



MINNESOTA DEPARTMENT OF TRANSPORTATION

METRO DIVISION - TRAFFIC ENGINEERING

SIGNAL WARRANTS ANALYSIS

LOCATION: TH-52 & 80TH ST W RAMPS

COUNTY: DAKOTA

REF. POINT: 122.784

DATE: 10/5/1995

OPERATOR: DR

Speed	Approach Description	Lanes
45	Major App1: W FRONTAGE ORD OF TH-52 NB, S OF 80TH ST	3
30	Major App3: TH-52 S RAMP TO 80TH ST	3
40	Minor App2: 80TH ST EB, W OF W RAMPS OF TH-52	4
40	Minor App4: 80TH ST WB, E OF W RAMPS OF TH-52	4

0.70 FACTOR USED? YES

POPULATION < 10,000? NO

EXISTING SIGNAL ? NO

HOUR	420/630			140/70		140/70		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	17	49	66	/	8	11	/	/	/
1:00 - 2:00	14	32	46	/	3	8	/	/	/
2:00 - 3:00	9	23	32	/	3	4	/	/	/
3:00 - 4:00	8	10	18	/	7	6	/	/	/
4:00 - 5:00	10	12	22	/	7	16	/	/	/
5:00 - 6:00	27	36	63	/	17	61	/	/	/
6:00 - 7:00	142	264	406	/	65	170	/	X/X	/
7:00 - 8:00	313	521	834	X/X	159	216	X/X	X/X	X/X
8:00 - 9:00	218	436	654	X/X	123	131	/X	/X	/X
9:00 - 10:00	156	317	473	X/	91	138	/X	/X	/
10:00 - 11:00	128	265	393	/	95	161	/X	X/X	/
11:00 - 12:00	123	273	396	/	83	185	/X	X/X	/
12:00 - 13:00	118	292	410	/	105	212	/X	X/X	/
13:00 - 14:00	118	255	373	/	95	192	/X	X/X	/
14:00 - 15:00	139	296	435	X/	102	292	/X	X/X	X/
15:00 - 16:00	265	438	703	X/X	160	228	X/X	X/X	X/X
16:00 - 17:00	317	621	938	X/X	149	219	X/X	X/X	X/X
17:00 - 18:00	304	806	1110	X/X	184	212	X/X	X/X	X/X
18:00 - 19:00	155	373	528	X/	105	149	/X	X/X	X/
19:00 - 20:00	95	248	343	/	73	125	/X	/X	/
20:00 - 21:00	73	204	277	/	83	188	/X	X/X	/
21:00 - 22:00	51	177	228	/	57	165	/	X/X	/
22:00 - 23:00	29	114	143	/	25	42	/	/	/
23:00 - 24:00	31	60	91	/	10	16	/	/	/

	Met (Hr)	Required (Hr)	
Warrant 1	6	8	Not satisfied
Warrant 2	5	8	Not satisfied
Warrant 6	14	8	Satisfied, check accident record
Warrant 8	6	8	Not satisfied
Warrant 9	5	4	Satisfied
Warrant 11	3	1	Satisfied

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OPERATOR: DR

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

Speed	Approach Description	Lanes
45	Major App1: W FRONTAGE ORD OF TH-52 NB, S OF 80TH ST	3
30	Major App3: TH-52 S RAMP TO 80TH ST	3
40	Minor App2: 80TH ST EB, W OF W RAMPS OF TH-52	4
40	Minor App4: 80TH ST WB, E OF W RAMPS OF TH-52	4

