0.2	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	13	814	5	0	469
Future Vol, veh/h	0	13	814	5	0	469
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	16	1018	6	0	586

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	512	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	507	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	507	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	12.33	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	507	-
HCM Lane V/C Ratio	-	-	0.032	-
HCM Control Delay (s/veh)	-	-	12.3	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	26	0	833	470	9
Future Vol, veh/h	0	26	0	833	470	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	28	0	905	511	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	260	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	738	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	738	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	10.07	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	738	-	-
HCM Lane V/C Ratio	-	0.038	-	-
HCM Control Delay (s/veh)	-	10.1	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	13	0	15	8	0	4	13	801	5	15	2	475	4
Future Vol, veh/h	13	0	15	8	0	4	13	801	5	15	2	475	4
Conflicting Peds, #/hr	0	0	0	0	0	3	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	140	-	-	-	120	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	0	19	10	0	5	16	1001	6	19	3	594	5

Major/Minor	Minor2			Minor1			Major1			Major2			
Conflicting Flow All	1175	1679	299	1376	1678	507	599	0	0	1008	1008	0	0
Stage 1	639	639	-	1037	1037	-	-	-	-	-	-	-	-
Stage 2	536	1040	-	339	641	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	147	94	697	104	94	511	974	-	-	328	683	-	-
Stage 1	431	469	-	247	307	-	-	-	-	-	-	-	-
Stage 2	496	306	-	649	467	-	-	-	-	-	-	-	-
Platoon blocked, %								-	-			-	-
Mov Cap-1 Maneuver	134	87	697	94	87	510	974	-	-	347	347	-	-
Mov Cap-2 Maneuver	257	193	-	190	199	-	-	-	-	-	-	-	-
Stage 1	404	440	-	243	301	-	-	-	-	-	-	-	-
Stage 2	482	300	-	593	439	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	15.18	21	0.14	0.55
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	974	-	-	389	240	347	-	-
HCM Lane V/C Ratio	0.017	-	-	0.09	0.063	0.061	-	-
HCM Control Delay (s/veh)	8.8	-	-	15.2	21	16.1	-	-
HCM Lane LOS	A	-	-	C	C	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.2	0.2	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	6	4	85	11	520	781	11
Future Vol, veh/h	6	4	85	11	520	781	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	0	-	-	150	-	-	-
Veh in Median Storage, #	1	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	8	5	106	14	650	976	14

Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	1548	495	990	990	0	-	0
Stage 1	983	-	-	-	-	-	-
Stage 2	565	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.44	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.52	2.22	-	-	-
Pot Cap-1 Maneuver	105	520	337	694	-	-	-
Stage 1	323	-	-	-	-	-	-
Stage 2	532	-	-	-	-	-	-
Platoon blocked, %					-	-	-
Mov Cap-1 Maneuver	69	520	355	355	-	-	-
Mov Cap-2 Maneuver	164	-	-	-	-	-	-
Stage 1	214	-	-	-	-	-	-
Stage 2	532	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	21.89	3.15	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	355	-	226	-	-
HCM Lane V/C Ratio	0.338	-	0.055	-	-
HCM Control Delay (s/veh)	20.2	-	21.9	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	1.5	-	0.2	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	12	568	10	0	848
Future Vol, veh/h	0	12	568	10	0	848
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	16	757	13	0	1131

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	385	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	613	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	613	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	11.03	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	613	-
HCM Lane V/C Ratio	-	-	0.026	-
HCM Control Delay (s/veh)	-	-	11	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	14	0	597	850	21
Future Vol, veh/h	0	14	0	597	850	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	15	0	649	924	23

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	473	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	537	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	537	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	11.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	537	-	-
HCM Lane V/C Ratio	-	0.028	-	-
HCM Control Delay (s/veh)	-	11.9	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	6	0	15	3	0	5	26	573	8	13	10	827	14
Future Vol, veh/h	6	0	15	3	0	5	26	573	8	13	10	827	14
Conflicting Peds, #/hr	0	0	0	0	0	3	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	140	-	-	-	120	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	20	4	0	7	34	754	11	17	13	1088	18

Major/Minor	Minor2			Minor1			Major1			Major2			
Conflicting Flow All	1606	1991	553	1432	1995	385	1107	0	0	764	764	0	0
Stage 1	1158	1158	-	828	828	-	-	-	-	-	-	-	-
Stage 2	448	833	-	605	1167	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	70	60	476	95	60	613	627	-	-	470	844	-	-
Stage 1	209	269	-	332	384	-	-	-	-	-	-	-	-
Stage 2	559	382	-	452	266	-	-	-	-	-	-	-	-
Platoon blocked, %								-	-			-	-
Mov Cap-1 Maneuver	62	54	476	81	53	611	627	-	-	578	578	-	-
Mov Cap-2 Maneuver	151	155	-	193	147	-	-	-	-	-	-	-	-
Stage 1	198	255	-	314	363	-	-	-	-	-	-	-	-
Stage 2	522	361	-	410	252	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	18.49	16.03	0.47	0.31
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	627	-	-	294	337	578	-	-
HCM Lane V/C Ratio	0.055	-	-	0.094	0.031	0.052	-	-
HCM Control Delay (s/veh)	11.1	-	-	18.5	16	11.6	-	-
HCM Lane LOS	B	-	-	C	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.1	0.2	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations								
Traffic Vol, veh/h	5	2	30	6	472	2	748	14
Future Vol, veh/h	5	2	30	6	472	2	748	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	-	None
Storage Length	0	-	-	150	-	-	-	-
Veh in Median Storage, #	1	-	-	-	0	-	0	-
Grade, %	0	-	-	-	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	5	2	31	6	482	2	763	14

Major/Minor	Minor2		Major1			Major2		
Conflicting Flow All	1089	389	778	778	0	482	-	0
Stage 1	774	-	-	-	-	-	-	-
Stage 2	314	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.44	4.14	-	6.44	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.52	2.22	-	2.52	-	-
Pot Cap-1 Maneuver	210	610	461	835	-	711	-	-
Stage 1	415	-	-	-	-	-	-	-
Stage 2	713	-	-	-	-	-	-	-
Platoon blocked, %					-		-	-
Mov Cap-1 Maneuver	194	610	497	497	-	711	-	-
Mov Cap-2 Maneuver	304	-	-	-	-	-	-	-
Stage 1	384	-	-	-	-	-	-	-
Stage 2	711	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	15.36	0.91	0.03
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	497	-	355	-	-
HCM Lane V/C Ratio	0.074	-	0.02	-	-
HCM Control Delay (s/veh)	12.8	-	15.4	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	12	477	8	0	750
Future Vol, veh/h	0	12	477	8	0	750
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	13	502	8	0	789

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	255	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	744	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	744	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.92	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	744	-
HCM Lane V/C Ratio	-	-	0.017	-
HCM Control Delay (s/veh)	-	-	9.9	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	17	0	511	754	29
Future Vol, veh/h	0	17	0	511	754	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	18	0	555	820	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	426	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	577	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	577	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	11.44	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	577	-	-
HCM Lane V/C Ratio	-	0.032	-	-
HCM Control Delay (s/veh)	-	11.4	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	5	0	14	2	0	5	17	488	10	13	3	737	18
Future Vol, veh/h	5	0	14	2	0	5	17	488	10	13	3	737	18
Conflicting Peds, #/hr	0	0	0	0	0	3	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	140	-	-	-	120	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	15	2	0	5	18	508	10	14	3	768	19

Major/Minor	Minor2			Minor1			Major1			Major2			
Conflicting Flow All	1103	1365	393	966	1369	262	786	0	0	519	519	0	0
Stage 1	810	810	-	549	549	-	-	-	-	-	-	-	-
Stage 2	293	554	-	417	820	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	166	146	606	209	145	736	828	-	-	674	1043	-	-
Stage 1	340	391	-	488	515	-	-	-	-	-	-	-	-
Stage 2	691	512	-	584	387	-	-	-	-	-	-	-	-
Platoon blocked, %								-	-			-	-
Mov Cap-1 Maneuver	157	140	606	195	139	734	828	-	-	717	717	-	-
Mov Cap-2 Maneuver	261	257	-	319	253	-	-	-	-	-	-	-	-
Stage 1	332	382	-	477	504	-	-	-	-	-	-	-	-
Stage 2	670	501	-	556	378	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	13.37	11.82	0.31	0.21
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	828	-	-	450	535	717	-	-
HCM Lane V/C Ratio	0.021	-	-	0.044	0.014	0.023	-	-
HCM Control Delay (s/veh)	9.4	-	-	13.4	11.8	10.1	-	-
HCM Lane LOS	A	-	-	B	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0	0.1	-	-

