

No

			Con	dition A - Minimu	ım Vehicular Vo	lume			
No. of Lanes VPH total on major street VPH on higher vol minor street				vol minor street					
Major	Minor	100%ª	80% ^b	70%°	56% ^d	100% ^a	80% ^b	70%°	56% ^d
1	1	500	400	350	280	150	120	105	84
2	1	600	480	420	336	150	120	105	84
2	2	600	480	420	336	200	160	140	112
1	2	500	400	350	280	200	160	140	112

			Condition	on B - Interupption	on of Continuou	s Traffic			
No. of	No. of Lanes VPH total on major street VPH on higher vol minor street								
Major	Minor	100%ª	80% ^b	70%°	56% ^d	100% ^a	80% ^b	70%°	56% ^d
1	1	750	600	525	420	75	60	53	42
2	1	900	720	630	504	75	60	53	42
2	2	900	720	630	504	100	80	70	56
1	2	750	600	525	420	100	80	70	56

^a Basic minimum hourly volume.

with a population or less than 10,000.

May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 70km/h or exceeds 40 mpn in an isolated community with a population less than 10,000

Ī		Traffic \		Total Major	Higher Minor	
	Mailer Oter et 4			M: 01 0		
	Major Street 1	Major Street 2	Minor Street 1	Minor Street 2	Street Vol	Street Vol
12:00 AM		12	5	0	28	5
1:00 AM		7	2	0	18	2
2:00 AM		6	3	0	17	3
3:00 AM		3 7	1	0	7	1
4:00 AM	5	7	0	0	12	0
5:00 AM		37	8	0	62	8
6:00 AM		58	36	0	146	36
7:00 AM	184	84	64	0	268	64
8:00 AM	208	80	70	0	288	70
9:00 AM	144	76	63	0	220	63
10:00 AM	143	101	60	0	244	60
11:00 AM	260	81	63	0	341	63
12:00 PM	252	110	36	0	362	36
1:00 PM	248	146	65	0	394	65
2:00 PM	238	125	68	0	363	68
3:00 PM	316	149	86	0	465	86
4:00 PM	349	159	82	0	508	82
5:00 PM	299	194	62	0	493	62
6:00 PM	200	106	33	0	306	33
7:00 PM	119	68	23	0	187	23
8:00 PM	112	57	20	0	169	20
9:00 PM	86	68	24	0	154	24
10:00 PM	86	44	21	0	130	21
11:00 PM	66	22	19	0	88	19

	Cond	ition A	Condi	tion B	Combination	Combination
	100%	70%	100%	70%	80%	56%
12:00 AM						
1:00 AM						
2:00 AM						
3:00 AM						
4:00 AM						
5:00 AM						
6:00 AM						
7:00 AM						
8:00 AM						
9:00 AM						
10:00 AM						
11:00 AM						
12:00 PM						
1:00 PM						
2:00 PM						
3:00 PM						
4:00 PM						
5:00 PM						
6:00 PM						
7:00 PM						
8:00 PM						
9:00 PM						
10:00 PM						
11:00 PM						
-	0	0	0	0	0	0

Warrant 1, Condition A Met:	No	70%:	N/A	
Warrant 1, Condition B Met:	No	70%:	N/A	
Consider combination?	Yes			
Warrant 1, Combination Met:	No	56%	No	
		Warrant 1, Met:	No	

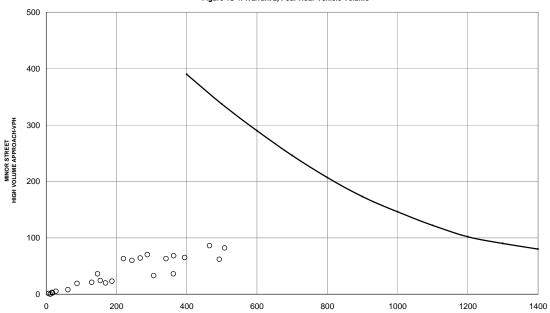
^b Used for combination of Conditions A and B after adequate trial of other remedial measures.

^c May be used when the major-street speed exceeds 40 mph or in an Isolated community with a population of less than 10,000.

Intersection Name: Eastbound Off & Excelsior St.
Major Street Name: Excelsior St. No. of Lanes:
Minor Street Name: Eastbound Off No. of Lanes:
"Major street speed exceeds 40 mph or isolated community with a population less than 10,000? 2 or more

		Traffic '	Volume		Total Major	Higher Minor	100%	70%
	Major Street 1	Major Street 2		Minor Street 2	Street Vol	Street Vol	Met	Met
12:00 AM		12	5	0	28	5		
1:00 AM	11	7	2	0	18	2		
2:00 AM	11	6	3	0	17	3		
3:00 AM	4	3	1	0	7	1		
4:00 AM	5	7	0	0	12	0		
5:00 AM	25	37	8	0	62	8		
6:00 AM	88	58	36	0	146	36		
7:00 AM	184	84	64	0	268	64		
8:00 AM	208	80	70	0	288	70		
9:00 AM	144	76	63	0	220	63		
10:00 AM	143	101	60	0	244	60		
11:00 AM	260	81	63	0	341	63		
12:00 PM	252	110	36	0	362	36		
1:00 PM	248	146	65	0	394	65		
2:00 PM	238	125	68	0	363	68		
3:00 PM	316	149	86	0	465	86		
4:00 PM	349	159	82	0	508	82		
5:00 PM	299	194	62	0	493	62		
6:00 PM	200	106	33	0	306	33		
7:00 PM	119	68	23	0	187	23		
8:00 PM	112	57	20	0	169	20		
9:00 PM	86	68	24	0	154	24		
10:00 PM		44	21	0	130	21		
11:00 PM	66	22	19	0	88	19		

Figure 4C-1. Warrant 2, Four Hour Vehicle Volume



MAJOR STREET-TOTAL OF BOTH APPROACHES-VEHICLES PER HOUR (VPH)

*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

No 70% N/A

Warrant 2, Met: No

Delay Study for Warrant 3

Intersection Name: Eastbound Off & Excelsior St.

Major Street Name: Excelsior St.

Minor Street Name: Eastbound Off

mber of Approaches: 4

Interval: Seconds

	Number of Stopped Vehicles		Number of Stopped Vehicles	Cars Served on Study Approach	Cars Served at Intersection
Min/Sec	0	Min/Sec	0	Interval No.	Interval No.
0		0		1	1
1		1		2	2
2		2		3	3
3		3		4	4
4		4		5	5
5		5		6	6
6		6		7	7
7		7		8	8
8		8		-	•
9		9		Cars Served	Cars Served
10		10		on Study Approach	at Intersection
11		11		Hourly Sum	Hourly Sum
12		12		1	1
13		13		2	2
14		14		3	3
15		15		4	4
					5
16 17		16 17		5	5
				Mahialaa Otaaaa	
18		18		Vehicles Stopped	
19		19		on Study Approach	
20		20		Hourly Totals	
21		21		1	
22		22		2	
23		23		3	
24		24		4	
25		25		5	
26		26			
27		27			
28		28		Total Number of Stopp	
29		29		Vehicles Served on Ap	proach Leg
30		30			
31		31			
32		32		Stopped Delay	sec/veh
33		33		Stopped Delay	veh-hrs
34		34		5.5,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
35		35			
36		36			
37		37			
38		38			
39		39			
40		40			
41		41			
42		42			
43		43			
43		43			
45		45			
46		45 46			
47		46 47			
48		48			
49		49			
50		50			
51		51			
52		52			
53		53			
54		54			
55		55			
56		56			
57		57			
58		58			
59		59			

| Intersection Name: Eastbound Off & Excelsior St. | Major Street Name: Excelsior St. | No. of Lanes: | 2 or more | Major street Name: Eastbound Off | No. of Lanes: | 1 | Major street speed exceeds 40 mph or isolated community with a population less than 10,000? No

* This signal warrant shall only be applied in unusual cases. Such cases include, but are not limited to, office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that atrract or discharge large numbers of vehicles over a short time.

Condition A:

1. The total stopped time delay experienced by the traffic on the one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and

Condition A-1 Met: N/A

2. The voulme on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for a one moving lane of traffic or 150 vehicles per hour for for two moving lanes, and

Condition A-2 Met:

3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles for intersections with four or more approaches.

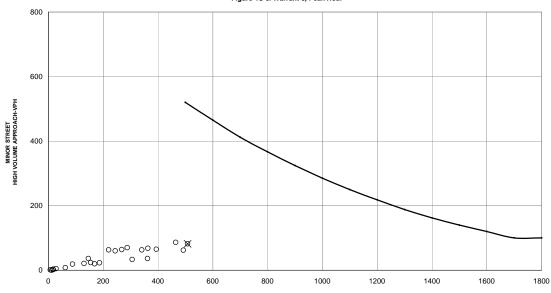
Condition A-3 Met: N/A

Condition B:

70% 100% Peak Hour Total Volume Total Major Higher Minor 4:00p-5:00p 590 508 82 Met

		Traffic '	Volume		Total Major	Higher Minor	100%	70%
	Major Street 1	Major Street 2	Minor Street 1	Minor Street 2	Street Vol	Street Vol	Met	Met
12:00 AM		12	5	0	28	5		
1:00 AM	11	7	2	0	18	2		
2:00 AM	11	6	3	0	17	3		
3:00 AM	4	3	1	0	7	1		
4:00 AM	5	7	0	0	12	0		
5:00 AM	25	37	8	0	62	8		
6:00 AM	88	58	36	0	146	36		
7:00 AM	184	84	64	0	268	64		
8:00 AM	208	80	70	0	288	70		
9:00 AM	144	76	63	0	220	63		
10:00 AM	143	101	60	0	244	60		
11:00 AM	260	81	63	0	341	63		
12:00 PM	252	110	36	0	362	36		
1:00 PM	248	146	65	0	394	65		
2:00 PM	238	125	68	0	363	68		
3:00 PM	316	149	86	0	465	86		
4:00 PM	349	159	82	0	508	82		
5:00 PM	299	194	62	0	493	62		
6:00 PM	200	106	33	0	306	33		
7:00 PM	119	68	23	0	187	23		
8:00 PM	112	57	20	0	169	20		
9:00 PM	86	68	24	0	154	24		
10:00 PM	86	44	21	0	130	21		
11:00 PM	66	22	19	0	88	19		

Figure 4C-3. Warrant 3, Peak Hour



Warrant 3, Condition A Met: Warrant 3. Condition B Met: No

70% N/A

MAJOR STREET-TOTAL OF BOTH APPROACHES-VEHICLES PER HOUR (VPH) *Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Is this an unusual case? No

Warrant 3. Met:

■ Warrant is not applicable

Warrant, 4 Pedestrian Volume

	Eastbound Off & Exc	celsior St.	
Major Street Name:		_	
Minor Street Name:			
Location less than 3	00' from nearest sig	nal?	No
	ed by a median with	sufficient width	
for pedestrians to w	ait?	No ▼	
	Pedestrian Volume		Vehicular Gaps
	Across Major Street		Across Major Street
12:00 AN			
1:00 AN			
2:00 AN			
3:00 AN			
4:00 AN			
5:00 AN			
6:00 AN			
7:00 AM 8:00 AM			
9:00 AN			
9:00 AN 10:00 AN			
11:00 AN			
12:00 PM			
1:00 PM			
2:00 PM			
3:00 PM			
4:00 PM			
5:00 PM			
6:00 PM			
7:00 PM			
8:00 PM	I		
9:00 PM	I		
10:00 PM	l		
11:00 PM	I		
	t 4, Condition A Met:		
Warran	t 4, Condition B Met:	N/A	
	Warrant 4, Met:	N/A	

Warrant 5, School Crossing

Intersection Name:	Eastbound Off & Excelsion	or St.
Major Street Name:	Excelsior St.	
Minor Street Name:	Eastbound Off	
Location less than 3	00' from nearest signal?	No
		·
	Start	Finish
	Interval 1	-
	Interval 2	-
	Interval 3	-
	Interval 4	-
	Interval 5	-
	Interval 6	-
	Student Volu	me Vehicular Gaps
	Across Major S	
	Interval 1	
	Interval 2	
	Interval 3	
	Interval 4	
	Interval 5	
	Interval 6	

Warrant 5, Met: N/A

Warrant 6, Corrdinated Signal System

Major Street Name: Eastbound Off & Excelsion St. Eastbound Off & Excelsion St. Eastbound Off
*The Coordinated Signal System signal warrant should not be applied where the resultant spacing of traffic control signals would be less than 1000'.
Condition A: 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.
Warrant 6, Condition A met:
Condition B: 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 6, Condition B met:
Warrant 6, Met: N/A

Warrant 7, Crash Experience

Intersection Name: Eastbound Off & Excelsior St.
Major Street Name: Excelsior St.
Minor Street Name: Eastbound Off
*Major street speed exceeds 40 mph or isolated
community with a population less than 10,000? No
Condition A:
Adequate trial of alternatives with satisfactory observance and enforcement has failed
to reduce the crash frequency
to reduce the crash nequency
Warrant 7, Condition A met: No ▼
Condition B:
Five or more reported crashes, of types susceptible to correction by a traffic control signal,
have occurred within a 12-month period, each crash involving personal injury or property
damage apparently exceeding the applicable requirements for a reportable crash
Number of Correctable Crashes: 4 ▼
Warrant 7, Condition B met: N
Condition C:
For each of any 8 hours of an average day, the vehicles per hour (vph) given in both of the
80% columns of Condition A in Table 4C-1, or the vph in both of the 80% columns of Condition B
in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively,
to the intersection, or the volume of pedestrian traffic is not less than 80% of the requirements
specified in the Pedestrian Volume warrant.
80% conditions Condition A in Table 4C-1 met: N
80% conditions Condition B in Table 4C-1 met: N
80% of Pedestrian Volume Warrant Volumes met: N/A

	80% Condition A in Table 4C-1	80% Condition B in Table 4C-1	80% Pedestrian Volumes
12:00 AM		·	_
1:00 AM			
2:00 AM			
3:00 AM			
4:00 AM			
5:00 AM			
6:00 AM			
7:00 AM			
8:00 AM			
9:00 AM			
10:00 AM			
11:00 AM			
12:00 PM			
1:00 PM			
2:00 PM			
3:00 PM			
4:00 PM			
5:00 PM			
6:00 PM			
7:00 PM			
8:00 PM			
9:00 PM			
10:00 PM			
11:00 PM			
	0	0	0

Warrant 7, Met: No

Warrant 8, Roadway Network

Intersection Name: Eastbound Off & Excelsior St.
* This warrant shall only be considered if the location is an intersection of two or more major routes.
A major route as used in this signal warrant shall have one or more of the following characteristics:
 It is part of the street or highway system that serves as the principal roadway network for through traffic flow; or
2. It includes rural or suburban highways outside, entering, or traversing a city; or
It appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.
Does the study intersection consist of two or more major routes?
Condition A The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday and has 5-year projected traffic volumes, based on an engineering study, that meet one or more of warrants 1, 2, and 3 during an average weekday; or
At least 1,000 vehicles entering the intersection: N/A Warrant 8, Condition A met: N/A
Condition B The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a nonnormal business day (Saturday or Sunday).
Warrant 8, Condition B met: N/A
Warrant 8, met: N/A

No

			Con	dition A - Minimu	ım Vehicular Vo	lume			
No. of	No. of Lanes VPH total on major street				VPH on higher	vol minor street			
Major	Minor	100%ª	80% ^b	70%°	56% ^d	100% ^a	80% ^b	70%°	56% ^d
1	1	500	400	350	280	150	120	105	84
2	1	600	480	420	336	150	120	105	84
2	2	600	480	420	336	200	160	140	112
1	2	500	400	350	280	200	160	140	112

			Condition	on B - Interupption	on of Continuou	s Traffic			
No. of	Lanes	VPH	total on major s	treet			VPH on higher	vol minor street	
Major	Minor	100%ª	80% ^b	70%°	56% ^d	100%ª	80% ^b	70%°	56% ^d
1	1	750	600	525	420	75	60	53	42
2	1	900	720	630	504	75	60	53	42
2	2	900	720	630	504	100	80	70	56
1	2	750	600	525	420	100	80	70	56

^a Basic minimum hourly volume.

with a population or less than 10,000.

May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 70km/h or exceeds 40 mpn in an isolated community with a population less than 10,000

I		Tag#ia	Volume		Total Major	Higher Minor
	Mailer Oter et 4			M: 01 0		
	Major Street 1	Major Street 2	Minor Street 1	Minor Street 2	Street Vol	Street Vol
12:00 AM		10	4	0	13	4
1:00 AM		5	4	0	11	4
2:00 AM		6	1	0	9	1
3:00 AM	11	3	0	0	14	0
4:00 AM		6	0	0	17	0
5:00 AM	24	15	10	0	39	10
6:00 AM		24	14	0	61	14
7:00 AM		66	24	0	136	24
8:00 AM	116	69	27	0	185	27
9:00 AM	54	59	26	0	113	26
10:00 AM	79	62	47	0	141	47
11:00 AM	92	98	63	0	190	63
12:00 PM	70	100	53	0	170	53
1:00 PM	88	68	51	0	156	51
2:00 PM	86	86	73	0	172	73
3:00 PM	95	96	88	0	191	88
4:00 PM	98	114	86	0	212	86
5:00 PM	104	115	67	0	219	67
6:00 PM	80	98	50	0	178	50
7:00 PM	73	69	40	0	142	40
8:00 PM	60	60	39	0	120	39
9:00 PM	32	54	27	0	86	27
10:00 PM	33	48	23	0	81	23
11:00 PM	9	20	10	0	29	10

	Condi	ition A	Condi	tion B	Combination	Combination
	100%	70%	100%	70%	80%	56%
12:00 AM						
1:00 AM						
2:00 AM						
3:00 AM						
4:00 AM						
5:00 AM						
6:00 AM						
7:00 AM						
8:00 AM						
9:00 AM						
10:00 AM						
11:00 AM						
12:00 PM						
1:00 PM						
2:00 PM						
3:00 PM						
4:00 PM						
5:00 PM						
6:00 PM						
7:00 PM						
8:00 PM						
9:00 PM						
10:00 PM						
11:00 PM						
	0	0	0	0	0	0

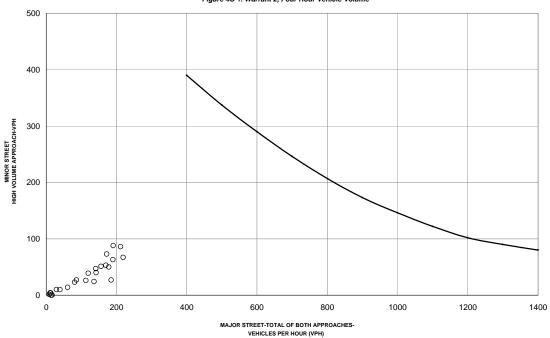
Warrant 1, Condition A Met:	No	70%:	N/A	
Warrant 1, Condition B Met:	No	70%:	N/A	
Consider combination?	Yes			
Warrant 1, Combination Met:	No	56%	No	
		Warrant 1, Met:	No	

^b Used for combination of Conditions A and B after adequate trial of other remedial measures.

^c May be used when the major-street speed exceeds 40 mph or in an Isolated community with a population of less than 10,000.

		Traffic	Volume		Total Major	Higher Minor	100%	70%
	Major Street 1	Major Street 2	Minor Street 1	Minor Street 2	Street Vol	Street Vol	Met	Met
12:00 AM	3	10	4	0	13	4		
1:00 AM	6	5	4	0	11	4		
2:00 AM	3	6	1	0	9	1		
3:00 AM	11	3	0	0	14	0		
4:00 AM	11	6	0	0	17	0		
5:00 AM	24	15	10	0	39	10		
6:00 AM	37	24	14	0	61	14		
7:00 AM	70	66	24	0	136	24		
8:00 AM	116	69	27	0	185	27		
9:00 AM	54	59	26	0	113	26		
10:00 AM	79	62	47	0	141	47		
11:00 AM	92	98	63	0	190	63		
12:00 PM	70	100	53	0	170	53		
1:00 PM	88	68	51	0	156	51		
2:00 PM	86	86	73	0	172	73		l
3:00 PM	95	96	88	0	191	88		
4:00 PM	98	114	86	0	212	86		
5:00 PM	104	115	67	0	219	67		
6:00 PM	80	98	50	0	178	50		l
7:00 PM	73	69	40	0	142	40		
8:00 PM	60	60	39	0	120	39		
9:00 PM	32	54	27	0	86	27		
10:00 PM	33	48	23	0	81	23		
11:00 PM	9	20	10	0	29	10		l

Figure 4C-1. Warrant 2, Four Hour Vehicle Volume



MAJOR STREET-TOTAL OF BOTH APPROACHES-VEHICLES PER HOUR (VPH)

*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

No **70**% N/A

Warrant 2, Met: No

Delay Study for Warrant 3

Intersection Name: South Bound Off & Continental Drive
Major Street Name: Continental
Minor Street Name: Southbound Off
mber of Approaches: 4

Interval: Seconds

	Number of Stopped Vehicles		Number of Stopped Vehicles	Cars Served on Study Approach	Cars Se	
Min/Sec	0	Min/Sec	0	Interval No.	Interval	No.
0		0		1	1	
1		1		2	2	
2		2		3	3	
3		3 4		4 5	4 5	
4 5		4 5		6	6	
6		6		7	7	
7		7		8	8	
8		8				
9		9		Cars Served	Cars Se	rved
10		10		on Study Approach	at Interse	ection
11		11		Hourly Sum	Hourly	Sum
12		12		1	1	
13		13		2	2	
14 15		14 15		3 4	3 4	
16		16		5	5	
17		17		5	5	
18		18		Vehicles Stopped		
19		19		on Study Approach		
20		20		Hourly Totals		
21		21		1		
22		22		2		
23		23		3		
24		24		4		
25		25		5		
26 27		26 27				
28		28		Total Number of Stoppe	nd Vehicles	
29		29		Vehicles Served on Ap	proach Lea	
30		30		V0.110.000 00.100 01.7.1p		
31		31				
32		32		Stopped Delay	S	ec/veh
33		33		Stopped Delay	v	eh-hrs
34		34				
35		35				
36		36				
37		37				
38 39		38 39				
40		40				
41		41				
42		42				
43		43				
44		44				
45		45				
46		46				
47		47				
48 49		48 49				
50		50				
51		51				
52		52				
53		53				
54		54				
55		55				
56		56				
57		57				
58 59		58 59				
29		29				

| Intersection Name: South Bound Off & Continental Drive | Major Street Name: Continental | No. of Lanes: 2 or more | Major street Name: Southbound Off No. of Lanes: 1 | Major street speed exceeds 40 mph or isolated community with a population less than 10,000? No

* This signal warrant shall only be applied in unusual cases. Such cases include, but are not limited to, office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that atrract or discharge large numbers of vehicles over a short time.

Condition A:

1. The total stopped time delay experienced by the traffic on the one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and

Condition A-1 Met: N/A

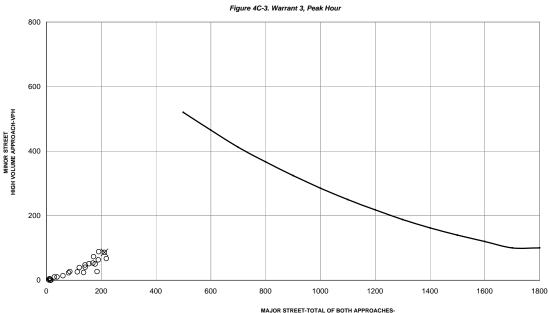
2. The voulme on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for a one moving lane of traffic or 150 vehicles per hour for for two moving lanes, and

Condition A-2 Met:

3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles for intersections with four or more approaches.

