



# MINNESOTA DEPARTMENT OF TRANSPORTATION

## METRO DIVISION - TRAFFIC ENGINEERING

### SIGNAL WARRANTS ANALYSIS

LOCATION: TH-10 & EDGEWOOD DRIVE

COUNTY: RAMSEY

REF. POINT: 237.156

DATE: 9/29/1997

OPERATOR: RE

Speed	Approach Description	Lanes
50	Major App1: TH-10 EB, W OF EDGEWOOD DRIVE	3
50	Major App3: TH-10 WB, E OF EDGEWOOD DRIVE	3
0	Minor App2: N/A	0
30	Minor App4: EDGEWOOD DRIVE SB, N OF TH-10	1

0.70 FACTOR USED? YES

POPULATION < 10,000? NO

EXISTING SIGNAL ? NO

420/630

0/0

105/52

HOUR	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	MET SAME HOURS
0:00 - 1:00	112	187	299	/	0	6	/	/	/
1:00 - 2:00	82	127	209	/	0	3	/	/	/
2:00 - 3:00	78	93	171	/	0	2	/	/	/
3:00 - 4:00	104	77	181	/	0	3	/	/	/
4:00 - 5:00	217	102	319	/	0	4	/	/	/
5:00 - 6:00	910	263	1173	X/X	0	26	/	/	/
6:00 - 7:00	2056	626	2682	X/X	0	68	/	/X	/X
7:00 - 8:00	2319	936	3255	X/X	0	113	/	X/X	X/X
8:00 - 9:00	1553	919	2472	X/X	0	67	/	/X	/X
9:00 - 10:00	986	801	1787	X/X	0	44	/	/	/
10:00 - 11:00	834	856	1690	X/X	0	40	/	/	/
11:00 - 12:00	930	996	1926	X/X	0	45	/	/	/
12:00 - 13:00	1112	1178	2290	X/X	0	54	/	/X	/X
13:00 - 14:00	1025	1101	2126	X/X	0	41	/	/	/
14:00 - 15:00	1066	1369	2435	X/X	0	50	/	/	/
15:00 - 16:00	1136	1948	3084	X/X	0	52	/	/X	/X
16:00 - 17:00	1156	2341	3497	X/X	0	55	/	/X	/X
17:00 - 18:00	1142	2290	3432	X/X	0	59	/	/X	/X
18:00 - 19:00	890	1423	2313	X/X	0	57	/	/X	/X
19:00 - 20:00	688	952	1640	X/X	0	52	/	/X	/X
20:00 - 21:00	562	750	1312	X/X	0	39	/	/	/
21:00 - 22:00	474	729	1203	X/X	0	30	/	/	/
22:00 - 23:00	352	461	813	X/X	0	22	/	/	/
23:00 - 24:00	204	316	520	X/	0	9	/	/	/

Met (Hr) Required (Hr)

Warrant 1	1	8	Not satisfied
Warrant 2	9	8	Satisfied
Warrant 6	12	8	Satisfied, check accident record
Warrant 8	1	8	Not satisfied
Warrant 9	3	4	Not satisfied
Warrant 11	1	1	Satisfied

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COUNTY: RAMSEY

REF. POINT: 237.156

DATE: 9/29/1997

OPERATOR: RE

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

Speed	Approach Description	Lanes
50	Major App1: TH-10 EB, W OF EDGEWOOD DRIVE	3
50	Major App3: TH-10 WB, E OF EDGEWOOD DRIVE	3
0	Minor App2: N/A	0
30	Minor App4: EDGEWOOD DRIVE SB, N OF TH-10	1

