



# MINNESOTA DEPARTMENT OF TRANSPORTATION

## METRO DIVISION - TRAFFIC ENGINEERING

### SIGNAL WARRANTS ANALYSIS

LOCATION: TH-149 & WENTWORTH AVE

COUNTY: DAKOTA

REF. POINT: 006.737

DATE: 10/17/1996

OPERATOR: DR

Speed	Approach Description	Lanes
40	Major App1: TH-149 NB, S OF WENTWORTH AVE	2
40	Major App3: TH-149 SB, N OF WENTWORTH AVE	2
35	Minor App2: WENTWORTH AVE EB, W OF TH-149	2
40	Minor App4: WENTWORTH AVE WB, E OF TH-149	2

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	28	15	43	/	12	6	/	/	/
1:00 - 2:00	17	7	24	/	6	2	/	/	/
2:00 - 3:00	6	5	11	/	1	1	/	/	/
3:00 - 4:00	7	8	15	/	1	4	/	/	/
4:00 - 5:00	7	19	26	/	2	5	/	/	/
5:00 - 6:00	16	52	68	/	6	9	/	/	/
6:00 - 7:00	93	145	238	/	19	32	/	/	/
7:00 - 8:00	264	228	492	X/	51	70	/	/X	/
8:00 - 9:00	223	183	406	/	62	75	/	/X	/
9:00 - 10:00	170	145	315	/	64	62	/	/	/
10:00 - 11:00	127	138	265	/	78	81	/X	/X	/
11:00 - 12:00	179	152	331	/	106	106	/X	/X	/
12:00 - 13:00	185	171	356	/	97	116	/X	/X	/
13:00 - 14:00	164	162	326	/	89	96	/X	/X	/
14:00 - 15:00	233	203	436	X/	84	94	/X	/X	/
15:00 - 16:00	292	221	513	X/	99	109	/X	/X	/
16:00 - 17:00	324	245	569	X/	131	121	/X	/X	/
17:00 - 18:00	361	262	623	X/	113	107	/X	/X	/
18:00 - 19:00	256	202	458	X/	78	94	/X	/X	/
19:00 - 20:00	155	154	309	/	65	78	/	/X	/
20:00 - 21:00	142	100	242	/	47	57	/	/	/
21:00 - 22:00	113	107	220	/	29	41	/	/	/
22:00 - 23:00	76	49	125	/	19	19	/	/	/
23:00 - 24:00	54	34	88	/	12	13	/	/	/

	Met (Hr)	Required (Hr)	
Warrant 1	0	8	Not satisfied
Warrant 2	0	8	Not satisfied
Warrant 6	4	8	Not satisfied
Warrant 8	2	8	Not satisfied
Warrant 9	0	4	Not satisfied
Warrant 11	0	1	Not satisfied

