



MINNESOTA DEPARTMENT OF TRANSPORTATION

METRO DIVISION - TRAFFIC ENGINEERING

SIGNAL WARRANTS ANALYSIS

LOCATION: TH 3 AT N JCT OF CSAH 38 (McAndrews rd)

COUNTY: CARVER

REF. POINT: 035+00.150

DATE: #REF!

OPERATOR: DR

Speed	Approach Description	Lanes
55	Major App1: TH 3 NB S OF CO RD 38 N JCT	2
55	Major App3: TH 3 SB N OF CO RD 38	2
55	Minor App2: CO RD 38 EB W OF TH 3	2
0	Minor App4:	0

0.70 FACTOR USED? YES

POPULATION < 10,000? NO

EXISTING SIGNAL ? NO

HOUR	420/630			140/70			0/0		MET SAME HOURS
	MAJOR APP. 1	MAJOR APP. 3	TOTAL 1+3	WARRANT MET	MINOR APP. 2	MINOR APP. 4	WARRANT MET APP. 2	WARRANT MET APP. 4	
0:00 - 1:00	10	28	38	/	5	0	/	/	/
1:00 - 2:00	13	26	39	/	5	0	/	/	/
2:00 - 3:00	15	17	32	/	6	0	/	/	/
3:00 - 4:00	40	12	52	/	6	0	/	/	/
4:00 - 5:00	155	41	196	/	29	0	/	/	/
5:00 - 6:00	521	159	680	X/X	135	0	/X	/	/X
6:00 - 7:00	795	346	1141	X/X	284	0	X/X	/	X/X
7:00 - 8:00	442	284	726	X/X	180	0	X/X	/	X/X
8:00 - 9:00	301	303	604	X/	104	0	/X	/	/
9:00 - 10:00	272	232	504	X/	78	0	/X	/	/
10:00 - 11:00	306	262	568	X/	77	0	/X	/	/
11:00 - 12:00	316	294	610	X/	95	0	/X	/	/
12:00 - 13:00	312	290	602	X/	92	0	/X	/	/
13:00 - 14:00	391	320	711	X/X	123	0	/X	/	/X
14:00 - 15:00	452	518	970	X/X	155	0	X/X	/	X/X
15:00 - 16:00	448	746	1194	X/X	171	0	X/X	/	X/X
16:00 - 17:00	443	715	1158	X/X	174	0	X/X	/	X/X
17:00 - 18:00	347	433	780	X/X	148	0	X/X	/	X/X
18:00 - 19:00	245	273	518	X/	97	0	/X	/	/
19:00 - 20:00	222	189	411	/	71	0	/X	/	/
20:00 - 21:00	168	170	338	/	64	0	/	/	/
21:00 - 22:00	94	88	182	/	32	0	/	/	/
22:00 - 23:00	42	63	105	/	13	0	/	/	/
23:00 - 24:00	28	30	58	/	7	0	/	/	/

	Met (Hr)	Required (Hr)	
Warrant 1	6	8	Not satisfied
Warrant 2	8	8	Satisfied
Warrant 6	14	8	Satisfied, check accident record
Warrant 8	8	8	Satisfied
Warrant 9	6	4	Satisfied
Warrant 11	4	1	Satisfied

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55	Major App3: TH 3 SB N OF CO RD 38	2
55	Minor App2: CO RD 38 EB W OF TH 3	2
0	Minor App4: 0	0

