



# MINNESOTA DEPARTMENT OF TRANSPORTATION

## METRO DIVISION - TRAFFIC ENGINEERING

### SIGNAL WARRANTS ANALYSIS

LOCATION: TH-5 AT CSAH 11 - VICTORIA DR

COUNTY: CARVER

REF. POINT: 038.920

DATE: 4/30/1996

OPERATOR: DR

Speed	Approach Description	Lanes
35	Major App1: TH-5 EB, W OF CSAH 11	2
35	Major App3: TH-5 WB, E OF CSAH 11	2
30	Minor App2: CSAH 11 NB, S OF TH-5	2
30	Minor App4: VICTORIA DR SB, N OF TH-5	2

0.70 FACTOR USED? NO

POPULATION < 10,000? NO

EXISTING SIGNAL ? NO

HOUR	600/900			200/100		200/100		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	32	38	70	/	8	7	/	/	/
1:00 - 2:00	11	37	48	/	5	4	/	/	/
2:00 - 3:00	13	24	37	/	5	1	/	/	/
3:00 - 4:00	31	20	51	/	3	2	/	/	/
4:00 - 5:00	101	22	123	/	9	1	/	/	/
5:00 - 6:00	428	61	489	/	52	6	/	/	/
6:00 - 7:00	1029	215	1244	X/X	178	12	/X	/	/X
7:00 - 8:00	1066	361	1427	X/X	295	42	X/X	/	X/X
8:00 - 9:00	580	332	912	X/X	205	32	X/X	/	X/X
9:00 - 10:00	409	316	725	X/	173	43	/X	/	/
10:00 - 11:00	357	334	691	X/	147	65	/X	/	/
11:00 - 12:00	362	345	707	X/	194	64	/X	/	/
12:00 - 13:00	364	415	779	X/	186	63	/X	/	/
13:00 - 14:00	351	418	769	X/	164	53	/X	/	/
14:00 - 15:00	420	547	967	X/X	201	66	X/X	/	X/X
15:00 - 16:00	416	822	1238	X/X	190	79	/X	/	/X
16:00 - 17:00	484	1038	1522	X/X	189	78	/X	/	/X
17:00 - 18:00	461	951	1412	X/X	179	41	/X	/	/X
18:00 - 19:00	381	623	1004	X/X	169	42	/X	/	/X
19:00 - 20:00	261	383	644	X/	149	39	/X	/	/
20:00 - 21:00	237	341	578	/	129	28	/X	/	/
21:00 - 22:00	184	287	471	/	62	21	/	/	/
22:00 - 23:00	97	201	298	/	29	15	/	/	/
23:00 - 24:00	57	104	161	/	21	26	/	/	/

	Met (Hr)	Required (Hr)	
Warrant 1	3	8	Not satisfied
Warrant 2	8	8	Satisfied
Warrant 6	12	8	Satisfied, check accident record
Warrant 8	11	8	Satisfied
Warrant 9	5	4	Satisfied
Warrant 11	2	1	Satisfied

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OPERATOR: DR

0.70 FACTOR USED? NO  
 POPULATION < 10,000? NO  
 EXISTING SIGNAL ? NO

Speed	Approach Description	Lanes
35	Major App1: TH-5 EB, W OF CSAH 11	2
35	Major App3: TH-5 WB, E OF CSAH 11	2
30	Minor App2: CSAH 11 NB, S OF TH-5	2
30	Minor App4: VICTORIA DR SB, N OF TH-5	2

