APPENDIX 1.1: APPROVED TRAFFIC STUDY SCOPING AGREEMENT

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MEMORANDUM

URBAN | CROSSROADS

DATE: January 18, 2024
TO: Rosie Ureno, City of Corona
FROM: Charlene So, Urban Crossroads
JOB NO: 15669-02 TA Scope

SECOND STREET FAMILY (DPR2023-0027) FOCUSED TRAFFIC STUDY SCOPING AGREEMENT

The firm of Urban Crossroads, Inc. is pleased to submit this scoping letter regarding a focused traffic study for the Second Street Family development (**Project**), which is located on the southwest corner of Buena Vista Avenue and 2nd Street in the City of Corona. This letter describes the proposed Project trip generation, trip distribution, and analysis methodology, which have been used to establish the draft proposed Project study area and analysis locations. The following scope of work is based on the City's Traffic Impact Study Guidelines (July 2006, **City Guidelines**). The City's scoping form is included in Attachment A.

PROPOSED PROJECT

It is our understanding that the Project is to consist of 115 affordable housing units (that will be income restricted). A preliminary site plan for the proposed Project is shown on Exhibit 1. Access to the Project site will be accommodated to Buena Vista Avenue via a full access driveway and secondary access on 2nd Street that will be limited to right-in/right-out access only.

EXHIBIT 1: PRELIMINARY SITE PLAN

TRIP GENERATION

Trip generation represents the amount of traffic that is attracted and produced by a development and is based upon the specific land uses planned for a given project. In order to develop the traffic characteristics of the proposed project, trip-generation statistics published in the Institute of Transportation Engineers (**ITE**) Trip Generation Manual (11th Edition, 2021) was used to estimate the Project's trip generation based on the Affordable Housing land use category (ITE Code 223). Trip generation rates are summarized on Table 1. As shown on Table 1, the proposed Project is anticipated to generate 554 two-way trips per day with 58 AM peak hour trips and 53 PM peak hour trips.

TABLE 1: PROJECT TRIP GENERATION SUMMARY

Land Use[1]	Units[2]	ITE LU Code	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Affordable Housing	DU	223	0.15	0.36	0.50	0.27	0.19	0.46	4.81

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Eleventh Edition (2021).

[2] DU = Dwelling Units

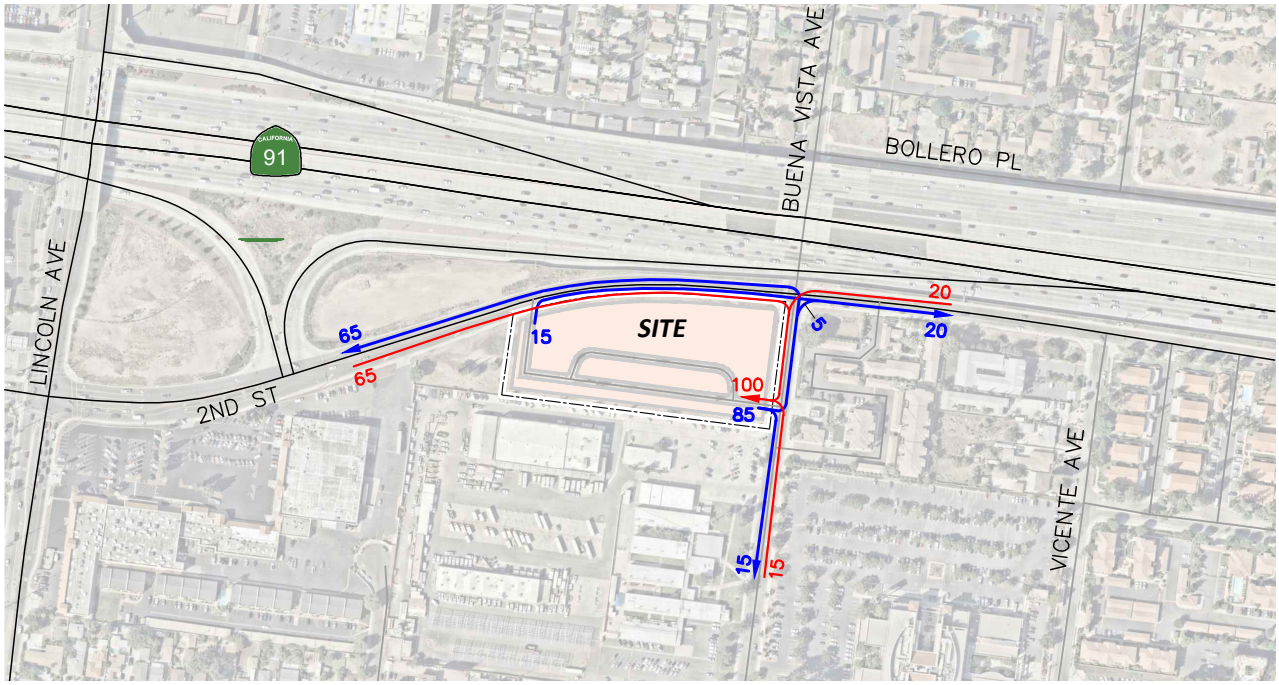
Land Use	Quantity	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Second Street Family	115	TSF	17	41	58	31	22	53	554

[1] DU = Dwelling Units

TRIP DISTRIBUTION

The Project trip distribution represents the directional orientation of traffic to and from the Project site. Trip distribution is the process of identifying the probable destinations, directions or traffic routes that will be utilized by Project traffic. The potential interaction between the planned land uses and surrounding regional access routes are considered, to identify the route where the Project traffic would distribute. Exhibit 2 shows the Project trip distribution patterns.

EXHIBIT 2: PROJECT TRIP DISTRIBUTION



ANALYSIS SCENARIOS

Consistent with the City's Guidelines, intersection analysis will be provided for the following analysis scenarios:

- Existing (2024) Conditions
- Existing plus Project (E+P) Conditions
- Opening Year Cumulative (2026) Without Project Conditions
- Opening Year Cumulative (2026) With Project Conditions

All study area intersections will be evaluated using the Highway Capacity Manual (HCM) 6th Edition analysis methodology. The study area that is proposed to be evaluated is shown on Exhibit 3.

EXHIBIT 3: STUDY AREA

ID	Intersection	Jurisdiction
1	Driveway 1 & Second St.	City of Corona
2	Buena Vista Av. & Second St.	City of Corona
3	Buena Vista Av. & Driveway 2	City of Corona

EXISTING COUNT DATA

We are proposing to conduct new traffic counts on a typical weekday when local schools are open and operating on normal bell schedules. The traffic counts will be collected for the following peak hours:

- Weekday AM Peak Hour (7:00-9:00 AM)
- Weekday PM Peak Hour (4:00-6:00 PM)

AMBIENT GROWTH

An ambient growth rate of 2% per year is proposed for the study area intersection to approximate background growth not identified by nearby cumulative development projects. As such, a total of 4.04% will be applied to the baseline (2% per year, compounded over 2 years).

CUMULATIVE PROJECTS

It is requested that the City Planning Department provide current cumulative projects within the study area for inclusion in the Focused Traffic Analysis.

SPECIAL ISSUES

The following special issues will also be addressed:

- Conduct traffic signal warrant analysis for all existing and future unsignalized study area intersections, which also includes the Project driveway proposed to have full access (Driveway 2 on Buena Vista Street).
- Conduct a queuing analysis of the Project driveways and the intersection of Buena Vista Avenue at Second Street.

If you have any questions or comments, I can be reached at cso@urbanxroads.com.

ATTACHMENT A: SCOPING FORM

Exhibit F

Traffic Impact Study Scope – City of Corona

Project Name:	Second Street Family
Project Address:	Southwest corner of Buena Vista Avenue and 2nd Street
Project Description:	115 affordable housing units
Case Number:	DPR2023-0027

	Consultant	Developer
Name:	Charlene So, Urban Crossroads, Inc.	Second Street Family LP
Address:	1133 Camelback St. #8329, Newport Beach, CA 92658	14211 Yorba Street, Suite 200 Tustin, CA 92780
Telephone: E-mail:	949-861-0177 cso@urbanxroads.com	714-288-7600

A. Trip Generation

Proposed Land Use	R3	Previous Land Use	Vacant
Existing Zoning	R3, MP	Proposed Zoning	R3

	In	Out	Total
AM Peak Hour	17	41	58
PM Peak Hour	31	22	53

B. Trip Distribution

Attach graphical representation

C. Background Traffic

Project Opening year:	2026	**Growth Rate:**	2.0 per year

D. Study Intersections

1. Driveway 1 & Second St.	
2. Buena Vista Av. & Second St.	
3. Buena Vista Av. & Driveway 2	

E. Specific Issues to be addressed in the Study

See attached memo

Approved By:

City of Corona Traffic Engineering:
Date:

APPROVED
By Rosalva Ureno at 4:18 pm, Feb 15, 2024

APPENDIX 1.2: SITE ADJACENT QUEUES

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Intersection: 1: Driveway 1 & 2nd St.