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

Speed	Approach Description	Lanes
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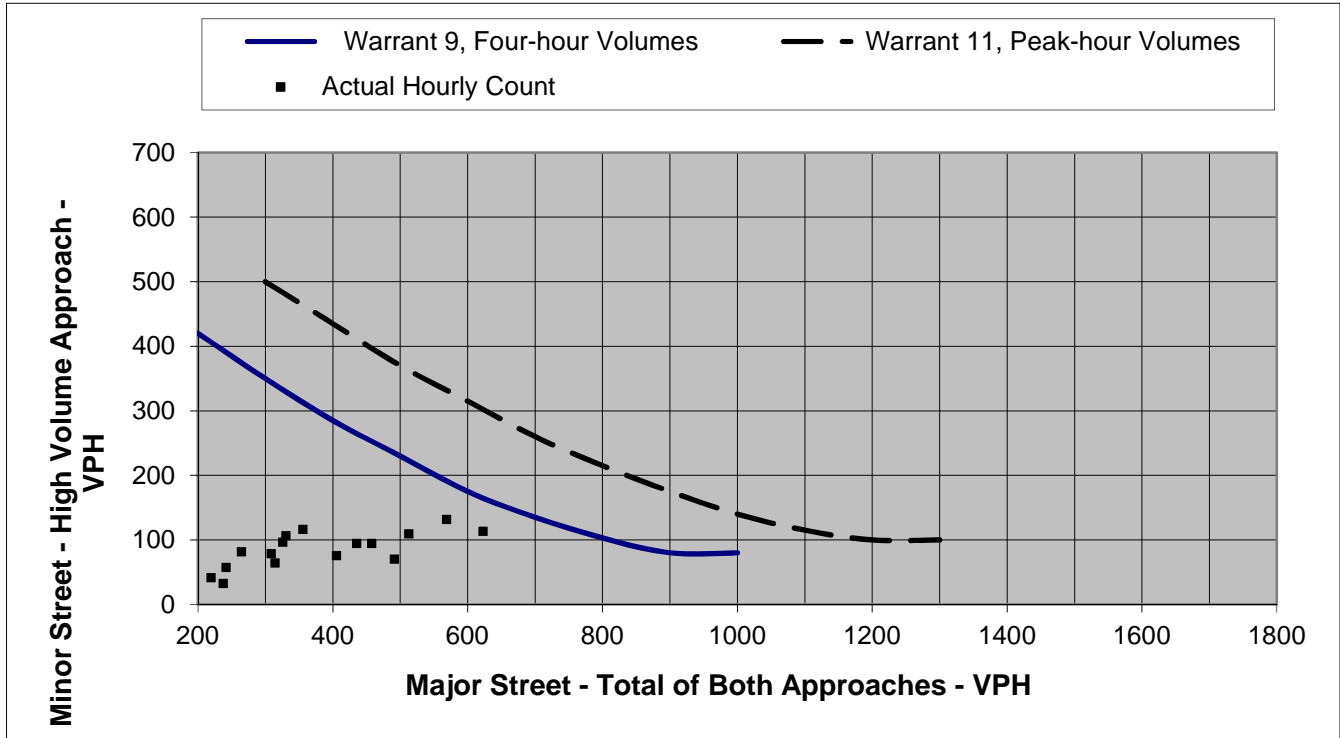


Figure 1. Four Hour and Peak Hour Warrant Analysis

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		43	12
300	350	500	24	6
400	285	435	11	1
500	230	370	15	4
600	175	315	26	5
700	135	260	68	9
800	103	215	238	32
900	80	175	492	70
1000	80	140	406	75
1100		115	315	64
1200		100	265	81
1300		100	331	106
1400			356	116
1500			326	96
1600			436	94
1700			513	109
1800			569	131
			623	113
			458	94
			309	78
			242	57
			220	41
			125	19
			88	13

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-149 & WENTWORTH AVE

COUNTY: DAKOTA

REF. POINT: 006.737

DATE: 10/17/1996

OPERATOR: DR

Speed	Approach Description	Lanes
40	Major App1: TH-149 NB, S OF WENTWORTH AVE	2
40	Major App3: TH-149 SB, N OF WENTWORTH AVE	2
35	Minor App2: WENTWORTH AVE EB, W OF TH-149	2
40	Minor App4: WENTWORTH AVE WB, E OF TH-149	2

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	28	15	12	6	61	18	/
1:00 - 2:00	17	7	6	2	32	8	/
2:00 - 3:00	6	5	1	1	13	2	/
3:00 - 4:00	7	8	1	4	20	5	/
4:00 - 5:00	7	19	2	5	33	7	/
5:00 - 6:00	16	52	6	9	83	15	/
6:00 - 7:00	93	145	19	32	289	51	/
7:00 - 8:00	264	228	51	70	613	121	X/
8:00 - 9:00	223	183	62	75	543	137	X/
9:00 - 10:00	170	145	64	62	441	126	X/
10:00 - 11:00	127	138	78	81	424	159	X/X
11:00 - 12:00	179	152	106	106	543	212	X/X
12:00 - 13:00	185	171	97	116	569	213	X/X
13:00 - 14:00	164	162	89	96	511	185	X/X
14:00 - 15:00	233	203	84	94	614	178	X/X
15:00 - 16:00	292	221	99	109	721	208	X/X
16:00 - 17:00	324	245	131	121	821	252	X/X
17:00 - 18:00	361	262	113	107	843	220	X/X
18:00 - 19:00	256	202	78	94	630	172	X/X
19:00 - 20:00	155	154	65	78	452	143	X/X
20:00 - 21:00	142	100	47	57	346	104	/
21:00 - 22:00	113	107	29	41	290	70	/
22:00 - 23:00	76	49	19	19	163	38	/
23:00 - 24:00	54	34	12	13	113	25	/

Met (Hr) Required (Hr)

Allway Stop Warrant: **10** 8 **Satisfied**

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