



MINNESOTA DEPARTMENT OF TRANSPORTATION

METRO DIVISION - TRAFFIC ENGINEERING

SIGNAL WARRANTS ANALYSIS

LOCATION: TH-61 & 12TH ST
 COUNTY: DAKOTA
 REF. POINT: 116.782
 DATE: 8/21/1996
 OPERATOR: DR

Speed	Approach Description	Lanes
30	Major App1: TH-61 NB, S OF 12TH ST	3
30	Major App3: TH-61 SB, N OF 12TH ST	3
30	Minor App2: 12TH ST EB, W OF TH-61	2
0	Minor App4: N/A	0

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

HOUR	MAJOR APP. 1	MAJOR APP. 3	TOTAL 1+3	600/900			200/100		0/0	MET SAME HOURS
				WARRANT MET	MINOR APP. 2	MINOR APP. 4	WARRANT MET APP. 2	WARRANT MET APP. 4		
0:00 - 1:00	130	151	281	/	7	0	/	/	/	
1:00 - 2:00	93	103	196	/	8	0	/	/	/	
2:00 - 3:00	72	78	150	/	2	0	/	/	/	
3:00 - 4:00	87	63	150	/	2	0	/	/	/	
4:00 - 5:00	115	75	190	/	5	0	/	/	/	
5:00 - 6:00	322	193	515	/	12	0	/	/	/	
6:00 - 7:00	832	490	1322	X/X	28	0	/	/	/	
7:00 - 8:00	870	660	1530	X/X	53	0	/	/	/	
8:00 - 9:00	725	664	1389	X/X	77	0	/	/	/	
9:00 - 10:00	730	775	1505	X/X	110	0	/X	/	/X	
10:00 - 11:00	807	852	1659	X/X	150	0	/X	/	/X	
11:00 - 12:00	866	961	1827	X/X	154	0	/X	/	/X	
12:00 - 13:00	982	961	1943	X/X	173	0	/X	/	/X	
13:00 - 14:00	891	894	1785	X/X	135	0	/X	/	/X	
14:00 - 15:00	954	954	1908	X/X	157	0	/X	/	/X	
15:00 - 16:00	1018	1156	2174	X/X	194	0	/X	/	/X	
16:00 - 17:00	1084	1300	2384	X/X	215	0	X/X	/	X/X	
17:00 - 18:00	1051	1192	2243	X/X	230	0	X/X	/	X/X	
18:00 - 19:00	880	959	1839	X/X	187	0	/X	/	/X	
19:00 - 20:00	773	793	1566	X/X	155	0	/X	/	/X	
20:00 - 21:00	661	716	1377	X/X	153	0	/X	/	/X	
21:00 - 22:00	509	567	1076	X/X	80	0	/	/	/	
22:00 - 23:00	371	424	795	X/	31	0	/	/	/	
23:00 - 24:00	231	315	546	/	12	0	/	/	/	

	Met (Hr)	Required (Hr)	
Warrant 1	2	8	Not satisfied
Warrant 2	12	8	Satisfied
Warrant 6	13	8	Satisfied, check accident record
Warrant 8	5	8	Not satisfied
Warrant 9	12	4	Satisfied
Warrant 11	7	1	Satisfied

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0.70 FACTOR USED? NO
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 EXISTING SIGNAL ? NO