APPENDIX 5.4: BACKGROUND (NEAR-TERM) (2028) WITH CUMULATIVE PROJECTS AND WITH PROJECT CONDITIONS (ALTERNATIVE 2) INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations								
Traffic Vol, veh/h	10	6	80	4	723	1	383	4
Future Vol, veh/h	10	6	80	4	723	1	383	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	-	None
Storage Length	0	-	-	150	-	-	-	-
Veh in Median Storage, #	1	-	-	-	0	-	0	-
Grade, %	0	-	-	-	0	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	12	7	99	5	893	1	473	5

Major/Minor	Minor2		Major1			Major2		
Conflicting Flow All	1131	239	478	478	0	893	-	0
Stage 1	478	-	-	-	-	-	-	-
Stage 2	654	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.44	4.14	-	6.44	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.52	2.22	-	2.52	-	-
Pot Cap-1 Maneuver	197	762	715	1081	-	389	-	-
Stage 1	590	-	-	-	-	-	-	-
Stage 2	479	-	-	-	-	-	-	-
Platoon blocked, %					-		-	-
Mov Cap-1 Maneuver	168	762	720	720	-	389	-	-
Mov Cap-2 Maneuver	300	-	-	-	-	-	-	-
Stage 1	505	-	-	-	-	-	-	-
Stage 2	478	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	14.76	1.13	0.04
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	720	-	389	-	-
HCM Lane V/C Ratio	0.144	-	0.051	-	-
HCM Control Delay (s/veh)	10.8	-	14.8	-	-
HCM Lane LOS	B	-	B	-	-
HCM 95th %tile Q(veh)	0.5	-	0.2	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	7	0	18	6	0	7	7	814	0	2	5	457	4
Future Vol, veh/h	7	0	18	6	0	7	7	814	0	2	5	457	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	92	92	92	80	92	80	92	80	80	92	80	80	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	20	8	0	9	8	1018	0	2	6	571	4

Major/Minor	Minor2			Minor1			Major1			Major2			
Conflicting Flow All	1114	1623	288	1335	1625	509	576	0	0	1018	1018	0	0
Stage 1	590	590	-	1033	1033	-	-	-	-	-	-	-	-
Stage 2	524	1033	-	302	592	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	163	102	709	112	101	509	994	-	-	324	678	-	-
Stage 1	461	493	-	249	308	-	-	-	-	-	-	-	-
Stage 2	505	308	-	682	492	-	-	-	-	-	-	-	-
Platoon blocked, %								-	-			-	-
Mov Cap-1 Maneuver	156	99	709	106	99	509	994	-	-	524	524	-	-
Mov Cap-2 Maneuver	156	99	-	106	99	-	-	-	-	-	-	-	-
Stage 1	453	485	-	247	306	-	-	-	-	-	-	-	-
Stage 2	492	306	-	652	484	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	15.94	26.33	0.06	0.17
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	994	-	-	356	185	524	-	-
HCM Lane V/C Ratio	0.008	-	-	0.076	0.088	0.016	-	-
HCM Control Delay (s/veh)	8.7	-	-	15.9	26.3	12	-	-
HCM Lane LOS	A	-	-	C	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.3	0	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	13	0	15	8	0	4	13	801	5	1	2	475	4
Future Vol, veh/h	13	0	15	8	0	4	13	801	5	1	2	475	4
Conflicting Peds, #/hr	0	0	0	0	0	3	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	140	-	-	-	120	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	0	19	10	0	5	16	1001	6	1	3	594	5

Major/Minor	Minor2			Minor1			Major1			Major2			
Conflicting Flow All	1140	1644	299	1341	1643	507	599	0	0	1008	1008	0	0
Stage 1	604	604	-	1037	1037	-	-	-	-	-	-	-	-
Stage 2	536	1040	-	304	606	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	156	99	697	111	99	511	974	-	-	328	683	-	-
Stage 1	452	486	-	247	307	-	-	-	-	-	-	-	-
Stage 2	496	306	-	680	485	-	-	-	-	-	-	-	-
Platoon blocked, %								-	-			-	-
Mov Cap-1 Maneuver	150	96	697	105	96	510	974	-	-	500	500	-	-
Mov Cap-2 Maneuver	280	208	-	196	208	-	-	-	-	-	-	-	-
Stage 1	449	483	-	243	301	-	-	-	-	-	-	-	-
Stage 2	482	300	-	657	481	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	14.55	20.53	0.14	0.08
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	974	-	-	412	247	500	-	-
HCM Lane V/C Ratio	0.017	-	-	0.085	0.061	0.008	-	-
HCM Control Delay (s/veh)	8.8	-	-	14.6	20.5	12.3	-	-
HCM Lane LOS	A	-	-	B	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.2	0	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	6	4	65	11	520	781	11
Future Vol, veh/h	6	4	65	11	520	781	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	0	-	-	150	-	-	-
Veh in Median Storage, #	1	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	8	5	81	14	650	976	14

Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	1498	495	990	990	0	-	0
Stage 1	983	-	-	-	-	-	-
Stage 2	515	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.44	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.52	2.22	-	-	-
Pot Cap-1 Maneuver	113	520	337	694	-	-	-
Stage 1	323	-	-	-	-	-	-
Stage 2	565	-	-	-	-	-	-
Platoon blocked, %					-	-	-
Mov Cap-1 Maneuver	83	520	361	361	-	-	-
Mov Cap-2 Maneuver	183	-	-	-	-	-	-
Stage 1	238	-	-	-	-	-	-
Stage 2	565	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	20.35	2.36	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	361	-	247	-	-
HCM Lane V/C Ratio	0.263	-	0.051	-	-
HCM Control Delay (s/veh)	18.5	-	20.4	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	1	-	0.2	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	11	5	0	7	15	569	2	8	836	7
Future Vol, veh/h	4	0	11	5	0	7	15	569	2	8	836	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	75	92	75	92	75	75	75	75	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	12	7	0	9	16	759	3	11	1115	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1552	1934	561	1371	1936	381	1122	0	0	761	0	0
Stage 1	1140	1140	-	793	793	-	-	-	-	-	-	-
Stage 2	412	794	-	579	1144	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	77	65	471	105	65	617	618	-	-	847	-	-
Stage 1	214	274	-	348	399	-	-	-	-	-	-	-
Stage 2	588	398	-	468	273	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	73	63	471	98	62	617	618	-	-	847	-	-
Mov Cap-2 Maneuver	73	63	-	98	62	-	-	-	-	-	-	-
Stage 1	211	271	-	339	388	-	-	-	-	-	-	-
Stage 2	564	387	-	450	269	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	25.5	25.31	0.23	0.09
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	618	-	-	192	193	847	-	-
HCM Lane V/C Ratio	0.026	-	-	0.085	0.083	0.013	-	-
HCM Control Delay (s/veh)	11	-	-	25.5	25.3	9.3	-	-
HCM Lane LOS	B	-	-	D	D	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.3	0	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	6	0	15	3	0	5	26	573	8	1	10	827	14
Future Vol, veh/h	6	0	15	3	0	5	26	573	8	1	10	827	14
Conflicting Peds, #/hr	0	0	0	0	0	3	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	140	-	-	-	120	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	20	4	0	7	34	754	11	1	13	1088	18