Condition A-3 Met: N/A 70% 100% Condition B: Peak Hour Total Volume Total Major Higher Minor 4:00p-5:00p 298 212 86 Met

		Traffic \	Volume		Total Major	Higher Minor	100%	70%
	Major Street 1	Major Street 2	Minor Street 1	Minor Street 2	Street Vol	Street Vol	Met	Met
12:00 AM	3	10	4	0	13	4		
1:00 AM		5	4	0	11	4		
2:00 AM	3	6 3	1	0	9	1		
3:00 AM	11	3	0	0	14	0		
4:00 AM	11	6	0	0	17	0		
5:00 AM	24	15	10	0	39	10		
6:00 AM	37	24	14	0	61	14		
7:00 AM	70	66	24	0	136	24		
8:00 AM	116	69	27	0	185	27		
9:00 AM	54	59	26	0	113	26		
10:00 AM	79	62	47	0	141	47		
11:00 AM	92	98	63	0	190	63		
12:00 PM	70	100	53	0	170	53		
1:00 PM	88	68	51	0	156	51		
2:00 PM	86	86	73	0	172	73		
3:00 PM	95	96	88	0	191	88		
4:00 PM	98	114	86	0	212	86		
5:00 PM	104	115	67	0	219	67		
6:00 PM	80	98	50	0	178	50		
7:00 PM	73	69	40	0	142	40		
8:00 PM	60	60	39	0	120	39		
9:00 PM	32	54	27	0	86	27		
10:00 PM	33	48	23	0	81	23		
11:00 PM	9	20	10	0	29	10		



Warrant 3, Condition A Met: VEHICLES PER HOUR (VPH) Warrant 3. Condition B Met: No 70% N/A *Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower Warrant 3. Met: threshold volume for a minor-street approach with one lane. Is this an unusual case? No **▼** Warrant is not applicable

Warrant, 4 Pedestrian Volume

Intersection Name: Major Street Name:	South Bound Off & C	Continental Drive	
Minor Street Name:		-	
Location less than 3	800' from nearest sig	nal?	No
	led by a median with	sufficient width	
for pedestrians to w	ait?	No ▼	
	Pedestrian Volume		Vehicular Gaps
	Across Major Street		Across Major Street
12:00 AM			
1:00 AM			
2:00 AN			
3:00 AN			
4:00 AN 5:00 AN			
5:00 AN 6:00 AN			
7:00 AN			
8:00 AN			
9:00 AM			
10:00 AM			
11:00 AM			
12:00 PM			
1:00 PM			
2:00 PM	1		
3:00 PM	1		
4:00 PM	1		
5:00 PM	1		
6:00 PM	1		
7:00 PM	1		
8:00 PM	1		
9:00 PM	1		
10:00 PM	1		
11:00 PM	1		
147		. N1/A	
	t 4, Condition A Met		
Warran	t 4, Condition B Met:	N/A	
	Warrant 4, Met	: N/A	
	vvarrant 4, Met	IN/A	

Warrant 5, School Crossing

Intersection Name: South Bound Off & Continental Drive Continental Minor Street Name: Gouthound Off Street Name: Southound Off Street Name: Start Finish Interval 1 Interval 2 Interval 3 Interval 4 Interval 5 Interval 6 Student Volume Across Major Street Interval 1 Interval 2 Interval 1 Interval 2 Interval 1 Interval 2 Interval 3 Interval 4 Interval 4 Interval 5 Interval 1 Interval 2 Interval 1 Interval 2 Interval 3 Interval 4 Interval 3 Interval 4 Interval 5 Interval 6 Interval 6

Warrant 5, Met: N/A

Warrant 6, Corrdinated Signal System

Intersection Name: Major Street Name: Minor Street Name:	
	nal System signal warrant should not be applied pacing of traffic control signals would be less than 1000'.
	or a street that has traffic predominantly in one direction, the adjacent traffic control signals hey do not provide the necessary degree of vehicular platooning.
	Warrant 6, Condition A met:
	adjacent traffic control signals do not provide the necessary degree of platooning and the nt traffic control signals will collectively provide a progressive operation.
	Warrant 6, Condition B met:
v	Varrant 6, Met: N/A

Warrant 7, Crash Experience

intersection name: South Bound Oil & Continental Drive	
Major Street Name: Continental	
Minor Street Name: Southbound Off	
Major street speed exceeds 40 mph or isolated	
community with a population less than 10,000? No	
· · · · · · · · · · · · · · · · · · ·	
Condition A:	
Adequate trial of alternatives with satisfactory observance and enforcement has failed	
to reduce the crash frequency	
in outside the outside moral states.	
Warrant 7, Condition A met: No ▼	
Warrant 7, Condition A met. 110	
Condition B:	
Five or more reported crashes, of types susceptible to correction by a traffic control signal,	
have occurred within a 12-month period, each crash involving personal injury or property	
damage apparently exceeding the applicable requirements for a reportable crash	
Number of Correctable Crashes: 0 ▼	
Warrant 7, Condition B met: N	
Condition C:	
For each of any 8 hours of an average day, the vehicles per hour (vph) given in both of the	
80% columns of Condition A in Table 4C-1, or the vph in both of the 80% columns of Condition B	
in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively,	
to the intersection, or the volume of pedestrian traffic is not less than 80% of the requirements	
specified in the Pedestrian Volume warrant.	
80% conditions Condition A in Table 4C-1 met: N	
80% conditions Condition B in Table 4C-1 met: N	
80% of Pedestrian Volume Warrant Volumes met: N/A	

	80% Condition A in Tabl	e 4C-1809	% Condition B in	Table 4C-1	80% Pedestrian Volumes
12:00 AM					
1:00 AM					
2:00 AM					
3:00 AM					
4:00 AM					
5:00 AM					
6:00 AM					
7:00 AM					
8:00 AM					
9:00 AM					
10:00 AM					
11:00 AM					
12:00 PM					
1:00 PM					
2:00 PM					
3:00 PM					
4:00 PM					
5:00 PM					
6:00 PM					
7:00 PM					
8:00 PM					
9:00 PM					
10:00 PM					
11:00 PM					
	0		0		0

Warrant 7, Met: No

Warrant 8, Roadway Network

Intersection Name: South Bound Off & Continental Drive Major Street Name: Continental Minor Street Name: Southbound Off
* This warrant shall only be considered if the location is an intersection of two or more major routes.
A major route as used in this signal warrant shall have one or more of the following characteristics:
 It is part of the street or highway system that serves as the principal roadway network for through traffic flow; or
2. It includes rural or suburban highways outside, entering, or traversing a city; or
It appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.
Does the study intersection consist of two or more major routes? $\overline{\ }_{\text{No}}$
Condition A The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday and has 5-year projected traffic volumes, based on an engineering study, that meet one or more of warrants 1, 2, and 3 during an average weekday; or
At least 1,000 vehicles entering the intersection: N/A Warrant 8, Condition A met: N/A
Condition B The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a nonnormal business day (Saturday or Sunday).
Warrant 8, Condition B met: N/A
Warrant 8, met: N/A

| Intersection Name: Morthbound Off & Continental Drive | Major Street Name: Ontinental No. of Lanes: 2 or more | Namor Street Name: Northbound Off No. of Lanes: 1 | Namor Street Speed exceeds 40 mph or isolated community with a population less than 10,000?

	Condition A - Minimum Vehicular Volume								
No. of	Lanes	VPH	total on major s	treet			VPH on higher	vol minor street	
Major	Minor	100%ª	80% ^b	70%°	56% ^d	100% ^a	80% ^b	70%°	56% ^d
1	1	500	400	350	280	150	120	105	84
2	1	600	480	420	336	150	120	105	84
2	2	600	480	420	336	200	160	140	112
1	2	500	400	350	280	200	160	140	112

	Condition B - Interupption of Continuous Traffic								
No. of Lanes VPH total on major street					VPH on higher vol minor street				
Major	Minor	100%ª	80% ^b	70%°	56% ^d	100%ª	80% ^b	70%°	56% ^d
1	1	750	600	525	420	75	60	53	42
2	1	900	720	630	504	75	60	53	42
2	2	900	720	630	504	100	80	70	56
1	2	750	600	525	420	100	80	70	56

^a Basic minimum hourly volume.

with a population or less than 10,000.

May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 70km/h or exceeds 40 mpn in an isolated community with a population less than 10,000

İ		Traffic \	Volume		Total Major	Higher Minor
	Major Street 1	Major Street 2	Minor Street 1	Minor Street 2	Street Vol	Street Vol
12:00 AM		7	0	3	12	3
1:00 AM	6	6	0	2	12	2
2:00 AM	1	6	0	1	7	1
3:00 AM	4	5	0	1	9	1
4:00 AM	1	5	0	3	6	3
5:00 AM	28	11	0	16	39	16
6:00 AM	59	26	0	37	85	37
7:00 AM		46	0	72	108	72
8:00 AM	83	46	0	77	129	77
9:00 AM	49	36	0	36	85	36
10:00 AM	36	36	0	22	72	22
11:00 AM	54	68	0	26	122	26
12:00 PM	64	56	0	30	120	30
1:00 PM	60	39	0	25	99	25
2:00 PM	58	46	0	27	104	27
3:00 PM	72	44	0	34	116	34
4:00 PM	70	84	0	32	154	32
5:00 PM	70	83	0	26	153	26
6:00 PM	77	51	0	37	128	37
7:00 PM	58	48	0	24	106	24
8:00 PM	43	22	0	16	65	16
9:00 PM	31	29	0	11	60	11
10:00 PM	20	20	0	7	40	7
11:00 PM	13	14	0	7	27	7

	Cond	ition A	Condi	tion B	Combination	Combination
	100%	70%	100%	70%	80%	56%
12:00 AM						
1:00 AM						
2:00 AM						
3:00 AM						
4:00 AM						
5:00 AM						
6:00 AM						
7:00 AM						
8:00 AM						
9:00 AM						
10:00 AM						
11:00 AM						
12:00 PM						
1:00 PM						
2:00 PM						
3:00 PM						
4:00 PM						
5:00 PM						
6:00 PM						
7:00 PM						
8:00 PM						
9:00 PM						
10:00 PM						
11:00 PM						
	0	0	0	0	0	0

Warrant 1, Condition A Met:	No	70%:	N/A	
Warrant 1, Condition B Met:	No	70%:	N/A	
Consider combination?	Yes			
Warrant 1, Combination Met:	No	56%	No	
		Warrant 1, Met:	No	

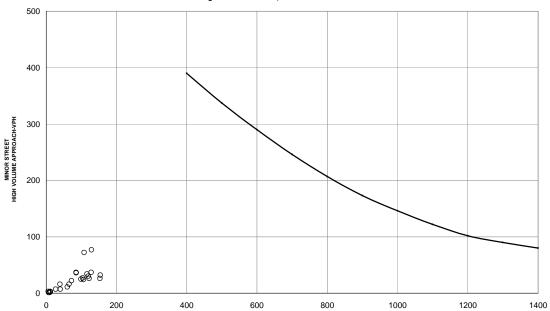
^b Used for combination of Conditions A and B after adequate trial of other remedial measures.

^c May be used when the major-street speed exceeds 40 mph or in an Isolated community with a population of less than 10,000.

| Intersection Name: Northbound Off & Continental Drive | Major Street Name: Ontinental No. of Lanes: 2 or more | Northbound Off No. of Lanes: 1 | Major Street Name: Northbound Off No. of Lanes: 1 | Major Street Speed exceeds 40 mph or isolated community with a population less than 10,000? No

		Traffic '	Total Major	Higher Minor	100%	70%		
	Major Street 1	Major Street 2	Minor Street 1	Minor Street 2	Street Vol	Street Vol	Met	Met
12:00 AM	5	7	0	3	12	3		
1:00 AM	6	6	0	2	12	2		
2:00 AM	1	6	0	1	7	1		
3:00 AM	4	5	0	1	9	1		
4:00 AM	1	5	0	3	6	3		
5:00 AM	28	11	0	16	39	16		
6:00 AM	59	26	0	37	85	37		
7:00 AM	62	46	0	72	108	72		
8:00 AM	83	46	0	77	129	77		
9:00 AM	49	36	0	36	85	36		
10:00 AM	36	36	0	22	72	22		
11:00 AM	54	68	0	26	122	26		
12:00 PM	64	56	0	30	120	30		
1:00 PM	60	39	0	25	99	25		
2:00 PM	58	46	0	27	104	27		
3:00 PM	72	44	0	34	116	34		
4:00 PM	70	84	0	32	154	32		
5:00 PM	70	83	0	26	153	26		
6:00 PM	77	51	0	37	128	37		
7:00 PM	58	48	0	24	106	24		
8:00 PM	43	22	0	16	65	16		
9:00 PM	31	29	0	11	60	11		
10:00 PM	20	20	0	7	40	7		
11:00 PM	13	14	0	7	27	7		

Figure 4C-1. Warrant 2, Four Hour Vehicle Volume



MAJOR STREET-TOTAL OF BOTH APPROACHES-VEHICLES PER HOUR (VPH)

*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

No **70**% N/A

Warrant 2, Met: No

Delay Study for Warrant 3

	Number of Stopped Vehicles		Number of Stopped Vehicles	Cars Served on Study Approach	Cars Served at Intersection
Min/Sec	0	Min/Sec	0	Interval No.	Interval No.
0		0		1	1
1		1		2	2
2		2		3	3
3		3		4	4
				5	
4		4			5
5		5		6	6
6		6		7	7
7		7		8	8
8		8			
9		9		Cars Served	Cars Served
10		10		on Study Approach	at Intersection
11		11		Hourly Sum	Hourly Sum
12		12		1	1
13		13		2	2
14		14		3	3
15		15		4	4
16		16		5	5
17		17		J	0
18		18		Vehicles Stopped	
19 20		19 20		on Study Approach	
				Hourly Totals	
21		21		1	
22		22		2	
23		23		3	
24		24		4	
25		25		5	
26		26			
27		27			
28		28		Total Number of Stopp	ed Vehicles
29		29		Vehicles Served on Ap	proach Leg
30		30			
31		31			
32		32		Stopped Delay	sec/veh
33		33		Stopped Delay	
34		34			
35		35			
36		36			
37		37			
38		38			
39		39			
40		40			
41		41			
42		42			
42		42			
43 44		43 44			
44 45		44 45			
46		46 47			
47					
48		48			
49		49			
50		50			
51		51			
52		52			
53		53			
54		54			
55		55			
56		56			
57		57			
58		58			
59		59			

community with a population less than 10,000?

* This signal warrant shall only be applied in unusual cases. Such cases include, but are not limited to, office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that atrract or discharge large numbers of vehicles over a short time.

Condition A:

1. The total stopped time delay experienced by the traffic on the one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and

Condition A-1 Met: N/A

2. The voulme on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for a one moving lane of traffic or 150 vehicles per hour for for two moving lanes, and

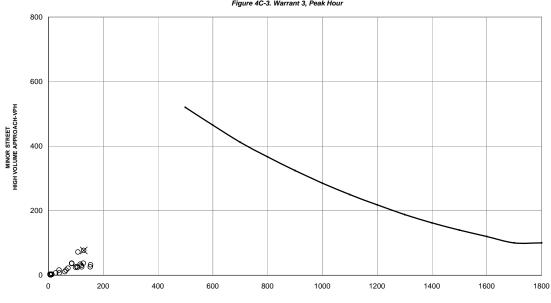
Condition A-2 Met:

3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles for intersections with four or more approaches.

Condition A-3 Met: N/A 70% 100% Condition B: Peak Hour 8:00a-9:00a Total Volume Total Major Higher Minor 77 Total Major Total Major 77 Met

		Traffic \	Total Major	Higher Minor	100%	70%		
	Major Street 1	Major Street 2	Minor Street 1	Minor Street 2	Street Vol	Street Vol	Met	Met
12:00 AM	5	7	0	3	12	3		
1:00 AM	6	6	0	2	12	2		
2:00 AM	1	6	0	1	7	1		
3:00 AM	4	6 5	0	1	9	1		
4:00 AM	1	5	0	3	6	3		
5:00 AM	28	11	0	16	39	16		
6:00 AM	59	26	0	37	85	37		
7:00 AM	62	46	0	72	108	72		
8:00 AM	83	46	0	77	129	77		
9:00 AM	49	36	0	36	85	36		
10:00 AM	36	36	0	22	72	22		
11:00 AM	54	68	0	26	122	26		
12:00 PM	64	56	0	30	120	30		
1:00 PM	60	39	0	25	99	25		
2:00 PM	58	46	0	27	104	27		
3:00 PM	72	44	0	34	116	34		
4:00 PM	70	84	0	32	154	32		
5:00 PM	70	83	0	26	153	26		
6:00 PM	77	51	0	37	128	37		
7:00 PM	58	48	0	24	106	24		
8:00 PM	43	22	0	16	65	16		
9:00 PM	31	29	0	11	60	11		
10:00 PM	20	20	0	7	40	7		
11:00 PM	13	14	0	7	27	7		

Figure 4C-3. Warrant 3, Peak Hour



MAJOR STREET-TOTAL OF BOTH APPROACHES-Warrant 3, Condition A Met: VEHICLES PER HOUR (VPH) Warrant 3. Condition B Met: No 70% N/A *Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower Warrant 3. Met: threshold volume for a minor-street approach with one lane. Is this an unusual case? No ■ Warrant is not applicable

Warrant, 4 Pedestrian Volume

	Northbound Off & Co	ontinental Drive	
Major Street Name: Minor Street Name:		-	
	300' from nearest sig	nal?	No
	ū	_	
Is the roadway divid for pedestrians to w	led by a median with		
for pedestrians to w	rait?	No ▼	
	Pedestrian Volume		Vehicular Gaps
	Across Major Street		Across Major Street
12:00 AN			
1:00 AN			
2:00 AN	•		
3:00 AN			
4:00 AN			
5:00 AN			
6:00 AN			
7:00 AN	•		
8:00 AN			
9:00 AN			
10:00 AN	•		
11:00 AN			
12:00 PN			
1:00 PN	1		
2:00 PN	1		
3:00 PN			
4:00 PN	1		
5:00 PN	1		
6:00 PN	1		
7:00 PN	1		
8:00 PN	1		
9:00 PN	1		
10:00 PN	1		
11:00 PM	1		
14/	A Constitution A Mark	N1/A	
	t 4, Condition A Met:		
Warran	t 4, Condition B Met:	N/A	

Warrant 4, Met: N/A

Warrant 5, School Crossing

Intersection Name:	Northbound Off & Continent	tal Drive	
Major Street Name:	Continental		
Minor Street Name:	Northbound Off		
Location less than 3	00' from nearest signal?	No	
	Start		Finish
	Interval 1	-	
	Interval 2	-	
	Interval 3	-	
	Interval 4	-	
	Interval 5	-	
	Interval 6	-	
	Student Volume	. Val	iaulas Cana
	Across Major Str		icular Gaps s Major Street
	Interval 1	eet ACIOS	s major street
	Interval 1		
	Interval 2 Interval 3		
	Interval 3		
	Interval 4		
	Interval 6		

Warrant 5, Met: N/A

Warrant 6, Corrdinated Signal System

Intersection Name: Morthbound Off & Continental Drive Continental Drive Continental Drive Continental Drive Minor Street Name: Morthbound Off Morthbound Off Continental Drive Continental
*The Coordinated Signal System signal warrant should not be applied where the resultant spacing of traffic control signals would be less than 1000'.
Condition A: 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.
Warrant 6, Condition A met:
Condition B: 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 6, Condition B met:
Warrant 6, Met: N/A

Warrant 7, Crash Experience

Intersection Name: Northbound Off & Continental Drive Major Street Name: Continental Minor Street Name: Northbound Off *Major street speed exceeds 40 mph or isolated community with a population less than 10,000? No
Condition A: Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency
Warrant 7, Condition A met: No ▼
Condition B: Five or more reported crashes, of types susceptible to correction by a traffic control signal, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash Number of Correctable Crashes: 0 Warrant 7, Condition B met: N
Condition C: For each of any 8 hours of an average day, the vehicles per hour (vph) given in both of the 80% columns of Condition A in Table 4C-1, or the vph in both of the 80% columns of Condition B in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection, or the volume of pedestrian traffic is not less than 80% of the requirements specified in the Pedestrian Volume warrant.
80% conditions Condition A in Table 4C-1 met: N 80% conditions Condition B in Table 4C-1 met: N 80% of Pedestrian Volume Warrant Volumes met: N/A

12:00 AM 1:00 AM 2:00 AM 3:00 AM 4:00 AM 5:00 AM 6:00 AM 7:00 AM 8:00 AM 10:00 AM 11:00 AM 11:00 AM 11:00 PM 2:00 PM 3:00 PM 4:00 PM	
2:00 AM 3:00 AM 4:00 AM 5:00 AM 6:00 AM 7:00 AM 8:00 AM 9:00 AM 11:00 AM 11:00 AM 12:00 PM 1:00 PM 2:00 PM 3:00 PM	
3:00 AM 4:00 AM 5:00 AM 6:00 AM 7:00 AM 8:00 AM 9:00 AM 10:00 AM 11:00 AM 11:00 PM 2:00 PM 3:00 PM 4:00 PM	
4:00 AM 5:00 AM 6:00 AM 7:00 AM 8:00 AM 9:00 AM 10:00 AM 11:00 AM 12:00 PM 2:00 PM 3:00 PM 3:00 PM	
5:00 AM 6:00 AM 7:00 AM 8:00 AM 9:00 AM 10:00 AM 11:00 AM 12:00 PM 1:00 PM 2:00 PM 3:00 PM 4:00 PM	
6:00 AM 7:00 AM 8:00 AM 9:00 AM 10:00 AM 11:00 AM 12:00 PM 1:00 PM 2:00 PM 3:00 PM	
7:00 AM 8:00 AM 9:00 AM 10:00 AM 11:00 AM 12:00 PM 1:00 PM 2:00 PM 3:00 PM	
8:00 AM 9:00 AM 10:00 AM 11:00 AM 12:00 PM 1:00 PM 2:00 PM 3:00 PM 4:00 PM	
9:00 AM 10:00 AM 11:00 AM 12:00 PM 1:00 PM 2:00 PM 3:00 PM 4:00 PM	
10:00 AM 11:00 AM 12:00 PM 1:00 PM 2:00 PM 3:00 PM 4:00 PM	
11:00 AM 12:00 PM 1:00 PM 2:00 PM 3:00 PM 4:00 PM	
12:00 PM 1:00 PM 2:00 PM 3:00 PM 4:00 PM	
1:00 PM 2:00 PM 3:00 PM 4:00 PM	
2:00 PM 3:00 PM 4:00 PM	
3:00 PM 4:00 PM	
4:00 PM	
5:00 PM	
6:00 PM	
7:00 PM	
8:00 PM	
9:00 PM	
10:00 PM	
11:00 PM	
0 0 0	

Warrant 7, Met: No

Warrant 8, Roadway Network

	<u>e</u>
Northbound Off	
only be considered if the location	is an intersection of two or more major routes.
ed in this signal warrant shall have	e one or more of the following characteristics:
street or highway system that se flow; or	rves as the principal roadway network for
l or suburban highways outside,	entering, or traversing a city; or
major route on an official plan, s sportation study.	uch as a major street plan in an urban area
udy intersection consist of two	or more major routes? No ▼
peak hour of a typical weekday a	orojected, entering volume of at least 1,000 vehicle nd has 5-year projected traffic volumes, based on a 1, 2, and 3 during an average weekday; or
les suterium the interception.	NI/A
	N/A N/A
Warrant o, Condition A met.	IVA
	orojected, entering volume of at least 1,000 vehicles ness day (Saturday or Sunday).
Warrant 8, Condition B met:	N/A
Warrant 8, met:	N/A
	street or highway system that se flow; or I or suburban highways outside, major route on an official plan, si sportation study. udy intersection consist of two or a total existing, or immediately peak hour of a typical weekday and meet one or more of warrants sites entering the intersection: Warrant 8, Condition A met:

No

Condition A - Minimum Vehicular Volume									
No. of	Lanes	VPH total on major street			VPH on higher vol minor street				
Major	Minor	100%ª	80% ^b	70%°	56% ^d	100% ^a	80% ^b	70%°	56% ^d
1	1	500	400	350	280	150	120	105	84
2	1	600	480	420	336	150	120	105	84
2	2	600	480	420	336	200	160	140	112
1	2	500	400	350	280	200	160	140	112

Condition B - Interupption of Continuous Traffic									
No. of	Lanes	VPH total on major street			VPH on higher vol minor street				
Major	Minor	100%ª	80% ^b	70%°	56% ^d	100% ^a	80% ^b	70%°	56% ^d
1	1	750	600	525	420	75	60	53	42
2	1	900	720	630	504	75	60	53	42
2	2	900	720	630	504	100	80	70	56
1	2	750	600	525	420	100	80	70	56

^a Basic minimum hourly volume.

with a population or less than 10,000.

May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 70km/h or exceeds 40 mpn in an isolated community with a population less than 10,000

			Volume		Total Major	Higher Minor			
	Major Street 1	Major Street 2	Minor Street 1	Minor Street 2	Street Vol	Street Vol			
12:00 AM	5	7	0	1	12	1			
1:00 AM	6	6	0	0	12	0			
2:00 AM	1	6	0	0	7	0			
3:00 AM		5	1	0	9	1			
4:00 AM	1	5	1	1	6	1			
5:00 AM	28	11	2	3	39	3			
6:00 AM	59	26	2	11	85	11			
7:00 AM		46	6	13	108	13			
8:00 AM	83	46	3	9	129	9			
9:00 AM	49	36	5	13	85	13			
10:00 AM		36	11	6	72	11			
11:00 AM		68	5	8	122	8			
12:00 PM	64	56	1	10	120	10			
1:00 PM		39	4	6	99	6			
2:00 PM		46	1	5	104	5			
3:00 PM	72	44	3	3	116	3			
4:00 PM		84	7	7	154	7			
5:00 PM		83	1	6	153	6			
6:00 PM		54	5	8	131	8			
7:00 PM	58	48	2	9	106	9			
8:00 PM		22	1	6	65	6			
9:00 PM	31	29	1	9	60	9			
10:00 PM	20	20	2	7	40	7			
11:00 PM	13	14	0	3	27	3			

	Condition A		Condi	tion B	Combination	Combination
	100%	70%	100%	70%	80%	56%
12:00 AM						
1:00 AM						
2:00 AM						
3:00 AM						
4:00 AM						
5:00 AM						
6:00 AM						
7:00 AM						
8:00 AM						
9:00 AM						
10:00 AM						
11:00 AM						
12:00 PM						
1:00 PM						
2:00 PM						
3:00 PM						
4:00 PM						
5:00 PM						
6:00 PM						
7:00 PM						
8:00 PM						
9:00 PM						
10:00 PM						
11:00 PM						
	0	0	0	0	0	0

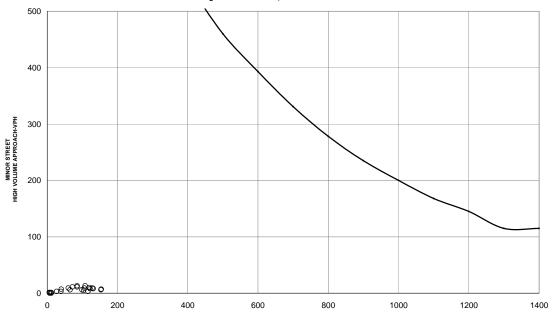
Warrant 1, Condition A Met:	No	70%:	N/A	
Warrant 1, Condition B Met:	No	70%:	N/A	
Consider combination?	Yes			
Warrant 1, Combination Met:	No	56%	No	
		Warrant 1, Met:	No	

^b Used for combination of Conditions A and B after adequate trial of other remedial measures.