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0	Minor App4: N/A	0

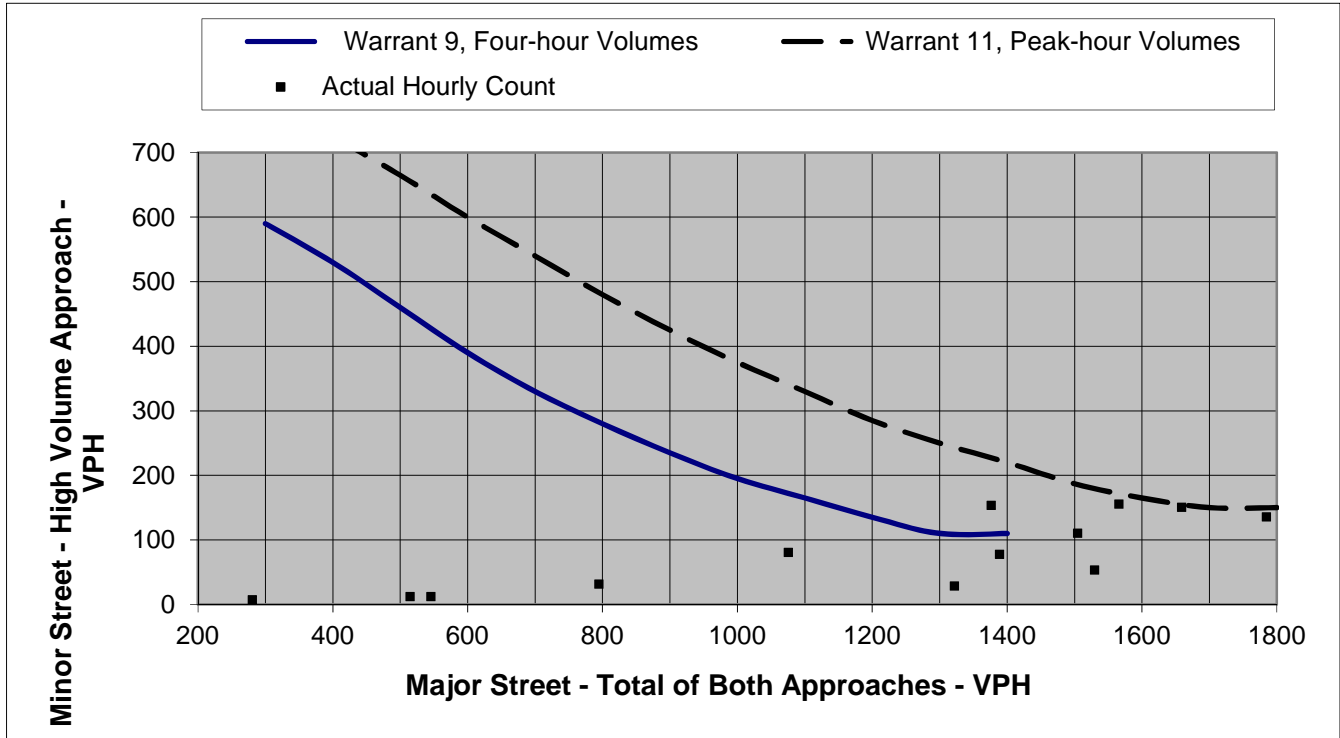


Figure 1. Four Hour and Peak Hour Warrant Analysis

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			281	7
300	590		196	8
400	530	725	150	2
500	460	665	150	2
600	390	600	190	5
700	330	540	515	12
800	280	480	1322	28
900	235	425	1530	53
1000	195	375	1389	77
1100	165	330	1505	110
1200	135	285	1659	150
1300	110	250	1827	154
1400	110	220	1943	173
1500		187	1785	135
1600		165	1908	157
1700		150	2174	194
1800		150	2384	215
			2243	230
			1839	187
			1566	155
			1377	153
			1076	80
			795	31
			546	12

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-61 & 12TH ST

COUNTY: DAKOTA

REF. POINT: 116.782

DATE: 8/21/1996

OPERATOR: DR

Speed	Approach Description	Lanes
30	Major App1: TH-61 NB, S OF 12TH ST	3
30	Major App3: TH-61 SB, N OF 12TH ST	3
30	Minor App2: 12TH ST EB, W OF TH-61	2
0	Minor App4: N/A	0

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	130	151	7	0	288	7	/
1:00 - 2:00	93	103	8	0	204	8	/
2:00 - 3:00	72	78	2	0	152	2	/
3:00 - 4:00	87	63	2	0	152	2	/
4:00 - 5:00	115	75	5	0	195	5	/
5:00 - 6:00	322	193	12	0	527	12	X/
6:00 - 7:00	832	490	28	0	1350	28	X/
7:00 - 8:00	870	660	53	0	1583	53	X/
8:00 - 9:00	725	664	77	0	1466	77	X/
9:00 - 10:00	730	775	110	0	1615	110	X/
10:00 - 11:00	807	852	150	0	1809	150	X/
11:00 - 12:00	866	961	154	0	1981	154	X/
12:00 - 13:00	982	961	173	0	2116	173	X/
13:00 - 14:00	891	894	135	0	1920	135	X/
14:00 - 15:00	954	954	157	0	2065	157	X/
15:00 - 16:00	1018	1156	194	0	2368	194	X/
16:00 - 17:00	1084	1300	215	0	2599	215	X/X
17:00 - 18:00	1051	1192	230	0	2473	230	X/X
18:00 - 19:00	880	959	187	0	2026	187	X/
19:00 - 20:00	773	793	155	0	1721	155	X/
20:00 - 21:00	661	716	153	0	1530	153	X/
21:00 - 22:00	509	567	80	0	1156	80	X/
22:00 - 23:00	371	424	31	0	826	31	X/
23:00 - 24:00	231	315	12	0	558	12	X/

Allway Stop Warrant: Met (Hr) 2 Required (Hr) 8 Not satisfied

REMARKS: _____