Movement	NB
Directions Served	R
Maximum Queue (ft)	28
Average Queue (ft)	5
95th Queue (ft)	23
Link Distance (ft)	130
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Buena Vista Av. & 2nd St.

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	152	125	100	92	39	111
Average Queue (ft)	69	66	45	45	17	54
95th Queue (ft)	117	108	77	73	43	88
Link Distance (ft)	534	699		196		490
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			90		90	
Storage Blk Time (%)			0	0		1
Queuing Penalty (veh)			1	0		0

Intersection: 3: Buena Vista Av. & Driveway 2

Movement	EB	NB	SB
Directions Served	LR	L	TR
Maximum Queue (ft)	49	19	4
Average Queue (ft)	24	1	0
95th Queue (ft)	50	8	4
Link Distance (ft)	106		196
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		50	
Storage Blk Time (%)		0	
Queuing Penalty (veh)		0	

Network Summary

Network wide Queuing Penalty: 1

Intersection: 1: Driveway 1 & 2nd St.

Movement	NB
Directions Served	R
Maximum Queue (ft)	28
Average Queue (ft)	3
95th Queue (ft)	17
Link Distance (ft)	130
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Buena Vista Av. & 2nd St.

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	323	89	101	88	61	119
Average Queue (ft)	124	50	41	45	26	58
95th Queue (ft)	235	79	71	73	52	98
Link Distance (ft)	534	699		196		490
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			90		90	
Storage Blk Time (%)			0	0	0	2
Queuing Penalty (veh)			0	0	0	1

Intersection: 3: Buena Vista Av. & Driveway 2

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	35	25
Average Queue (ft)	14	2
95th Queue (ft)	38	14
Link Distance (ft)	106	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		50
Storage Blk Time (%)		0
Queuing Penalty (veh)		0

Network Summary

Network wide Queuing Penalty: 1

APPENDIX 3.1: TRAFFIC COUNTS

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

City of Corona
N/S: Buena Vista Avenue
E/W: W 2nd Street
Weather: Clear

File Name : COR_BV_2nd AM
Site Code : 05124099
Start Date : 1/31/2024
Page No : 1

Groups Printed- Total Volume

	Buena Vista Avenue Southbound				W 2nd Street Westbound				Buena Vista Avenue Northbound				W 2nd Street 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	2	31	8	41	6	23	3	32	16	24	8	48	20	16	27	63	184
07:15 AM	5	35	12	52	7	36	7	50	19	23	5	47	22	13	12	47	196
07:30 AM	8	50	17	75	21	40	2	63	18	34	6	58	14	14	15	43	239
07:45 AM	6	31	14	51	27	56	6	89	30	44	5	79	21	26	25	72	291
Total	21	147	51	219	61	155	18	234	83	125	24	232	77	69	79	225	910
08:00 AM	4	38	11	53	14	35	2	51	23	25	2	50	19	34	20	73	227
08:15 AM	4	38	8	50	15	28	4	47	19	31	6	56	14	31	16	61	214
08:30 AM	3	38	12	53	23	26	3	52	16	23	5	44	14	13	19	46	195
08:45 AM	5	26	14	45	14	19	7	40	24	30	2	56	18	35	19	72	213
Total	16	140	45	201	66	108	16	190	82	109	15	206	65	113	74	252	849
Grand Total	37	287	96	420	127	263	34	424	165	234	39	438	142	182	153	477	1759
Apprch %	8.8	68.3	22.9		30	62	8		37.7	53.4	8.9		29.8	38.2	32.1		
Total %	2.1	16.3	5.5	23.9	7.2	15	1.9	24.1	9.4	13.3	2.2	24.9	8.1	10.3	8.7	27.1	

	Buena Vista Avenue Southbound				W 2nd Street Westbound				Buena Vista Avenue Northbound				W 2nd Street 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 07:30 AM																	
07:30 AM	**8**	**50**	**17**	**75**	21	40	2	63	18	34	**6**	58	14	14	15	43	239
07:45 AM	6	31	14	51	**27**	**56**	**6**	**89**	**30**	**44**	5	**79**	**21**	26	**25**	72	**291**
08:00 AM	4	38	11	53	14	35	2	51	23	25	2	50	19	**34**	20	**73**	227
08:15 AM	4	38	8	50	15	28	4	47	19	31	6	56	14	31	16	61	214
Total Volume	22	157	50	229	77	159	14	250	90	134	19	243	68	105	76	249	971
% App. Total	9.6	68.6	21.8		30.8	63.6	5.6		37	55.1	7.8		27.3	42.2	30.5		
PHF	.688	.785	.735	.763	.713	.710	.583	.702	.750	.761	.792	.769	.810	.772	.760	.853	.834

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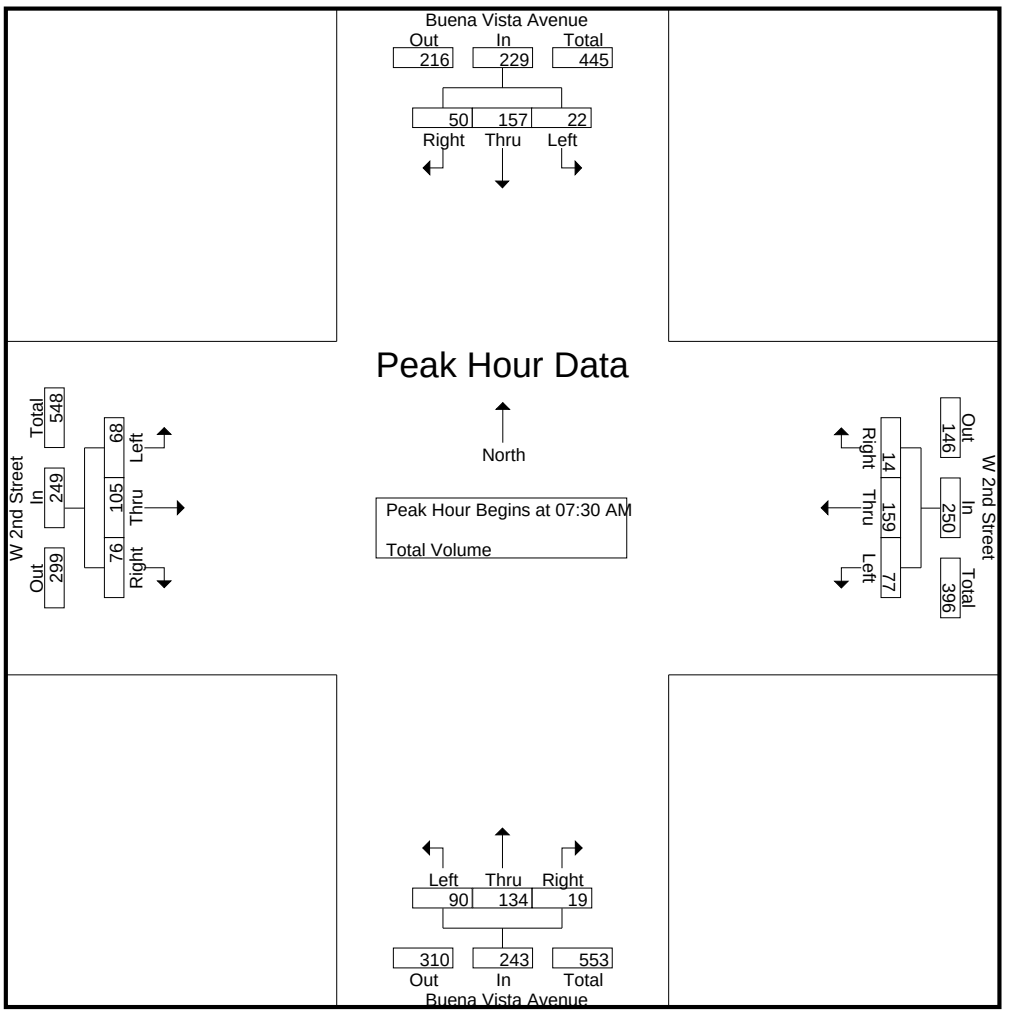
File Name : COR_BV_2nd AM
Site Code : 05124099
Start Date : 1/31/2024
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:30 AM				07:45 AM			
+0 mins.	5	35	12	52	7	36	**7**	50	18	34	**6**	58	**21**	26	**25**	72
+15 mins.	**8**	**50**	**17**	**75**	21	40	2	63	**30**	**44**	5	**79**	19	**34**	20	**73**
+30 mins.	6	31	14	51	**27**	**56**	6	**89**	23	25	2	50	14	31	16	61
+45 mins.	4	38	11	53	14	35	2	51	19	31	6	56	14	13	19	46
Total Volume	23	154	54	231	69	167	17	253	90	134	19	243	68	104	80	252
% App. Total	10	66.7	23.4		27.3	66	6.7		37	55.1	7.8		27	41.3	31.7	
PHF	.719	.770	.794	.770	.639	.746	.607	.711	.750	.761	.792	.769	.810	.765	.800	.863