Major/Minor	Minor2			Minor1			Major1			Major2			
Conflicting Flow All	1575	1959	553	1401	1963	385	1107	0	0	764	764	0	0
Stage 1	1126	1126	-	828	828	-	-	-	-	-	-	-	-
Stage 2	448	833	-	573	1136	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	74	63	476	100	62	613	627	-	-	470	844	-	-
Stage 1	218	278	-	332	384	-	-	-	-	-	-	-	-
Stage 2	559	382	-	472	275	-	-	-	-	-	-	-	-
Platoon blocked, %								-	-			-	-
Mov Cap-1 Maneuver	68	58	476	89	58	611	627	-	-	786	786	-	-
Mov Cap-2 Maneuver	162	166	-	202	156	-	-	-	-	-	-	-	-
Stage 1	214	273	-	314	363	-	-	-	-	-	-	-	-
Stage 2	522	361	-	444	270	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	17.9	15.7	0.47	0.12
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	627	-	-	307	347	786	-	-
HCM Lane V/C Ratio	0.055	-	-	0.09	0.03	0.018	-	-
HCM Control Delay (s/veh)	11.1	-	-	17.9	15.7	9.7	-	-
HCM Lane LOS	B	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations								
Traffic Vol, veh/h	5	2	4	6	472	2	748	14
Future Vol, veh/h	5	2	4	6	472	2	748	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	-	None
Storage Length	0	-	-	150	-	-	-	-
Veh in Median Storage, #	1	-	-	-	0	-	0	-
Grade, %	0	-	-	-	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	5	2	4	6	482	2	763	14

Major/Minor	Minor2		Major1			Major2		
Conflicting Flow All	1036	389	778	778	0	482	-	0
Stage 1	774	-	-	-	-	-	-	-
Stage 2	261	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.44	4.14	-	6.44	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.52	2.22	-	2.52	-	-
Pot Cap-1 Maneuver	227	610	461	835	-	711	-	-
Stage 1	415	-	-	-	-	-	-	-
Stage 2	759	-	-	-	-	-	-	-
Platoon blocked, %					-		-	-
Mov Cap-1 Maneuver	223	610	629	629	-	711	-	-
Mov Cap-2 Maneuver	329	-	-	-	-	-	-	-
Stage 1	408	-	-	-	-	-	-	-
Stage 2	756	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	14.69	0.22	0.03
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	629	-	379	-	-
HCM Lane V/C Ratio	0.016	-	0.019	-	-
HCM Control Delay (s/veh)	10.8	-	14.7	-	-
HCM Lane LOS	B	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↑↕		↰	↑↕	
Traffic Vol, veh/h	5	0	16	5	0	7	21	478	1	7	739	8
Future Vol, veh/h	5	0	16	5	0	7	21	478	1	7	739	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	95	92	95	92	95	95	95	95	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	17	5	0	7	23	503	1	7	778	9

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1094	1347	393	953	1351	252	787	0	0	504	0	0
Stage 1	797	797	-	549	549	-	-	-	-	-	-	-
Stage 2	297	550	-	404	801	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	168	150	606	214	149	747	828	-	-	1057	-	-
Stage 1	346	397	-	487	514	-	-	-	-	-	-	-
Stage 2	687	514	-	595	395	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	161	145	606	200	144	747	828	-	-	1057	-	-
Mov Cap-2 Maneuver	161	145	-	200	144	-	-	-	-	-	-	-
Stage 1	344	394	-	474	500	-	-	-	-	-	-	-
Stage 2	661	500	-	573	392	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	15.51	15.68	0.41	0.08
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	828	-	-	365	350	1057	-	-
HCM Lane V/C Ratio	0.028	-	-	0.062	0.036	0.007	-	-
HCM Control Delay (s/veh)	9.5	-	-	15.5	15.7	8.4	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	5	0	14	2	0	5	17	488	10	1	3	737	18
Future Vol, veh/h	5	0	14	2	0	5	17	488	10	1	3	737	18
Conflicting Peds, #/hr	0	0	0	0	0	3	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	140	-	-	-	120	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	15	2	0	5	18	508	10	1	3	768	19

Major/Minor	Minor2			Minor1			Major1			Major2			
Conflicting Flow All	1078	1340	393	941	1344	262	786	0	0	519	519	0	0
Stage 1	785	785	-	549	549	-	-	-	-	-	-	-	-
Stage 2	293	554	-	392	795	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	173	151	606	218	151	736	828	-	-	674	1043	-	-
Stage 1	352	402	-	488	515	-	-	-	-	-	-	-	-
Stage 2	691	512	-	604	398	-	-	-	-	-	-	-	-
Platoon blocked, %								-	-			-	-
Mov Cap-1 Maneuver	167	148	606	207	147	734	828	-	-	915	915	-	-
Mov Cap-2 Maneuver	275	268	-	330	262	-	-	-	-	-	-	-	-
Stage 1	350	400	-	477	504	-	-	-	-	-	-	-	-
Stage 2	670	501	-	587	396	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	13.18	11.71	0.31	0.05
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	828	-	-	460	544	915	-	-
HCM Lane V/C Ratio	0.021	-	-	0.043	0.013	0.005	-	-
HCM Control Delay (s/veh)	9.4	-	-	13.2	11.7	9	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0	0	-	-

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APPENDIX 5.5: BACKGROUND (NEAR-TERM) (2028) WITHOUT CUMULATIVE PROJECTS AND WITHOUT PROJECT CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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California MUTCD 2014 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

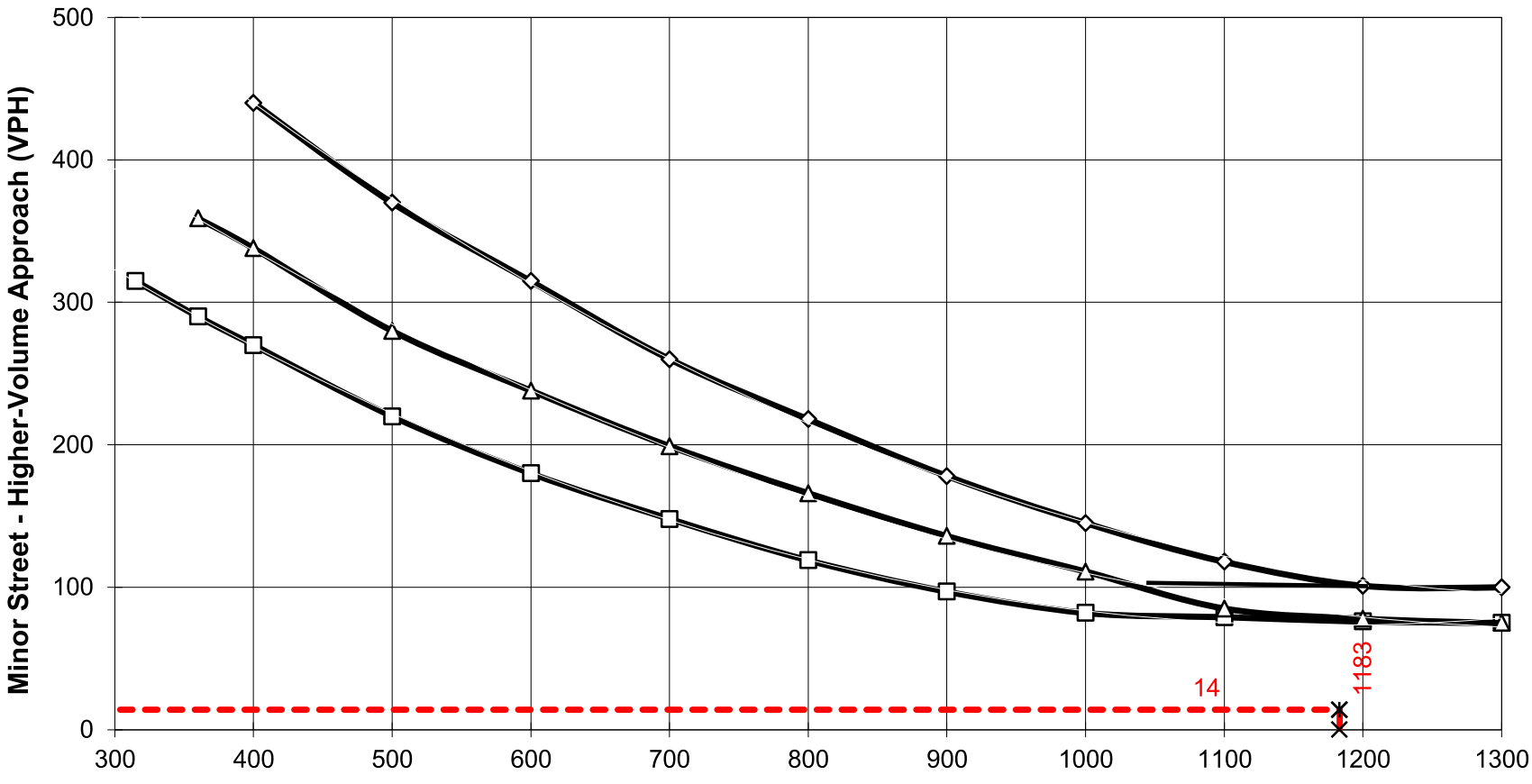
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Background (2028) Conditions - Weekday AM Peak Hour**