^c May be used when the major-street speed exceeds 40 mph or in an Isolated community with a population of less than 10,000.

	_							
			Volume		Total Major	Higher Minor	100%	70%
		Major Street 2		Minor Street 2	Street Vol	Street Vol	Met	Met
12:00 AM		7	0	1	12	1		
1:00 AM		6	0	0	12	0		
2:00 AM		6	0	0	7	0		
3:00 AM		5	1	0	9	1		
4:00 AM	1	5	1	1	6	1		
5:00 AM	28	11	2	3	39	3		
6:00 AM	59	26	2	11	85	11		
7:00 AM	62	46	6	13	108	13		
8:00 AM	83	46	3	9	129	9		
9:00 AM	49	36	5	13	85	13		
10:00 AM	36	36	11	6	72	11		
11:00 AM	54	68	5	8	122	8		
12:00 PM	64	56	1	10	120	10		
1:00 PM	60	39	4	6	99	6		
2:00 PM	58	46	1	5	104	5		
3:00 PM	72	44	3	3	116	3		
4:00 PM	70	84	7	7	154	7		
5:00 PM	70	83	1	6	153	6		
6:00 PM	77	54	5	8	131	8		
7:00 PM	58	48	2	9	106	9		
8:00 PM	43	22	1	6	65	6		
9:00 PM	31	29	1	9	60	9		
10:00 PM		20	2	7	40	7		
11:00 PM		14	0	3	27	3		

Figure 4C-1. Warrant 2, Four Hour Vehicle Volume



MAJOR STREET-TOTAL OF BOTH APPROACHES-VEHICLES PER HOUR (VPH)

*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

No **70**% N/A

Warrant 2, Met: No

Delay Study for Warrant 3

Intersection Name: Continental Dr. & Saddle Rock Dr.
Major Street Name: Continental Dr.
Minor Street Name: Saddle Rock Dr
mber of Approaches: 4
Interval: Seconds

	Number of Stopped Vehicles		Number of Stopped Vehicles	Cars Served on Study Approach	Cars Served at Intersection
Min/Sec	0	Min/Sec	0	Interval No.	Interval No.
0		0		1	1
1		1		2	2
2		2		3	3
3		3		4	4
4		4		5	5
5		5		6	6
6		6		7	7
7		7		8	8
8		8		0	0
9		9		Cars Served	Cars Served
10		10		on Study Approach	at Intersection
11		11		Hourly Sum	Hourly Sum
12		12		1	1
13		13		2	2
14		14		3	
				3 4	3
15		15		5	4 5
16		16		5	5
17		17		Vahialaa Ctaar	
18		18		Vehicles Stopped	
19		19		on Study Approach	
20		20		Hourly Totals	
21		21		1	
22		22		2	
23		23		3	
24		24		4	
25		25		5	
26		26			
27		27			
28		28		Total Number of Stopp	ed Vehicles
29		29		Vehicles Served on Ap	proach Leg
30		30			
31		31			
32		32		Stopped Delay	/ sec/veh
33		33		Stopped Delay	veh-hrs
34		34			
35		35			
36		36			
37		37			
38		38			
39		39			
40		40			
41		41			
42		42			
43		43			
44		44			
45		45			
46		46			
47		47			
48		48			
49		49			
50		50			
51		51			
52		52			
53		53			
54		54			
55		55			
56		56			
57		57			
58		58			
59		59			
		•			

No

community with a population less than 10,000?

* This signal warrant shall only be applied in unusual cases. Such cases include, but are not limited to, office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that atrract or discharge large numbers of vehicles over a short time.

Condition A:

Condition B:

1. The total stopped time delay experienced by the traffic on the one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and

Condition A-1 Met: N/A

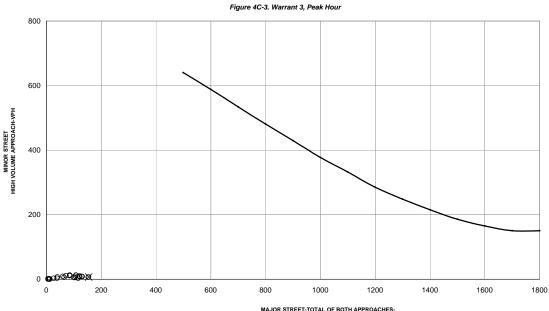
2. The voulme on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for a one moving lane of traffic or 150 vehicles per hour for for two moving lanes, and

Condition A-2 Met:

3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles for intersections with four or more approaches.

Condition A-3 Met: N/A 100% 70% Peak Hour Total Volume Total Major Higher Minor 4:00p-5:00p 168 154 7 Met

		Traffic Volume			Total Major	Higher Minor	100%	70%
	Major Street 1	Major Street 2	Minor Street 1	Minor Street 2	Street Vol	Street Vol	Met	Met
12:00 AM	5	7	0	1	12	1		
1:00 AM	6	6	0	0	12	0		
2:00 AM	1	6	0	0	7	0		
3:00 AM	4	6 5	1	0	9	1		
4:00 AM	1	5	1	1	6	1		
5:00 AM	28	11	2	3	39	3		
6:00 AM	59	26	2	11	85	11		
7:00 AM	62	46	6	13	108	13		
8:00 AM	83	46	3	9	129	9		
9:00 AM	49	36	5	13	85	13		
10:00 AM	36	36	11	6	72	11		
11:00 AM	54	68	5	8	122	8		
12:00 PM	64	56	1	10	120	10		
1:00 PM	60	39	4	6	99	6		
2:00 PM	58	46	1	5	104	5		
3:00 PM	72	44	3	3	116	3		
4:00 PM	70	84	7	7	154	7		
5:00 PM	70	83	1	6	153	6		
6:00 PM	77	54	5	8	131	8		
7:00 PM	58	48	2	9	106	9		
8:00 PM	43	22	1	6	65	6		
9:00 PM	31	29	1	9	60	9		
10:00 PM	20	20	2	7	40	7		
11:00 PM	13	14	0	3	27	3		



MAJOR STREET-TOTAL OF BOTH APPROACHES-Warrant 3, Condition A Met: VEHICLES PER HOUR (VPH) Warrant 3. Condition B Met: No 70% N/A *Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower Warrant 3. Met: threshold volume for a minor-street approach with one lane. Is this an unusual case? No ■ Warrant is not applicable

Warrant, 4 Pedestrian Volume

	Continental Dr. & Sa	ddle Rock Dr.	
	Continental Dr.	_	
Minor Street Name:			NI-
Location less than 300' from nearest signal?			
	ed by a median with	sufficient width	
for pedestrians to w	ait?	No 🔻	
	Pedestrian Volume		Vehicular Gaps
	Across Major Street		Across Major Street
12:00 AM	l		
1:00 AN			
2:00 AM	l		
3:00 AN			
4:00 AN			
5:00 AM			
6:00 AN			
7:00 AN			
8:00 AN			
9:00 AN			
10:00 AN			
11:00 AN			
12:00 PM			
1:00 PM			
2:00 PM			
3:00 PM			
4:00 PM			
5:00 PM			
6:00 PM			
7:00 PM			
8:00 PM			
9:00 PM			
10:00 PM			
11:00 PM	l		
14/	. 4 0	NI/A	
	t 4, Condition A Met:		
vvarran	t 4, Condition B Met:	N/A	
	Warrant 4, Met:	N/A	

Warrant 5, School Crossing

Intersection Name:	Continental Dr. & Saddle	Rock Dr.	
Major Street Name:	Continental Dr.		
Minor Street Name:	Saddle Rock Dr		
Location less than 3	00' from nearest signal?	No	
	Start		Finish
	Interval 1	-	
	Interval 2	-	
	Interval 3	-	
	Interval 4	-	
	Interval 5	-	
	Interval 6	-	
	Student Volu	me Ve	hicular Gaps
	Across Major S		ss Major Street
	Interval 1		
	Interval 2		
	Interval 3		
	Interval 4		
	Interval 5		
	Interval 6		

Warrant 5, Met: N/A

Warrant 6, Corrdinated Signal System

Intersection Name: Major Street Name: Minor Street Name:				
*The Coordinated Signal System signal warrant should not be applied where the resultant spacing of traffic control signals would be less than 1000'.				
	or a street that has traffic predominantly in one direction, the adjacent traffic control signals they do not provide the necessary degree of vehicular platooning.			
	Warrant 6, Condition A met:			
	adjacent traffic control signals do not provide the necessary degree of platooning and the ent traffic control signals will collectively provide a progressive operation.			
	Warrant 6, Condition B met:			
,	Warrant 6, Met: N/A			

Warrant 7, Crash Experience

Intersection Name: Co	Continental Dr. & Saddle Rock Dr.	
Major Street Name: Co	Continental Dr.	
Minor Street Name: Sa	Saddle Rock Dr	
*Major street speed exc	xceeds 40 mph or isolated	
community with a popu	oulation less than 10,000? No	
Condition A:		
	natives with satisfactory observance and enforcement has failed	
to reduce the crash fre	equency	
V	Warrant 7, Condition A met: №	
0		
Condition B:		
	crashes, of types susceptible to correction by a traffic control sig	
	a 12-month period, each crash involving personal injury or proper	ty
damage apparently exc	cceeding the applicable requirements for a reportable crash	
Numb	ber of Correctable Crashes: 0	
	Warrant 7, Condition B met:	
V	warrant 7, Condition B met:	
Condition C:		
00.10.1.0.1	irs of an average day, the vehicles per hour (vph) given in both of t	he
	lition A in Table 4C-1, or the vph in both of the 80% columns of Col	
	n the major-street and the higher-volume minor-street approach, re	
	the volume of pedestrian traffic is not less than 80% of the require	
specified in the Pedest		
specifica in the redest	Milan Foranic Warrant.	
80% conditions Con	ondition A in Table 4C-1 met: N	
80% conditions Con	ondition B in Table 4C-1 met:	
80% of Pedestrian Volu	lume Warrant Volumes met: N/A	
		

		80% Condition B in Table 4C-1	80% Pedestrian Volumes
12:00 AM			
1:00 AM			
2:00 AM			
3:00 AM			
4:00 AM			
5:00 AM			
6:00 AM			
7:00 AM			
8:00 AM			
9:00 AM			
10:00 AM			
11:00 AM			
12:00 PM			
1:00 PM			
2:00 PM			
3:00 PM			
4:00 PM			
5:00 PM			
6:00 PM			
7:00 PM			
8:00 PM			
9:00 PM			
10:00 PM			
11:00 PM			
	0	0	0

Warrant 7, Met: No

PBSJ - Traffic Engineering Ver. 1.00

Warrant 8, Roadway Network

Intersection Name: Continental Dr. & Saddle Rock Dr.
* This warrant shall only be considered if the location is an intersection of two or more major routes.
A major route as used in this signal warrant shall have one or more of the following characteristics:
 It is part of the street or highway system that serves as the principal roadway network for through traffic flow; or
2. It includes rural or suburban highways outside, entering, or traversing a city; or
It appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.
Does the study intersection consist of two or more major routes? $\overline{\ \ }_{\text{No}}$
Condition A The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday and has 5-year projected traffic volumes, based on an engineering study, that meet one or more of warrants 1, 2, and 3 during an average weekday; or
At least 1,000 vehicles entering the intersection: N/A Warrant 8, Condition A met: N/A
Condition B The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a nonnormal business day (Saturday or Sunday).
Warrant 8, Condition B met: N/A
Warrant 8, met: N/A

	Condition A - Minimum Vehicular Volume								
No. of	No. of Lanes VPH total on major street				VPH on higher	vol minor street			
Major	Minor	100%ª	80% ^b	70%°	56% ^d	100% ^a	80% ^b	70%°	56% ^d
1	1	500	400	350	280	150	120	105	84
2	1	600	480	420	336	150	120	105	84
2	2	600	480	420	336	200	160	140	112
1	2	500	400	350	280	200	160	140	112

			Condition	on B - Interupption	on of Continuou	s Traffic			
No. of	Lanes	VPH	VPH total on major street				VPH on higher	vol minor street	
Major	Minor	100%ª	80% ^b	70%°	56% ^d	100%ª	80% ^b	70%°	56% ^d
1	1	750	600	525	420	75	60	53	42
2	1	900	720	630	504	75	60	53	42
2	2	900	720	630	504	100	80	70	56
1	2	750	600	525	420	100	80	70	56

^a Basic minimum hourly volume.

with a population or less than 10,000.

May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 70km/h or exceeds 40 mpn in an isolated community with a population less than 10,000

I		Traffic \		Total Major	Higher Minor	
	Mailer Oter et 4			M' 01 0		
	Major Street 1	Major Street 2	Minor Street 1	Minor Street 2	Street Vol	Street Vol
12:00 AM		31	0	48	66	48
1:00 AM		17	0	25	35	25
2:00 AM		18	0	20	36	20
3:00 AM		14	0	24	27	24
4:00 AM	16	24	0	24	40	24
5:00 AM	44	46	0	39	90	39
6:00 AM		62	0	72	124	72
7:00 AM		83	0	121	188	121
8:00 AM	147	106	0	180	253	180
9:00 AM	142	101	0	181	243	181
10:00 AM	155	128	0	188	283	188
11:00 AM	148	101	0	197	249	197
12:00 PM	159	115	0	212	274	212
1:00 PM	167	115	0	234	282	234
2:00 PM	159	107	0	252	266	252
3:00 PM	178	120	0	226	298	226
4:00 PM	186	112	0	236	298	236
5:00 PM	160	125	0	210	285	210
6:00 PM	119	109	0	174	228	174
7:00 PM	106	92	0	167	198	167
8:00 PM	91	89	0	116	180	116
9:00 PM		80	0	121	159	121
10:00 PM		59	0	80	125	80
11:00 PM	51	49	0	59	100	59

	Cond	ition A	Condi	tion B	Combination	Combination
	100%	70%	100%	70%	80%	56%
12:00 AM						
1:00 AM						
2:00 AM						
3:00 AM						
4:00 AM						
5:00 AM						
6:00 AM						
7:00 AM						
8:00 AM						
9:00 AM						
10:00 AM						
11:00 AM						
12:00 PM						
1:00 PM						
2:00 PM						
3:00 PM						
4:00 PM						
5:00 PM						
6:00 PM						
7:00 PM						
8:00 PM						
9:00 PM						
10:00 PM						
11:00 PM						
-	0	0	0	0	0	0

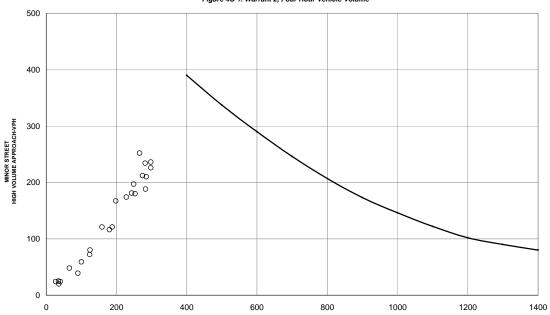
Warrant 1, Condition A Met:	No	70%:	N/A	
Warrant 1, Condition B Met:	No	70%:	N/A	
Consider combination?	Yes			
Warrant 1, Combination Met:	No	56%	No	
		Warrant 1, Met:	No	

^b Used for combination of Conditions A and B after adequate trial of other remedial measures.

^c May be used when the major-street speed exceeds 40 mph or in an Isolated community with a population of less than 10,000.

		Traffic '	Volume		Total Major	Higher Minor	100%	70%
	Major Street 1	Major Street 2	Minor Street 1	Minor Street 2	Street Vol	Street Vol	Met	Met
12:00 AM	35	31	0	48	66	48		
1:00 AM	18	17	0	25	35	25		
2:00 AM	18	18	0	20	36	20		
3:00 AM	13	14	0	24	27	24		
4:00 AM	16	24	0	24	40	24		
5:00 AM	44	46	0	39	90	39		
6:00 AM	62	62	0	72	124	72		
7:00 AM	105	83	0	121	188	121		
8:00 AM	147	106	0	180	253	180		
9:00 AM	142	101	0	181	243	181		
10:00 AM	155	128	0	188	283	188		
11:00 AM	148	101	0	197	249	197		
12:00 PM	159	115	0	212	274	212		
1:00 PM	167	115	0	234	282	234		
2:00 PM	159	107	0	252	266	252		
3:00 PM	178	120	0	226	298	226		
4:00 PM	186	112	0	236	298	236		
5:00 PM	160	125	0	210	285	210		
6:00 PM	119	109	0	174	228	174		
7:00 PM	106	92	0	167	198	167		
8:00 PM	91	89	0	116	180	116		
9:00 PM	79	80	0	121	159	121		
10:00 PM	66	59	0	80	125	80		
11:00 PM	51	49	0	59	100	59		

Figure 4C-1. Warrant 2, Four Hour Vehicle Volume



MAJOR STREET-TOTAL OF BOTH APPROACHES-VEHICLES PER HOUR (VPH)

*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

No 70% N/A

Warrant 2, Met: No

Delay Study for Warrant 3

Intersection Name: Rocker and WB Off
Major Street Name: Rocker
Minor Street Name: WB Off
nber of Approaches: 4
Interval: Seconds Seconds Interval:

	Number of Stopped Vehicles		Number of Stopped Vehicles	Cars Served on Study Approach	Cars Served at Intersection
Min/Sec	0	Min/Sec	0	Interval No.	Interval No.
0	0	0	0	1	1
1		1		2	2
2		2		3	3
3		3		4	4
4		4		5	5
5		5		6	6
6		6		7	7
7		7		8	8
8		8		-	•
9		9		Cars Served	Cars Served
10		10		on Study Approach	at Intersection
11		11		Hourly Sum	Hourly Sum
12		12		1	1
13		13		2	2
14		14		3	3
15		15		4	4
16		16		5	5
17		17		-	•
18		18		Vehicles Stopped	
19		19		on Study Approach	
20		20		Hourly Totals	
21		21		1	
22		22		2	
23		23		3	
24		24		4	
25		25		5	
26		26		ű	
27		27			
28		28		Total Number of Stopp	ed Vehicles
29		29		Vehicles Served on Ap	
30		30		vernoies derved on rep	prodon Ecg
31		31			
32		32		Stopped Delay	sec/veh
33		33			
34		34		Stopped Delay	ven-ins
35		35			
36		36			
37		37			
38		38			
39		39			
40		40			
41		41			
42		42			
43		43			
44		43			
45		45			
46		46			
47		47			
48		48			
49		49			
50		50			
51		51			
52		52			
53		53			
54		54			
55		55			
56		56			
57		57			
58		58			
59		59			

*Major street speed exceeds 40 mph or isolated community with a population less than 10,000?

Condition A:

1. The total stopped time delay experienced by the traffic on the one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and

Condition A-1 Met: N/A

2. The voulme on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for a one moving lane of traffic or 150 vehicles per hour for for two moving lanes, and

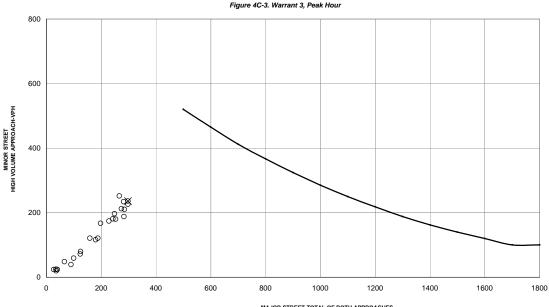
Condition A-2 Met:

3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles for intersections with four or more approaches.

Condition A-3 Met: N/A 70% 100% Condition B: Peak Hour Total Volume Total Major Higher Minor 4:00p-5:00p 534 298 236 Met

		Traffic \	Total Major	Higher Minor	100%	70%		
	Major Street 1	Major Street 2	Minor Street 1	Minor Street 2	Street Vol	Street Vol	Met	Met
12:00 AM	35	31	0	48	66	48		
1:00 AM	18	17	0	25	35	25		
2:00 AM	18	18	0	20	36	20		
3:00 AM	13	14	0	24	27	24		
4:00 AM	16	24	0	24	40	24		
5:00 AM	44	46	0	39	90	39		
6:00 AM	62	62	0	72	124	72		
7:00 AM	105	83	0	121	188	121		
8:00 AM	147	106	0	180	253	180		
9:00 AM	142	101	0	181	243	181		
10:00 AM	155	128	0	188	283	188		
11:00 AM	148	101	0	197	249	197		
12:00 PM	159	115	0	212	274	212		
1:00 PM	167	115	0	234	282	234		
2:00 PM	159	107	0	252	266	252		
3:00 PM	178	120	0	226	298	226		
4:00 PM	186	112	0	236	298	236		
5:00 PM	160	125	0	210	285	210		
6:00 PM	119	109	0	174	228	174		
7:00 PM	106	92	0	167	198	167		
8:00 PM	91	89	0	116	180	116		
9:00 PM	79	80	0	121	159	121		
10:00 PM	66	59	0	80	125	80		
11:00 PM	51	49	0	59	100	59		

Figure 4C-3. Warrant 3, Peak Hour



MAJOR STREET-TOTAL OF BOTH APPROACHES-Warrant 3, Condition A Met: VEHICLES PER HOUR (VPH) Warrant 3. Condition B Met: No 70% N/A *Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower Warrant 3. Met: threshold volume for a minor-street approach with one lane. Is this an unusual case? No **▼** Warrant is not applicable

^{*} This signal warrant shall only be applied in unusual cases. Such cases include, but are not limited to, office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that atrract or discharge large numbers of vehicles over a short time.