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City of Corona
N/S: Buena Vista Avenue
E/W: W 2nd Street
Weather: Clear

File Name : COR_BV_2nd PM
Site Code : 05124099
Start Date : 1/31/2024
Page No : 1

Groups Printed- Total Volume

	Buena Vista Avenue Southbound				W 2nd Street Westbound				Buena Vista Avenue Northbound				W 2nd Street 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	14	48	16	78	6	22	2	30	20	29	14	63	19	46	32	97	268
04:15 PM	5	33	17	55	7	24	10	41	19	30	7	56	19	59	32	110	262
04:30 PM	18	39	17	74	17	20	11	48	19	26	6	51	14	50	24	88	261
04:45 PM	12	41	15	68	10	26	6	42	13	21	5	39	11	50	29	90	239
Total	49	161	65	275	40	92	29	161	71	106	32	209	63	205	117	385	1030
05:00 PM	10	43	15	68	6	22	4	32	24	33	10	67	28	65	27	120	287
05:15 PM	10	37	13	60	6	20	6	32	11	30	9	50	16	55	17	88	230
05:30 PM	8	20	10	38	7	24	9	40	28	36	2	66	14	33	32	79	223
05:45 PM	7	33	8	48	9	18	2	29	14	27	5	46	20	46	20	86	209
Total	35	133	46	214	28	84	21	133	77	126	26	229	78	199	96	373	949
Grand Total	84	294	111	489	68	176	50	294	148	232	58	438	141	404	213	758	1979
Apprch %	17.2	60.1	22.7		23.1	59.9	17		33.8	53	13.2		18.6	53.3	28.1		
Total %	4.2	14.9	5.6	24.7	3.4	8.9	2.5	14.9	7.5	11.7	2.9	22.1	7.1	20.4	10.8	38.3	

	Buena Vista Avenue Southbound				W 2nd Street Westbound				Buena Vista Avenue Northbound				W 2nd Street 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 04:15 PM																	
04:15 PM	5	33	**17**	55	7	24	10	41	19	30	7	56	19	59	**32**	110	262
04:30 PM	**18**	39	17	**74**	**17**	20	**11**	**48**	19	26	6	51	14	50	24	88	261
04:45 PM	12	41	15	68	10	**26**	6	42	13	21	5	39	11	50	29	90	239
05:00 PM	10	**43**	15	68	6	22	4	32	**24**	**33**	**10**	**67**	**28**	**65**	27	**120**	**287**
Total Volume	45	156	64	265	40	92	31	163	75	110	28	213	72	224	112	408	1049
% App. Total	17	58.9	24.2		24.5	56.4	19		35.2	51.6	13.1		17.6	54.9	27.5		
PHF	.625	.907	.941	.895	.588	.885	.705	.849	.781	.833	.700	.795	.643	.862	.875	.850	.914

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File Name : COR_BV_2nd PM
Site Code : 05124099
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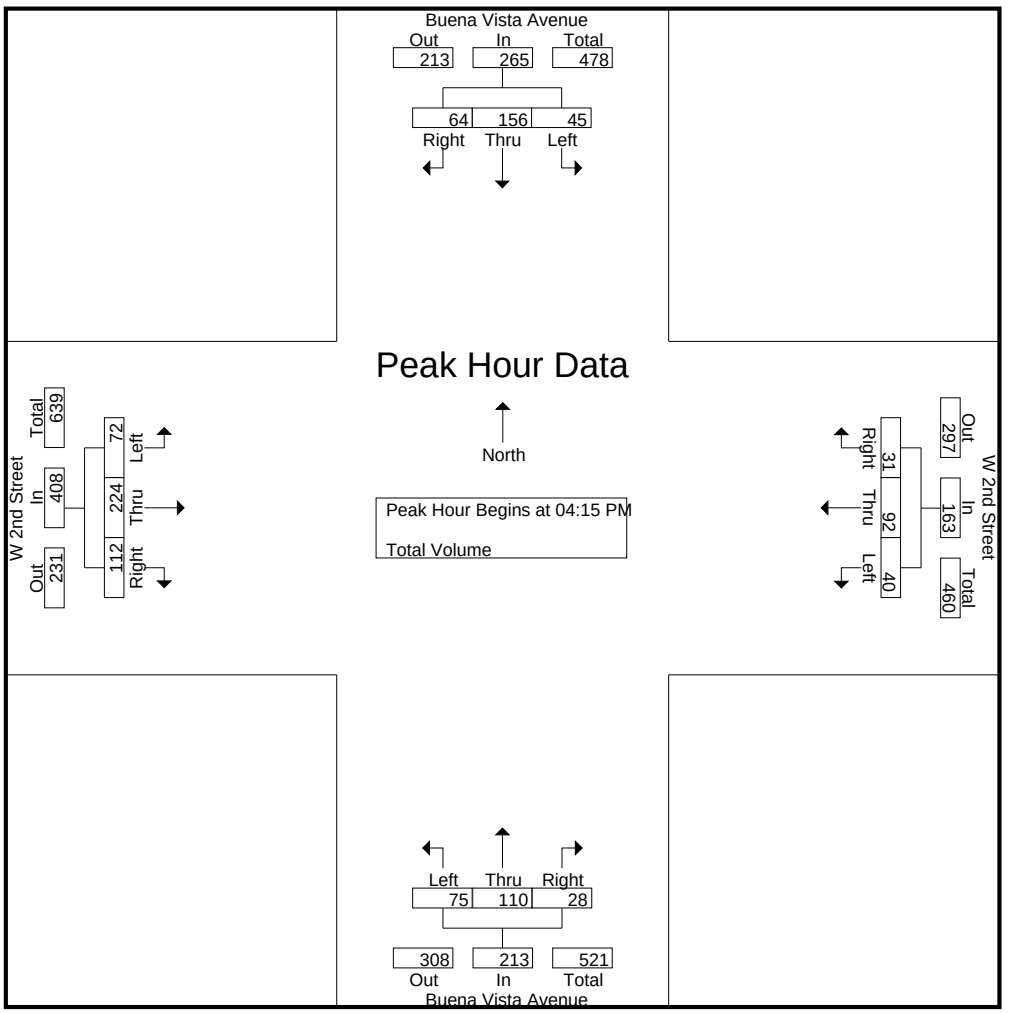

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:15 PM				05:00 PM				04:15 PM			
+0 mins.	14	**48**	16	**78**	7	24	10	41	24	33	**10**	**67**	19	59	**32**	110
+15 mins.	5	33	**17**	55	**17**	20	**11**	**48**	11	30	9	50	14	50	24	88
+30 mins.	**18**	39	17	74	10	**26**	6	42	**28**	**36**	2	66	11	50	29	90
+45 mins.	12	41	15	68	6	22	4	32	14	27	5	46	**28**	**65**	27	**120**
Total Volume	49	161	65	275	40	92	31	163	77	126	26	229	72	224	112	408
% App. Total	17.8	58.5	23.6		24.5	56.4	19		33.6	55	11.4		17.6	54.9	27.5	
PHF	.681	.839	.956	.881	.588	.885	.705	.849	.688	.875	.650	.854	.643	.862	.875	.850