Major Street Name = **La Sierra Av.** Total of Both Approaches (VPH) = **1183**
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Alhambra Av.** High Volume Approach (VPH) = **14**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

California MUTCD 2014 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

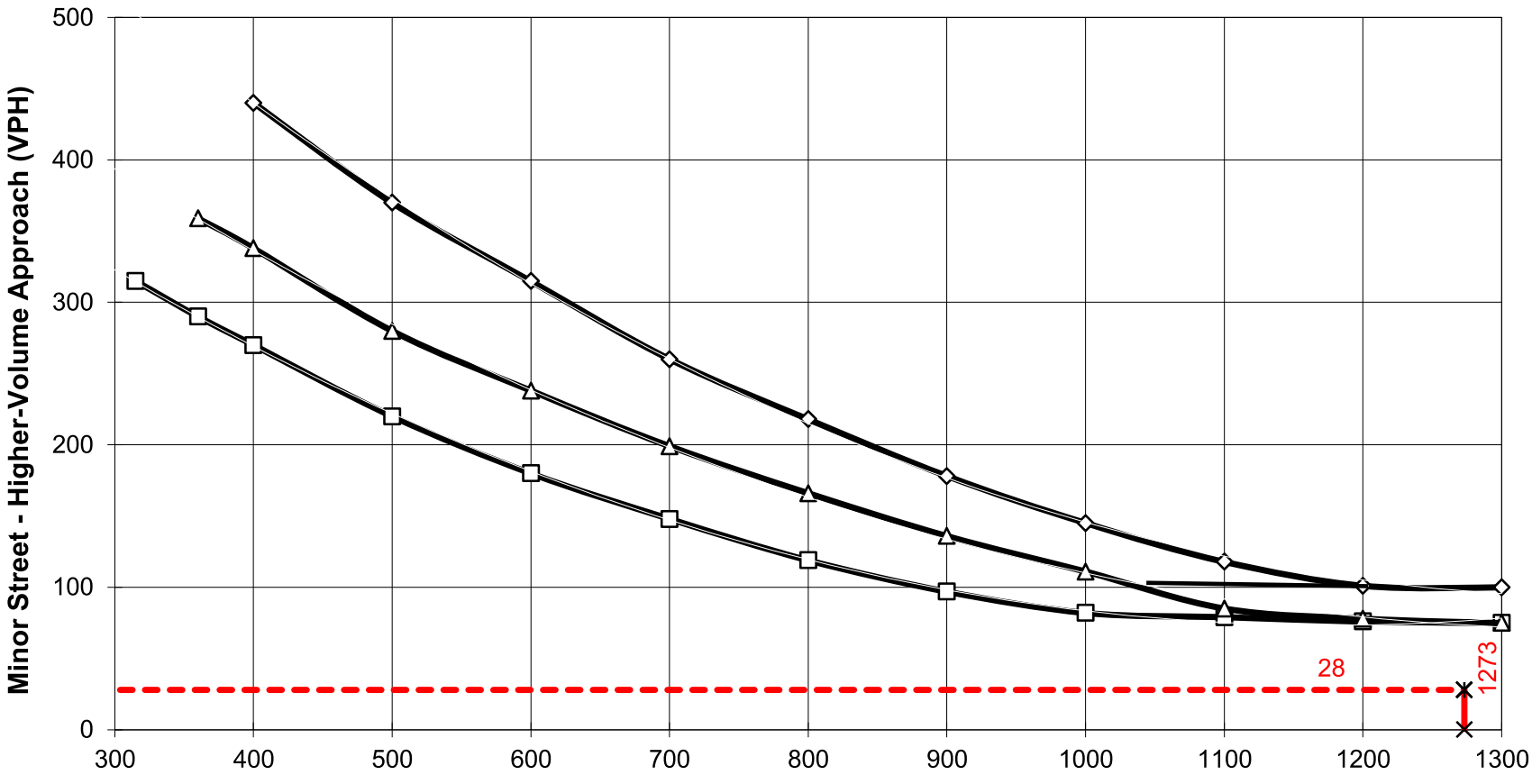
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Background (2028) Conditions - Weekday AM Peak Hour**

Major Street Name = **La Sierra Av.** Total of Both Approaches (VPH) = **1273**
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Francisco Pl.** High Volume Approach (VPH) = **28**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

APPENDIX 5.6: BACKGROUND (NEAR-TERM) (2028) WITH CUMULATIVE PROJECTS AND WITHOUT PROJECT CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

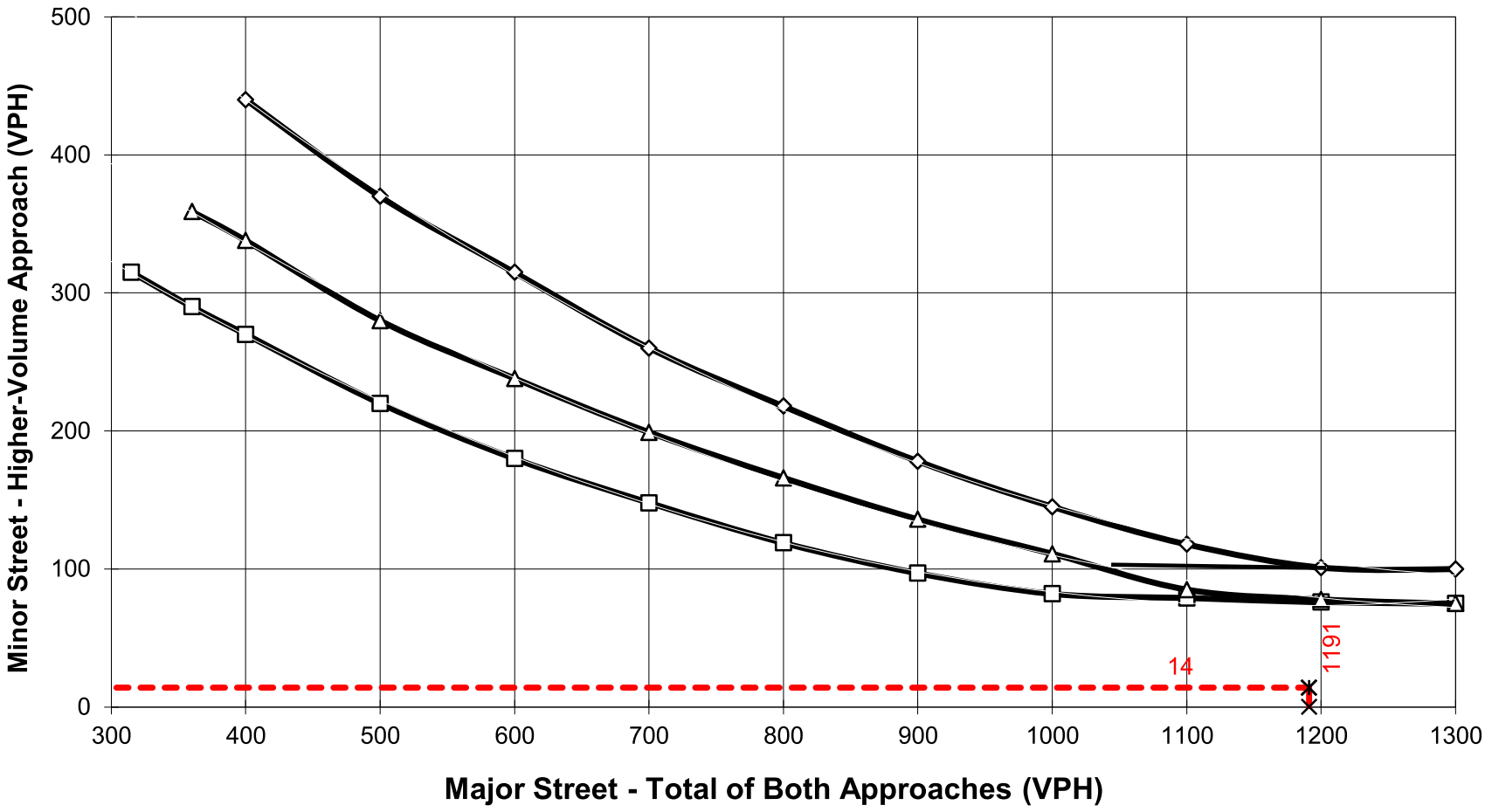
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Background (2028) + C Conditions - Weekday AM Peak Hour**