Warrant, 4 Pedestrian Volume

Intersection Name:	Rocker and WB Off		
Major Street Name:	Rocker	•	
Minor Street Name:		•	
Location less than 3	800' from nearest sign	nal?	No
Is the roadway divid for pedestrians to w	led by a median with rait?	sufficient width	
	Pedestrian Volume		Vehicular Gaps
	Across Major Street		Across Major Street
12:00 AN			
1:00 AN			
2:00 AN			
3:00 AN			
4:00 AN			
5:00 AN			
6:00 AN			
7:00 AM 8:00 AM			
9:00 AN			
10:00 AN			
11:00 AN			
12:00 PM			
1:00 PM	1		
2:00 PM	1		
3:00 PM	1		
4:00 PM	1		
5:00 PM	1		
6:00 PM	1		
7:00 PM	1		
8:00 PM			
9:00 PM			
10:00 PM			
11:00 PM	1		
Warran	t 4, Condition A Met:	N/A	
	t 4, Condition A Met.		
**aiiaii	t 4, Condition D Wet.	IN/A	
	Warrant 4, Met:	N/A	

Warrant 5, School Crossing

Major Street Name: Rocker	
Minor Street Name: WB Off	
Location less than 300' from nearest signal? No	
Start	Finish
Interval 1 -	
Interval 2 -	
Interval 3 -	
Interval 4 -	
Interval 5 -	
Interval 6 -	
Student Volume Veh	nicular Gaps
Across Major Street Acros	s Major Street
Interval 1	
Interval 2	
Interval 3	
Interval 4	
Interval 5	
Interval 6	

Warrant 5, Met: N/A

Warrant 6, Corrdinated Signal System

Intersection Name: Major Street Name: Minor Street Name:	Rocker
	ignal System signal warrant should not be applied spacing of traffic control signals would be less than 1000'.
	or a street that has traffic predominantly in one direction, the adjacent traffic control signals they do not provide the necessary degree of vehicular platooning.
	Warrant 6, Condition A met:
	, adjacent traffic control signals do not provide the necessary degree of platooning and the ent traffic control signals will collectively provide a progressive operation.
	Warrant 6, Condition B met:
,	Warrant 6. Met: N/A

Warrant 7, Crash Experience

Intersection Name: Rocker and WB Off Major Street Name: Rocker WB Off WB Off
Condition A: Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency
Warrant 7, Condition A met: No ▼
Condition B: Five or more reported crashes, of types susceptible to correction by a traffic control signal, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash Number of Correctable Crashes: 1 Warrant 7, Condition B met: N
Condition C: For each of any 8 hours of an average day, the vehicles per hour (vph) given in both of the 80% columns of Condition A in Table 4C-1, or the vph in both of the 80% columns of Condition B in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection, or the volume of pedestrian traffic is not less than 80% of the requirements specified in the Pedestrian Volume warrant.
80% conditions Condition A in Table 4C-1 met: N 80% conditions Condition B in Table 4C-1 met: N 80% of Pedestrian Volume Warrant Volumes met: N/A

		80% Condition B in Table 4C-1	80% Pedestrian Volumes
12:00 AM			
1:00 AM			
2:00 AM			
3:00 AM			
4:00 AM			
5:00 AM			
6:00 AM			
7:00 AM			
8:00 AM			
9:00 AM			
10:00 AM			
11:00 AM			
12:00 PM			
1:00 PM			
2:00 PM			
3:00 PM			
4:00 PM			
5:00 PM			
6:00 PM			
7:00 PM			
8:00 PM			
9:00 PM			
10:00 PM			
11:00 PM			
	0	0	0

Warrant 7, Met: No

Warrant 8, Roadway Network

Intersection Name: Rocker and WB Off
* This warrant shall only be considered if the location is an intersection of two or more major routes.
A major route as used in this signal warrant shall have one or more of the following characteristics:
 It is part of the street or highway system that serves as the principal roadway network for through traffic flow; or
2. It includes rural or suburban highways outside, entering, or traversing a city; or
It appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.
Does the study intersection consist of two or more major routes? $\overline{\ \ \ \ \ \ \ \ \ \ \ \ }$
Condition A The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday and has 5-year projected traffic volumes, based on an engineering study, that meet one or more of warrants 1, 2, and 3 during an average weekday; or
At least 1,000 vehicles entering the intersection: N/A Warrant 8, Condition A met: N/A
Condition B The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a nonnormal business day (Saturday or Sunday).
Warrant 8, Condition B met: N/A
Warrant 8, met: <u>N/A</u>

| Intersection Name: | Montana Street & WB Off Ramp | Major Street Name: | Montana St | No. of Lanes: | 2 or more | Minor Street Name: | WB Off Ramp | No. of Lanes: | 2 or more | Najor street speed exceeds 40 mph or isolated community with a population less than 10,000? | No

			Con	dition A - Minimu	ım Vehicular Vol	ume			
No. o	No. of Lanes VPH total on major street					VPH on higher	vol minor street		
Major	Minor	100%ª	80% ^b	70%°	56% ^d	100% ^a	80% ^b	70%°	56% ^d
1	1	500	400	350	280	150	120	105	84
2	1	600	480	420	336	150	120	105	84
2	2	600	480	420	336	200	160	140	112
1	2	500	400	350	280	200	160	140	112

			Condition	on B - Interupption	on of Continuous	s Traffic			
No. of	No. of Lanes VPH total on major street					VPH on higher	vol minor street		
Major	Minor	100%ª	80% ^b	70% ^c	56% ^d	100%ª	80% ^b	70%°	56% ^d
1	1	750	600	525	420	75	60	53	42
2	1	900	720	630	504	75	60	53	42
2	2	900	720	630	504	100	80	70	56
1	2	750	600	525	420	100	80	70	56

^a Basic minimum hourly volume.

d May be used for combination of Conditions A and B after adequate trial of other remedial measures when the majorstreet speed exceeds 70km/h or exceeds 40 mpn in an isolated community with a population less than 10,000

		Traffic \	/olume		Total Major	Higher Minor
	Major Street 1	Major Street 2	Minor Street 1	Minor Street 2	Street Vol	Street Vol
12:00 AM	56	53	0	23	109	23
1:00 AM	31	28	0	12	59	12
2:00 AM	26	19	0	9	45	9
3:00 AM	19	18	0	14	37	14
4:00 AM	48	29	0	15	77	15
5:00 AM	102	90	0	43	192	43
6:00 AM	197	232	0	101	429	101
7:00 AM	367	479	0	211	846	211
8:00 AM	435	570	0	245	1005	245
9:00 AM	430	450	0	174	880	174
10:00 AM	457	445	0	149	902	149
11:00 AM		463	0	137	1055	137
12:00 PM	575	512	0	169	1087	169
1:00 PM	587	585	0	183	1172	183
2:00 PM		582	0	184	1211	184
3:00 PM	674	556	0	170	1230	170
4:00 PM	714	595	0	205	1309	205
5:00 PM		583	0	223	1344	223
6:00 PM	506	482	0	192	988	192
7:00 PM	372	394	0	126	766	126
8:00 PM		322	0	115	630	115
9:00 PM		243	0	90	487	90
10:00 PM	190	183	0	77	373	77
11:00 PM	116	106	0	52	222	52

	Cond	ition A	Condi	tion B	Combination	Combination
	100%	70%	100%	70%	80%	56%
12:00 AM						
1:00 AM						
2:00 AM						
3:00 AM						
4:00 AM						
5:00 AM						
6:00 AM						
7:00 AM	~					
8:00 AM	~		~			
9:00 AM						
10:00 AM			~			
11:00 AM			~			
12:00 PM			~			
1:00 PM			~			
2:00 PM			~			
3:00 PM			~			
4:00 PM	~		~			
5:00 PM	~		~			
6:00 PM			~			
7:00 PM						
8:00 PM						
9:00 PM						
10:00 PM						
11:00 PM						
	4	0	10	0	0	0

Warrant 1. Condition A Met: 70%: N/A Warrant 1, Condition B Met:

Consider combination? See Note 1
Warrant 1, Combination Met: N/A N/A 56%

Note 1: Not considered because either Condition A or B is already met.

Warrant 1, Met: Yes

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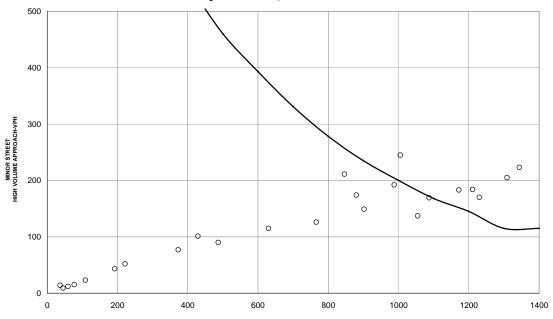
^b Used for combination of Conditions A and B after adequate trial of other remedial measures.

^c May be used when the major-street speed exceeds 40 mph or in an Isolated community with a population of less than 10,000.

| Intersection Name: | Montana Street & WB Off Ramp | Major Street Name: | Montana St. | No. of Lanes: | 2 or more | Minor Street Name: | WB Off Ramp | No. of Lanes: | 2 or more | Major street speed exceeds 40 mph or isolated | community with a population less than 10,000? | No

		Traffic '	Volume		Total Major	Higher Minor	100%	70%
	Major Street 1	Major Street 2	Minor Street 1	Minor Street 2	Street Vol	Street Vol	Met	Met
12:00 AM	56	53	0	23	109	23		
1:00 AM	31	28	0	12	59	12		
2:00 AM	26	19	0	9	45	9		
3:00 AM	19	18	0	14	37	14		
4:00 AM	48	29	0	15	77	15		
5:00 AM	102	90	0	43	192	43		
6:00 AM	197	232	0	101	429	101		
7:00 AM	367	479	0	211	846	211		
8:00 AM	435	570	0	245	1005	245	~	
9:00 AM	430	450	0	174	880	174		
10:00 AM	457	445	0	149	902	149		
11:00 AM	592	463	0	137	1055	137		
12:00 PM	575	512	0	169	1087	169		
1:00 PM	587	585	0	183	1172	183	~	
2:00 PM	629	582	0	184	1211	184	~	
3:00 PM	674	556	0	170	1230	170	~	
4:00 PM	714	595	0	205	1309	205	~	
5:00 PM	761	583	0	223	1344	223	~	
6:00 PM	506	482	0	192	988	192		
7:00 PM	372	394	0	126	766	126		
8:00 PM	308	322	0	115	630	115		
9:00 PM	244	243	0	90	487	90		
10:00 PM	190	183	0	77	373	77		
11:00 PM	116	106	0	52	222	52		

Figure 4C-1. Warrant 2, Four Hour Vehicle Volume



MAJOR STREET-TOTAL OF BOTH APPROACHES-VEHICLES PER HOUR (VPH)

*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Yes 70% N/A

Warrant 2, Met: Yes

Delay Study for Warrant 3

Intersection Name: Montana Street & WB Off Ramp
Major Street Name: Montana St
Minor Street Name: WB Off Ramp
mber of Approaches: 4
Interval: Seconds

	Number of Stopped Vehicles		Number of Stopped Vehicles	Cars Served on Study Approach	Cars Served at Intersection
Min/Sec	0	Min/Sec	0	Interval No.	Interval No.
0	•	0	-	1	1
1		1		2	2
2		2		3	3
3		3		4	4
4		4		5	5
5		5		6	6
6		6		7	7
7		7		8	8
8		8			
9		9		Cars Served	Cars Served
10		10		on Study Approach	at Intersection
11		11		Hourly Sum	Hourly Sum
12		12		1	1
13		13		2	2
14		14		3	3
15		15		4	4
16		16		5	5
17		17			
18		18		Vehicles Stopped	
19		19		on Study Approach	
20		20		Hourly Totals	
21		21		1	
22		22		2	
23		23		3	
24		24		4	
25		25		5	
26		26 27			
27				Tatal Nameh as of Otana	- 41/4-1-1
28		28		Total Number of Stopp	ed Vehicles
29		29		Vehicles Served on Ap	proach Leg
30		30			
31		31		01	
32		32		Stopped Delay	sec/veh
33		33		Stopped Delay	veh-hrs
34		34			
35		35			
36 37		36 37			
38 39		38 39			
40		40			
41		41			
42		42			
43		43			
44		44			
45		45			
46		46			
47		47			
48		48			
49		49			
50		50			
51		51			
52		52			
53		53			
54		54			
55		55			
56		56			
57		57			
58		58			
59		59			

| Intersection Name: | Montana Street & WB Off Ramp | Major Street Name: | Montana St | No. of Lanes: | 2 or more | Major street Name: | WB Off Ramp | No. of Lanes: | 2 or more | Major street speed exceeds 40 mph or isolated |

community with a population less than 10,000? No

Condition A:

1. The total stopped time delay experienced by the traffic on the one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and

Condition A-1 Met: N/A

2. The voulme on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for a one moving lane of traffic or 150 vehicles per hour for for two moving lanes, and

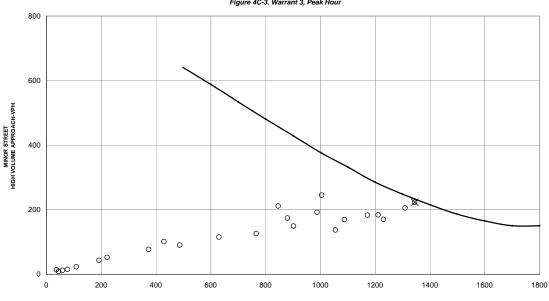
Condition A-2 Met:

3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles for intersections with four or more approaches.

Condition A-3 Met: N/A 70% 100% Condition B: Peak Hour Total Volume Total Major Higher Minor 5:00p-6:00p 1567 1344 223 Met

		Traffic '	Volume		Total Major	Higher Minor	100%	70%
	Major Street 1	Major Street 2	Minor Street 1	Minor Street 2	Street Vol	Street Vol	Met	Met
12:00 AM	56	53	0	23	109	23		
1:00 AM	31	28	0	12	59	12		
2:00 AM	26	19	0	9	45	9		
3:00 AM	19	18	0	14	37	14		
4:00 AM	48	29	0	15	77	15		
5:00 AM	102	90	0	43	192	43		
6:00 AM	197	232	0	101	429	101		
7:00 AM	367	479	0	211	846	211		
8:00 AM	435	570	0	245	1005	245		
9:00 AM	430	450	0	174	880	174		
10:00 AM	457	445	0	149	902	149		
11:00 AM	592	463	0	137	1055	137		
12:00 PM	575	512	0	169	1087	169		
1:00 PM	587	585	0	183	1172	183		
2:00 PM	629	582	0	184	1211	184		
3:00 PM	674	556	0	170	1230	170		
4:00 PM	714	595	0	205	1309	205		
5:00 PM	761	583	0	223	1344	223		
6:00 PM	506	482	0	192	988	192		
7:00 PM	372	394	0	126	766	126		
8:00 PM	308	322	0	115	630	115		
9:00 PM	244	243	0	90	487	90		
10:00 PM	190	183	0	77	373	77		
11:00 PM	116	106	0	52	222	52		

Figure 4C-3. Warrant 3, Peak Hour



MAJOR STREET-TOTAL OF BOTH APPROACHES-Warrant 3, Condition A Met: VEHICLES PER HOUR (VPH) Warrant 3. Condition B Met: No 70% N/A *Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower Warrant 3. Met: threshold volume for a minor-street approach with one lane. Is this an unusual case? No **▼** Warrant is not applicable

^{*} This signal warrant shall only be applied in unusual cases. Such cases include, but are not limited to, office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that atrract or discharge large numbers of vehicles over a short time.

Warrant, 4 Pedestrian Volume

tersection Name:	Montana Street & WE	3 Off Ramp	
lajor Street Name:	Montana St		
linor Street Name:	WB Off Ramp		
ocation less than 3	00' from nearest sign	nal?	No
	ed by a median with	sufficient wid	th
or pedestrians to w	ait?	No ▼	
	Pedestrian Volume		Vehicular Gaps
	Across Major Street		Across Major Street
12:00 AM			
1:00 AM			
2:00 AM	I		
3:00 AM			
4:00 AN			
5:00 AM			
6:00 AM			
7:00 AM			
8:00 AM			
9:00 AM			
10:00 AM			
11:00 AM	l		
12:00 PM			
1:00 PM	l		
2:00 PM	l		
3:00 PM			
4:00 PM			
5:00 PM			
6:00 PM			
7:00 PM			
8:00 PM			
9:00 PM			
10:00 PM			
11:00 PM	I		
Warran	t 4, Condition A Met:	N/A	
	t 4, Condition B Met:		_
	,	. 471	=
	Warrant 4, Met:	N/A	

Warrant 5, School Crossing

Intersection Name: Montana Street & WB Off Ramp
Major Street Name: Montana St
Minor Street Name: WB Off Ramp
Location less than 300' from nearest signal?

Start

Start

Interval 1
Interval 2
Interval 3
Interval 4
Interval 5
Interval 6

Student Volume
Across Major Street
Interval 1
Interval 2
Interval 2
Interval 3
Interval 6

Student Volume
Across Major Street
Interval 1
Interval 2
Interval 3
Interval 4
Interval 3
Interval 4
Interval 5
Interval 5
Interval 6

Warrant 5, Met: N/A

Warrant 6, Corrdinated Signal System

Intersection Name: Montana Street & WB Off Ramp Major Street Name: Montana St Winor Street Name: WB Off Ramp
The Coordinated Signal System signal warrant should not be applied where the resultant spacing of traffic control signals would be less than 1000'.
Condition A: 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.
Warrant 6, Condition A met:
Condition B: 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 6, Condition B met:
Warrant 6. Met: N/A
Warrant 6, Met: N/A

Warrant 7, Crash Experience

Intersection Name: Montana Street & WB Off Ramp Major Street Name: Montana St WB Off Ramp Major street speed exceeds 40 mph or isolated community with a population less than 10,000? No
Condition A: Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency
Warrant 7, Condition A met: No ▼
Condition B: Five or more reported crashes, of types susceptible to correction by a traffic control signal, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash Number of Correctable Crashes: 2 Warrant 7, Condition B met: N
Condition C: For each of any 8 hours of an average day, the vehicles per hour (vph) given in both of the 80% columns of Condition A in Table 4C-1, or the vph in both of the 80% columns of Condition B in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection, or the volume of pedestrian traffic is not less than 80% of the requirements specified in the Pedestrian Volume warrant.
80% conditions Condition A in Table 4C-1 met: Y 80% conditions Condition B in Table 4C-1 met: Y 80% of Pedestrian Volume Warrant Volumes met: N/A

	80% Condition A in Table 4C-1	80% Condition B in Table 4C-1	80% Pedestrian Volumes
12:00 AM			
1:00 AM			
2:00 AM			
3:00 AM			
4:00 AM			
5:00 AM			
6:00 AM			
7:00 AM	-	~	
8:00 AM	~	~	
9:00 AM		~	
10:00 AM		~	
11:00 AM		~	
12:00 PM		~	
1:00 PM		~	
2:00 PM		~	
3:00 PM	~	~	
4:00 PM		~	
5:00 PM	~	~	
6:00 PM		~	
7:00 PM		~	
8:00 PM			
9:00 PM			
10:00 PM			
11:00 PM			
	10	13	0

Warrant 7, Met: No

PBSJ - Traffic Engineering Ver. 1.00

Warrant 8, Roadway Network

Intersection Name:
* This warrant shall only be considered if the location is an intersection of two or more major routes.
A major route as used in this signal warrant shall have one or more of the following characteristics:
 It is part of the street or highway system that serves as the principal roadway network for through traffic flow; or
2. It includes rural or suburban highways outside, entering, or traversing a city; or
It appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.
Does the study intersection consist of two or more major routes? $\overline{\ \ \ \ \ \ \ \ \ \ \ \ \ \ }$
Condition A The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday and has 5-year projected traffic volumes, based on an engineering study, that meet one or more of warrants 1, 2, and 3 during an average weekday; or
At least 1,000 vehicles entering the intersection: N/A Warrant 8, Condition A met: N/A
Condition B The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a nonnormal business day (Saturday or Sunday).
Warrant 8, Condition B met: N/A
Warrant 8, met: N/A

| Intersection Name: | Montana Street & EB Off Ramp | Major Street Name: | Montana St | No. of Lanes: | 2 or more | Minor Street Name: | EB Off Ramp | No. of Lanes: | 2 or more | Najor street speed exceeds 40 mph or isolated community with a population less than 10,000? | No

	Condition A - Minimum Vehicular Volume										
No. of Lanes VPH total on major street				VPH on higher vol minor street							
Major	Minor	100% ^a	80% ^b	70%°	56% ^d	100% ^a	80% ^b	70%°	56% ^d		
1	1	500	400	350	280	150	120	105	84		
2	1	600	480	420	336	150	120	105	84		
2	2	600	480	420	336	200	160	140	112		
1	2	500	400	350	280	200	160	140	112		

	Condition B - Interupption of Continuous Traffic									
No. of	No. of Lanes VPH total on major street			VPH on higher vol minor street						
Major	Minor	100%ª	80% ^b	70%°	56% ^d	100%ª	80% ^b	70%°	56% ^d	
1	1	750	600	525	420	75	60	53	42	
2	1	900	720	630	504	75	60	53	42	
2	2	900	720	630	504	100	80	70	56	
1	2	750	600	525	420	100	80	70	56	

^a Basic minimum hourly volume.

with a population or less than 10,000.

May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 70km/h or exceeds 40 mpn in an isolated community with a population less than 10,000

ſ		Traffic \	Total Major	Higher Minor		
	Major Street 1	Major Street 2	Minor Street 1	Street Vol	Street Vol	
40.00 444				Minor Street 2		
12:00 AM		50	15	0	106	15
1:00 AM		27	15	0	58	15
2:00 AM		17	14	0	43	14
3:00 AM		21	11	0	40	11
4:00 AM	48	35	19	0	83	19
5:00 AM	102	97	25	0	199	25
6:00 AM	197	198	52	0	395	52
7:00 AM	367	380	90	0	747	90
8:00 AM	435	429	98	0	864	98
9:00 AM	430	377	97	0	807	97
10:00 AM	457	384	103	0	841	103
11:00 AM	592	351	115	0	943	115
12:00 PM	575	508	101	0	1083	101
1:00 PM	587	501	101	0	1088	101
2:00 PM	629	497	129	0	1126	129
3:00 PM	674	502	129	0	1176	129
4:00 PM	714	506	147	0	1220	147
5:00 PM	761	512	134	0	1273	134
6:00 PM	506	400	93	0	906	93
7:00 PM	372	340	63	0	712	63
8:00 PM	308	278	59	0	586	59
9:00 PM	244	216	35	0	460	35
10:00 PM		140	34	0	330	34
11:00 PM		78	27	0	194	27

	Cond	ition A	Condi	tion B	Combination	Combination
	100%	70%	100%	70%	80%	56%
12:00 AM						
1:00 AM						
2:00 AM						
3:00 AM						
4:00 AM						
5:00 AM						
6:00 AM						
7:00 AM						
8:00 AM						
9:00 AM						
10:00 AM						
11:00 AM			~			
12:00 PM			~			
1:00 PM			~			
2:00 PM			~			
3:00 PM			~			
4:00 PM			~			
5:00 PM			~			
6:00 PM						
7:00 PM						
8:00 PM						
9:00 PM						
10:00 PM						
11:00 PM						
	0	0	7	0	0	0

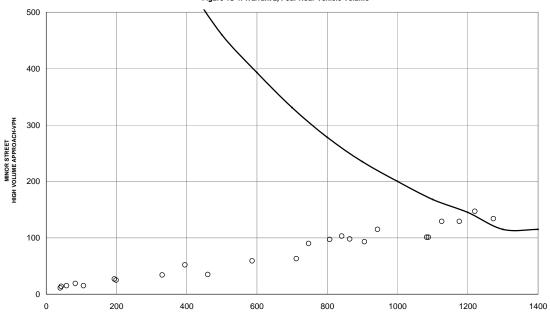
Warrant 1, Condition A Met:	No	70%:	N/A	
Warrant 1, Condition B Met:	No	70%:	N/A	
Consider combination?	Yes			
Warrant 1, Combination Met:	No	56%	No	
		Warrant 1, Met:	No	

^b Used for combination of Conditions A and B after adequate trial of other remedial measures.

^c May be used when the major-street speed exceeds 40 mph or in an Isolated community with a population of less than 10,000.

		Traffic '	Volume	Total Major	Higher Minor	100%	70%	
	Major Street 1	Major Street 2		Minor Street 2	Street Vol	Street Vol	Met	Met
12:00 AM	56	50	15	0	106	15		
1:00 AM	31	27	15	0	58	15		
2:00 AM	26	17	14	0	43	14		
3:00 AM	19	21	11	0	40	11		
4:00 AM	48	35	19	0	83	19		
5:00 AM	102	97	25	0	199	25		
6:00 AM	197	198	52	0	395	52		
7:00 AM	367	380	90	0	747	90		
8:00 AM	435	429	98	0	864	98		
9:00 AM	430	377	97	0	807	97		
10:00 AM	457	384	103	0	841	103		
11:00 AM	592	351	115	0	943	115		
12:00 PM	575	508	101	0	1083	101		
1:00 PM	587	501	101	0	1088	101		
2:00 PM	629	497	129	0	1126	129		
3:00 PM	674	502	129	0	1176	129		
4:00 PM	714	506	147	0	1220	147	~	
5:00 PM	761	512	134	0	1273	134	~	
6:00 PM	506	400	93	0	906	93		
7:00 PM	372	340	63	0	712	63		
8:00 PM	308	278	59	0	586	59		
9:00 PM	244	216	35	0	460	35		
10:00 PM	190	140	34	0	330	34		
11:00 PM	116	78	27	0	194	27		

Figure 4C-1. Warrant 2, Four Hour Vehicle Volume



MAJOR STREET-TOTAL OF BOTH APPROACHES-VEHICLES PER HOUR (VPH)

*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

No 70% N/A

Warrant 2, Met: No

Delay Study for Warrant 3

Intersection Name: Montana Street & EB Off Ramp
Major Street Name: Montana St
Minor Street Name: EB Off Ramp
mber of Approaches: 4
Interval: Seconds

	Number of Stopped Vehicles		Number of Stopped Vehicles	Cars Served on Study Approach	Cars Served at Intersection
Min/Sec	0	Min/Sec	0	Interval No.	Interval No.
0	•	0	-	1	1
1		1		2	2
2		2		3	3
3		3		4	4
4		4		5	5
5		5		6	6
6		6		7	7
7		7		8	8
8		8			
9		9		Cars Served	Cars Served
10		10		on Study Approach	at Intersection
11		11		Hourly Sum	Hourly Sum
12		12		1	1
13		13		2	2
14		14		3	3
15		15		4	4
16		16		5	5
17		17			
18		18		Vehicles Stopped	
19		19		on Study Approach	
20		20		Hourly Totals	
21		21		1	
22		22		2	
23		23		3	
24		24		4	
25		25		5	
26		26 27			
27				Tatal Nameh as of Otana	- 41/4-1-1
28		28		Total Number of Stopp	ed Vehicles
29		29		Vehicles Served on Ap	proach Leg
30		30			
31		31		01	
32		32		Stopped Delay	sec/veh
33		33		Stopped Delay	veh-hrs
34		34			
35		35			
36 37		36 37			
38 39		38 39			
40		40			
41		41			
42		42			
43		43			
44		44			
45		45			
46		46			
47		47			
48		48			
49		49			
50		50			
51		51			
52		52			
53		53			
54		54			
55		55			
56		56			
57		57			
58		58			
59		59			

| Intersection Name: | Montana Street & EB Off Ramp | Major Street Name: | Montana St | No. of Lanes: | 2 or more | Major street Name: | EB Off Ramp | No. of Lanes: | 2 or more | Major street speed exceeds 40 mph or isolated |

community with a population less than 10,000? No

Condition A:

1. The total stopped time delay experienced by the traffic on the one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and

Condition A-1 Met: N/A

2. The voulme on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for a one moving lane of traffic or 150 vehicles per hour for for two moving lanes, and

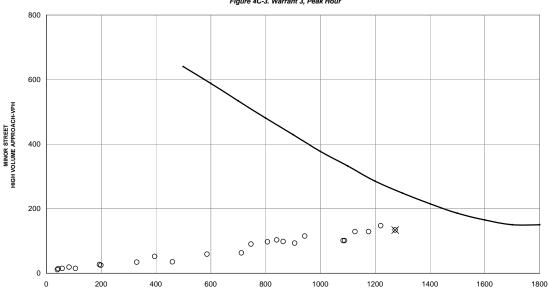
Condition A-2 Met:

3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles for intersections with four or more approaches.