Location: Corona
N/S: Buena Vista Avenue
E/W: W 2nd Street

Date: 1/31/2024
Day: Wednesday

PEDESTRIANS

	North Leg Buena Vista Avenue	East Leg W 2nd Street	South Leg Buena Vista Avenue	West Leg W 2nd Street	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
7:00 AM	0	1	0	0	1
7:15 AM	0	0	1	0	1
7:30 AM	1	1	0	0	2
7:45 AM	0	1	1	0	2
8:00 AM	0	0	1	0	1
8:15 AM	0	0	0	1	1
8:30 AM	0	0	1	3	4
8:45 AM	0	2	1	4	7
TOTAL VOLUMES:	1	5	5	8	19

	North Leg Buena Vista Avenue	East Leg W 2nd Street	South Leg Buena Vista Avenue	West Leg W 2nd Street	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	0	4	1	0	5
4:15 PM	1	0	2	4	7
4:30 PM	1	2	3	1	7
4:45 PM	0	2	0	0	2
5:00 PM	0	3	0	0	3
5:15 PM	0	0	1	4	5
5:30 PM	0	0	0	0	0
5:45 PM	0	1	1	1	3
TOTAL VOLUMES:	2	12	8	10	32

Location: Corona
N/S: Buena Vista Avenue
E/W: W 2nd Street

Date: 1/31/2024
Day: Wednesday

BICYCLES

	Southbound Buena Vista Avenue			Westbound W 2nd Street			Northbound Buena Vista Avenue			Eastbound W 2nd Street			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	1	0	0	0	0	0	1	0	0	0	0	2
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	1	0	0	0	1	0	0	0	0	0	0	2
8:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	4	0	0	0	1	0	1	0	0	0	0	6

	Southbound Buena Vista Avenue			Westbound W 2nd Street			Northbound Buena Vista Avenue			Eastbound W 2nd Street			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	1	0	0	0	0	0	0	0	0	2	0	3
4:15 PM	0	0	0	0	0	1	0	0	0	1	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	1	0	1	0	0	0	0	0	0	1	3
5:00 PM	0	0	1	0	1	0	0	0	0	2	0	0	4
5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
5:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
TOTAL VOLUMES:	0	2	2	0	2	2	0	0	0	4	2	1	15

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

City of Corona
2nd Street
W/ Buena Vista Avenue
24 Hour Directional Volume Count

COR002
Site Code: 051-24099

Start Time	1/31/24 Wed	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		11	77			7	51				
12:15		5	70			6	40				
12:30		7	60			4	52				
12:45		7	74	30	281	2	51	19	194	49	475
01:00		3	59			3	57				
01:15		10	93			3	56				
01:30		3	80			3	68				
01:45		3	75	19	307	1	61	10	242	29	549
02:00		5	75			1	51				
02:15		4	83			1	**54**				
02:30		4	93			1	**69**				
02:45		4	91	17	342	2	**67**	5	241	22	583
03:00		4	82			4	**63**				
03:15		2	100			4	39				
03:30		2	75			7	59				
03:45		5	108	13	365	8	65	23	226	36	591
04:00		3	97			11	58				
04:15		4	**110**			10	60				
04:30		19	**88**			24	56				
04:45		15	**90**	41	385	20	54	65	228	106	613
05:00		5	**120**			27	61				
05:15		23	88			21	44				
05:30		18	79			29	62				
05:45		32	86	78	373	23	40	100	207	178	580
06:00		23	81			32	74				
06:15		21	88			28	40				
06:30		27	67			52	33				
06:45		54	69	125	305	56	31	168	178	293	483
07:00		63	60			47	32				
07:15		47	59			**67**	20				
07:30		43	57			**75**	34				
07:45		**72**	53	225	229	**100**	31	289	117	514	346
08:00		**73**	56			**69**	24				
08:15		**61**	43			55	28				
08:30		**46**	48			54	23				
08:45		72	49	252	196	57	20	235	95	487	291
09:00		66	35			42	24				
09:15		54	37			66	24				
09:30		42	38			51	22				
09:45		58	41	220	151	40	14	199	84	419	235
10:00		39	30			37	13				
10:15		52	20			51	9				
10:30		56	17			36	4				
10:45		58	13	205	80	49	6	173	32	378	112
11:00		71	19			37	6				
11:15		50	18			41	7				
11:30		52	8			41	7				
11:45		61	4	234	49	35	2	154	22	388	71
Total		1459	3063	1459	3063	1440	1866	1440	1866	2899	4929
Combined Total		4522		4522		3306		3306		7828	
AM Peak	-	07:45	-	-	-	07:15	-	-	-	-	-
Vol.	-	252	-	-	-	311	-	-	-	-	-
P.H.F.		0.863				0.778					
PM Peak	-	-	04:15	-	-	-	02:15	-	-	-	-
Vol.	-	-	408	-	-	-	253	-	-	-	-
P.H.F.			0.850				0.917				
Percentage		32.3%	67.7%			43.6%	56.4%				
ADT/AADT		ADT 7,828		AADT 7,828							

Counts Unlimited, Inc.

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

City of Corona
Buena Vista Avenue
S/ 2nd Street
24 Hour Directional Volume Count

COR001
Site Code: 051-24099

Start Time	1/31/24 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		1	60			7	71				
12:15		3	**67**			4	68				
12:30		3	**66**			9	74				
12:45		1	**63**	8	256	3	**103**	23	316	31	572
01:00		0	**88**			3	**74**				
01:15		2	67			4	**67**				
01:30		2	60			1	**90**				
01:45		1	65	5	280	1	75	9	306	14	586
02:00		1	50			5	65				
02:15		1	74			1	70				
02:30		1	67			4	93				
02:45		5	59	8	250	2	70	12	298	20	548
03:00		4	56			2	70				
03:15		4	56			1	70				
03:30		6	47			4	85				
03:45		16	80	30	239	1	88	8	313	38	552
04:00		3	63			3	86				
04:15		8	56			1	72				
04:30		25	51			8	80				
04:45		22	39	58	209	10	80	22	318	80	527
05:00		17	67			5	76				
05:15		25	50			23	60				
05:30		18	66			21	59				
05:45		31	46	91	229	29	62	78	257	169	486
06:00		26	66			25	67				
06:15		33	41			21	43				
06:30		42	26			29	52				
06:45		66	38	167	171	44	47	119	209	286	380
07:00		48	33			64	35				
07:15		47	31			54	46				
07:30		58	28			**86**	45				
07:45		79	18	232	110	**83**	37	287	163	519	273
08:00		50	22			**72**	34				
08:15		56	20			**69**	20				
08:30		44	17			80	31				
08:45		56	20	206	79	59	34	280	119	486	198
09:00		44	20			73	24				
09:15		**87**	21			50	29				
09:30		**54**	17			66	24				
09:45		**51**	10	236	68	51	28	240	105	476	173
10:00		**58**	4			39	18				
10:15		51	6			41	14				
10:30		37	6			40	14				
10:45		48	4	194	20	45	11	165	57	359	77
11:00		40	4			47	10				
11:15		40	8			39	9				
11:30		52	3			49	3				
11:45		50	5	182	20	63	3	198	25	380	45
Total		1417	1931	1417	1931	1441	2486	1441	2486	2858	4417
Combined Total		3348		3348		3927		3927		7275	
AM Peak	-	09:15	-	-	-	07:30	-	-	-	-	-
Vol.	-	250	-	-	-	310	-	-	-	-	-
P.H.F.		0.718				0.901					
PM Peak	-	-	00:15	-	-	-	00:45	-	-	-	-
Vol.	-	-	284	-	-	-	334	-	-	-	-
P.H.F.			0.807				0.811				
Percentage		42.3%	57.7%			36.7%	63.3%				
ADT/AADT		ADT 7,275		AADT 7,275							