Major Street Name = **La Sierra Av.** Total of Both Approaches (VPH) = **1191**
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Alhambra Av.** High Volume Approach (VPH) = **14**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

California MUTCD 2014 Edition
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Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

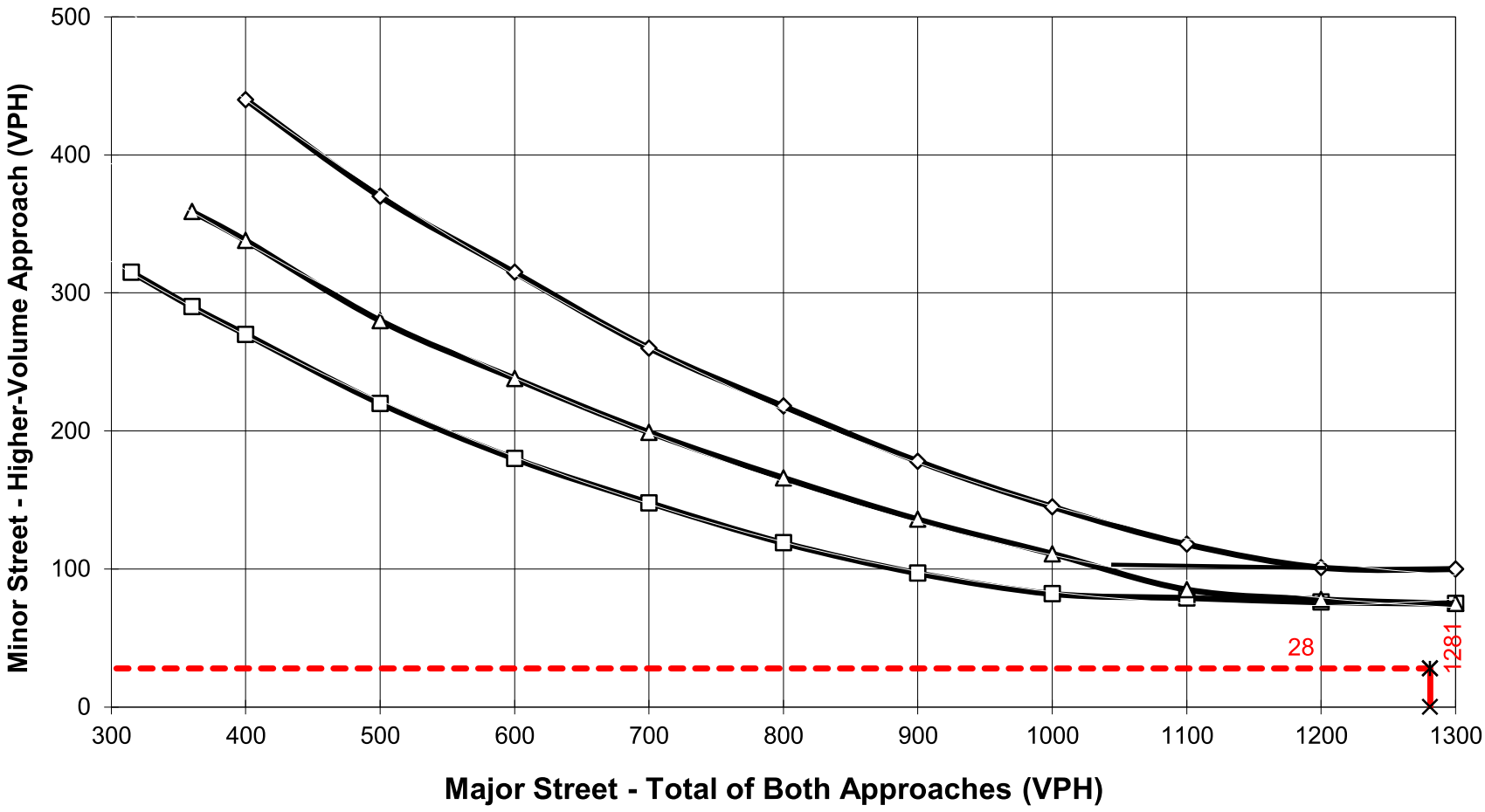
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Background (2028) + C Conditions - Weekday AM Peak Hour**

Major Street Name = **La Sierra Av.** Total of Both Approaches (VPH) = **1281**
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Francisco Pl.** High Volume Approach (VPH) = **28**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

APPENDIX 5.7: BACKGROUND (NEAR-TERM) (2028) WITH CUMULATIVE PROJECTS AND WITH PROJECT CONDITIONS (ALTERNATIVE 1) TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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California MUTCD 2014 Edition
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Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

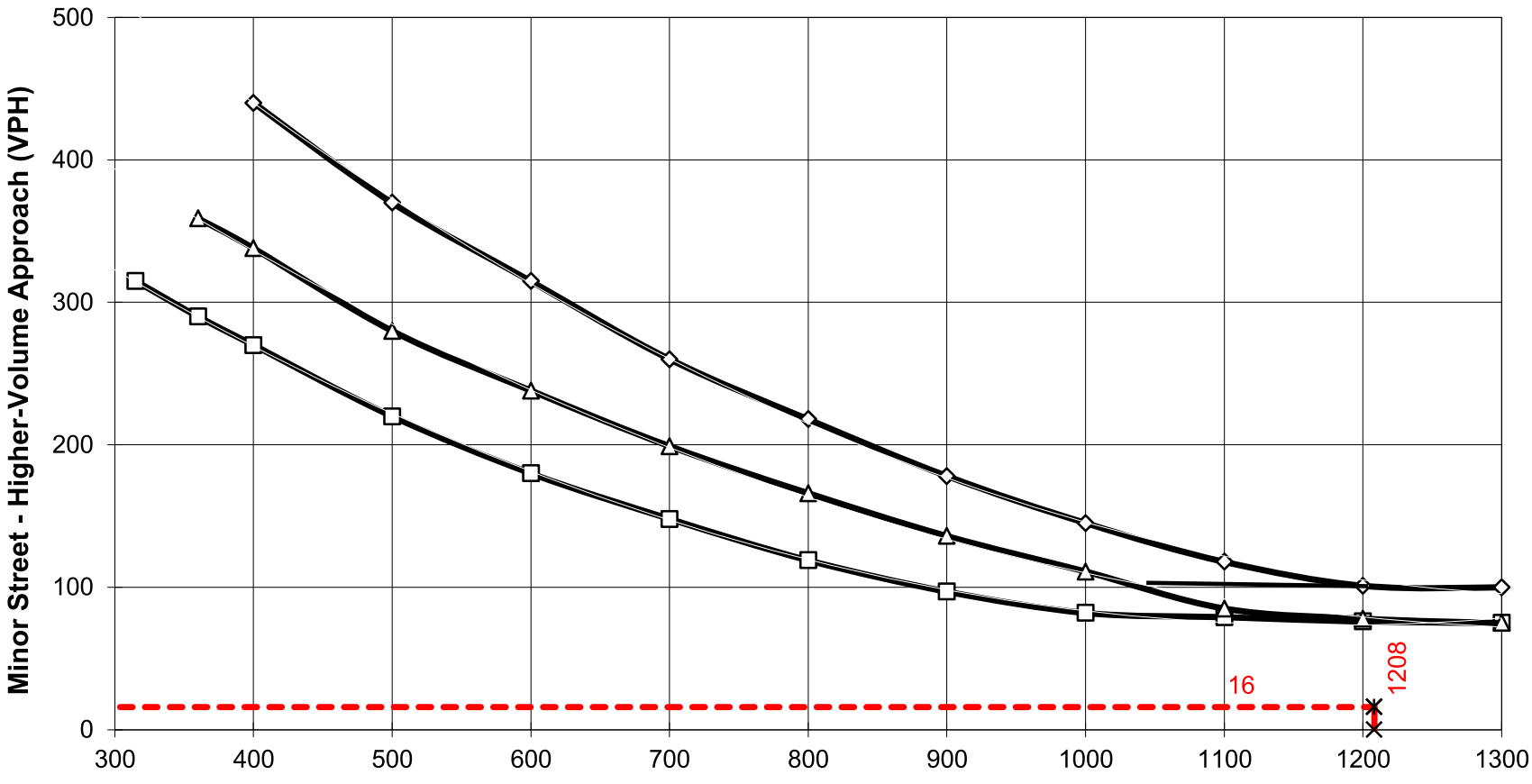
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Background (2028) + C + P (Alt. 1) Conditions - Weekday AM Peak Hour**