Condition A-3 Met: N/A 70% 100% Condition B: Peak Hour Total Volume Total Major Higher Minor 5:00p-6:00p 1407 1273 134 Met

		Traffic '	Volume		Total Major	Higher Minor	100%	70%
	Major Street 1	Major Street 2		Minor Street 2	Street Vol	Street Vol	Met	Met
12:00 AM		50	15	0	106	15		
1:00 AM	31	27	15	0	58	15		
2:00 AM	26	17	14	0	43	14		
3:00 AM	19	21	11	0	40	11		
4:00 AM	48	35	19	0	83	19		
5:00 AM	102	97	25	0	199	25		
6:00 AM	197	198	52	0	395	52		
7:00 AM	367	380	90	0	747	90		
8:00 AM	435	429	98	0	864	98		
9:00 AM	430	377	97	0	807	97		
10:00 AM	457	384	103	0	841	103		
11:00 AM	592	351	115	0	943	115		
12:00 PM	575	508	101	0	1083	101		
1:00 PM	587	501	101	0	1088	101		
2:00 PM	629	497	129	0	1126	129		
3:00 PM	674	502	129	0	1176	129		
4:00 PM	714	506	147	0	1220	147		
5:00 PM	761	512	134	0	1273	134		
6:00 PM	506	400	93	0	906	93		
7:00 PM	372	340	63	0	712	63		
8:00 PM	308	278	59	0	586	59		
9:00 PM	244	216	35	0	460	35		
10:00 PM	190	140	34	0	330	34		
11:00 PM	116	78	27	0	194	27		

Figure 4C-3. Warrant 3, Peak Hour



MAJOR STREET-TOTAL OF BOTH APPROACHES-Warrant 3, Condition A Met: VEHICLES PER HOUR (VPH) Warrant 3. Condition B Met: No 70% N/A *Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower Warrant 3. Met: threshold volume for a minor-street approach with one lane. Is this an unusual case? No **▼** Warrant is not applicable

^{*} This signal warrant shall only be applied in unusual cases. Such cases include, but are not limited to, office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that atrract or discharge large numbers of vehicles over a short time.

Warrant, 4 Pedestrian Volume

	Montana Street & EE	Off Ramp	
Major Street Name:		_	
Minor Street Name:			
Location less than 3	nal?	No	
	ed by a median with	sufficient width	
for pedestrians to w	ait?	No ▼	
	Pedestrian Volume		Vehicular Gaps
	Across Major Street		Across Major Street
12:00 AN			
1:00 AN			
2:00 AN			
3:00 AN			
4:00 AN			
5:00 AN			
6:00 AN			
7:00 AM 8:00 AM			
9:00 AN			
10:00 AN			
11:00 AN			
12:00 PM			
1:00 PM			
2:00 PM			
3:00 PM			
4:00 PM			
5:00 PM	I		
6:00 PM	I		
7:00 PM	I		
8:00 PM	I		
9:00 PM			
10:00 PM			
11:00 PM	I		
		N1/A	
	t 4, Condition A Met:		
vvarran	t 4, Condition B Met:	N/A	
	Warrant 4, Met:	N/A	

Warrant 5, School Crossing

Intersection Name:	Montana Street & EB 0	Off Ramp	
Major Street Name:	Montana St		_
Minor Street Name:	EB Off Ramp		
Location less than 3	00' from nearest signa	al? No	_
	Start		Finish
	Interval 1	-	
	Interval 2	-	
	Interval 3	-	
	Interval 4	-	
	Interval 5	-	
	Interval 6	-	
	Student Vo	olume V	ehicular Gaps
	Across Majo		oss Major Street
	Interval 1	" Olicci Acit	oss major otrect
	Interval 2		
	Interval 3		
	Interval 4		
	Interval 5		
	Interval 6		
	interval 0		

Warrant 5, Met: N/A

Warrant 6, Corrdinated Signal System

Major Street Name: Minor Street Name: EB Off Ramp
*The Coordinated Signal System signal warrant should not be applied where the resultant spacing of traffic control signals would be less than 1000'.
Condition A: 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.
Warrant 6, Condition A met:
Condition B: 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 6, Condition B met:
Warrant 6, Met: N/A

Warrant 7, Crash Experience

Intersection Name: Montana Street & EB Off Ramp Major Street Name: Montana St EB Off Ramp Major street Name: Montana St EB Off Ramp Major street speed exceeds 40 mph or isolated community with a population less than 10,000? No No
Condition A: Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency
Warrant 7, Condition A met: No ▼
Condition B: Five or more reported crashes, of types susceptible to correction by a traffic control signal, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash Number of Correctable Crashes: 4 Warrant 7, Condition B met:N
Condition C: For each of any 8 hours of an average day, the vehicles per hour (vph) given in both of the 80% columns of Condition A in Table 4C-1, or the vph in both of the 80% columns of Condition B in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection, or the volume of pedestrian traffic is not less than 80% of the requirements specified in the Pedestrian Volume warrant.
80% conditions Condition A in Table 4C-1 met: N 80% conditions Condition B in Table 4C-1 met: Y 80% of Pedestrian Volume Warrant Volumes met: N/A

	80% Condition A in Table 4C-1	80% Condition B in Table 4C-1	80% Pedestrian Volumes
12:00 AM			
1:00 AM			
2:00 AM			
3:00 AM			
4:00 AM			
5:00 AM			
6:00 AM			
7:00 AM		~	
8:00 AM		~	
9:00 AM		~	
10:00 AM		~	
11:00 AM		~	
12:00 PM		~	
1:00 PM		~	
2:00 PM		~	
3:00 PM		•	
4:00 PM		~	
5:00 PM		•	
6:00 PM		~	
7:00 PM			
8:00 PM			
9:00 PM			
10:00 PM			
11:00 PM			
	0	12	0

Warrant 7, Met: No

PBSJ - Traffic Engineering Ver. 1.00

Warrant 8, Roadway Network

Intersection Name:								
* This warrant shall only be considered if the location is an intersection of two or more major routes.								
A major route as used in this signal warrant shall have one or more of the following characteristics:								
 It is part of the street or highway system that serves as the principal roadway network for through traffic flow; or 								
2. It includes rural or suburban highways outside, entering, or traversing a city; or								
It appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.								
Does the study intersection consist of two or more major routes? $\overline{\ \ \ \ \ \ \ \ \ \ \ \ \ \ }$								
Condition A The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday and has 5-year projected traffic volumes, based on an engineering study, that meet one or more of warrants 1, 2, and 3 during an average weekday; or								
At least 1,000 vehicles entering the intersection: N/A Warrant 8, Condition A met: N/A								
Condition B The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a nonnormal business day (Saturday or Sunday).								
Warrant 8, Condition B met: N/A								
Warrant 8, met: N/A								

| Intersection Name: | Rocker & Nissler/Grizzly | Major Street Name: | Rocker | No. of Lanes: | 2 or more | Nissler/Grizzly | No. of Lanes: | 2 or more | Name: | Nissler/Grizzly | No. of Lanes: | 2 or more | Nissler/Grizzly | No. of Lanes: | 2 or more | Nissler/Grizzly | No. of Lanes: | 2 or more | Nissler/Grizzly | No. of Lanes: | 2 or more | Nissler/Grizzly | No. of Lanes: | 2 or more | Nissler/Grizzly | No. of Lanes: | 2 or more | Nissler/Grizzly | No. of Lanes: | 2 or more | Nissler/Grizzly | No. of Lanes: | 2 or more | Nissler/Grizzly | No. of Lanes: | 2 or more | Nissler/Grizzly | No. of Lanes: | 2 or more | Nissler/Grizzly | No. of Lanes: | 2 or more | Nissler/Grizzly | No. of Lanes: | 2 or more | Nissler/Grizzly | No. of Lanes: | 2 or more | Nissler/Grizzly | No. of Lanes: | 2 or more | Nissler/Grizzly | No. of Lanes: | 2 or more | Nissler/Grizzly | No. of Lanes: | 2 or more | Nissler/Grizzly | No. of Lanes: | 2 or more | Nissler/Grizzly | No. of Lanes: | 2 or more | Nissler/Grizzly | No. of Lanes: | 2 or more | Nissler/Grizzly | No. of Lanes: | 2 or more | Nissler/Grizzly | No. of Lanes: | 2 or more | Nissler/Grizzly | No. of Lanes: | 2 or more | Nissler/Grizzly | No. of Lanes: | 2 or more | Nissler/Grizzly | No. of Lanes: | 2 or more | Nissler/Grizzly | No. of Lanes: | 2 or more | Nissler/Grizzly | Nisler/Grizzly | Nissler/Grizzly | Nissler/Grizzly | Nissler/Grizzly No

Condition A - Minimum Vehicular Volume									
No. of Lanes VPH total on major street				VPH on higher vol minor street					
Major	Minor	100%ª	80% ^b	70%°	56% ^d	100% ^a	80% ^b	70%°	56% ^d
1	1	500	400	350	280	150	120	105	84
2	1	600	480	420	336	150	120	105	84
2	2	600	480	420	336	200	160	140	112
1	2	500	400	350	280	200	160	140	112

	Condition B - Interupption of Continuous Traffic								
No. of	Lanes	anes VPH total on major street			VPH on higher vol minor street				
Major	Minor	100%ª	80% ^b	70%°	56% ^d	100% ^a	80% ^b	70%°	56% ^d
1	1	750	600	525	420	75	60	53	42
2	1	900	720	630	504	75	60	53	42
2	2	900	720	630	504	100	80	70	56
1	2	750	600	525	420	100	80	70	56

^a Basic minimum hourly volume.

with a population or less than 10,000.

May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 70km/h or exceeds 40 mpn in an isolated community with a population less than 10,000

ĺ		Traffic '	Total Major	Higher Minor		
	Major Street 1	Major Street 2	Minor Street 1	Minor Street 2	Street Vol	Street Vol
12:00 AM		31	18	5	66	18
1:00 AM	18	17	16	6	35	16
2:00 AM	18	18	13	5	36	13
3:00 AM	13	14	16	2	27	16
4:00 AM	16	24	20	3	40	20
5:00 AM	44	46	28	6	90	28
6:00 AM	62	62	43	21	124	43
7:00 AM		83	64	35	188	64
8:00 AM	147	106	68	25	253	68
9:00 AM		101	61	26	243	61
10:00 AM	155	128	62	32	283	62
11:00 AM	148	101	60	20	249	60
12:00 PM	159	115	69	32	274	69
1:00 PM		115	67	35	282	67
2:00 PM	159	107	57	37	266	57
3:00 PM		120	60	38	298	60
4:00 PM		112	55	35	298	55
5:00 PM	160	125	59	38	285	59
6:00 PM		109	51	37	228	51
7:00 PM		92	36	27	198	36
8:00 PM		89	38	20	180	38
9:00 PM		80	40	20	159	40
10:00 PM		59	33	16	125	33
11:00 PM	51	49	26	8	100	26

	Cond	ition A	Condi	tion B	Combination	Combination
	100%	70%	100%	70%	80%	56%
12:00 AM						
1:00 AM						
2:00 AM						
3:00 AM						
4:00 AM						
5:00 AM						
6:00 AM						
7:00 AM						
8:00 AM						
9:00 AM						
10:00 AM						
11:00 AM						
12:00 PM						
1:00 PM						
2:00 PM						
3:00 PM						
4:00 PM						
5:00 PM						
6:00 PM						
7:00 PM						
8:00 PM						
9:00 PM						
10:00 PM						
11:00 PM						
	0	0	0	0	0	0

Warrant 1, Condition A Met:	No	70%:	N/A	
Warrant 1, Condition B Met:	No	70%:	N/A	
Consider combination?	Yes			
Warrant 1, Combination Met:	No	56%	No	
		Warrant 1, Met:	No	

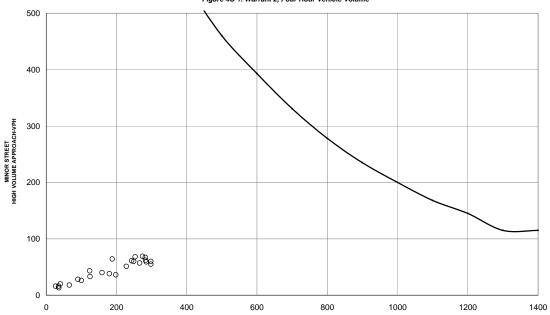
^b Used for combination of Conditions A and B after adequate trial of other remedial measures.

^c May be used when the major-street speed exceeds 40 mph or in an Isolated community with a population of less than 10,000.

2 or more 2 or more No

Ī		Traffic '	Total Major	Higher Minor	100%	70%		
	Major Street 1	Major Street 2	Minor Street 1	Minor Street 2	Street Vol	Street Vol	Met	Met
12:00 AM	35	31	18	5	66	18		
1:00 AM	18	17	16	6	35	16		
2:00 AM	18	18	13	5	36	13		
3:00 AM	13	14	16	2	27	16		
4:00 AM	16	24	20	3	40	20		
5:00 AM	44	46	28	6	90	28		
6:00 AM	62	62	43	21	124	43		
7:00 AM	105	83	64	35	188	64		
8:00 AM	147	106	68	25	253	68		
9:00 AM	142	101	61	26	243	61		
10:00 AM	155	128	62	32	283	62		
11:00 AM	148	101	60	20	249	60		
12:00 PM	159	115	69	32	274	69		
1:00 PM	167	115	67	35	282	67		
2:00 PM	159	107	57	37	266	57		
3:00 PM	178	120	60	38	298	60		
4:00 PM	186	112	55	35	298	55		
5:00 PM	160	125	59	38	285	59		
6:00 PM	119	109	51	37	228	51		
7:00 PM	106	92	36	27	198	36		
8:00 PM	91	89	38	20	180	38		
9:00 PM	79	80	40	20	159	40		
10:00 PM	66	59	33	16	125	33		
11:00 PM	51	49	26	8	100	26		

Figure 4C-1. Warrant 2, Four Hour Vehicle Volume



MAJOR STREET-TOTAL OF BOTH APPROACHES-VEHICLES PER HOUR (VPH)

*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

No 70% N/A

Warrant 2, Met: No

Delay Study for Warrant 3

Intersection Name: Rocker & Nissler/Grizzly
Major Street Name: Rocker
Minor Street Name: Nissler/Grizzly
nber of Approaches: 4 ▼
Interval: Seconds Seconds Interval:

	Number of Stopped Vehicles		Number of Stopped Vehicles	Cars Served	Cars Served
				on Study Approach	at Intersection
Min/Sec	0	Min/Sec	0	Interval No.	Interval No.
0		0		1	1
1		1		2	2
2		2		3	3
3		3		4	4
4		4		5	5
5		5		6	6
6		6		7	7
7		7		8	8
8		8		ū	· ·
9		9		Cars Served	Cars Served
10		10		on Study Approach	at Intersection
11		11		Hourly Sum	Hourly Sum
12		12		1	1
13		13		2	2
14		14		3	3
15		15		4	4
16		16		5	5
17		17			
18		18		Vehicles Stopped	
19		19		on Study Approach	
20		20		Hourly Totals	
21		21		1	
22		22		2	
23		23		3	
24		24		4	
25		25		5	
				5	
26		26			
27		27			
28		28		Total Number of Stopp	
29		29		Vehicles Served on Ap	proach Leg
30		30			
31		31			
32		32		Stopped Delay	sec/veh
33		33		Stopped Delay	
34		34			
35		35			
36		36			
37		37			
38		38			
39		39			
		40			
40 41		40 41			
42		42			
43		43			
44		44			
45		45			
46		46			
47		47			
48		48			
49		49			
50		50			
51		51			
52		52			
53		53			
54		54			
55		55			
56		56			
57		57			
58		58			
59		59			

| Intersection Name: Rocker & Nissler/Grizzly | Major Street Name: Rocker | No. of Lanes: 2 or more | No. of Lanes: 2 or more | No. of Lanes: 4 or m community with a population less than 10,000? No

Condition A:

1. The total stopped time delay experienced by the traffic on the one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and

Condition A-1 Met: N/A

2. The voulme on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for a one moving lane of traffic or 150 vehicles per hour for for two moving lanes, and

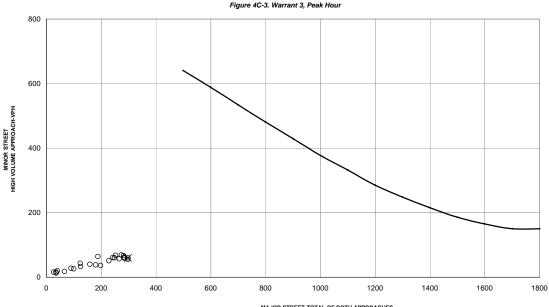
Condition A-2 Met:

3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles for intersections with four or more approaches.

Condition A-3 Met: N/A 70% 100% Condition B: Peak Hour Total Volume Total Major Higher Minor 3:00p-4:00p 396 298 60 Met

	Traffic Volume			Total Major	Higher Minor	100%	70%	
	Major Street 1	Major Street 2		Minor Street 2	Street Vol	Street Vol	Met	Met
12:00 AM	35	31	18	5	66	18		
1:00 AM	18	17	16	6	35	16		
2:00 AM	18	18	13	5	36	13		
3:00 AM	13	14	16	2	27	16		
4:00 AM	16	24	20	3	40	20		
5:00 AM	44	46	28	6	90	28		
6:00 AM	62	62	43	21	124	43		
7:00 AM	105	83	64	35	188	64		
8:00 AM	147	106	68	25	253	68		
9:00 AM	142	101	61	26	243	61		
10:00 AM	155	128	62	32	283	62		
11:00 AM	148	101	60	20	249	60		
12:00 PM	159	115	69	32	274	69		
1:00 PM	167	115	67	35	282	67		
2:00 PM	159	107	57	37	266	57		
3:00 PM	178	120	60	38	298	60		
4:00 PM	186	112	55	35	298	55		
5:00 PM	160	125	59	38	285	59		
6:00 PM	119	109	51	37	228	51		
7:00 PM	106	92	36	27	198	36		
8:00 PM	91	89	38	20	180	38		
9:00 PM	79	80	40	20	159	40		
10:00 PM	66	59	33	16	125	33		
11:00 PM	51	49	26	8	100	26		

Figure 4C-3. Warrant 3, Peak Hour



MAJOR STREET-TOTAL OF BOTH APPROACHES-Warrant 3, Condition A Met: VEHICLES PER HOUR (VPH) Warrant 3. Condition B Met: No 70% N/A *Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower Warrant 3. Met: threshold volume for a minor-street approach with one lane. Is this an unusual case? No ■ Warrant is not applicable

^{*} This signal warrant shall only be applied in unusual cases. Such cases include, but are not limited to, office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that atrract or discharge large numbers of vehicles over a short time.

Warrant, 4 Pedestrian Volume

Intersection Name: Rocker & Nissler/C Major Street Name: Rocker	Grizzly
Minor Street Name: Nissler/Grizzly Location less than 300' from nearest s	ignal? No No
Is the roadway divided by a median wi for pedestrians to wait?	ith sufficient width
	·
Pedestrian Volum	
Across Major Stre	eet Across Major Street
12:00 AM	
1:00 AM	
2:00 AM	
3:00 AM	
4:00 AM 5:00 AM	
6:00 AM	
7:00 AM	
8:00 AM	
9:00 AM	
10:00 AM	
11:00 AM	
12:00 PM	
1:00 PM	
2:00 PM	
3:00 PM	
4:00 PM	
5:00 PM	
6:00 PM	
7:00 PM	
8:00 PM	
9:00 PM	
10:00 PM 11:00 PM	
11.00 PM	
Warrant 4, Condition A Me	et: N/A
Warrant 4, Condition B Me	
Warrant 4, Me	et: N/A

Warrant 5, School Crossing

Intersection Name:	Rocker & Nissler/G	irizzly	
Major Street Name:	Rocker		
Minor Street Name:	Nissler/Grizzly		
Location less than 3	00' from nearest si	gnal? N	0
	S	tart	Finish
	Interval 1		
	Interval 2	-	
	Interval 3		
	Interval 4		
	Interval 5		
	Interval 6		
		t Volume	Vehicular Gaps
	Across N	t Volume Iajor Street	Vehicular Gaps Across Major Street
	Across N		
	Across N Interval 1		
	Across N Interval 1 Interval 2		
	Across N Interval 1 Interval 2 Interval 3		
	Across N Interval 1 Interval 2 Interval 3 Interval 4		
	Across N Interval 1 Interval 2 Interval 3 Interval 4 Interval 5		
	Across N Interval 1 Interval 2 Interval 3 Interval 4 Interval 5		

Warrant 5, Met: N/A

Warrant 6, Corrdinated Signal System

Intersection Name: Rocker & Nissler/Grizzly Rocker Rocker Rocker Nissler/Grizzly Rocker
*The Coordinated Signal System signal warrant should not be applied where the resultant spacing of traffic control signals would be less than 1000'.
Condition A: 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.
Warrant 6, Condition A met: ▼
Condition B: 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 6, Condition B met:
Warrant 6, Met: N/A

Warrant 7, Crash Experience

Intersection Name: Rocker & Nissler/Grizzly Major Street Name: Rocker Missler/Grizzly Missler/Grizzly Major street speed exceeds 40 mph or isolated community with a population less than 10,000? No
Condition A: Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency
Warrant 7, Condition A met: No ▼
Condition B: Five or more reported crashes, of types susceptible to correction by a traffic control signal, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash Number of Correctable Crashes: 2 Warrant 7, Condition B met: N
Condition C: For each of any 8 hours of an average day, the vehicles per hour (vph) given in both of the 80% columns of Condition A in Table 4C-1, or the vph in both of the 80% columns of Condition B in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection, or the volume of pedestrian traffic is not less than 80% of the requirements specified in the Pedestrian Volume warrant.
80% conditions Condition A in Table 4C-1 met: N 80% conditions Condition B in Table 4C-1 met: N 80% of Pedestrian Volume Warrant Volumes met: N/A

	80% Condition A in Tabl	e 4C-1809	% Condition B in	Table 4C-1	80% Pedestrian Volumes
12:00 AM					
1:00 AM					
2:00 AM					
3:00 AM					
4:00 AM					
5:00 AM					
6:00 AM					
7:00 AM					
8:00 AM					
9:00 AM					
10:00 AM					
11:00 AM					
12:00 PM					
1:00 PM					
2:00 PM					
3:00 PM					
4:00 PM					
5:00 PM					
6:00 PM					
7:00 PM					
8:00 PM					
9:00 PM					
10:00 PM					
11:00 PM					
	0		0		0

Warrant 7, Met: No

Warrant 8, Roadway Network

Intersection Name: Rocker & Nissler/Grizzly Major Street Name: Rocker Minor Street Name: Nissler/Grizzly
* This warrant shall only be considered if the location is an intersection of two or more major routes.
A major route as used in this signal warrant shall have one or more of the following characteristics:
 It is part of the street or highway system that serves as the principal roadway network for through traffic flow; or
2. It includes rural or suburban highways outside, entering, or traversing a city; or
It appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.
Does the study intersection consist of two or more major routes? $\overline{\ }_{No}$
Condition A The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicle per hour during the peak hour of a typical weekday and has 5-year projected traffic volumes, based on a engineering study, that meet one or more of warrants 1, 2, and 3 during an average weekday; or
At least 1,000 vehicles entering the intersection: N/A
Warrant 8, Condition A met: N/A
Condition B The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a nonnormal business day (Saturday or Sunday).
Warrant 8, Condition B met:N/A
Warrant 8, met:N/A

			Con	dition A - Minimu	ım Vehicular Vol	ume			
No. of	No. of Lanes VPH total on major street VPH on higher vol minor street				s VPH total on major street				
Major	Minor	100% ^a	80% ^b	70% ^c	56% ^d	100% ^a	80% ^b	70%°	56% ^d
1	1	500	400	350	280	150	120	105	84
2	1	600	480	420	336	150	120	105	84
2	2	600	480	420	336	200	160	140	112
1	2	500	400	350	280	200	160	140	112

			Condition	on B - Interupption	on of Continuou	s Traffic			
No. of	Lanes	VPH	total on major s	treet			VPH on higher	vol minor street	
Major	Minor	100%ª	80% ^b	70%°	56% ^d	100% ^a	80% ^b	70%°	56% ^d
1	1	750	600	525	420	75	60	53	42
2	1	900	720	630	504	75	60	53	42
2	2	900	720	630	504	100	80	70	56
1	2	750	600	525	420	100	80	70	56

^a Basic minimum hourly volume.

with a population or less than 10,000.