APPENDIX 3.2: EXISTING (2024) CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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Intersection	
Intersection Delay, s/veh	15.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	68	105	76	77	159	14	90	134	19	22	157	50
Future Vol, veh/h	68	105	76	77	159	14	90	134	19	22	157	50
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	82	127	92	93	192	17	108	161	23	27	189	60
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay, s/veh	16.5	17.2	13.3	15.6
HCM LOS	C	C	B	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	27%	31%	100%	0%
Vol Thru, %	0%	88%	42%	64%	0%	76%
Vol Right, %	0%	12%	31%	6%	0%	24%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	90	153	249	250	22	207
LT Vol	90	0	68	77	22	0
Through Vol	0	134	105	159	0	157
RT Vol	0	19	76	14	0	50
Lane Flow Rate	108	184	300	301	27	249
Geometry Grp	5	5	2	2	5	5
Degree of Util (X)	0.23	0.36	0.532	0.546	0.056	0.483
Departure Headway (Hd)	7.642	7.039	6.383	6.521	7.658	6.97
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	468	511	564	551	467	516
Service Time	5.405	4.801	4.439	4.577	5.418	4.73
HCM Lane V/C Ratio	0.231	0.36	0.532	0.546	0.058	0.483
HCM Control Delay, s/veh	12.7	13.7	16.5	17.2	10.9	16.1
HCM Lane LOS	B	B	C	C	B	C
HCM 95th-tile Q	0.9	1.6	3.1	3.3	0.2	2.6

Intersection	
Intersection Delay, s/veh	17.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	72	224	112	40	92	31	75	110	28	45	156	64
Future Vol, veh/h	72	224	112	40	92	31	75	110	28	45	156	64
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	79	246	123	44	101	34	82	121	31	49	171	70
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay, s/veh	23.5	12.7	12.4	14.5
HCM LOS	C	B	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	18%	25%	100%	0%
Vol Thru, %	0%	80%	55%	56%	0%	71%
Vol Right, %	0%	20%	27%	19%	0%	29%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	75	138	408	163	45	220
LT Vol	75	0	72	40	45	0
Through Vol	0	110	224	92	0	156
RT Vol	0	28	112	31	0	64
Lane Flow Rate	82	152	448	179	49	242
Geometry Grp	5	5	2	2	5	5
Degree of Util (X)	0.175	0.294	0.734	0.326	0.103	0.457
Departure Headway (Hd)	7.649	6.989	5.891	6.542	7.523	6.801
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	469	514	614	548	476	529
Service Time	5.401	4.741	3.928	4.592	5.272	4.549
HCM Lane V/C Ratio	0.175	0.296	0.73	0.327	0.103	0.457
HCM Control Delay, s/veh	12	12.6	23.5	12.7	11.1	15.2
HCM Lane LOS	B	B	C	B	B	C
HCM 95th-tile Q	0.6	1.2	6.3	1.4	0.3	2.4

APPENDIX 3.3: EXISTING (2024) CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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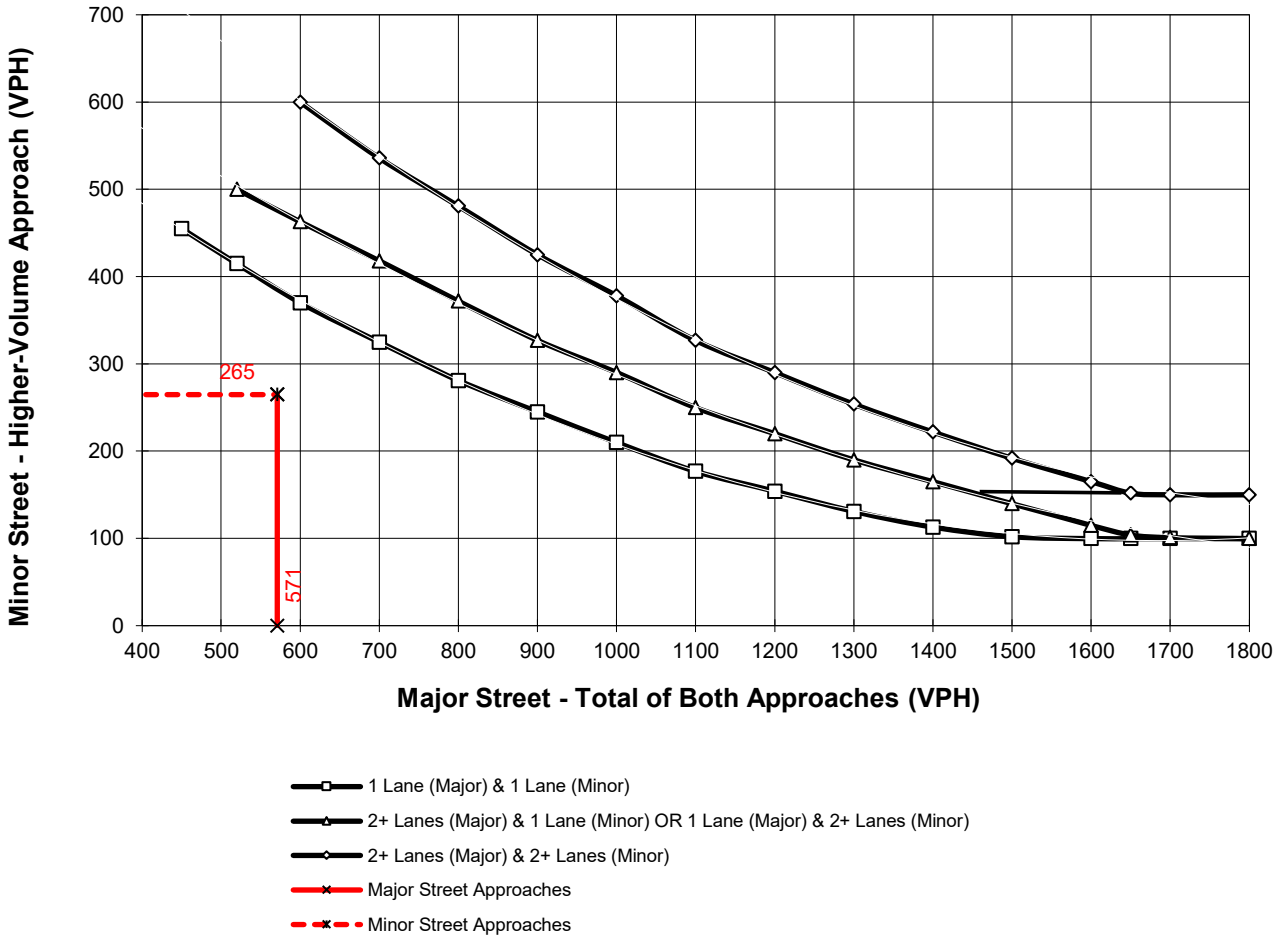
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Existing (2024) Conditions - Weekday PM Peak Hour**

Major Street Name = **2nd Street**
Total of Both Approaches (VPH) = **571**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Buena Vista Avenue**
High Volume Approach (VPH) = **265**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

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APPENDIX 5.1: E+P CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↱
Traffic Vol, veh/h	260	0	0	326	0	6
Future Vol, veh/h	260	0	0	326	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	313	0	0	393	0	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	313
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	0	727
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	727
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	727	-	-
HCM Lane V/C Ratio	0.01	-	-
HCM Control Delay (s/veh)	10	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0	-	-

Intersection	
Intersection Delay, s/veh	16.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	68	111	87	80	159	14	117	134	21	22	157	50
Future Vol, veh/h	68	111	87	80	159	14	117	134	21	22	157	50
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	82	134	105	96	192	17	141	161	25	27	189	60
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay, s/veh	18.5	18.5	14.1	16.4
HCM LOS	C	C	B	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	26%	32%	100%	0%
Vol Thru, %	0%	86%	42%	63%	0%	76%
Vol Right, %	0%	14%	33%	6%	0%	24%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	117	155	266	253	22	207
LT Vol	117	0	68	80	22	0
Through Vol	0	134	111	159	0	157
RT Vol	0	21	87	14	0	50
Lane Flow Rate	141	187	320	305	27	249
Geometry Grp	5	5	2	2	5	5
Degree of Util (X)	0.306	0.373	0.583	0.571	0.058	0.499
Departure Headway (Hd)	7.806	7.194	6.548	6.745	7.887	7.198
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	460	499	548	533	452	499
Service Time	5.582	4.97	4.618	4.817	5.663	4.973
HCM Lane V/C Ratio	0.307	0.375	0.584	0.572	0.06	0.499
HCM Control Delay, s/veh	14	14.2	18.5	18.5	11.2	17
HCM Lane LOS	B	B	C	C	B	C
HCM 95th-tile Q	1.3	1.7	3.7	3.5	0.2	2.7