Major Street Name = **La Sierra Av.**
Total of Both Approaches (VPH) = **1208**
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Alhambra Av.**
High Volume Approach (VPH) = **16**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



1 Lane (Major) & 1 Lane (Minor)
2+ Lanes (Major) & 1 Lane (Minor) OR 1 Lane (Major) & 2+ Lanes (Minor)
2+ Lanes (Major) & 2+ Lanes (Minor)
Major Street Approaches
Minor Street Approaches

*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

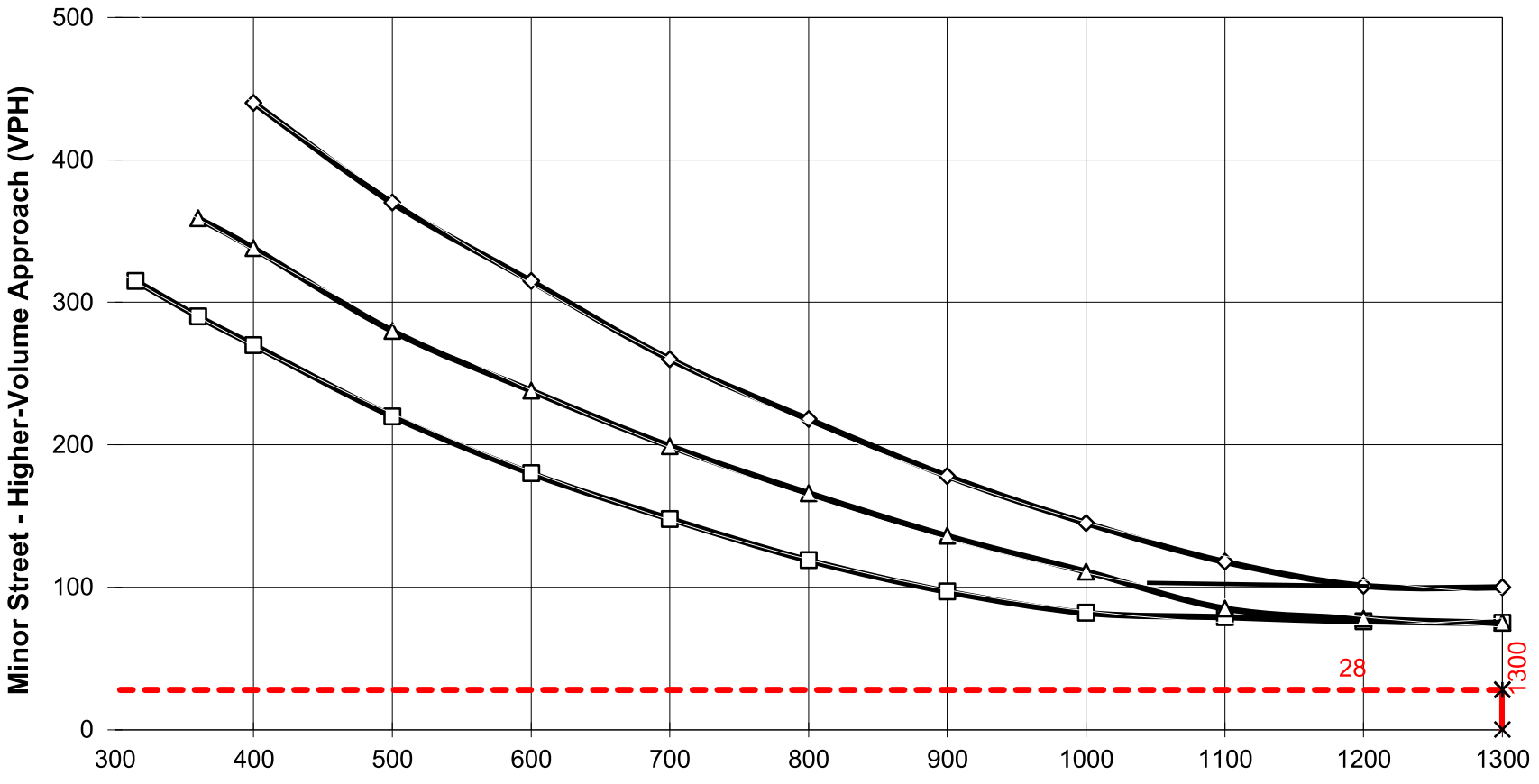
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Background (2028) + C + P (Alt. 1) Conditions - Weekday AM Peak Hour**

Major Street Name = **La Sierra Av.**
Total of Both Approaches (VPH) = **1315**
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Francisco Pl.**
High Volume Approach (VPH) = **28**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

APPENDIX 5.8: BACKGROUND (NEAR-TERM) (2028) WITH CUMULATIVE PROJECTS AND WITH PROJECT CONDITIONS (ALTERNATIVE 2) TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

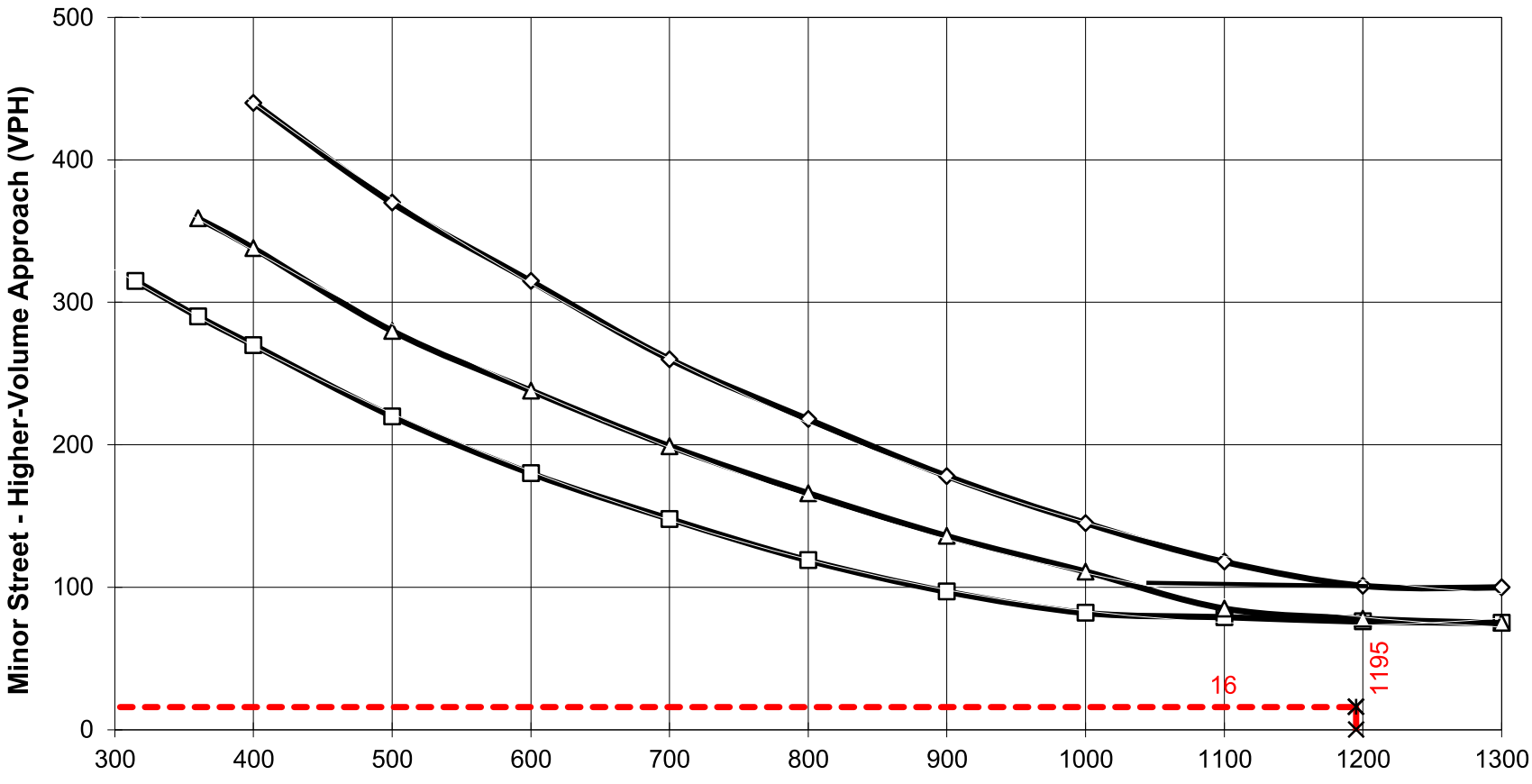
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Background (2028) + C + P (Alt. 1) Conditions - Weekday AM Peak Hour**