May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 70km/h or exceeds 40 mpn in an isolated community with a population less than 10,000

ſ		Traffic \		Total Major	Higher Minor	
	Major Street 1	Major Street 2	Minor Street 1	Minor Street 2	Street Vol	Street Vol
12:00 AM		7	4	6	10	6
1:00 AM	6	6	3	3	12	3
2:00 AM	3	6	3	3	9	3
3:00 AM	11	5	1	1	16	1
4:00 AM	11	5 5	5	3	16	5
5:00 AM	24	11	23	22	35	23
6:00 AM	37	26	41	36	63	41
7:00 AM	70	46	104	57	116	104
8:00 AM	116	46	97	73	162	97
9:00 AM	54	36	77	44	90	77
10:00 AM	79	36	53	64	115	64
11:00 AM	92	68	43	79	160	79
12:00 PM	70	56	57	64	126	64
1:00 PM	88	39	43	64	127	64
2:00 PM	86	46	68	77	132	77
3:00 PM	95	44	52	137	139	137
4:00 PM	98	84	64	92	182	92
5:00 PM	104	83	58	140	187	140
6:00 PM	80	54	65	92	134	92
7:00 PM	73	48	82	68	121	82
8:00 PM	60	22	36	60	82	60
9:00 PM	32	29	35	58	61	58
10:00 PM	33	20	28	57	53	57
11:00 PM	9	14	10	11	23	11

	Condi	ition A	Condi	tion B	Combination	Combination
	100%	70%	100%	70%	80%	56%
12:00 AM						
1:00 AM						
2:00 AM						
3:00 AM						
4:00 AM						
5:00 AM						
6:00 AM						
7:00 AM						
8:00 AM						
9:00 AM						
10:00 AM						
11:00 AM						
12:00 PM						
1:00 PM						
2:00 PM						
3:00 PM						
4:00 PM						
5:00 PM						
6:00 PM						
7:00 PM						
8:00 PM						
9:00 PM						
10:00 PM						
11:00 PM						
	0	0	0	0	0	0

Warrant 1, Condition A Met:	No	70%:	N/A	
Warrant 1, Condition B Met:	No	70%:	N/A	
Consider combination?	Yes			
Warrant 1, Combination Met:	No	56%	No	
		Warrant 1, Met:	No	

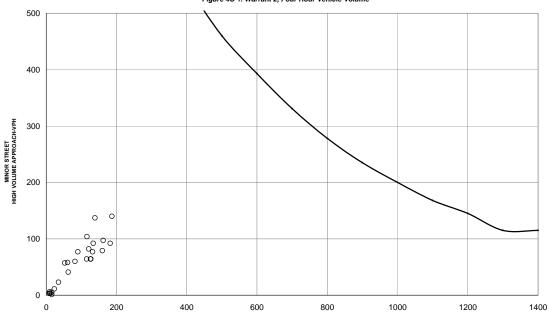
^b Used for combination of Conditions A and B after adequate trial of other remedial measures.

^c May be used when the major-street speed exceeds 40 mph or in an Isolated community with a population of less than 10,000.

| Intersection Name: Mt. Highland & Continental Dr. Major Street Name: Mt. Highland No. of Lanes: Minor Street Name: Continental Dr. No. of Lanes: "Major street speed exceeds 40 mph or isolated community with a population less than 10,000? 2 or more 2 or more No

1	_						,	
			Volume		Total Major	Higher Minor	100%	70%
	Major Street 1	Major Street 2		Minor Street 2	Street Vol	Street Vol	Met	Met
12:00 AM	-	7	4	6	10	6		
1:00 AM		6	3	3	12	3		
2:00 AM		6	3	3	9	3		
3:00 AM		5 5	1	1	16	1		
4:00 AM	11		5	3	16	5		
5:00 AM	24	11	23	22	35	23		
6:00 AM	37	26	41	36	63	41		
7:00 AM	70	46	104	57	116	104		
8:00 AM	116	46	97	73	162	97		
9:00 AM	54	36	77	44	90	77		
10:00 AM	79	36	53	64	115	64		
11:00 AM	92	68	43	79	160	79		
12:00 PM	70	56	57	64	126	64		
1:00 PM	88	39	43	64	127	64		
2:00 PM	86	46	68	77	132	77		
3:00 PM	95	44	52	137	139	137		
4:00 PM	98	84	64	92	182	92		
5:00 PM	104	83	58	140	187	140		
6:00 PM	80	54	65	92	134	92		
7:00 PM	73	48	82	68	121	82		
8:00 PM	60	22	36	60	82	60		
9:00 PM	32	29	35	58	61	58		
10:00 PM		20	28	57	53	57		
11:00 PM		14	10	11	23	11		

Figure 4C-1. Warrant 2, Four Hour Vehicle Volume



MAJOR STREET-TOTAL OF BOTH APPROACHES-VEHICLES PER HOUR (VPH)

*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

No 70% N/A

Warrant 2, Met: No

Delay Study for Warrant 3

Intersection Name: Mt. Highland & Continental Dr.

Major Street Name: Mt. Highland
Minor Street Name: Continental Dr.
mber of Approaches: 4

Interval: Seconds

	Number of Stopped Vehicles		Number of Stopped Vehicles	Cars Served on Study Approach	Cars Served at Intersection
Min/Sec	0	Min/Sec	0	Interval No.	Interval No.
0		0		1	1
1		1		2	2
2		2		3	3
3		3		4	4
4		4		5	5
5		5		6	6
6		6		7	7
7		7		8	8
8		8		-	•
9		9		Cars Served	Cars Served
10		10		on Study Approach	at Intersection
11		11		Hourly Sum	Hourly Sum
12		12		1	1
13		13		2	2
14		14		3	3
15		15		4	4
					5
16 17		16 17		5	5
				Mahialaa Otaaaa	
18		18		Vehicles Stopped	
19		19		on Study Approach	
20		20		Hourly Totals	
21		21		1	
22		22		2	
23		23		3	
24		24		4	
25		25		5	
26		26			
27		27			
28		28		Total Number of Stopp	
29		29		Vehicles Served on Ap	proach Leg
30		30			
31		31			
32		32		Stopped Delay	sec/veh
33		33		Stopped Delay	veh-hrs
34		34		5.5,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
35		35			
36		36			
37		37			
38		38			
39		39			
40		40			
41		41			
42		42			
43		43			
43		43			
45		45			
46		45 46			
47		46 47			
48		48			
49		49			
50		50			
51		51			
52		52			
53		53			
54		54			
55		55			
56		56			
57		57			
58		58			
59		59			

| Intersection Name: Mt. Highland & Continental Dr. | Major Street Name: Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lanes: 2 or more | Mt. Highland No. of Lan community with a population less than 10,000? No

* This signal warrant shall only be applied in unusual cases. Such cases include, but are not limited to, office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that atrract or discharge large numbers of vehicles over a short time.

Condition A:

1. The total stopped time delay experienced by the traffic on the one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and

Condition A-1 Met: N/A

2. The voulme on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for a one moving lane of traffic or 150 vehicles per hour for for two moving lanes, and

Condition A-2 Met:

3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles for intersections with four or more approaches.

Condition A-3 Met: N/A

Condition B:

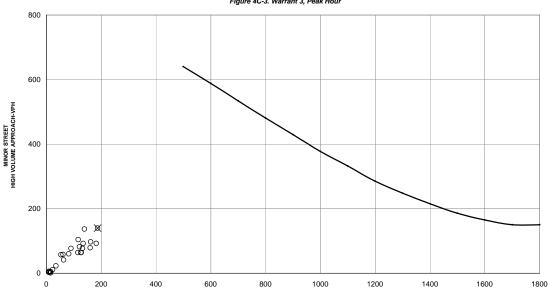
	Peak Hour 5:00p-6:00p	Total Volume 385	Total Major 187	Higher Minor 140	Met	Met	
Traffic '	Volume		Total Major	Higher Minor	100%	70%	ĺ
Street 2	Minor Street 1	Minor Street 2	Street Vol	Street Vol	Met	Met	ı
7	4	6	10	6			ı
6	3	3	12	3			ı
6	3	3	9	3			i
5	1	1	16	1			ı
5	5	3	16	5			1
11	23	22	35	23		1	11

70%

100%

	Major Street 1	Major Street 2	Minor Street 1	Minor Street 2	Street Vol	Street Vol	Met	Met
12:00 AM	3	7	4	6	10	6		
1:00 AM		6	3	3	12	3		
2:00 AM	3	6	3	3	9	3		
3:00 AM	11	6 5 5	1	1	16	1		
4:00 AM	11	5	5	3	16	5		
5:00 AM	24	11	23	22	35	23		
6:00 AM	37	26	41	36	63	41		
7:00 AM	70	46	104	57	116	104		
8:00 AM	116	46	97	73	162	97		
9:00 AM	54	36	77	44	90	77		
10:00 AM	79	36	53	64	115	64		
11:00 AM	92	68	43	79	160	79		
12:00 PM	70	56	57	64	126	64		
1:00 PM	88	39	43	64	127	64		
2:00 PM	86	46	68	77	132	77		
3:00 PM	95	44	52	137	139	137		
4:00 PM	98	84	64	92	182	92		
5:00 PM	104	83	58	140	187	140		
6:00 PM	80	54	65	92	134	92		
7:00 PM	73	48	82	68	121	82		
8:00 PM	60	22	36	60	82	60		
9:00 PM	32	29	35	58	61	58		
10:00 PM	33	20	28	57	53	57		
11:00 PM	9	14	10	11	23	11		

Figure 4C-3. Warrant 3, Peak Hour



Warrant 3, Condition A Met: Warrant 3. Condition B Met: No

Warrant 3. Met: Is this an unusual case? No

MAJOR STREET-TOTAL OF BOTH APPROACHES-VEHICLES PER HOUR (VPH) 70% N/A *Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower

threshold volume for a minor-street approach with one lane. **▼** Warrant is not applicable

Warrant, 4 Pedestrian Volume

tersection Name:	Mt. Highland & Conti	nental Dr.	
ajor Street Name:	Mt. Highland		
inor Street Name:	Continental Dr.	-	
ocation less than 3	00' from nearest sig	nal?	No
	ed by a median with	sufficient width	
r pedestrians to w	ait?	No 🔻	
	Pedestrian Volume		Vehicular Gaps
	Across Major Street		Across Major Street
12:00 AM	1		
1:00 AM	I		
2:00 AM	I		
3:00 AM	I		
4:00 AN	I		
5:00 AM	I		
6:00 AM			
7:00 AM	I		
8:00 AM			
9:00 AM			
10:00 AM			
11:00 AM	l		
12:00 PM			
1:00 PM			
2:00 PM			
3:00 PM			
4:00 PM			
5:00 PM			
6:00 PM			
7:00 PM	l		
8:00 PM			
9:00 PM			
10:00 PM			
11:00 PM	I		
Warran	t 4, Condition A Met:	N/A	
	t 4, Condition B Met:		
··uii aii	, condition b wet.	13//3	

Warrant 4, Met: N/A

Warrant 5, School Crossing

Intersection Name:	Mt. Highland & Continent	ital Dr.	
Major Street Name:	Mt. Highland		
Minor Street Name:	Continental Dr.		
Location less than 3	00' from nearest signal?	? <u>No</u>	
	Start	Finish	
	Interval 1	-	
	Interval 2	-	
	Interval 3	-	
	Interval 4	-	
	Interval 5	-	
	Interval 6	-	
	Student Volu	ume Vehicular Gaps	
		Otal A M-1 Otal -	
	Across Major S	Street Across Major Stree	t
	Across Major S Interval 1	Street Across Major Stree	ŧ
	Across Major S Interval 1 Interval 2	Street Across Major Stree	t
	Across Major S Interval 1 Interval 2 Interval 3	Street Across Major Stree	et
	Across Major S Interval 1 Interval 2 Interval 3 Interval 4	Street Across Major Stree	et
	Across Major S Interval 1 Interval 2 Interval 3 Interval 4 Interval 5	Street Across Major Stree	et
	Across Major S Interval 1 Interval 2 Interval 3 Interval 4	Street Across Major Stree	et
	Across Major S Interval 1 Interval 2 Interval 3 Interval 4 Interval 5	Street Across Major Stree	et
	Across Major S Interval 1 Interval 2 Interval 3 Interval 4 Interval 5	Street Across Major Stree	et

Warrant 5, Met: N/A

Warrant 6, Corrdinated Signal System

Major Street Name: Mt. Highland Mt. Mighland Minor Street Name: Continental Dr.
*The Coordinated Signal System signal warrant should not be applied
where the resultant spacing of traffic control signals would be less than 1000'.
Out Him A
Condition A: 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.
Warrant 6, Condition A met:
Condition B: 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 6, Condition B met: ▼
Warrant 6, Met: N/A

Warrant 7, Crash Experience

Intersection Name: Mt. Highland & Continental Dr. Major Street Name: Mt. Highland Continental Dr. Mt. Highland Mt. High
Condition A: Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency
Warrant 7, Condition A met: No ▼
Condition B: Five or more reported crashes, of types susceptible to correction by a traffic control signal, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash Number of Correctable Crashes: 1 Warrant 7, Condition B met: N
Condition C: For each of any 8 hours of an average day, the vehicles per hour (vph) given in both of the 80% columns of Condition A in Table 4C-1, or the vph in both of the 80% columns of Condition B in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection, or the volume of pedestrian traffic is not less than 80% of the requirements specified in the Pedestrian Volume warrant.
80% conditions Condition A in Table 4C-1 met: N 80% conditions Condition B in Table 4C-1 met: N 80% of Pedestrian Volume Warrant Volumes met: N/A

	80% Condition A in Table	4C-180	0% Condition B is	n Table 4C-1	80% Pedestrian Volumes
12:00 AM					
1:00 AM					
2:00 AM					
3:00 AM					
4:00 AM					
5:00 AM					
6:00 AM					
7:00 AM					
8:00 AM					
9:00 AM					
10:00 AM					
11:00 AM					
12:00 PM					
1:00 PM					
2:00 PM					
3:00 PM					
4:00 PM					
5:00 PM					
6:00 PM					
7:00 PM					
8:00 PM					
9:00 PM					
10:00 PM					
11:00 PM					
	0		0		0

Warrant 7, Met: No

Warrant 8, Roadway Network

Intersection Name: Mt. Highland & Continental Dr.							
* This warrant shall only be considered if the location is an intersection of two or more major routes.							
A major route as used in this signal warrant shall have one or more of the following characteristics:							
 It is part of the street or highway system that serves as the principal roadway network for through traffic flow; or 							
2. It includes rural or suburban highways outside, entering, or traversing a city; or							
It appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.							
Does the study intersection consist of two or more major routes? No							
Condition A The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday and has 5-year projected traffic volumes, based on an engineering study, that meet one or more of warrants 1, 2, and 3 during an average weekday; or							
At least 1,000 vehicles entering the intersection: N/A Warrant 8, Condition A met: N/A							
Condition B The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a nonnormal business day (Saturday or Sunday).							
Warrant 8, Condition B met:N/A							
Warrant 8, met: N/A							

| Intersection Name: Eastbound Off & Harrison Ave. | Major Street Name: Harrison Ave. | No. of Lanes: 2 or more | Minor Street Name: Eastbound Off No. of Lanes: 1 | Major street speed exceeds 40 mph or isolated community with a population less than 10,000? | No

Condition A - Minimum Vehicular Volume										
No. of	Lanes	VPH	VPH total on major street				VPH on higher vol minor street			
Major	Minor	100%ª	80% ^b	70%°	56% ^d	100% ^a	80% ^b	70%°	56% ^d	
1	1	500	400	350	280	150	120	105	84	
2	1	600	480	420	336	150	120	105	84	
2	2	600	480	420	336	200	160	140	112	
1	2	500	400	350	280	200	160	140	112	

Condition B - Interupption of Continuous Traffic										
No. of	Lanes	VPH total on major street				VPH on higher vol minor street				
Major	Minor	100%ª	80% ^b	70%°	56% ^d	100%ª	80% ^b	70%°	56% ^d	
1	1	750	600	525	420	75	60	53	42	
2	1	900	720	630	504	75	60	53	42	
2	2	900	720	630	504	100	80	70	56	
1	2	750	600	525	420	100	80	70	56	

^a Basic minimum hourly volume.

d May be used for combination of Conditions A and B after adequate trial of other remedial measures when the majorstreet speed exceeds 70km/h or exceeds 40 mpn in an isolated community with a population less than 10,000

		Traffic \	Volume		Total Major	Higher Minor
	Major Street 1	Major Street 2	Minor Street 1	Minor Street 2	Street Vol	Street Vol
12:00 AM	115	127	0	16	242	16
1:00 AM	71	64	0	6	135	6
2:00 AM	59	44	0	5	103	5
3:00 AM	41	42	0	2	83	2
4:00 AM	72	42	0	3	114	3
5:00 AM	164	126	0	33	290	33
6:00 AM	288	212	0	43	500	43
7:00 AM		415	0	124	965	124
8:00 AM	729	559	0	160	1288	160
9:00 AM	773	654	0	114	1427	114
10:00 AM		754	0	117	1599	117
11:00 AM		929	0	110	2024	110
12:00 PM	1281	1177	0	168	2458	168
1:00 PM	1202	1095	0	154	2297	154
2:00 PM		1118	0	153	2292	153
3:00 PM	1154	1088	0	208	2242	208
4:00 PM	1165	1124	0	272	2289	272
5:00 PM		1117	0	280	2273	280
6:00 PM	967	935	0	203	1902	203
7:00 PM	779	753	0	158	1532	158
8:00 PM		634	0	124	1276	124
9:00 PM		585	0	97	1161	97
10:00 PM	464	370	0	100	834	100
11:00 PM	227	241	0	63	468	63

	Condition A		Cond	tion B	Combination	Combination
	100%	70%	100%	70%	80%	56%
12:00 AM						
1:00 AM						
2:00 AM						
3:00 AM						
4:00 AM						
5:00 AM						
6:00 AM						
7:00 AM			~			
8:00 AM	~		~			
9:00 AM			~			
10:00 AM			~			
11:00 AM			~			
12:00 PM	~		~			
1:00 PM	~		~			
2:00 PM			~			
3:00 PM	~		~			
4:00 PM			~			
5:00 PM	~		~			
6:00 PM	~		~			
7:00 PM			~			
8:00 PM			~			
9:00 PM			~			
10:00 PM						
11:00 PM						
	9	0	15	0	0	0

Warrant 1. Condition A Met: 70%: N/A N/A Warrant 1, Condition B Met:

Consider combination? See Note 1
Warrant 1, Combination Met: N/A N/A 56%

Note 1: Not considered because either Condition A or B is already met.

Warrant 1, Met: Yes

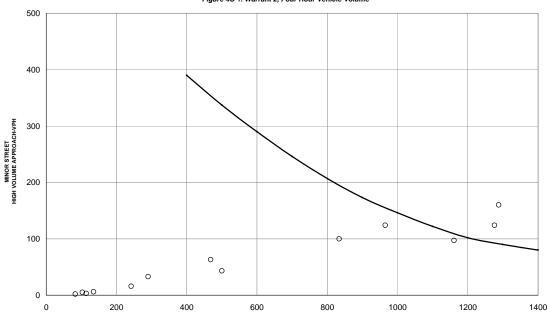
^b Used for combination of Conditions A and B after adequate trial of other remedial measures.

 $^{^{\}rm C}\,$ May be used when the major-street speed exceeds 40 mph or in an Isolated community with a population of less than 10,000.

| Intersection Name: Eastbound Off & Harrison Ave. | Major Street Name: Harrison Ave. No. of Lanes: 2 or more | Eastbound Off No. of Lanes: 1 | Major street speed exceeds 40 mph or isolated community with a population less than 10,000? | No

		Traffic '	Volume	Total Major	Higher Minor	100%	70%	
	Major Street 1	Major Street 2	Minor Street 1	Minor Street 2	Street Vol	Street Vol	Met	Met
12:00 AM		127	0	16	242	16		
1:00 AM	71	64	0	6	135	6		
2:00 AM	59	44	0	5	103	5		
3:00 AM	41	42	0	2	83	2		
4:00 AM	72	42	0	3	114	3		
5:00 AM	164	126	0	33	290	33		
6:00 AM	288	212	0	43	500	43		
7:00 AM	550	415	0	124	965	124		
8:00 AM	729	559	0	160	1288	160	~	
9:00 AM	773	654	0	114	1427	114	~	
10:00 AM	845	754	0	117	1599	117	~	
11:00 AM	1095	929	0	110	2024	110	~	
12:00 PM	1281	1177	0	168	2458	168	~	
1:00 PM	1202	1095	0	154	2297	154	~	
2:00 PM	1174	1118	0	153	2292	153	~	
3:00 PM	1154	1088	0	208	2242	208	~	
4:00 PM	1165	1124	0	272	2289	272	~	
5:00 PM	1156	1117	0	280	2273	280	~	
6:00 PM	967	935	0	203	1902	203	~	
7:00 PM	779	753	0	158	1532	158	~	
8:00 PM	642	634	0	124	1276	124	~	
9:00 PM	576	585	0	97	1161	97		
10:00 PM	464	370	0	100	834	100		
11:00 PM	227	241	0	63	468	63		

Figure 4C-1. Warrant 2, Four Hour Vehicle Volume



MAJOR STREET-TOTAL OF BOTH APPROACHES-VEHICLES PER HOUR (VPH)

*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Yes 70% N/A

Warrant 2, Met: Yes

Delay Study for Warrant 3

Intersection Name: Eastbound Off & Harrison Ave.

Major Street Name: Harrison Ave.

Minor Street Name: Eastbound Off

mber of Approaches: 4

Interval: Seconds

	Number of Stopped Vehicles		Number of Stopped Vehicles	Cars Served on Study Approach	Cars S	
Min/Sec	0	Min/Sec	0	Interval No.	Interval	No.
0		0		1	1	
1		1		2	2	
2		2		3	3	
3		3		4	4	
4		4		5	5	
5		5		6	6	
6		6		7	7	
7		7		8	8	
8		8		· ·	Ü	
9		9		Cars Served	Cars S	orved
10		10		on Study Approach	at Inters	
11		11		Hourly Sum	Hourly	
12		12		1	1	Juili
13		13		2	2	
14		14		3	3	
15		15		4	4	
16		16		5	5	
17		17		5	5	
18		18		Vehicles Stopped		
19		19		on Study Approach		
20		20		Hourly Totals		
21		21		1		
22		22		2		
23		23		3		
24		24		4		
25		25		5		
26		26				
27		27				
28		28		Total Number of Stopp	ed Vehicles	
29		29		Vehicles Served on Ap	proach Leg_	
30		30				
31		31				
32		32		Stopped Delay	·	sec/veh
33		33		Stopped Delay		veh-hrs
34		34				
35		35				
36		36				
37		37				
38		38				
39		39				
40		40				
41		41				
42		42				
43		43				
44		44				
45		45				
46		46				
47		47				
48		48				
49		49				
50		50				
51		51				
52		52				
53		53				
54		54				
55		55				
56		56				
57		57				
58		58				
59		59				

| Intersection Name: Eastbound Off & Harrison Ave. | Major Street Name: Harrison Ave. No. of Lanes: 2 or more | Major street Name: Eastbound Off No. of Lanes: 1 | Major street speed exceeds 40 mph or isolated community with a population less than 10,000?

Condition A:

1. The total stopped time delay experienced by the traffic on the one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and

Condition A-1 Met: N/A

The voulme on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for a one moving lane of traffic or 150 vehicles per hour for for two moving lanes, and

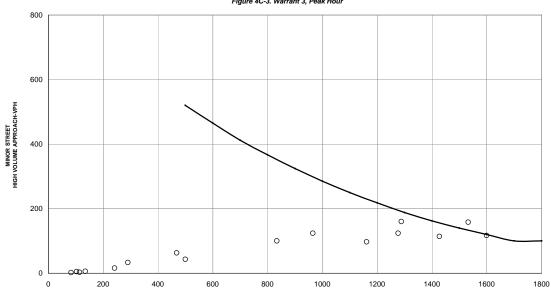
Condition A-2 Met:

3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles for intersections with four or more approaches.

Condition A-3 Met: N/A 100% 70% Condition B: Peak Hour Total Volume Total Major Higher Minor 12:00p-1:00p 2626 2458 168 Met

		Traffic \	Volume	Total Major	Higher Minor	100%	70%	
	Major Street 1	Major Street 2	Minor Street 1	Minor Street 2	Street Vol	Street Vol	Met	Met
12:00 AM	115	127	0	16	242	16		
1:00 AM	71	64	0	6	135	6		
2:00 AM	59	44	0	5	103	5		
3:00 AM	41	42	0	2	83	2		
4:00 AM	72	42	0	3	114	3		
5:00 AM	164	126	0	33	290	33		
6:00 AM	288	212	0	43	500	43		
7:00 AM	550	415	0	124	965	124		
8:00 AM	729	559	0	160	1288	160		
9:00 AM	773	654	0	114	1427	114		
10:00 AM	845	754	0	117	1599	117		
11:00 AM	1095	929	0	110	2024	110	~	
12:00 PM	1281	1177	0	168	2458	168	~	
1:00 PM	1202	1095	0	154	2297	154	~	
2:00 PM	1174	1118	0	153	2292	153	~	
3:00 PM	1154	1088	0	208	2242	208	~	
4:00 PM	1165	1124	0	272	2289	272	~	
5:00 PM	1156	1117	0	280	2273	280	~	
6:00 PM	967	935	0	203	1902	203	~	
7:00 PM	779	753	0	158	1532	158		
8:00 PM	642	634	0	124	1276	124		
9:00 PM	576	585	0	97	1161	97		
10:00 PM	464	370	0	100	834	100		
11:00 PM	227	241	0	63	468	63		

Figure 4C-3. Warrant 3, Peak Hour



MAJOR STREET-TOTAL OF BOTH APPROACHES-Warrant 3, Condition A Met: VEHICLES PER HOUR (VPH) Warrant 3. Condition B Met: Yes 70% N/A *Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower Warrant 3. Met: threshold volume for a minor-street approach with one lane. Is this an unusual case? No **▼** Warrant is not applicable

^{*} This signal warrant shall only be applied in unusual cases. Such cases include, but are not limited to, office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that atrract or discharge large numbers of vehicles over a short time.