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	6	3	243	310	14
Future Vol, veh/h	29	6	3	243	310	14
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	-	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	35	7	4	293	373	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	682	382	390	0	-	0
Stage 1	382	-	-	-	-	-
Stage 2	300	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	415	665	1168	-	-	-
Stage 1	690	-	-	-	-	-
Stage 2	752	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	414	665	1168	-	-	-
Mov Cap-2 Maneuver	516	-	-	-	-	-
Stage 1	688	-	-	-	-	-
Stage 2	752	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	12.28	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1168	-	537	-	-
HCM Lane V/C Ratio	0.003	-	0.079	-	-
HCM Control Delay (s/veh)	8.1	-	12.3	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↗
Traffic Vol, veh/h	428	0	0	245	0	3
Future Vol, veh/h	428	0	0	245	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	470	0	0	269	0	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	470
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	0	593
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	593
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	593	-	-
HCM Lane V/C Ratio	0.006	-	-
HCM Control Delay (s/veh)	11.1	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0	-	-

Intersection	
Intersection Delay, s/veh	19.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	72	227	132	46	92	31	89	110	29	45	156	64
Future Vol, veh/h	72	227	132	46	92	31	89	110	29	45	156	64
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	79	249	145	51	101	34	98	121	32	49	171	70
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay, s/veh	27.7	13.3	12.9	15.1
HCM LOS	D	B	B	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	17%	27%	100%	0%
Vol Thru, %	0%	79%	53%	54%	0%	71%
Vol Right, %	0%	21%	31%	18%	0%	29%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	89	139	431	169	45	220
LT Vol	89	0	72	46	45	0
Through Vol	0	110	227	92	0	156
RT Vol	0	29	132	31	0	64
Lane Flow Rate	98	153	474	186	49	242
Geometry Grp	5	5	2	2	5	5
Degree of Util (X)	0.212	0.303	0.787	0.347	0.106	0.469
Departure Headway (Hd)	7.81	7.145	5.982	6.723	7.711	6.988
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	459	501	606	533	464	515
Service Time	5.573	4.908	4.026	4.786	5.47	4.746
HCM Lane V/C Ratio	0.214	0.305	0.782	0.349	0.106	0.47
HCM Control Delay, s/veh	12.7	13	27.7	13.3	11.4	15.8
HCM Lane LOS	B	B	D	B	B	C
HCM 95th-tile Q	0.8	1.3	7.5	1.5	0.4	2.5

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	3	5	213	308	26
Future Vol, veh/h	15	3	5	213	308	26
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	-	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	3	5	234	338	29

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	598	353	367	0	-	0
Stage 1	353	-	-	-	-	-
Stage 2	245	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	465	691	1192	-	-	-
Stage 1	711	-	-	-	-	-
Stage 2	796	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	463	691	1192	-	-	-
Mov Cap-2 Maneuver	551	-	-	-	-	-
Stage 1	708	-	-	-	-	-
Stage 2	796	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	11.53	0.18	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1192	-	571	-	-
HCM Lane V/C Ratio	0.005	-	0.035	-	-
HCM Control Delay (s/veh)	8	-	11.5	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

APPENDIX 5.2: E+P CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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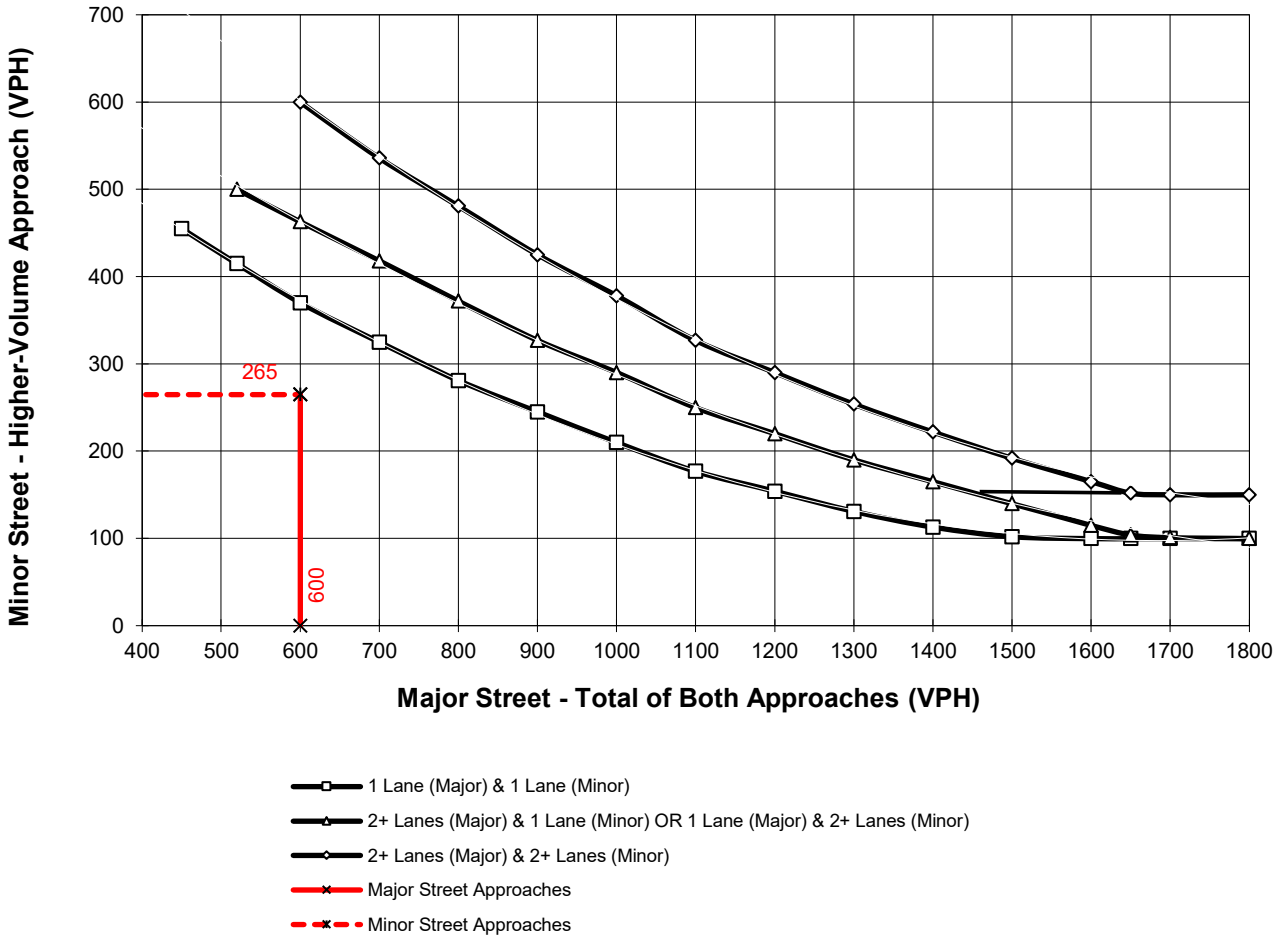
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **E+P Conditions - Weekday PM Peak Hour**

Major Street Name = **2nd Street**
Total of Both Approaches (VPH) = **600**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Buena Vista Avenue**
High Volume Approach (VPH) = **265**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 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		E+P
				CALC CS	DATE	03/05/24
Jurisdiction: City of Corona				CHK CS	DATE	03/05/24
Major Street: Buena Vista Avenue				Critical Approach Speed (Major)		25 mph
Minor Street: Driveway 2				Critical Approach Speed (Minor)		25 mph

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

Major Street Future ADT = **7,532** vpd Minor Street Future ADT = **257** vpd

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

or **URBAN (U)**

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

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements EADT			
XX					
CONDITION A - Minimum Vehicular Volume		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied				
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **7,532**	*1* **257**	8,000	5,600	2,400	1,680
2 +	*1*	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		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied				
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **7,532**	*1* **257**	12,000	8,400	1,200	850
2 +	*1*	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	2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 11%	**B** 21%			

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.