Major Street Name = **La Sierra Av.**
Total of Both Approaches (VPH) = **1195**
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Alhambra Av.**
High Volume Approach (VPH) = **16**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS	B+C+P (Alt 2)
				CALC RV	DATE 08/27/24
				CHK RV	DATE 08/27/24

Jurisdiction: **City of Riverside**
Major Street: **La Sierra**
Minor Street: **Somervale/Dwy 2**

Critical Approach Speed (Major) 45 mph
Critical Approach Speed (Minor) 25 mph

Major Street Approach Lanes = **2** lane
Minor Street Approach Lanes **1** lane

Major Street Future ADT = **14,285** vpd
Minor Street Future ADT = **317** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ..... √

or **RURAL (R)**

In built up area of isolated community of < 10,000 population .....

(Based on Estimated Average Daily Traffic - See Note)

URBAN / RURAL **XX**

CONDITION A - Minimum Vehicular Volume

Satisfied / Not Satisfied **XX**

Number of lanes for moving traffic on each approach

Major Street	Minor Street	Minimum Requirements EADT: Vehicles Per Day on Major Street (Total of Both Approaches) Urban	Rural	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only) Urban	Rural
1	*1*	8,000	5,600	2,400	1,680
2 + **14,285**	*1* **317**	9,600	6,720 *	2,400	1,680
2 +	*2* +	9,600	6,720	3,200	2,240
1	*2* +	8,000	5,600	3,200	2,240

CONDITION B - Interruption of Continuous Traffic

Satisfied / Not Satisfied **XX**

Number of lanes for moving traffic on each approach

Major Street	Minor Street	Vehicles Per Day on Major Street (Total of Both Approaches) Urban	Rural	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only) Urban	Rural
1	*1*	12,000	8,400	1,200	850
2 + **14,285**	*1* **317**	14,400	10,080 *	1,200	850
2 +	*2* +	14,400	10,080	1,600	1,120
1	*2* +	12,000	8,400	1,600	1,120

Combination of CONDITIONS A + B

Satisfied / Not Satisfied **XX**

No one condition satisfied, but following conditions fulfilled 80% of more ..... **A** **19%** **B** **37%**

2 CONDITIONS 80% (Urban) | 2 CONDITIONS 80% (Rural)

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

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(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

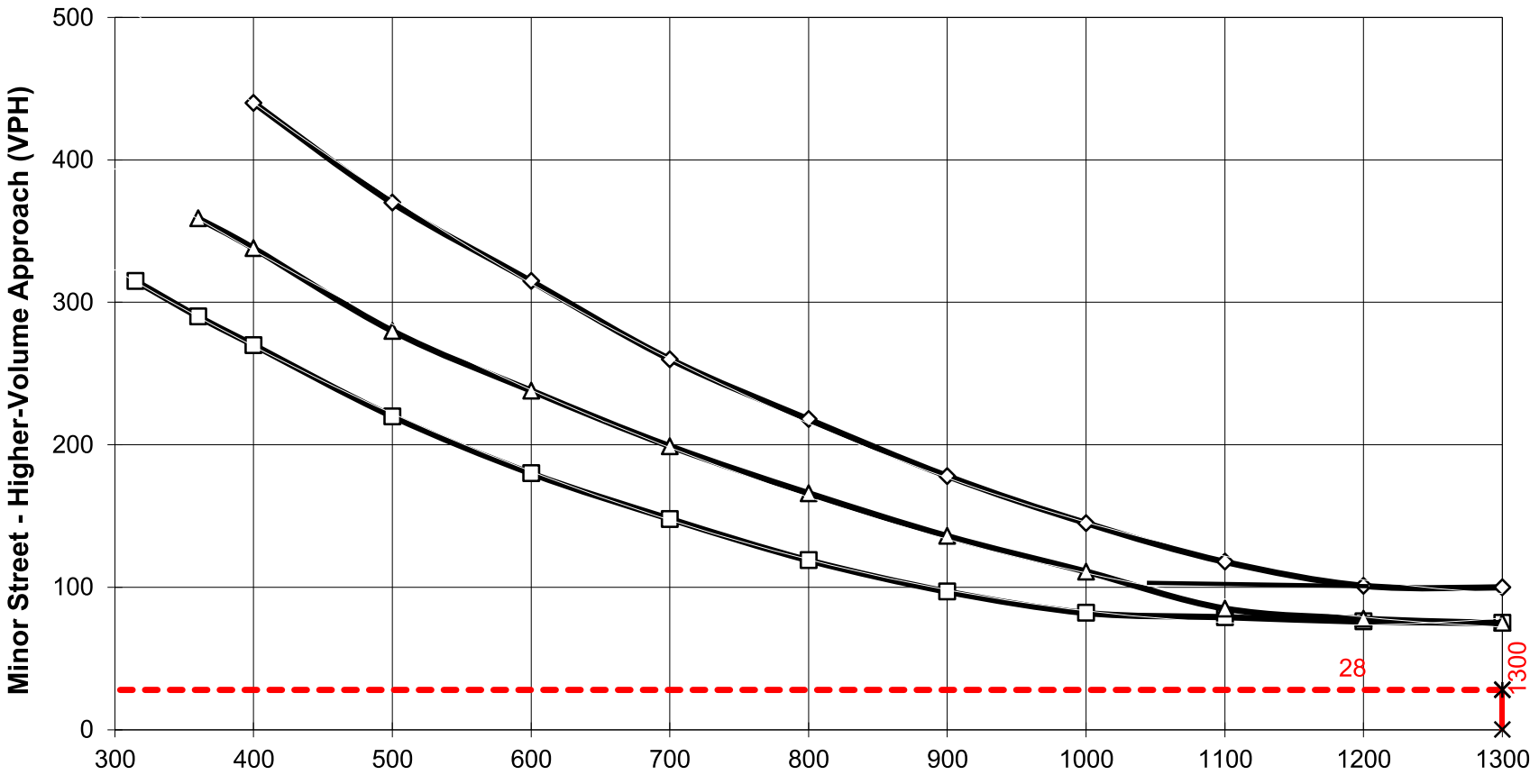
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Background (2028) + C + P (Alt. 2) Conditions - Weekday AM Peak Hour**

Major Street Name = **La Sierra Av.**
Total of Both Approaches (VPH) = **1301**
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Francisco Pl.**
High Volume Approach (VPH) = **28**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



1 Lane (Major) & 1 Lane (Minor)
2+ Lanes (Major) & 1 Lane (Minor) OR 1 Lane (Major) & 2+ Lanes (Minor)
2+ Lanes (Major) & 2+ Lanes (Minor)
Major Street Approaches
Minor Street Approaches

*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

H.2 - Vehicle Miles Traveled Analysis

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MEMORANDUM

URBAN | CROSSROADS

DATE: October 29,2024; Revised: June 10, 2025
TO: Louisa Feletto, MLC Holdings, Inc.
FROM: Alex So, Urban Crossroads, Inc.
JOB NO: 15842-04 VMT

LA SIERRA & ALHAMBRA VEHICLE MILES TRAVELED (VMT) ANALYSIS

Urban Crossroads, Inc. has prepared the following Preliminary Vehicle Miles Traveled (VMT) Analysis for the La Sierra & Alhambra (**Project**), located west of La Sierra Avenue between Alhambra Avenue and Francisco Place in the City of Riverside.