Warrant, 4 Pedestrian Volume

tersection Name:	Eastbound Off & Har	rison Ave.	
lajor Street Name:	Harrison Ave.		
linor Street Name:	Eastbound Off		
ocation less than 3	00' from nearest sign	nal?	No
	ed by a median with	sufficient widt	h
or pedestrians to w	ait?	No 🔻	
	Pedestrian Volume		Vehicular Gaps
	Across Major Street		Across Major Street
12:00 AM	I		
1:00 AM			
2:00 AM	I		
3:00 AM	I		
4:00 AN	I		
5:00 AM	I		
6:00 AM	I		
7:00 AM	I		
8:00 AM	I		
9:00 AM	I		
10:00 AM	I		
11:00 AM			
12:00 PM			
1:00 PM			
2:00 PM			
3:00 PM			
4:00 PM	l		
5:00 PM	l		
6:00 PM	l		
7:00 PM	l		
8:00 PM	l		
9:00 PM			
10:00 PM	l		
11:00 PM	I		
Warran	t 4, Condition A Met:	N/A	
	t 4, Condition B Met:		•
wantan	, concilion b mot	.,,,,	•
	Warrant 4, Met:	N/A	

Warrant 5, School Crossing

Intersection Name:	Eastbound Off & Harriso	n Ave.	
Major Street Name:	Harrison Ave.		_
Minor Street Name:	Eastbound Off		
Location less than 3	00' from nearest signal	? No	
	Start		Finish
	Interval 1	-	
	Interval 2	-	
	Interval 3	-	
	Interval 4	-	
	Interval 5	-	
	Interval 6	-	
	Student Vol	ume	Vehicular Gaps
	Across Major	Street A	cross Major Street
	Interval 1		
	Interval 2		
	Interval 3		
	Interval 4		
	Interval 5		
	Interval 6		

Warrant 5, Met: N/A

Warrant 6, Corrdinated Signal System

Intersection Name: Eastbound Off & Harrison Ave. Major Street Name: Harrison Ave. Minor Street Name: Eastbound Off
*The Coordinated Signal System signal warrant should not be applied where the resultant spacing of traffic control signals would be less than 1000'.
Condition A: 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.
Warrant 6, Condition A met:
Condition B: 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 6, Condition B met: ▼
Warrant 6, Met: N/A

Warrant 7, Crash Experience

Intersection Name: Eastbound Off & Harrison Ave. Major Street Name: Harrison Ave. Minor Street Name: Eastbound Off "Major street speed exceeds 40 mph or isolated community with a population less than 10,000? No
Condition A: Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency
Warrant 7, Condition A met: №
Condition B: Five or more reported crashes, of types susceptible to correction by a traffic control signal, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash Number of Correctable Crashes: 5
Warrant 7, Condition B met: Y
Condition C: For each of any 8 hours of an average day, the vehicles per hour (vph) given in both of the 80% columns of Condition A in Table 4C-1, or the vph in both of the 80% columns of Condition B in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection, or the volume of pedestrian traffic is not less than 80% of the requirements specified in the Pedestrian Volume warrant.
80% conditions Condition A in Table 4C-1 met: Y 80% conditions Condition B in Table 4C-1 met: Y 80% of Pedestrian Volume Warrant Volumes met: N/A

	80% Condition A in Table 4C-1	80% Condition B in Table 4C-1	80% Pedestrian Volumes
12:00 AM			
1:00 AM			
2:00 AM			
3:00 AM			
4:00 AM			
5:00 AM			
6:00 AM			
7:00 AM	~	~	
8:00 AM	~	~	
9:00 AM		~	
10:00 AM		~	
11:00 AM		~	
12:00 PM	~	~	
1:00 PM	~	~	
2:00 PM	~	~	
3:00 PM	~	~	
4:00 PM	~	~	
5:00 PM	~	~	
6:00 PM	~	~	
7:00 PM	~	~	
8:00 PM	~	~	
9:00 PM		~	
10:00 PM		~	
11:00 PM			
	11	16	0

Warrant 7, Met: No

PBSJ - Traffic Engineering Ver. 1.00

Warrant 8, Roadway Network

Intersection Name: Eastbound Off & Harrison Ave. Major Street Name: Harrison Ave. Minor Street Name: Eastbound Off
* This warrant shall only be considered if the location is an intersection of two or more major routes.
A major route as used in this signal warrant shall have one or more of the following characteristics:
 It is part of the street or highway system that serves as the principal roadway network for through traffic flow; or
2. It includes rural or suburban highways outside, entering, or traversing a city; or
It appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.
Does the study intersection consist of two or more major routes?
Condition A The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday and has 5-year projected traffic volumes, based on an engineering study, that meet one or more of warrants 1, 2, and 3 during an average weekday; or
At least 1,000 vehicles entering the intersection: N/A
Warrant 8, Condition A met: N/A
Condition B The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a nonnormal business day (Saturday or Sunday).
Warrant 8, Condition B met: N/A
Warrant 8, met:N/A

| Intersection Name: Eastbound Off & Harrison Ave. | Major Street Name: Harrison Ave. | No. of Lanes: 2 or more | Minor Street Name: Eastbound Off No. of Lanes: 1 | Major street speed exceeds 40 mph or isolated community with a population less than 10,000? | No

Condition A - Minimum Vehicular Volume										
No. of Lanes VPH total on major street			VPH on higher vol minor street							
Major	Minor	100%ª	80% ^b	70%°	56% ^d	100% ^a	80% ^b	70%°	56% ^d	
1	1	500	400	350	280	150	120	105	84	
2	1	600	480	420	336	150	120	105	84	
2	2	600	480	420	336	200	160	140	112	
1	2	500	400	350	280	200	160	140	112	

	Condition B - Interupption of Continuous Traffic									
No. of	No. of Lanes VPH total on major street			VPH on higher vol minor street						
Major	Minor	100%ª	80% ^b	70%°	56% ^d	100%ª	80% ^b	70%°	56% ^d	
1	1	750	600	525	420	75	60	53	42	
2	1	900	720	630	504	75	60	53	42	
2	2	900	720	630	504	100	80	70	56	
1	2	750	600	525	420	100	80	70	56	

^a Basic minimum hourly volume.

d May be used for combination of Conditions A and B after adequate trial of other remedial measures when the majorstreet speed exceeds 70km/h or exceeds 40 mpn in an isolated community with a population less than 10,000

		Traffic \	Volume		Total Major	Higher Minor
	Major Street 1	Major Street 2	Minor Street 1	Minor Street 2	Street Vol	Street Vol
12:00 AM	96	136	27	0	232	27
1:00 AM	70	62	13	0	132	13
2:00 AM	48	48	12	0	96	12
3:00 AM	32	39	10	0	71	10
4:00 AM	57	38	12	0	95	12
5:00 AM	138	135	20	0	273	20
6:00 AM	284	208	49	0	492	49
7:00 AM	531	435	98	0	966	98
8:00 AM	687	601	114	0	1288	114
9:00 AM	705	672	111	0	1377	111
10:00 AM	746	761	96	0	1507	96
11:00 AM	1059	958	117	0	2017	117
12:00 PM	1253	1086	133	0	2339	133
1:00 PM	1170	1056	127	0	2226	127
2:00 PM	1123	1042	125	0	2165	125
3:00 PM	1157	1063	121	0	2220	121
4:00 PM	1119	1126	152	0	2245	152
5:00 PM	1098	1205	156	0	2303	156
6:00 PM	947	1003	138	0	1950	138
7:00 PM	762	808	112	0	1570	112
8:00 PM	624	677	81	0	1301	81
9:00 PM	560	614	72	0	1174	72
10:00 PM	456	415	52	0	871	52
11:00 PM	489	267	34	0	756	34

	Cond	ition A	Condi	tion B	Combination	Combination
	100%	70%	100%	70%	80%	56%
12:00 AM						
1:00 AM						
2:00 AM						
3:00 AM						
4:00 AM						
5:00 AM						
6:00 AM						
7:00 AM			~			
8:00 AM			~			
9:00 AM			~			
10:00 AM			~			
11:00 AM			~			
12:00 PM			~			
1:00 PM			~			
2:00 PM			~			
3:00 PM			~			
4:00 PM	~		~			
5:00 PM	~		~			
6:00 PM			~			
7:00 PM			~			
8:00 PM			~			
9:00 PM						
10:00 PM						
11:00 PM						
	2	0	14	0	0	0

Warrant 1. Condition A Met: 70%: N/A N/A Warrant 1, Condition B Met:

Consider combination? See Note 1
Warrant 1, Combination Met: N/A N/A 56%

Note 1: Not considered because either Condition A or B is already met.

Warrant 1, Met: Yes

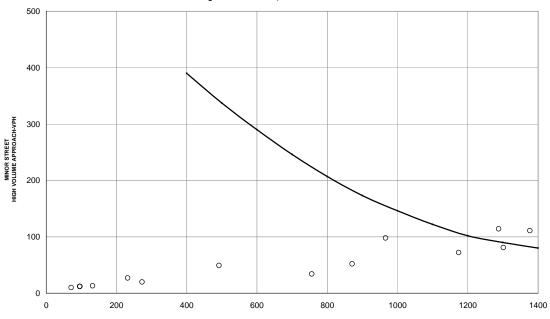
^b Used for combination of Conditions A and B after adequate trial of other remedial measures.

^c May be used when the major-street speed exceeds 40 mph or in an Isolated community with a population of less than 10,000.

| Intersection Name: Eastbound Off & Harrison Ave. | Major Street Name: Harrison Ave. No. of Lanes: 2 or more | Eastbound Off No. of Lanes: 1 | Major street speed exceeds 40 mph or isolated community with a population less than 10,000? | No

		Traffic '	Total Major	Higher Minor	100%	70%		
	Major Street 1	Major Street 2		Minor Street 2	Street Vol	Street Vol	Met	Met
12:00 AM	96	136	27	0	232	27		
1:00 AM	70	62	13	0	132	13		
2:00 AM	48	48	12	0	96	12		
3:00 AM	32	39	10	0	71	10		
4:00 AM	57	38	12	0	95	12		
5:00 AM	138	135	20	0	273	20		
6:00 AM	284	208	49	0	492	49		
7:00 AM	531	435	98	0	966	98		
8:00 AM	687	601	114	0	1288	114	~	
9:00 AM	705	672	111	0	1377	111	~	
10:00 AM	746	761	96	0	1507	96	~	
11:00 AM	1059	958	117	0	2017	117	~	
12:00 PM	1253	1086	133	0	2339	133	~	
1:00 PM	1170	1056	127	0	2226	127	~	
2:00 PM	1123	1042	125	0	2165	125	~	
3:00 PM	1157	1063	121	0	2220	121	~	
4:00 PM	1119	1126	152	0	2245	152	~	
5:00 PM	1098	1205	156	0	2303	156	~	
6:00 PM	947	1003	138	0	1950	138	~	
7:00 PM	762	808	112	0	1570	112	~	
8:00 PM	624	677	81	0	1301	81		
9:00 PM	560	614	72	0	1174	72		
10:00 PM	456	415	52	0	871	52		
11:00 PM	489	267	34	0	756	34		

Figure 4C-1. Warrant 2, Four Hour Vehicle Volume



MAJOR STREET-TOTAL OF BOTH APPROACHES-VEHICLES PER HOUR (VPH)

*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Yes **70**% N/A

Warrant 2, Met: Yes

Delay Study for Warrant 3

Intersection Name: Eastbound Off & Harrison Ave.

Major Street Name: Harrison Ave.

Minor Street Name: Eastbound Off

mber of Approaches: 4

Interval: Seconds

	Number of Stopped Vehicles		Number of Stopped Vehicles	Cars Served on Study Approach	Cars S	
Min/Sec	0	Min/Sec	0	Interval No.	Interval	No.
0		0		1	1	
1		1		2	2	
2		2		3	3	
3		3		4	4	
4		4		5	5	
5		5		6	6	
6		6		7	7	
7		7		8	8	
8		8		· ·	Ü	
9		9		Cars Served	Cars S	orved
10		10		on Study Approach	at Inters	
11		11		Hourly Sum	Hourly	
12		12		1	1	Juili
13		13		2	2	
14		14		3	3	
15		15		4	4	
16		16		5	5	
17		17		5	5	
18		18		Vehicles Stopped		
19		19		on Study Approach		
20		20		Hourly Totals		
21		21		1		
22		22		2		
23		23		3		
24		24		4		
25		25		5		
26		26				
27		27				
28		28		Total Number of Stopp	ed Vehicles	
29		29		Vehicles Served on Ap	proach Leg_	
30		30				
31		31				
32		32		Stopped Delay	·	sec/veh
33		33		Stopped Delay		veh-hrs
34		34				
35		35				
36		36				
37		37				
38		38				
39		39				
40		40				
41		41				
42		42				
43		43				
44		44				
45		45				
46		46				
47		47				
48		48				
49		49				
50		50				
51		51				
52		52				
53		53				
54		54				
55		55				
56		56				
57		57				
58		58				
59		59				

| Intersection Name: Eastbound Off & Harrison Ave. | Major Street Name: Harrison Ave. No. of Lanes: 2 or more | Major street Name: Eastbound Off No. of Lanes: 1 | Major street speed exceeds 40 mph or isolated community with a population less than 10,000? No

Condition A:

1. The total stopped time delay experienced by the traffic on the one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and

Condition A-1 Met: N/A

The voulme on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for a one moving lane of traffic or 150 vehicles per hour for for two moving lanes, and

Condition A-2 Met:

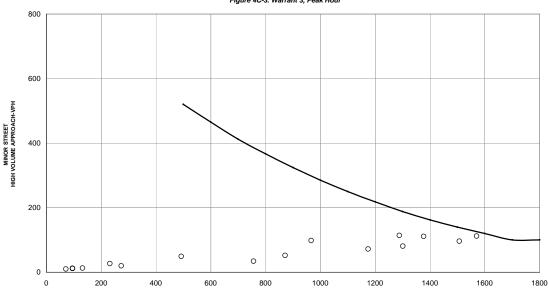
3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles for intersections with four or more approaches.

Condition A-3 Met: N/A

100% 70% Condition B: Peak Hour Total Volume Total Major Higher Minor 12:00p-1:00p 2472 2339 133 Met

I		Traffic '	Volume	Total Major	Higher Minor	100%	70%	
	Major Street 1	Major Street 2	Minor Street 1	Minor Street 2	Street Vol	Street Vol	Met	Met
12:00 AM	96	136	27	0	232	27		
1:00 AM	70	62	13	0	132	13		
2:00 AM	48	48	12	0	96	12		
3:00 AM	32	39	10	0	71	10		
4:00 AM	57	38	12	0	95	12		
5:00 AM	138	135	20	0	273	20		
6:00 AM	284	208	49	0	492	49		
7:00 AM	531	435	98	0	966	98		
8:00 AM	687	601	114	0	1288	114		
9:00 AM	705	672	111	0	1377	111		
10:00 AM	746	761	96	0	1507	96		
11:00 AM	1059	958	117	0	2017	117	~	
12:00 PM	1253	1086	133	0	2339	133	~	
1:00 PM	1170	1056	127	0	2226	127	~	
2:00 PM	1123	1042	125	0	2165	125	~	
3:00 PM	1157	1063	121	0	2220	121	~	
4:00 PM	1119	1126	152	0	2245	152	~	
5:00 PM	1098	1205	156	0	2303	156	~	
6:00 PM	947	1003	138	0	1950	138	~	
7:00 PM	762	808	112	0	1570	112		
8:00 PM	624	677	81	0	1301	81		
9:00 PM	560	614	72	0	1174	72		
10:00 PM	456	415	52	0	871	52		
11:00 PM	489	267	34	0	756	34		

Figure 4C-3. Warrant 3, Peak Hour



MAJOR STREET-TOTAL OF BOTH APPROACHES-Warrant 3, Condition A Met: VEHICLES PER HOUR (VPH) Warrant 3. Condition B Met: Yes 70% N/A *Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower Warrant 3. Met: threshold volume for a minor-street approach with one lane. Is this an unusual case? No **▼** Warrant is not applicable

^{*} This signal warrant shall only be applied in unusual cases. Such cases include, but are not limited to, office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that atrract or discharge large numbers of vehicles over a short time.

Warrant, 4 Pedestrian Volume

tersection Name:	Eastbound Off & Har	rison Ave.	
lajor Street Name:	Harrison Ave.		
linor Street Name:	Eastbound Off		
ocation less than 3	00' from nearest sign	nal?	No
	ed by a median with	sufficient widt	h
or pedestrians to w	ait?	No 🔻	
	Pedestrian Volume		Vehicular Gaps
	Across Major Street		Across Major Street
12:00 AM	I		
1:00 AM			
2:00 AM	I		
3:00 AM	I		
4:00 AN	I		
5:00 AM	I		
6:00 AM	I		
7:00 AM	I		
8:00 AM	I		
9:00 AM	I		
10:00 AM	I		
11:00 AM			
12:00 PM			
1:00 PM			
2:00 PM			
3:00 PM			
4:00 PM	l		
5:00 PM	l		
6:00 PM	l		
7:00 PM	l		
8:00 PM	l		
9:00 PM			
10:00 PM	l		
11:00 PM	I		
Warran	t 4, Condition A Met:	N/A	
	t 4, Condition B Met:		•
wantan	, concilion b mot	.,,,,	•
	Warrant 4, Met:	N/A	

Warrant 5, School Crossing

Intersection Name:	Eastbound Off & Harriso	n Ave.	
Major Street Name:	Harrison Ave.		_
Minor Street Name:	Eastbound Off		
Location less than 3	00' from nearest signal	? No	
	Start		Finish
	Interval 1	-	
	Interval 2	-	
	Interval 3	-	
	Interval 4	-	
	Interval 5	-	
	Interval 6	-	
	Student Vol	ume	Vehicular Gaps
	Across Major	Street A	cross Major Street
	Interval 1		
	Interval 2		
	Interval 3		
	Interval 4		
	Interval 5		
	Interval 6		

Warrant 5, Met: N/A

Warrant 6, Corrdinated Signal System

Intersection Name: Eastbound Off & Harrison Ave. Major Street Name: Harrison Ave. Minor Street Name: Eastbound Off
*The Coordinated Signal System signal warrant should not be applied where the resultant spacing of traffic control signals would be less than 1000'.
Condition A: 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.
Warrant 6, Condition A met:
Condition B: 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 6, Condition B met: ▼
Warrant 6, Met: N/A

Warrant 7, Crash Experience

Intersection Name: Eastbound Off & Harrison Ave. Major Street Name: Harrison Ave. Eastbound Off Eastbound Off Major street speed exceeds 40 mph or isolated community with a population less than 10,000? No
Condition A: Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency
Warrant 7, Condition A met: No ▼
Condition B: Five or more reported crashes, of types susceptible to correction by a traffic control signal, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash Number of Correctable Crashes: 7 Warrant 7, Condition B met:Y
Condition C: For each of any 8 hours of an average day, the vehicles per hour (vph) given in both of the 80% columns of Condition A in Table 4C-1, or the vph in both of the 80% columns of Condition B in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection, or the volume of pedestrian traffic is not less than 80% of the requirements specified in the Pedestrian Volume warrant.
80% conditions Condition A in Table 4C-1 met: N 80% conditions Condition B in Table 4C-1 met: Y 80% of Pedestrian Volume Warrant Volumes met: N/A

	80% Condition A in Table 4C-1	80% Condition B in Table 4C-1	80% Pedestrian Volumes
12:00 AM			_
1:00 AM			
2:00 AM			
3:00 AM			
4:00 AM			
5:00 AM			
6:00 AM			
7:00 AM		~	
8:00 AM		~	
9:00 AM		~	
10:00 AM		~	
11:00 AM		~	
12:00 PM		~	
1:00 PM		~	
2:00 PM		~	
3:00 PM		~	
4:00 PM		~	
5:00 PM		~	
6:00 PM		~	
7:00 PM		~	
8:00 PM		~	
9:00 PM		~	
10:00 PM			
11:00 PM			
	7	15	0

Warrant 7, Met: No

Warrant 8, Roadway Network

Intersection Name: Eastbound Off & Harrison Ave. Major Street Name: Harrison Ave. Minor Street Name: Eastbound Off
* This warrant shall only be considered if the location is an intersection of two or more major routes.
A major route as used in this signal warrant shall have one or more of the following characteristics:
 It is part of the street or highway system that serves as the principal roadway network for through traffic flow; or
2. It includes rural or suburban highways outside, entering, or traversing a city; or
It appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.
Does the study intersection consist of two or more major routes?
Condition A The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday and has 5-year projected traffic volumes, based on an engineering study, that meet one or more of warrants 1, 2, and 3 during an average weekday; or
At least 1,000 vehicles entering the intersection: N/A
Warrant 8, Condition A met: N/A
Condition B The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a nonnormal business day (Saturday or Sunday).
Warrant 8, Condition B met: N/A
Warrant 8, met:N/A

	Condition A - Minimum Vehicular Volume								
No. of Lanes VPH total on major street				VPH on higher vol minor street					
Major	Minor	100%ª	80% ^b	70%°	56% ^d	100% ^a	80% ^b	70%°	56% ^d
1	1	500	400	350	280	150	120	105	84
2	1	600	480	420	336	150	120	105	84
2	2	600	480	420	336	200	160	140	112
1	2	500	400	350	280	200	160	140	112

Condition B - Interupption of Continuous Traffic									
No. of Lanes VPH total on major street			VPH on higher vol minor street						
Major	Minor	100%ª	80% ^b	70%°	56% ^d	100% ^a	80% ^b	70%°	56% ^d
1	1	750	600	525	420	75	60	53	42
2	1	900	720	630	504	75	60	53	42
2	2	900	720	630	504	100	80	70	56
1	2	750	600	525	420	100	80	70	56

^a Basic minimum hourly volume.

with a population or less than 10,000.

May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 70km/h or exceeds 40 mpn in an isolated community with a population less than 10,000

			Volume		Total Major	Higher Minor		
	Major Street 1	Major Street 2	Minor Street 1	Minor Street 2	Street Vol	Street Vol		
12:00 AM		31	13	0	66	13		
1:00 AM	18	17	7	0	35	7		
2:00 AM	18	18	6	0	36	6		
3:00 AM		14	7	0	27	7		
4:00 AM	16	24	7	0	40	7		
5:00 AM	44	46	12	0	90	12		
6:00 AM		62	29	0	124	29		
7:00 AM	105	83	56	0	188	56		
8:00 AM	147	106	62	0	253	62		
9:00 AM		101	54	0	243	54		
10:00 AM		128	54	0	283	54		
11:00 AM		101	54	0	249	54		
12:00 PM	159	115	38	0	274	38		
1:00 PM		115	39	0	282	39		
2:00 PM		107	51	0	266	51		
3:00 PM	178	120	58	0	298	58		
4:00 PM	186	112	61	0	298	61		
5:00 PM	160	125	61	0	285	61		
6:00 PM	119	109	75	0	228	75		
7:00 PM	106	92	46	0	198	46		
8:00 PM		89	32	0	180	32		
9:00 PM	79	80	33	0	159	33		
10:00 PM	66	59	22	0	125	22		
11:00 PM	51	49	16	0	100	16		

	Cond	ition A	Condi	tion B	Combination	Combination
	100%	70%	100%	70%	80%	56%
12:00 AM						
1:00 AM						
2:00 AM						
3:00 AM						
4:00 AM						
5:00 AM						
6:00 AM						
7:00 AM						
8:00 AM						
9:00 AM						
10:00 AM						
11:00 AM						
12:00 PM						
1:00 PM						
2:00 PM						
3:00 PM						
4:00 PM						
5:00 PM						
6:00 PM						
7:00 PM						
8:00 PM						
9:00 PM						
10:00 PM						
11:00 PM						
	0	0	0	0	0	0

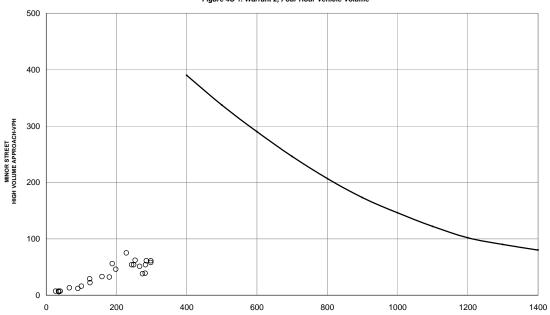
Warrant 1, Condition A Met:	No	70%:	N/A	
Warrant 1, Condition B Met:	No	70%:	N/A	
Consider combination?	Yes			
Warrant 1, Combination Met:	No	56%	No	
		Warrant 1, Met:	No	

^b Used for combination of Conditions A and B after adequate trial of other remedial measures.

^c May be used when the major-street speed exceeds 40 mph or in an Isolated community with a population of less than 10,000.