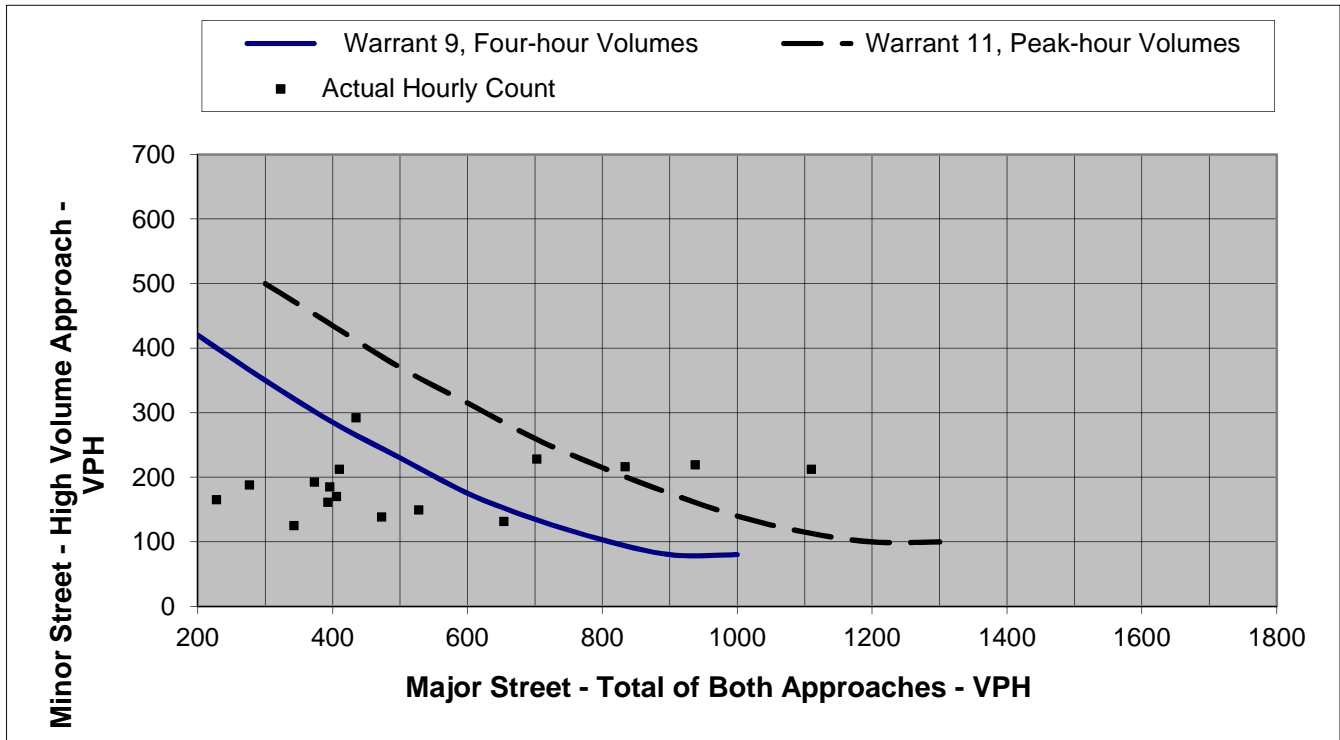


Figure 1. Four Hour and Peak Hour Warrant Analysis

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		66	11
300	350	500	46	8
400	285	435	32	4
500	230	370	18	7
600	175	315	22	16
700	135	260	63	61
800	103	215	406	170
900	80	175	834	216
1000	80	140	654	131
1100		115	473	138
1200		100	393	161
1300		100	396	185
1400			410	212
1500			373	192
1600			435	292
1700			703	228
1800			938	219
			1110	212
			528	149
			343	125
			277	188
			228	165
			143	42
			91	16

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-52 & 80TH ST W RAMPS

COUNTY: DAKOTA

REF. POINT: 122.784

DATE: 10/5/1995

OPERATOR: DR

Speed	Approach Description	Lanes
45	Major App1: W FRONTAGE ORD OF TH-52 NB, S OF 80TH S	3
30	Major App3: TH-52 S RAMP TO 80TH ST	3
40	Minor App2: 80TH ST EB, W OF W RAMPS OF TH-52	4
40	Minor App4: 80TH ST WB, E OF W RAMPS OF TH-52	4

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	17	49	8	11	85	19	/
1:00 - 2:00	14	32	3	8	57	11	/
2:00 - 3:00	9	23	3	4	39	7	/
3:00 - 4:00	8	10	7	6	31	13	/
4:00 - 5:00	10	12	7	16	45	23	/
5:00 - 6:00	27	36	17	61	141	78	/
6:00 - 7:00	142	264	65	170	641	235	X/X
7:00 - 8:00	313	521	159	216	1209	375	X/X
8:00 - 9:00	218	436	123	131	908	254	X/X
9:00 - 10:00	156	317	91	138	702	229	X/X
10:00 - 11:00	128	265	95	161	649	256	X/X
11:00 - 12:00	123	273	83	185	664	268	X/X
12:00 - 13:00	118	292	105	212	727	317	X/X
13:00 - 14:00	118	255	95	192	660	287	X/X
14:00 - 15:00	139	296	102	292	829	394	X/X
15:00 - 16:00	265	438	160	228	1091	388	X/X
16:00 - 17:00	317	621	149	219	1306	368	X/X
17:00 - 18:00	304	806	184	212	1506	396	X/X
18:00 - 19:00	155	373	105	149	782	254	X/X
19:00 - 20:00	95	248	73	125	541	198	X/X
20:00 - 21:00	73	204	83	188	548	271	X/X
21:00 - 22:00	51	177	57	165	450	222	X/X
22:00 - 23:00	29	114	25	42	210	67	/
23:00 - 24:00	31	60	10	16	117	26	/

Met (Hr) Required (Hr)

Allway Stop Warrant: **16** 8 **Satisfied**

REMARKS: _____