APPENDIX 6.1: OPENING YEAR CUMULATIVE (2026) WITHOUT PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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Intersection	
Intersection Delay, s/veh	21.6
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	79	132	100	80	179	15	115	139	20	23	163	59
Future Vol, veh/h	79	132	100	80	179	15	115	139	20	23	163	59
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	95	159	120	96	216	18	139	167	24	28	196	71
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay, s/veh	26.5	23.6	15.7	19.7
HCM LOS	D	C	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	25%	29%	100%	0%
Vol Thru, %	0%	87%	42%	65%	0%	73%
Vol Right, %	0%	13%	32%	5%	0%	27%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	115	159	311	274	23	222
LT Vol	115	0	79	80	23	0
Through Vol	0	139	132	179	0	163
RT Vol	0	20	100	15	0	59
Lane Flow Rate	139	192	375	330	28	267
Geometry Grp	5	5	2	2	5	5
Degree of Util (X)	0.324	0.416	0.726	0.665	0.065	0.575
Departure Headway (Hd)	8.423	7.813	6.976	7.252	8.449	7.738
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	427	460	517	498	424	465
Service Time	6.18	5.57	5.029	5.308	6.203	5.492
HCM Lane V/C Ratio	0.326	0.417	0.725	0.663	0.066	0.574
HCM Control Delay, s/veh	15.2	16.1	26.5	23.6	11.8	20.5
HCM Lane LOS	C	C	D	C	B	C
HCM 95th-tile Q	1.4	2	5.9	4.8	0.2	3.5

Intersection	
Intersection Delay, s/veh	27.2
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	86	252	138	42	111	33	100	115	29	47	162	74
Future Vol, veh/h	86	252	138	42	111	33	100	115	29	47	162	74
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	95	277	152	46	122	36	110	126	32	52	178	81
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay, s/veh	44.5	15.1	14	17.3
HCM LOS	E	C	B	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	18%	23%	100%	0%
Vol Thru, %	0%	80%	53%	60%	0%	69%
Vol Right, %	0%	20%	29%	18%	0%	31%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	100	144	476	186	47	236
LT Vol	100	0	86	42	47	0
Through Vol	0	115	252	111	0	162
RT Vol	0	29	138	33	0	74
Lane Flow Rate	110	158	523	204	52	259
Geometry Grp	5	5	2	2	5	5
Degree of Util (X)	0.252	0.334	0.913	0.406	0.117	0.532
Departure Headway (Hd)	8.252	7.589	6.281	7.149	8.129	7.385
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	433	470	575	501	439	485
Service Time	6.05	5.387	4.35	5.247	5.919	5.175
HCM Lane V/C Ratio	0.254	0.336	0.91	0.407	0.118	0.534
HCM Control Delay, s/veh	13.8	14.2	44.5	15.1	12	18.4
HCM Lane LOS	B	B	E	C	B	C
HCM 95th-tile Q	1	1.5	11.2	1.9	0.4	3.1

APPENDIX 6.2: OPENING YEAR CUMULATIVE (2026) WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↱
Traffic Vol, veh/h	289	0	0	347	0	6
Future Vol, veh/h	289	0	0	347	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	348	0	0	418	0	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	348
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	0	695
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	695
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	10.23
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	695	-	-
HCM Lane V/C Ratio	0.01	-	-
HCM Control Delay (s/veh)	10.2	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0	-	-

Intersection	
Intersection Delay, s/veh	20.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	75	127	93	83	168	15	124	139	22	23	163	55
Future Vol, veh/h	75	127	93	83	168	15	124	139	22	23	163	55
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	90	153	112	100	202	18	149	167	27	28	196	66
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay, s/veh	23.8	22.2	15.5	18.8
HCM LOS	C	C	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	25%	31%	100%	0%
Vol Thru, %	0%	86%	43%	63%	0%	75%
Vol Right, %	0%	14%	32%	6%	0%	25%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	124	161	295	266	23	218
LT Vol	124	0	75	83	23	0
Through Vol	0	139	127	168	0	163
RT Vol	0	22	93	15	0	55
Lane Flow Rate	149	194	355	320	28	263
Geometry Grp	5	5	2	2	5	5
Degree of Util (X)	0.343	0.412	0.686	0.641	0.064	0.557
Departure Headway (Hd)	8.261	7.645	6.951	7.201	8.331	7.631
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	435	469	522	503	430	473
Service Time	6.022	5.405	4.972	5.221	6.091	5.391
HCM Lane V/C Ratio	0.343	0.414	0.68	0.636	0.065	0.556
HCM Control Delay, s/veh	15.3	15.7	23.8	22.2	11.7	19.6
HCM Lane LOS	C	C	C	C	B	C
HCM 95th-tile Q	1.5	2	5.2	4.5	0.2	3.3

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	6	3	256	326	14
Future Vol, veh/h	29	6	3	256	326	14
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	-	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	35	7	4	308	393	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	717	401	410	0	-	0
Stage 1	401	-	-	-	-	-
Stage 2	316	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	396	649	1149	-	-	-
Stage 1	676	-	-	-	-	-
Stage 2	739	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	395	649	1149	-	-	-
Mov Cap-2 Maneuver	501	-	-	-	-	-
Stage 1	674	-	-	-	-	-
Stage 2	739	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	12.51	0.09	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1149	-	522	-	-
HCM Lane V/C Ratio	0.003	-	0.081	-	-
HCM Control Delay (s/veh)	8.1	-	12.5	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↱
Traffic Vol, veh/h	461	0	0	263	0	3
Future Vol, veh/h	461	0	0	263	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	507	0	0	289	0	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	507
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	0	566
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	566
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	566	-	-
HCM Lane V/C Ratio	0.006	-	-
HCM Control Delay (s/veh)	11.4	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0	-	-

Intersection	
Intersection Delay, s/veh	24.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	81	244	140	48	99	33	95	115	30	47	162	70
Future Vol, veh/h	81	244	140	48	99	33	95	115	30	47	162	70
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	89	268	154	53	109	36	104	126	33	52	178	77
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay, s/veh	38.7	14.6	13.7	16.6
HCM LOS	E	B	B	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	17%	27%	100%	0%
Vol Thru, %	0%	79%	52%	55%	0%	70%
Vol Right, %	0%	21%	30%	18%	0%	30%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	95	145	465	180	47	232
LT Vol	95	0	81	48	47	0
Through Vol	0	115	244	99	0	162
RT Vol	0	30	140	33	0	70
Lane Flow Rate	104	159	511	198	52	255
Geometry Grp	5	5	2	2	5	5
Degree of Util (X)	0.236	0.33	0.879	0.387	0.115	0.515
Departure Headway (Hd)	8.131	7.465	6.193	7.038	8.013	7.279
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	440	480	583	508	446	492
Service Time	5.916	5.249	4.253	5.125	5.792	5.058
HCM Lane V/C Ratio	0.236	0.331	0.877	0.39	0.117	0.518
HCM Control Delay, s/veh	13.4	13.9	38.7	14.6	11.8	17.6
HCM Lane LOS	B	B	E	B	B	C
HCM 95th-tile Q	0.9	1.4	10.1	1.8	0.4	2.9

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	3	5	225	323	26
Future Vol, veh/h	15	3	5	225	323	26
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	-	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	3	5	247	355	29

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	627	369	384	0	-	0
Stage 1	369	-	-	-	-	-
Stage 2	258	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	447	676	1175	-	-	-
Stage 1	699	-	-	-	-	-
Stage 2	785	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	445	676	1175	-	-	-
Mov Cap-2 Maneuver	538	-	-	-	-	-
Stage 1	696	-	-	-	-	-
Stage 2	785	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	11.7	0.18	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1175	-	557	-	-
HCM Lane V/C Ratio	0.005	-	0.036	-	-
HCM Control Delay (s/veh)	8.1	-	11.7	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