		Traffic '	Total Major	Higher Minor	100%	70%		
	Major Street 1		Minor Street 1	Minor Street 2	Street Vol	Street Vol	Met	Met
12:00 AM		31	13	0	66	13		
1:00 AM	18	17	7	0	35	7		
2:00 AM	18	18	6	0	36	6		
3:00 AM	13	14	7	0	27	7		
4:00 AM	16	24	7	0	40	7		
5:00 AM	44	46	12	0	90	12		
6:00 AM	62	62	29	0	124	29		
7:00 AM	105	83	56	0	188	56		
8:00 AM	147	106	62	0	253	62		
9:00 AM	142	101	54	0	243	54		
10:00 AM	155	128	54	0	283	54		
11:00 AM	148	101	54	0	249	54		
12:00 PM	159	115	38	0	274	38		
1:00 PM	167	115	39	0	282	39		
2:00 PM	159	107	51	0	266	51		
3:00 PM	178	120	58	0	298	58		
4:00 PM	186	112	61	0	298	61		
5:00 PM	160	125	61	0	285	61		
6:00 PM	119	109	75	0	228	75		
7:00 PM	106	92	46	0	198	46		
8:00 PM	91	89	32	0	180	32		
9:00 PM	79	80	33	0	159	33		
10:00 PM	66	59	22	0	125	22		
11:00 PM	51	49	16	0	100	16		

Figure 4C-1. Warrant 2, Four Hour Vehicle Volume



MAJOR STREET-TOTAL OF BOTH APPROACHES-VEHICLES PER HOUR (VPH)

*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

No 70% N/A

Warrant 2, Met: No

Delay Study for Warrant 3

Intersection Name: Rocker and EB Off
Major Street Name: Rocker
Minor Street Name: EB Off
nber of Approaches: 4
Interval: Seconds

	Number of Stopped Vehicles		Number of Stopped Vehicles	Cars Served	Cars Served
	_		_	on Study Approach	at Intersection
Min/Sec	0	Min/Sec	0	Interval No.	Interval No.
0		0		1	1
1		1		2	2
2		2		3	3
3		3		4	4
4		4		5	5
5		5		6	6
6		6		7	7
7		7		8	8
8		8			
9		9		Cars Served	Cars Served
10		10		on Study Approach	at Intersection
11		11		Hourly Sum	Hourly Sum
12		12		1	1
13		13		2	2
14		14		3	3
15		15		4	4
16		16		5	5
				5	5
17		17			
18		18		Vehicles Stopped	
19		19		on Study Approach	
20		20		Hourly Totals	
21		21		1	
22		22		2	
23		23		3	
24		24		4	
25		25		5	
26		26		-	
27		27			
28		28		Total Number of Stopp	ad Vahiclas
29		29			
				Vehicles Served on Ap	proach Leg
30		30			
31		31			
32		32		Stopped Delay	
33		33		Stopped Delay	veh-hrs
34		34			
35		35			
36		36			
37		37			
38		38			
39		39			
40		40			
41		41			
42		42			
43		43			
43 44		43			
45		45			
46		46			
47		47			
48		48			
49		49			
50		50			
51		51			
52		52			
53		53			
54		54			
55		55			
56		56			
57		57			
58		58			
58 59		58 59			
59		อษ			

No. of Lanes: *Major street speed exceeds 40 mph or isolated community with a population less than 10,000?

Condition A:

1. The total stopped time delay experienced by the traffic on the one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and

Condition A-1 Met: N/A

2. The voulme on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for a one moving lane of traffic or 150 vehicles per hour for for two moving lanes, and

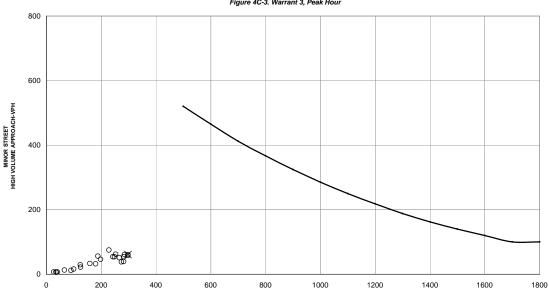
Condition A-2 Met:

3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles for intersections with four or more approaches.

Condition A-3 Met: N/A 70% 100% Condition B: Peak Hour Total Volume Total Major Higher Minor 4:00p-5:00p 359 298 61 Met

		Traffic \	Volume		Total Major	Higher Minor	100%	70%
	Major Street 1	Major Street 2		Minor Street 2	Street Vol	Street Vol	Met	Met
12:00 AM	35	31	13	0	66	13		
1:00 AM	18	17	7	0	35	7		
2:00 AM	18	18	6	0	36	6		
3:00 AM	13	14	7	0	27	7		
4:00 AM	16	24	7	0	40	7		
5:00 AM	44	46	12	0	90	12		
6:00 AM	62	62	29	0	124	29		
7:00 AM	105	83	56	0	188	56		
8:00 AM	147	106	62	0	253	62		
9:00 AM	142	101	54	0	243	54		
10:00 AM	155	128	54	0	283	54		
11:00 AM	148	101	54	0	249	54		
12:00 PM	159	115	38	0	274	38		
1:00 PM	167	115	39	0	282	39		
2:00 PM	159	107	51	0	266	51		
3:00 PM	178	120	58	0	298	58		
4:00 PM	186	112	61	0	298	61		
5:00 PM	160	125	61	0	285	61		
6:00 PM	119	109	75	0	228	75		
7:00 PM	106	92	46	0	198	46		
8:00 PM	91	89	32	0	180	32		
9:00 PM	79	80	33	0	159	33		
10:00 PM	66	59	22	0	125	22		
11:00 PM	51	49	16	0	100	16		

Figure 4C-3. Warrant 3, Peak Hour



MAJOR STREET-TOTAL OF BOTH APPROACHES-Warrant 3, Condition A Met: VEHICLES PER HOUR (VPH) Warrant 3. Condition B Met: No 70% N/A *Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower Warrant 3. Met: threshold volume for a minor-street approach with one lane. Is this an unusual case? No ■ Warrant is not applicable

^{*} This signal warrant shall only be applied in unusual cases. Such cases include, but are not limited to, office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that atrract or discharge large numbers of vehicles over a short time.

Warrant, 4 Pedestrian Volume

	Rocker and EB Off		
Major Street Name:			
Minor Street Name:		•	
Location less than 3	00' from nearest sig	nal?	No
Is the roadway divid	ed by a median with	sufficient width	
for pedestrians to w	ait?	No 🔻	
	Pedestrian Volume		Vehicular Gaps
	Across Major Street		Across Major Street
12:00 AM			riorodo major otroct
1:00 AM			
2:00 AM			
3:00 AM			
4:00 AM			
5:00 AM			
6:00 AM			
7:00 AM	1		
8:00 AM			
9:00 AM			
10:00 AM			
11:00 AM	1		
12:00 PM	1		
1:00 PM			
2:00 PM			
3:00 PM			
4:00 PM			
5:00 PM			
6:00 PM			
7:00 PM			
8:00 PM			
9:00 PM	1		
10:00 PM	1		
11:00 PM			
	t 4, Condition A Met:		
Warran	4, Condition B Met:	N/A	
	Warrant 4, Met:	N/A	

Warrant 5, School Crossing

Intersection Name: Major Street Name: Minor Street Name: Location less than 3			No	
		Start		Finish
	Interval 1		-	
	Interval 2		-	
	Interval 3		-	
	Interval 4		-	
	Interval 5		-	
	Interval 6		-	
	Sto	udent Volume	Ve	hicular Gaps
	Acro	ss Major Street	Acro	ss Major Street
	Interval 1			
	Interval 2			
	Interval 3			
	Interval 4			
	Interval 5			
	Interval 6			

Warrant 5, Met: N/A

Warrant 6, Corrdinated Signal System

Intersection Name: Rocker and EB Off
Major Street Name: Rocker
Minor Street Name: EB Off
*The Coordinated Signal System signal warrant should not be applied
where the resultant spacing of traffic control signals would be less than 1000'.
more the reculture opacing of traine colliner organic from 20 tool train 1000.
Condition A:
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 platoning.
are so far apart that they do not provide the necessary degree of venicular platooning.
Warrant 6, Condition A met:
warrant 6, Condition A met.
Condition B:
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 6, Condition B met:
Warrant 6, Met: N/A

Warrant 7, Crash Experience

Intersection Name: Rocker and EB Off Major Street Name: Rocker Minor Street Name: EB Off *Major street Name: EB Off *Major street speed exceeds 40 mph or isolated community with a population less than 10,000? No
Condition A: Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency
Warrant 7, Condition A met: No ▼
Condition B: Five or more reported crashes, of types susceptible to correction by a traffic control signal, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash Number of Correctable Crashes: 1 Warrant 7, Condition B met: N
Condition C: For each of any 8 hours of an average day, the vehicles per hour (vph) given in both of the 80% columns of Condition A in Table 4C-1, or the vph in both of the 80% columns of Condition B in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection, or the volume of pedestrian traffic is not less than 80% of the requirements specified in the Pedestrian Volume warrant.
80% conditions Condition A in Table 4C-1 met: N 80% conditions Condition B in Table 4C-1 met: N 80% of Pedestrian Volume Warrant Volumes met: N/A

	80% Condition A in Table 4C-1	80% Condition B in Table 4C-1	80% Pedestrian Volumes
12:00 AM			
1:00 AM			
2:00 AM			
3:00 AM			
4:00 AM			
5:00 AM			
6:00 AM			
7:00 AM			
8:00 AM			
9:00 AM			
10:00 AM			
11:00 AM			
12:00 PM			
1:00 PM			
2:00 PM			
3:00 PM			
4:00 PM			
5:00 PM			
6:00 PM			
7:00 PM			
8:00 PM			
9:00 PM			
10:00 PM			
11:00 PM			
	0	0	0

Warrant 7, Met: No

Warrant 8, Roadway Network

Intersection Name: Rocker and EB Off							
* This warrant shall only be considered if the location is an intersection of two or more major routes.							
A major route as used in this signal warrant shall have one or more of the following characteristics:							
 It is part of the street or highway system that serves as the principal roadway network for through traffic flow; or 							
2. It includes rural or suburban highways outside, entering, or traversing a city; or							
It appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.							
Does the study intersection consist of two or more major routes? $\overline{\ \ \ \ \ \ \ \ \ \ \ }$							
Condition A The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday and has 5-year projected traffic volumes, based on an engineering study, that meet one or more of warrants 1, 2, and 3 during an average weekday; or							
At least 1,000 vehicles entering the intersection: N/A							
Warrant 8, Condition A met: N/A							
Condition B The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a nonnormal business day (Saturday or Sunday).							
Warrant 8, Condition B met: N/A							

| Intersection Name: Eastbound Off | Major Street Name: S-276 | No. of Lanes: 2 or more | Minor Street Name: Eastbound Off | No. of Lanes: 1 | Major Street speed exceeds 40 mph or isolated community with a population less than 10,000? | No

Condition A - Minimum Vehicular Volume									
No. of Lanes VPH total on major street				VPH on higher vol minor street					
Major	Minor	100%ª	80% ^b	70%°	56% ^d	100% ^a	80% ^b	70%°	56% ^d
1	1	500	400	350	280	150	120	105	84
2	1	600	480	420	336	150	120	105	84
2	2	600	480	420	336	200	160	140	112
1	2	500	400	350	280	200	160	140	112

Condition B - Interupption of Continuous Traffic									
No. of Lanes VPH total on major street			VPH on higher vol minor street						
Major	Minor	100%ª	80% ^b	70%°	56% ^d	100%ª	80% ^b	70%°	56% ^d
1	1	750	600	525	420	75	60	53	42
2	1	900	720	630	504	75	60	53	42
2	2	900	720	630	504	100	80	70	56
1	2	750	600	525	420	100	80	70	56

^a Basic minimum hourly volume.

with a population or less than 10,000.

May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 70km/h or exceeds 40 mpn in an isolated community with a population less than 10,000

ſ		Traffic \	Total Major	Higher Minor		
	Major Street 1	Major Street 2		Minor Street 2	Street Vol	Street Vol
12:00 AM	31	35	0	13	66	13
1:00 AM	17	18	0	7	35	7
2:00 AM	18	18	0	6	36	6
3:00 AM	14	13	0	7	27	7
4:00 AM	24	16	0	7	40	7
5:00 AM	46	44	0	12	90	12
6:00 AM	62	62	0	29	124	29
7:00 AM	83	105	0	56	188	56
8:00 AM	106	147	0	62	253	62
9:00 AM	101	142	0	54	243	54
10:00 AM	128	155	0	54	283	54
11:00 AM	101	148	0	54	249	54
12:00 PM	115	159	0	38	274	38
1:00 PM	115	167	0	39	282	39
2:00 PM	107	159	0	51	266	51
3:00 PM	120	178	0	58	298	58
4:00 PM	112	186	0	61	298	61
5:00 PM	125	160	0	61	285	61
6:00 PM	109	119	0	75	228	75
7:00 PM	92	106	0	46	198	46
8:00 PM	89	91	0	32	180	32
9:00 PM	80	79	0	33	159	33
10:00 PM	59	66	0	22	125	22
11:00 PM	49	51	0	16	100	16

	Condition A		Condi	tion B	Combination	Combination
	100%	70%	100%	70%	80%	56%
12:00 AM						
1:00 AM						
2:00 AM						
3:00 AM						
4:00 AM						
5:00 AM						
6:00 AM						
7:00 AM						
8:00 AM						
9:00 AM						
10:00 AM						
11:00 AM						
12:00 PM						
1:00 PM						
2:00 PM						
3:00 PM						
4:00 PM						
5:00 PM						
6:00 PM						
7:00 PM						
8:00 PM						
9:00 PM						
10:00 PM						
11:00 PM						
-	0	0	0	0	0	0

Warrant 1, Condition A Met:	No	70%:	N/A	
Warrant 1, Condition B Met:	No	70%:	N/A	
Consider combination?	Yes			
Warrant 1, Combination Met:	No	56%	No	
		Warrant 1, Met:	No	

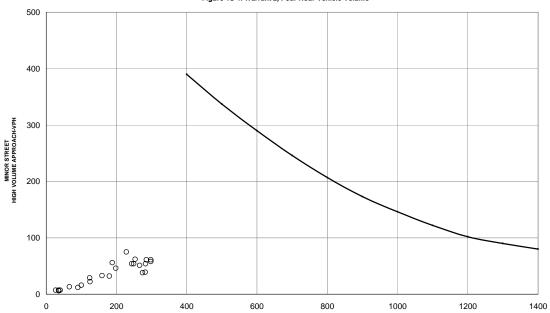
^b Used for combination of Conditions A and B after adequate trial of other remedial measures.

^c May be used when the major-street speed exceeds 40 mph or in an Isolated community with a population of less than 10,000.

| Intersection Name: Eastbound Off | Major Street Name: S-276 | No. of Lanes: 2 or more | Minor Street Name: Eastbound Off | No. of Lanes: 1 | Major street speed exceeds 40 mph or isolated community with a population less than 10,000? | No

1		Traffic '		Total Major	Higher Minor	100%	70%	
	Major Street 1	Major Street 2	Minor Street 1	Minor Street 2	Street Vol	Street Vol	Met	Met
12:00 AM	31	35	0	13	66	13		
1:00 AM	17	18	0	7	35	7		
2:00 AM	18	18	0	6	36	6		
3:00 AM	14	13	0	7	27	7		
4:00 AM	24	16	0	7	40	7		
5:00 AM	46	44	0	12	90	12		
6:00 AM	62	62	0	29	124	29		
7:00 AM	83	105	0	56	188	56		
8:00 AM	106	147	0	62	253	62		
9:00 AM	101	142	0	54	243	54		
10:00 AM	128	155	0	54	283	54		
11:00 AM	101	148	0	54	249	54		
12:00 PM	115	159	0	38	274	38		
1:00 PM	115	167	0	39	282	39		
2:00 PM	107	159	0	51	266	51		
3:00 PM	120	178	0	58	298	58		
4:00 PM	112	186	0	61	298	61		
5:00 PM	125	160	0	61	285	61		
6:00 PM		119	0	75	228	75		
7:00 PM	92	106	0	46	198	46		
8:00 PM	89	91	0	32	180	32		
9:00 PM	80	79	0	33	159	33		
10:00 PM		66	0	22	125	22		
11:00 PM	49	51	0	16	100	16		

Figure 4C-1. Warrant 2, Four Hour Vehicle Volume



MAJOR STREET-TOTAL OF BOTH APPROACHES-VEHICLES PER HOUR (VPH)

*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

No 70% N/A

Warrant 2, Met: No

Delay Study for Warrant 3

Intersection Name:	Eastbound Off
Major Street Name:	S-276
Minor Street Name:	Eastbound Off
nber of Approaches:	4 ▼
Interval:	Seconds

	Number of Stopped Vehicles		Number of Stopped Vehicles	Cars Served on Study Approach	Cars Served at Intersection
Min/Sec	0	Min/Sec	0	Interval No.	Interval No.
0	ů	0	0	1	1
1		1		2	2
2		2		3	3
3		3		4	4
4		4		5	5
5		5		6	6
6		6		7	7
7		7		8	8
8		8			
9		9		Cars Served	Cars Served
10		10		on Study Approach	at Intersection
11		11		Hourly Sum	Hourly Sum
12		12		1 1	1 1
13		13		2	2
14		14		3	3
15		15		4	4
16		16		5	5
17		17			
18		18		Vehicles Stopped	
19		19		on Study Approach	
20		20		Hourly Totals	
21		21		1 1	
22		22		2	
23		23		3	
24		24		4	
25		25		5	
26		26			
27		27			
28		28		Total Number of Stopp	ed Vehicles
29		29		Vehicles Served on Ap	
30		30		,	
31		31			
32		32		Stopped Delay	sec/veh
33		33		Stopped Delay	
34		34		Ctopped Bota,	
35		35			
36		36			
37		37			
38		38			
39		39			
40		40			
41		41			
42		42			
43		43			
44		44			
45		45			
46		46			
47		47			
48		48			
49		49			
50		50			
51		51			
52		52			
53		53			
54		54			
55		55			
56		56			
57		57			
58		58			
59		59			

| Intersection Name: Eastbound Off | Major Street Name: | S-276 | No. of Lanes: | 2 or more | Minor Street Name: | Eastbound Off | No. of Lanes: | 1 | Major street speed exceeds 40 mph or isolated | community with a population less than 10,000?

Condition A:

Condition B:

1. The total stopped time delay experienced by the traffic on the one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and

Condition A-1 Met: N/A

The voulme on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for a one moving lane of traffic or 150 vehicles per hour for for two moving lanes, and

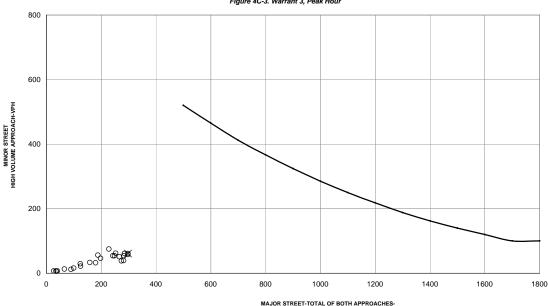
Condition A-2 Met:

3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles for intersections with four or more approaches.

Condition A-3 Met: N/A 70% 100% Peak Hour Total Volume Total Major Higher Minor 4:00p-5:00p 359 298 61 Met

		Traffic \			Total Major	Higher Minor	100%	70%
	Major Street 1	Major Street 2		Minor Street 2	Street Vol	Street Vol	Met	Met
12:00 AM	31	35	0	13	66	13		
1:00 AM	17	18	0	7	35	7		
2:00 AM	18	18	0	6	36	6		
3:00 AM	14	13	0	7	27	7		
4:00 AM	24	16	0	7	40	7		
5:00 AM	46	44	0	12	90	12		
6:00 AM	62	62	0	29	124	29		
7:00 AM	83	105	0	56	188	56		
8:00 AM	106	147	0	62	253	62		
9:00 AM	101	142	0	54	243	54		
10:00 AM	128	155	0	54	283	54		
11:00 AM	101	148	0	54	249	54		
12:00 PM	115	159	0	38	274	38		
1:00 PM	115	167	0	39	282	39		
2:00 PM	107	159	0	51	266	51		
3:00 PM	120	178	0	58	298	58		
4:00 PM	112	186	0	61	298	61		
5:00 PM	125	160	0	61	285	61		
6:00 PM	109	119	0	75	228	75		
7:00 PM	92	106	0	46	198	46		
8:00 PM	89	91	0	32	180	32		
9:00 PM	80	79	0	33	159	33		
10:00 PM	59	66	0	22	125	22		
11:00 PM	49	51	0	16	100	16		

Figure 4C-3. Warrant 3, Peak Hour



Warrant 3, Condition A Met: Warrant 3. Condition B Met: No

Warrant 3. Met: Is this an unusual case? No 70% N/A

VEHICLES PER HOUR (VPH) *Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

▼ Warrant is not applicable

^{*} This signal warrant shall only be applied in unusual cases. Such cases include, but are not limited to, office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that atrract or discharge large numbers of vehicles over a short time.

Warrant, 4 Pedestrian Volume

Intersection Name:	Eastbound Off		
	S-276		
Minor Street Name:	Eastbound Off	•	
Location less than 3	nal?	No	
Is the roadway divid	led by a median with	sufficient width	
for pedestrians to w		No 🔻	
•			
	Pedestrian Volume		Vehicular Gaps
	Across Major Street		Across Major Street
12:00 AM	1		•
1:00 AM	1		
2:00 AM	1		
3:00 AM	1		
4:00 AM	1		
5:00 AM	1		
6:00 AM	1		
7:00 AM	1		
8:00 AM	1		
9:00 AM	1		
10:00 AM	1		
11:00 AM	1		
12:00 PM	1		
1:00 PM	1		
2:00 PM	1		
3:00 PM	1		
4:00 PM	1		
5:00 PM	1		
6:00 PM	1		
7:00 PM	1		
8:00 PM	1		
9:00 PM	1		
10:00 PM	1		
11:00 PM	1		
	t 4, Condition A Met:		
Warran	t 4, Condition B Met:	N/A	
	Warrant 4, Met:	N/A	

Warrant 5, School Crossing

Intersection Name:	Eastbound Off		
Major Street Name:	S-276		
Minor Street Name:	Eastbound Off		
Location less than 3	00' from nearest si	ignal? N	0
	S	tart	Finish
	Interval 1	-	
	Interval 2	-	
	Interval 3	-	
	Interval 4	-	
	Interval 5	-	
	Interval 6	-	
	Ctudon	t Volume	Vehicular Gaps
		lajor Street	Across Major Street
	Interval 1	iajoi Street	Across major street
	Interval 2		
	Interval 2		
	Interval 4		
	Interval 4		
	Interval 6		
	interval o		

Warrant 5, Met: N/A

Warrant 6, Corrdinated Signal System

Major Street Name: Eastbound Off Minor Street Name: Eastbound Off
*The Coordinated Signal System signal warrant should not be applied where the resultant spacing of traffic control signals would be less than 1000'.
Condition A: 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.
Warrant 6, Condition A met:
Condition B: 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 6, Condition B met:
Warrant 6, Met: N/A

Warrant 7, Crash Experience

Intersection Name: E	Eastbound Off	
Major Street Name: S		
Minor Street Name: E	Eastbound Off	
	exceeds 40 mph or isolated	
community with a pop	opulation less than 10,000? No	
Condition A:		
	ernatives with satisfactory observance and enforcement has failed	
to reduce the crash fre	frequency	
V	Warrant 7, Condition A met: No ▼	
Condition B:		
Five or more reported	ed crashes, of types susceptible to correction by a traffic control signal,	
	n a 12-month period, each crash involving personal injury or property	
damage apparently exc	exceeding the applicable requirements for a reportable crash	
• ,		
Numb	mber of Correctable Crashes: 4	
V	Warrant 7, Condition B met: N	
Condition C:		
	ours of an average day, the vehicles per hour (vph) given in both of the	
80% columns of Condi	ndition A in Table 4C-1, or the vph in both of the 80% columns of Condition B	
	on the major-street and the higher-volume minor-street approach, respectively,	
	or the volume of pedestrian traffic is not less than 80% of the requirements	
specified in the Pedest	estrian Volume warrant.	
	Condition A in Table 4C-1 met: N	
	Condition B in Table 4C-1 met: N	
80% of Pedestrian Vol	/olume Warrant Volumes met: N/A	

	80% Condition A in Ta	ble 4C-1	80% Condition B in Table	le 4C-1	80% Pedestrian Volumes
12:00 AM					
1:00 AM					
2:00 AM					
3:00 AM					
4:00 AM					
5:00 AM					
6:00 AM					
7:00 AM					
8:00 AM					
9:00 AM					
10:00 AM					
11:00 AM					
12:00 PM					
1:00 PM					
2:00 PM					
3:00 PM					
4:00 PM					
5:00 PM					
6:00 PM					
7:00 PM					
8:00 PM					
9:00 PM					
10:00 PM					
11:00 PM					
	0		0		0

Warrant 7, Met: No

Warrant 8, Roadway Network

Intersection Name: Eastbound Off
Major Street Name: S-276 Minor Street Name: Eastbound Off
MINO Street Name: Eastbound On
* This warrant shall only be considered if the location is an intersection of two or more major routes.
A major route as used in this signal warrant shall have one or more of the following characteristics:
 It is part of the street or highway system that serves as the principal roadway network for through traffic flow; or
2. It includes rural or suburban highways outside, entering, or traversing a city; or
It appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.
Does the study intersection consist of two or more major routes? $\overline{\ \ \ \ \ \ \ \ \ \ \ \ }$
Condition A The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday and has 5-year projected traffic volumes, based on an engineering study, that meet one or more of warrants 1, 2, and 3 during an average weekday; or
At least 1,000 vehicles entering the intersection: N/A Warrant 8, Condition A met: N/A
Condition B The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a nonnormal business day (Saturday or Sunday).
Warrant 8, Condition B met: N/A