PROJECT OVERVIEW

The Project includes the development of 4 single-family (estate) residential dwelling units located on Alhambra Avenue and 52 single-family detached residential dwelling units are proposed off La Sierra Avenue. Three of the single-family detached residential dwelling units off La Sierra Avenue consist of affordable housing (see Attachment A, Exhibit A-1-1 for Alternative 1 and Exhibit A-1-2 for Alternative 2). As indicated on Exhibit A-1-1, Alternative 1 vehicular access will be provided via one right-in/right-out access driveway on La Sierra Avenue. As indicated on Exhibit A-1-1, Alternative 2 vehicular access will be provided via one full access driveway on La Sierra Avenue (allowing left turns into and out of the Project).

BACKGROUND

The California Environmental Quality Act (CEQA) requires all lead agencies to adopt VMT as the measure for identifying transportation impacts for land use projects. To comply with CEQA, the City of Riverside adopted analytical procedures, screening tools, and impact thresholds for VMT, which are documented in their adopted City of Riverside Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and Level of Service Assessment (July 2020) (**City Guidelines**) (1).

VMT SCREENING

City Guidelines state that a project may be determined to have a less than significant VMT impact if it meets the City's adopted screening criteria. The

screening criteria are described in Table 1 along with a determination of Project eligibility.

TABLE 1: SCREENING FOR LAND USE POJECTS EXEMPT FROM VMT CALCULATIONS

Screening Step	Description	Result
Step 1: Transit Priority Area (TPA)	Projects located within a TPA (i.e., within a half mile of an existing major transit stop or an existing stop along a high-quality transit corridor) are presumed to have a less than significant impact on VMT.	Does not meet.
Step 2: Low VMT Area	Projects located in a low VMT-generating area are presumed to have a less than significant impact on VMT.	Does not meet.
Step 3: Project Type	Local-Serving Retail under 50,000 square feet, Local-Serving Essential Services such as parks and day care centers, affordable or supportive housing, senior housing, non-destination small hotels, and small projects generating less than 110 daily vehicle trips are presumed to have a less than significant VMT impact.	Does not meet.
Step 4: Mixed-Use Projects	To identify if the proposed project requires a VMT analysis, the City of Riverside may evaluate each component of a mixed-use project independently and apply the significance threshold for each project type included (e.g. residential and retail).	Not Applicable.
Step 5: Redevelopment Projects	Where a project replaces existing VMT generating land uses, if the replacement leads to a net overall decrease in VMT, the project would lead to less than significant transportation impact. If the project leads to a net overall increase in VMT, then the thresholds described above should apply.	Not Applicable.

Consistent with City Guidelines, projects not eligible for screening are required to prepare a VMT analysis.

VMT ANALYSIS

TRAFFIC MODELING METHODOLOGY

City Guidelines identifies the Riverside County Transportation Model (RIVCOM) as the appropriate tool for conducting VMT analysis for land use projects in the City of Riverside. Western Riverside Council of Governments' (WRCOG) most recent release of RIVCOM is version 4.0.1, released in January of 2024. RIVCOM is a travel forecasting model that represents a sub-area (Riverside County area) of the Southern California Association of Governments (SCAG) regional traffic model and was designed to provide a greater level of detail and sensitivity in the Riverside County area as compared to the regional SCAG model. RIVCOM is a useful tool to estimate VMT as it considers interaction between different land uses based on socio-economic data such as population, households, and employment. The calculation of VMT for land use projects is based on the total number of trips generated and the average trip length of each vehicle type.

VMT ANALYSIS METHODOLOGY

For the purposes of this analysis, Project-generated VMT has been estimated using the Production/Attraction (PA) method. Consistent with City Guidelines, for residential projects, project-generated VMT is presented as PA Home-Based (HB) VMT per capita.

PRODUCTION/ATTRACTION METHOD

The PA method for calculating VMT sums all weekday VMT generated by HB trips with at least one trip-end inside the study area (i.e., Project Traffic Analysis Zone or TAZ) by trip purpose to/from their ultimate destination unless that destination is outside of the model boundary area. Productions are land use types that generate trips (residences), and attractions are land use types that attract trips (employment). The PA method allows Project VMT to be evaluated based on trip purpose, which is consistent with Governor's Office of Planning and Research's *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018).

VMT METRIC AND SIGNIFICANCE THRESHOLD

The City of Riverside has adopted the following thresholds of significance related to VMT for residential land use projects. It is our understanding that the City of Riverside is in process of updating their VMT guidance, of which the revised City threshold will be baseline VMT per capita

A project would result in a significant project-generated VMT impact if the following condition is satisfied:

- Baseline or cumulative project-generated VMT per capita below the current jurisdictional baseline VMT per capita.

It is our understanding that the City of Riverside is in the process of updating their VMT guidance, of which the revised City threshold will be baseline VMT per capita. As such the following VMT analysis will evaluate the Project with the anticipated revised City thresholds. The City of Riverside's current VMT per capita and impact threshold has been calculated using the RIVCOM model (see Table 2).

TABLE 2: BASELINE CITYWIDE VMT PER CAPITA

	City of Riverside
Population	341,792
VMT	5,547,015
VMT per Capita (City Threshold)	**16.2**

PROJECT VMT ESTIMATES

To estimate project-generated VMT, land use information such as dwelling units must first be converted into a RIVCOM-compatible dataset. The RIVCOM model utilizes socio-economic data (SED) (e.g., population) for the purposes of vehicle trip estimation. Project population estimates were obtained using housing density factors outlined in the City of Riverside's General Plan as shown in Table 3.

TABLE 3: PROJECT POPULATION ESTIMATE

Land Use	Households	Population Estimate Factor	Population
Residential	56	2.93 Person per Household[1]	164

[1]City of Riverside General Plan; Appendix H, Page 199

Project-generated VMT and a comparison to the City's impact threshold is presented in Table 4.

TABLE 4: PROJECT VMT PER CAPITA

	Baseline	Cumulative
VMT	2,358	2,354
Population	164	164
VMT per Capita	14.4	14.4
City Threshold	16.2	16.2
Exceeds City Threshold?	No	No

As shown in Table 4, the Project would not exceed the City's VMT per capita impact threshold for baseline and cumulative conditions.

CONCLUSION

Based on the results of this analysis, the following findings are made:

- The Project was evaluated against screening criteria as outlined in the City Guidelines and was not found to meet applicable screening criteria. A project-level VMT analysis was performed.

- The VMT analysis identifies that the Project would generate VMT per capita that would not result in potential transportation impacts.

If you have any questions, please contact me directly at aso@urbanxroads.com.

REFERENCES

1. **City of Riverside Public Works Department.** *Draft Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and Level of Service Assessment.* City of Riverside : s.n., July 2020.

ATTACHMENT A
PROJECT SITE PLAN

EXHIBIT A-1-1: PROJECT SITE PLAN ALTERNATIVE 1

NOTE(S):

1 = *There are no proposed gates for Driveway 1*

EXHIBIT A-1-2: PROJECT SITE PLAN ALTERNATIVE 2

NOTE(S):

1 = *There are no proposed gates for Driveway 1*

2 = *For Alternative 2, Driveway 1 on La Sierra Avenue is proposed to accommodate full access and would require a break in the existing median and the construction of both a northbound and southbound left turn pocket.*