



# MINNESOTA DEPARTMENT OF TRANSPORTATION

## METRO DIVISION - TRAFFIC ENGINEERING

### SIGNAL WARRANTS ANALYSIS

LOCATION: TH 52 AT THOMPSON AVE. E RAMP

COUNTY: DAKOTA

REF. POINT: 127+00.295

DATE: 3/24/2004

OPERATOR: DR

Speed	Approach Description	Lanes
30	Major App1: THOMPSON AVE EB W OF TH 53 E RAMP	2
30	Major App3: E FRONTAGE RD NB S OF THOMPSON AVE	2
30	Minor App2: THOMPSON AV WB E OF TH 52 E RAMP	2
0	Minor App4: 0	0

0.70 FACTOR USED?

NO

POPULATION < 10,000?

NO

EXISTING SIGNAL ?

NO

THRESHOLDS 1A/1B:

600/900

200/100

HOUR	MAJOR APP. 1	MAJOR APP. 3	TOTAL 1+3	MAJOR 1A/1B	MINOR APP. 2	MINOR 2 1A/1B	MINOR APP. 4	MINOR 4 1A/1B	MET SAME 1A/1B
0:00 - 1:00	43	17	60	/	18	/	0		/
1:00 - 2:00	34	14	48	/	15	/	0		/
2:00 - 3:00	23	7	30	/	13	/	0		/
3:00 - 4:00	21	10	31	/	12	/	0		/
4:00 - 5:00	26	30	56	/	6	/	0		/
5:00 - 6:00	62	104	166	/	34	/	0		/
6:00 - 7:00	162	220	382	/	98	/	0		/
7:00 - 8:00	208	280	488	/	139	/X	0		/
8:00 - 9:00	214	198	412	/	139	/X	0		/
9:00 - 10:00	246	182	428	/	126	/X	0		/
10:00 - 11:00	271	207	478	/	127	/X	0		/
11:00 - 12:00	335	227	562	/	155	/X	0		/
12:00 - 13:00	379	219	598	/	173	/X	0		/
13:00 - 14:00	332	217	549	/	167	/X	0		/
14:00 - 15:00	394	242	636	X/	160	/X	0		/
15:00 - 16:00	473	242	715	X/	194	/X	0		/
16:00 - 17:00	476	212	688	X/	208	X/X	0		X/
17:00 - 18:00	465	271	736	X/	200	X/X	0		X/
18:00 - 19:00	369	219	588	/	172	/X	0		/
19:00 - 20:00	279	161	440	/	133	/X	0		/
20:00 - 21:00	233	129	362	/	128	/X	0		/
21:00 - 22:00	199	108	307	/	103	/X	0		/
22:00 - 23:00	118	71	189	/	68	/	0		/
23:00 - 24:00	71	47	118	/	34	/	0		/

Met (Hr)      Required (Hr)

Warrant 1A	2	8	Not satisfied
Warrant 1B	0	8	Not satisfied
Warrant 2	0	4	Not satisfied
Warrant 3	0	1	Not satisfied
Warrant 7	7	8	Not satisfied

Four Hour Warrant				Peak Hour Warrant		
Major App	Minor App			Major App	Minor App	
	1 & 1	2 & 1	2 & 2		1 & 1	2 & 1
300	360	440	590	400	475	570
400	310	390	530	500	425	520
500	260	340	460	600	370	465
600	215	290	390	700	330	420
700	180	245	330	800	280	370
800	150	205	280	900	240	330
900	125	170	235	1000	204	285
1000	100	145	195	1100	175	250
1100	85	120	165	1200	150	220
1200	80	100	135	1300	130	190
1300	80	83	115	1400	115	160
1400	80	80	115	1500	100	140
1500	80	80	115	1600	100	115
1600	80	80	115	1700	100	100
1700	80	80	115	1800	100	100
1800	80	80	115			

Four Hour Warrant Factored				Peak Hour Warrant Factored		
Major App	Minor App			Major App	Minor App	
	1 & 1	2 & 1	2 & 2		1 & 1	2 & 1
200	250	320	420	300	320	380
300	210	265	350	400	270	335
400	170	215	285	500	225	285
500	130	170	230	600	180	240
600	93	130	175	700	145	200
700	70	100	135	800	115	160
800	60	80	103	900	90	135
900	60	65	80	1000	75	110
1000	60	60	80	1100	75	95
1100	60	60	80	1200	75	75
1200	60	60	80	1300	75	75
1300	60	60	80	1400	75	75
1400	60	60	80	1500	75	75
1500	60	60	80	1600	75	75
1600	60	60	80	1700	75	75
1700	60	60	80	1800	75	75
1800	60	60	80			

2 & 2  
725  
665  
600  
540  
480  
425  
375  
330  
285  
250  
220  
187  
165  
150  
150

ctored

2 & 2  
500  
435  
370  
315  
260  
215  
175  
140  
115  
100  
100  
100  
100  
100  
100  
100

LOCATION: TH 52 AT THOMPSON AVE. E RAMP

COUNTY: DAKOTA

REF. POINT: 127+00.295

DATE: 3/24/2004

OPERATOR: DR

Speed	Approach Description	Lanes
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30	Minor App2: THOMPSON AV WB E OF TH 52 E RAMP	2
0	Minor App4: 0	0