APPENDIX 6.3: OPENING YEAR CUMULATIVE (2026) WITHOUT PROJECT CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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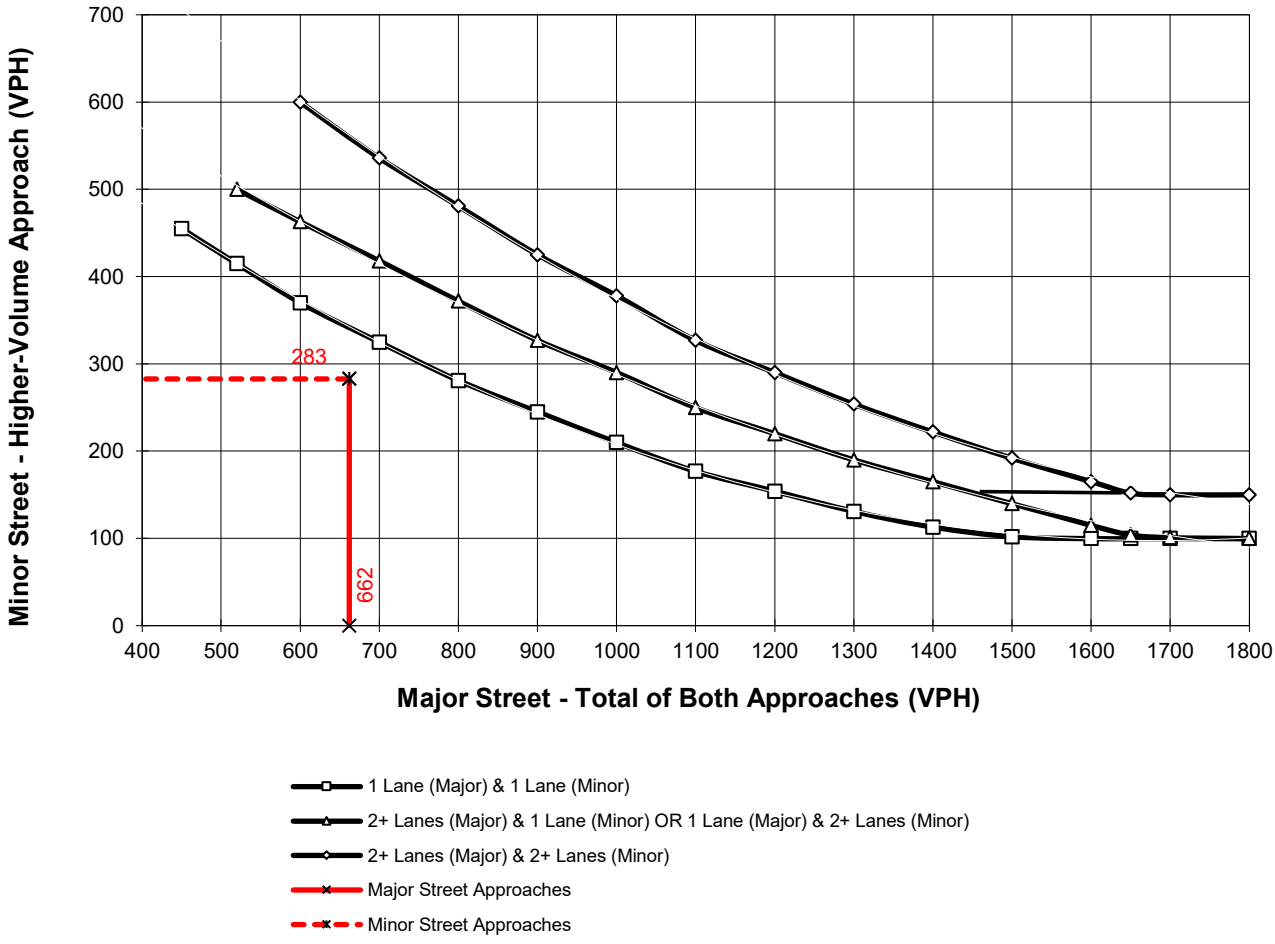
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **2026 Without Project Conditions - Weekday PM Peak Hour**

Major Street Name = **2nd Street**
Total of Both Approaches (VPH) = **662**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Buena Vista Avenue**
High Volume Approach (VPH) = **283**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

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APPENDIX 6.4: OPENING YEAR CUMULATIVE (2025) WITH PROJECT CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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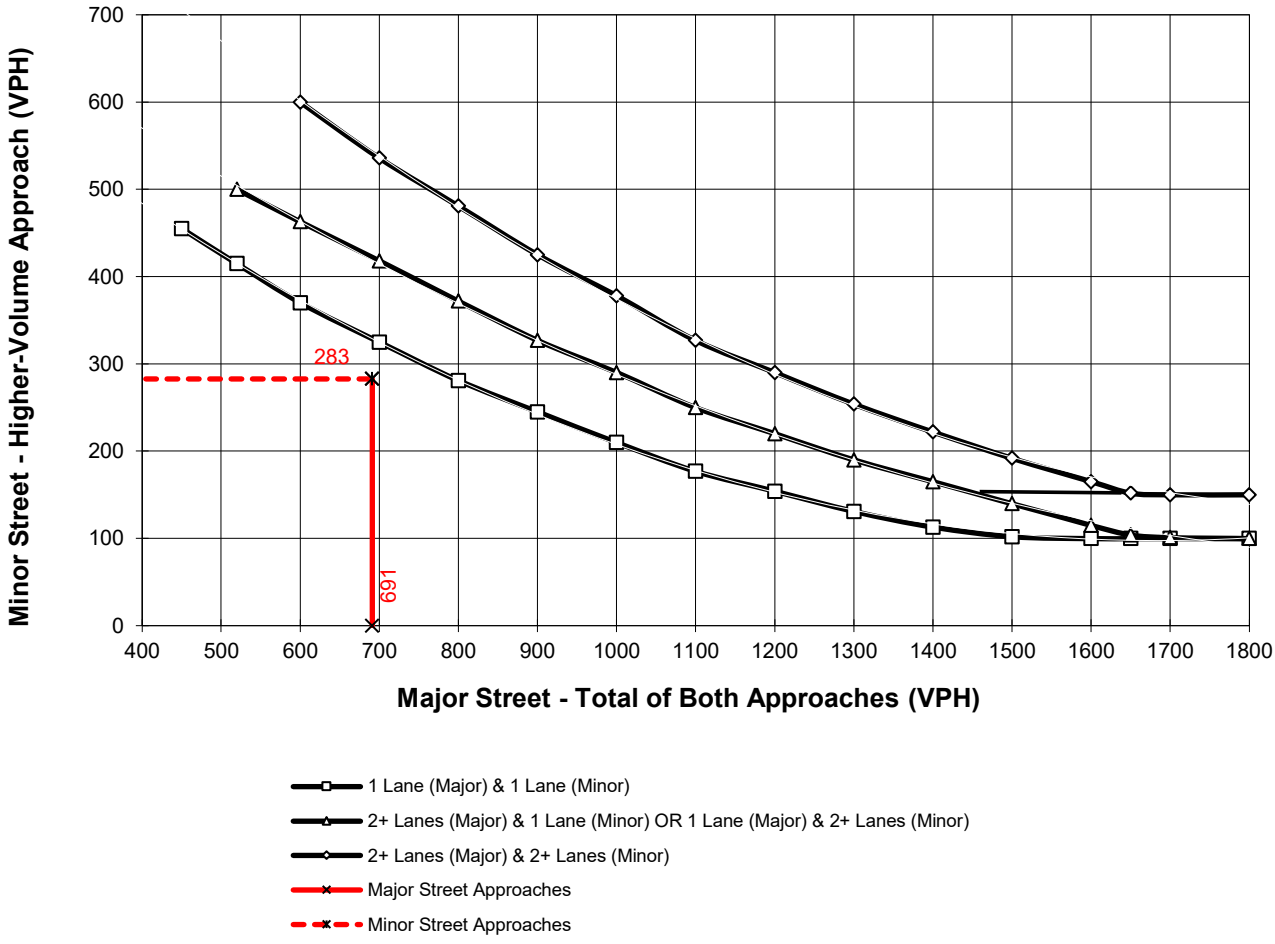
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **2026 With Project Conditions - Weekday PM Peak Hour**

Major Street Name = **2nd Street**
Total of Both Approaches (VPH) = **691**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Buena Vista Avenue**
High Volume Approach (VPH) = **283**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 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		2026 WP
				CALC CS	DATE	03/05/24
Jurisdiction: City of Corona				CHK CS	DATE	03/05/24
Major Street: Buena Vista Avenue				Critical Approach Speed (Major)		25 mph
Minor Street: Driveway 2				Critical Approach Speed (Minor)		25 mph

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

Major Street Future ADT = **8,446** vpd Minor Street Future ADT = **257** vpd

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

or **URBAN (U)**

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

(Based on Estimated Average Daily Traffic - See Note)

URBAN / RURAL	Minimum Requirements EADT			
XX				
CONDITION A - Minimum Vehicular Volume	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied / Not Satisfied: XX	Urban	Rural	Urban	Rural
Number of lanes for moving traffic on each approach: Major Street / Minor Street				
1 **8,446** / *1* **257**	8,000 *	5,600	2,400	1,680
2 + / *1*	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	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied / Not Satisfied: XX	Urban	Rural	Urban	Rural
Number of lanes for moving traffic on each approach: Major Street / Minor Street				
1 **8,446** / *1* **257**	12,000	8,400	1,200	850
2 + / *1*	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	2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more ….. A: 11% B: 21%				

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.