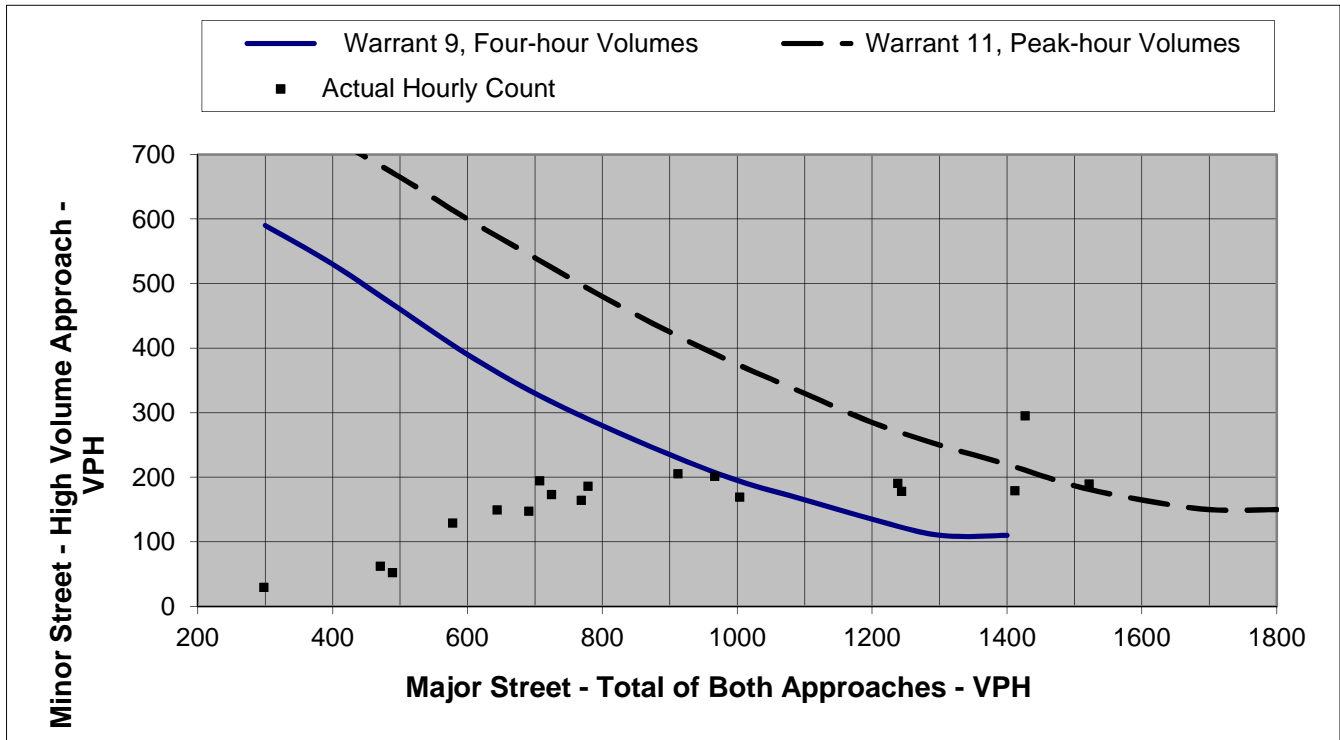


Figure 1. Four Hour and Peak Hour Warrant Analysis

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			70	8
300	590		48	5
400	530	725	37	5
500	460	665	51	3
600	390	600	123	9
700	330	540	489	52
800	280	480	1244	178
900	235	425	1427	295
1000	195	375	912	205
1100	165	330	725	173
1200	135	285	691	147
1300	110	250	707	194
1400	110	220	779	186
1500		187	769	164
1600		165	967	201
1700		150	1238	190
1800		150	1522	189
			1412	179
			1004	169
			644	149
			578	129
			471	62
			298	29
			161	26

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-5 AT CSAH 11 - VICTORIA DR

COUNTY: CARVER

REF. POINT: 038.920

DATE: 4/30/1996

OPERATOR: DR

Speed	Approach Description	Lanes
35	Major App1: TH-5 EB, W OF CSAH 11	2
35	Major App3: TH-5 WB, E OF CSAH 11	2
30	Minor App2: CSAH 11 NB, S OF TH-5	2
30	Minor App4: VICTORIA DR SB, N OF TH-5	2

0.70 FACTOR USED? No

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	500	200	WARRANT MET
					TOTAL Σ (APP.1 to APP. 4)	MINOR TOTAL APP. 2 + APP. 4	
0:00 - 1:00	32	38	8	7	85	15	/
1:00 - 2:00	11	37	5	4	57	9	/
2:00 - 3:00	13	24	5	1	43	6	/
3:00 - 4:00	31	20	3	2	56	5	/
4:00 - 5:00	101	22	9	1	133	10	/
5:00 - 6:00	428	61	52	6	547	58	X/
6:00 - 7:00	1029	215	178	12	1434	190	X/
7:00 - 8:00	1066	361	295	42	1764	337	X/X
8:00 - 9:00	580	332	205	32	1149	237	X/X
9:00 - 10:00	409	316	173	43	941	216	X/X
10:00 - 11:00	357	334	147	65	903	212	X/X
11:00 - 12:00	362	345	194	64	965	258	X/X
12:00 - 13:00	364	415	186	63	1028	249	X/X
13:00 - 14:00	351	418	164	53	986	217	X/X
14:00 - 15:00	420	547	201	66	1234	267	X/X
15:00 - 16:00	416	822	190	79	1507	269	X/X
16:00 - 17:00	484	1038	189	78	1789	267	X/X
17:00 - 18:00	461	951	179	41	1632	220	X/X
18:00 - 19:00	381	623	169	42	1215	211	X/X
19:00 - 20:00	261	383	149	39	832	188	X/
20:00 - 21:00	237	341	129	28	735	157	X/
21:00 - 22:00	184	287	62	21	554	83	X/
22:00 - 23:00	97	201	29	15	342	44	/
23:00 - 24:00	57	104	21	26	208	47	/

Met (Hr) Required (Hr)

Allway Stop Warrant: **12** 8 **Satisfied**

REMARKS: \_\_\_\_\_

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