0.70 FACTOR USED? YES

POPULATION < 10,000? NO

EXISTING SIGNAL ? NO

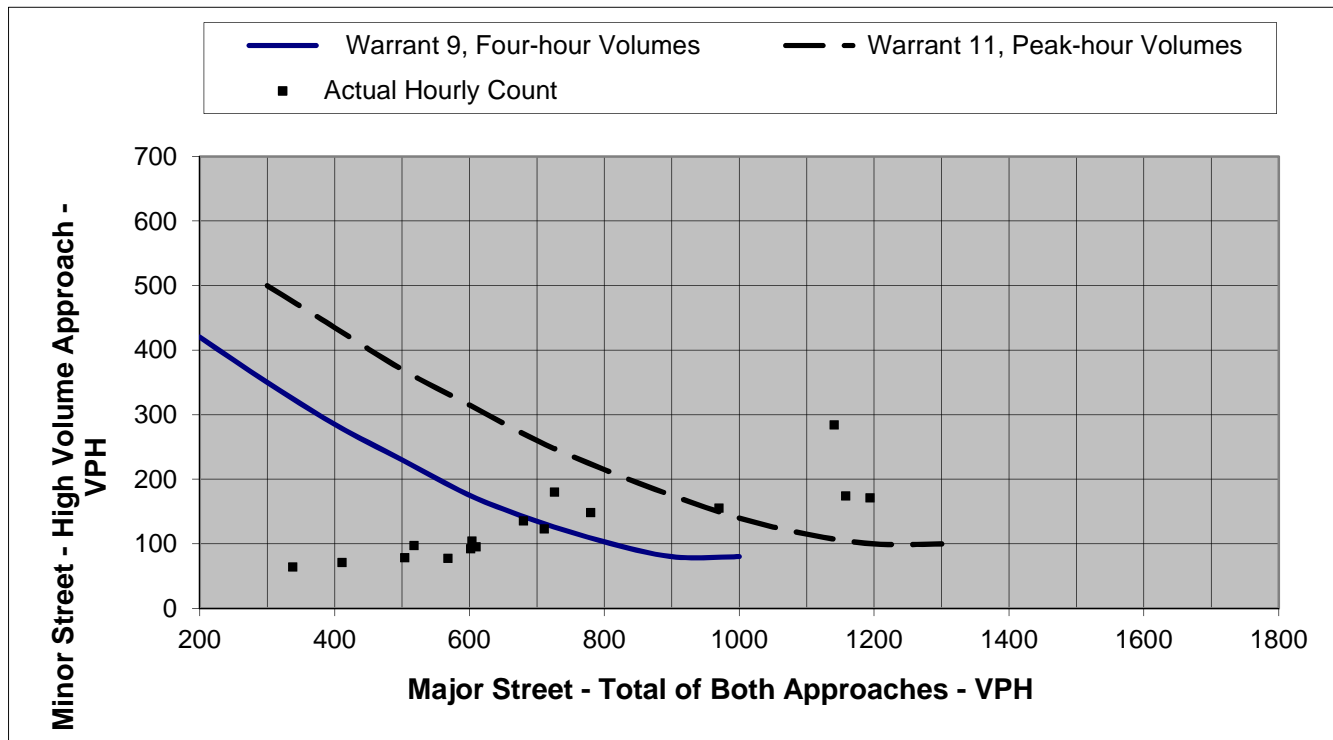


Figure 1. Four Hour and Peak Hour Warrant Analysis

Note: For data points outside the graph range, check the minor street volume against the lower thresholds

Major	Warrant Criteria		Actual Hourly Count	
	Warrant 9, F	Warrant 11, P	Major	Actual Hourly Count
200	420		38	5
300	350	500	39	5
400	285	435	32	6
500	230	370	52	6
600	175	315	196	29
700	135	260	680	135
800	103	215	1141	284
900	80	175	726	180
1000	80	140	604	104
1100		115	504	78
1200		100	568	77
1300		100	610	95
1400			602	92
1500			711	123
1600			970	155
1700			1194	171
1800			1158	174
			780	148
			518	97
			411	71
			338	64
			182	32
			105	13
			58	7

Four Hour Warrant

Major App	Minor App		
	1 & 1	2 & 1	2 & 2
300	360	440	590
400	310	390	530
500	260	340	460
600	215	290	390
700	180	245	330
800	150	205	280
900	125	170	235
1000	100	145	195
1100	85	120	165
1200	80	100	135
1300	80	83	110
1400	80	80	110

Peak Hour

Major App	1 & 1
400	475
500	425
600	370
700	330
800	280
900	240
1000	204
1100	175
1200	150
1300	130
1400	115
1500	100
1600	100
1700	100
1800	100

Four Hour Warrant Factored

Major App	Minor App		
	1 & 1	2 & 1	2 & 2
200	250	320	420
300	210	265	350
400	170	215	285
500	130	170	230
600	93	130	175
700	70	100	135
800	60	80	103
900	60	65	80
1000	60	60	80

Peak Hour

Major App	1 & 1
300	320
400	270
500	225
600	180
700	145
800	115
900	90
1000	75
1100	75
1200	75
1300	75

Warrant

Minor App

2 & 1	2 & 2
570	725
520	665
465	600
420	540
370	480
330	425
285	375
250	330
220	285
190	250
160	220
140	187
115	165
100	150
100	150

Warrant Factored

Minor App

2 & 1	2 & 2
380	500
335	435
285	370
240	315
200	260
160	215
135	175
110	140
95	115
75	100
75	100



MINNESOTA DEPARTMENT OF TRANSPORTATION

METRO DIVISION - TRAFFIC ENGINEERING

ALL WAY STOP WARRANT

LOCATION: TH 3 AT CO RD 38, N JCT

COUNTY: CARVER

REF. POINT: 035+00.150

DATE: #REF!

OPERATOR: DR

Speed	Approach Description	Lanes
55	Major App1: TH 3 NB S OF CO RD 38 N JCT	2
55	Major App3: TH 3 SB N OF CO RD 38	2
55	Minor App2: CO RD 38 EB W OF TH 3	2
0	Minor App4: 0	0

0.70 FACTOR USED? Yes

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	350	140	WARRANT MET
					TOTAL Σ (APP.1 to APP. 4)	MINOR TOTAL APP. 2 + APP. 4	
0:00 - 1:00	10	28	5	0	43	5	/
1:00 - 2:00	13	26	5	0	44	5	/
2:00 - 3:00	15	17	6	0	38	6	/
3:00 - 4:00	40	12	6	0	58	6	/
4:00 - 5:00	155	41	29	0	225	29	/
5:00 - 6:00	521	159	135	0	815	135	X/
6:00 - 7:00	795	346	284	0	1425	284	X/X
7:00 - 8:00	442	284	180	0	906	180	X/X
8:00 - 9:00	301	303	104	0	708	104	X/
9:00 - 10:00	272	232	78	0	582	78	X/
10:00 - 11:00	306	262	77	0	645	77	X/
11:00 - 12:00	316	294	95	0	705	95	X/
12:00 - 13:00	312	290	92	0	694	92	X/
13:00 - 14:00	391	320	123	0	834	123	X/
14:00 - 15:00	452	518	155	0	1125	155	X/X
15:00 - 16:00	448	746	171	0	1365	171	X/X
16:00 - 17:00	443	715	174	0	1332	174	X/X
17:00 - 18:00	347	433	148	0	928	148	X/X
18:00 - 19:00	245	273	97	0	615	97	X/
19:00 - 20:00	222	189	71	0	482	71	X/
20:00 - 21:00	168	170	64	0	402	64	X/
21:00 - 22:00	94	88	32	0	214	32	/
22:00 - 23:00	42	63	13	0	118	13	/
23:00 - 24:00	28	30	7	0	65	7	/

Allway Stop Warrant: Met (Hr) 6 Required (Hr) 8 Not satisfied

REMARKS: _____