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

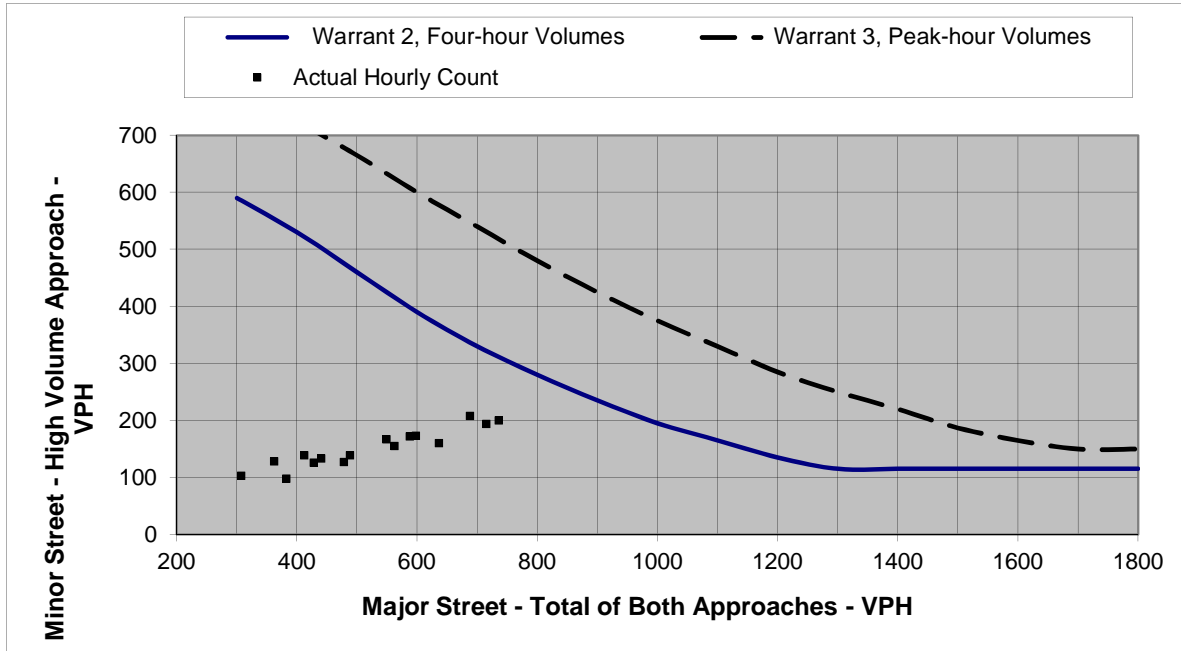


Figure 1. Four Hour and Peak Hour Warrant Analysis

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

Major	Warrant Criteria		Actual Hourly Count	
	Warrant 2, F	Warrant 3, Pe	Major	Actual Hourly Count
200			60	18
300	590		48	15
400	530	725	30	13
500	460	665	31	12
600	390	600	56	6
700	330	540	166	34
800	280	480	382	98
900	235	425	488	139
1000	195	375	412	139
1100	165	330	428	126
1200	135	285	478	127
1300	115	250	562	155
1400	115	220	598	173
1500	115	187	549	167
1600	115	165	636	160
1700	115	150	715	194
1800	115	150	688	208
			736	200
			588	172
			440	133
			362	128
			307	103
			189	68
			118	34



# MINNESOTA DEPARTMENT OF TRANSPORTATION

## METRO DIVISION - TRAFFIC ENGINEERING

### ALL WAY STOP WARRANT

LOCATION: TH 52 AT THOMPSON AVE. E RAMP

COUNTY: DAKOTA

REF. POINT: 127+00.295

DATE: 3/24/2004

OPERATOR: DR

Speed	Approach Description	Lanes
30	Major App1: THOMPSON AVE EB W OF TH 53 E RAMP	2
30	Major App3: E FRONTAGE RD NB S OF THOMPSON AVE	2
30	Minor App2: THOMPSON AV WB E OF TH 52 E RAMP	2
0	Minor App4: 0	0

0.70 FACTOR USED? No

500

200

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	TOTAL Σ (APP.1 to APP. 4)	MINOR TOTAL APP. 2 + APP. 4	WARRANT MET
0:00 - 1:00	43	17	18	/	78	18	/
1:00 - 2:00	34	14	15	/	63	15	/
2:00 - 3:00	23	7	13	/	43	13	/
3:00 - 4:00	21	10	12	/	43	12	/
4:00 - 5:00	26	30	6	/	62	6	/
5:00 - 6:00	62	104	34	/	200	34	/
6:00 - 7:00	162	220	98	X/X	480	98	/
7:00 - 8:00	208	280	139	X/X	627	139	X/
8:00 - 9:00	214	198	139	X/X	551	139	X/
9:00 - 10:00	246	182	126	X/X	554	126	X/
10:00 - 11:00	271	207	127	X/X	605	127	X/
11:00 - 12:00	335	227	155	X/X	717	155	X/
12:00 - 13:00	379	219	173	X/X	771	173	X/
13:00 - 14:00	332	217	167	X/X	716	167	X/
14:00 - 15:00	394	242	160	X/X	796	160	X/
15:00 - 16:00	473	242	194	X/X	909	194	X/
16:00 - 17:00	476	212	208	X/X	896	208	X/X
17:00 - 18:00	465	271	200	X/X	936	200	X/X
18:00 - 19:00	369	219	172	X/X	760	172	X/
19:00 - 20:00	279	161	133	X/X	573	133	X/
20:00 - 21:00	233	129	128	X/X	490	128	/
21:00 - 22:00	199	108	103	X/X	410	103	/
22:00 - 23:00	118	71	68	/X	257	68	/
23:00 - 24:00	71	47	34	/X	152	34	/

Met (Hr) Required (Hr)

Allway Stop Warrant: 2 8 Not satisfied

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