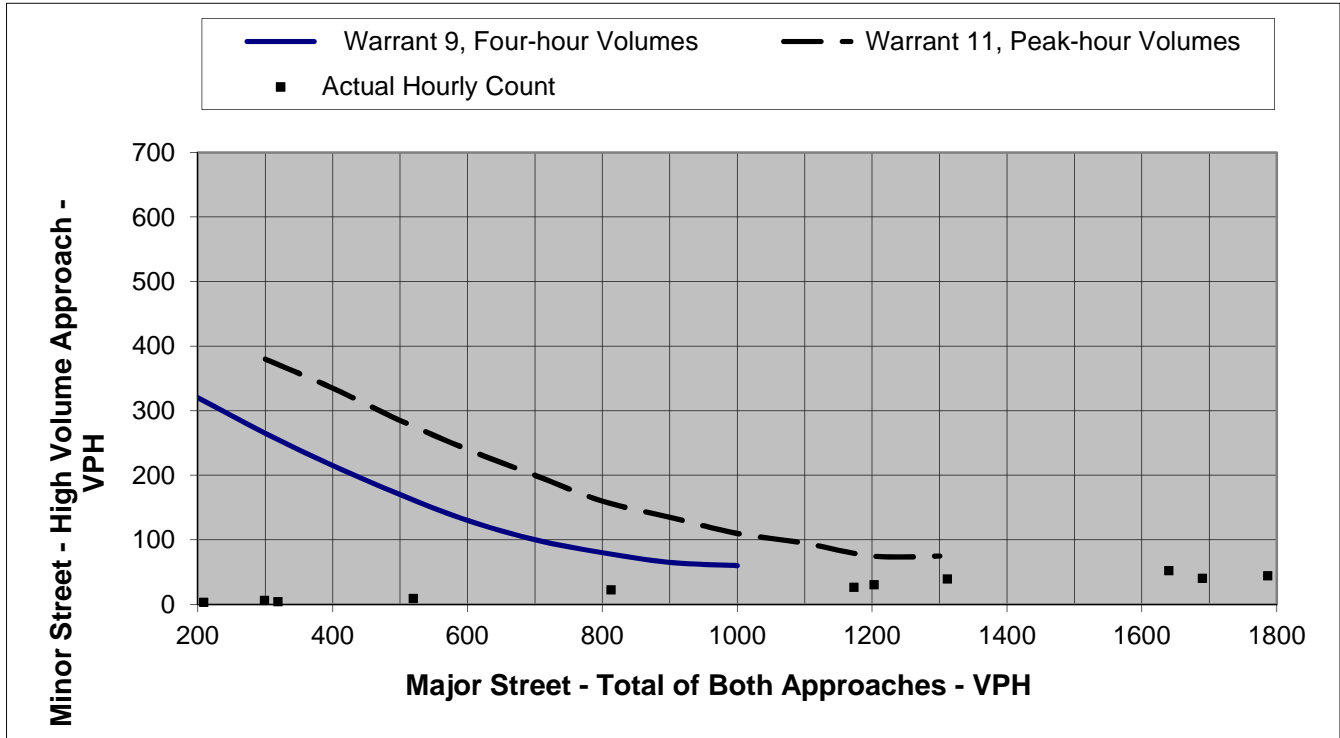


Figure 1. Four Hour and Peak Hour Warrant Analysis

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	320		299	6
300	265	380	209	3
400	215	335	171	2
500	170	285	181	3
600	130	240	319	4
700	100	200	1173	26
800	80	160	2682	68
900	65	135	3255	113
1000	60	110	2472	67
1100		95	1787	44
1200		75	1690	40
1300		75	1926	45
1400			2290	54
1500			2126	41
1600			2435	50
1700			3084	52
1800			3497	55
			3432	59
			2313	57
			1640	52
			1312	39
			1203	30
			813	22
			520	9

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-10 & EDGEWOOD DRIVE

COUNTY: RAMSEY

REF. POINT: 237.156

DATE:

OPERATOR: RE

Speed	Approach Description	Lanes
50	Major App1: TH-10 EB, W OF EDGEWOOD DRIVE	3
50	Major App3: TH-10 WB, E OF EDGEWOOD DRIVE	3
0	Minor App2: N/A	0
30	Minor App4: EDGEWOOD DRIVE SB, N OF TH-10	1

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	112	187	0	6	305	6	/
1:00 - 2:00	82	127	0	3	212	3	/
2:00 - 3:00	78	93	0	2	173	2	/
3:00 - 4:00	104	77	0	3	184	3	/
4:00 - 5:00	217	102	0	4	323	4	/
5:00 - 6:00	910	263	0	26	1199	26	X/
6:00 - 7:00	2056	626	0	68	2750	68	X/
7:00 - 8:00	2319	936	0	113	3368	113	X/
8:00 - 9:00	1553	919	0	67	2539	67	X/
9:00 - 10:00	986	801	0	44	1831	44	X/
10:00 - 11:00	834	856	0	40	1730	40	X/
11:00 - 12:00	930	996	0	45	1971	45	X/
12:00 - 13:00	1112	1178	0	54	2344	54	X/
13:00 - 14:00	1025	1101	0	41	2167	41	X/
14:00 - 15:00	1066	1369	0	50	2485	50	X/
15:00 - 16:00	1136	1948	0	52	3136	52	X/
16:00 - 17:00	1156	2341	0	55	3552	55	X/
17:00 - 18:00	1142	2290	0	59	3491	59	X/
18:00 - 19:00	890	1423	0	57	2370	57	X/
19:00 - 20:00	688	952	0	52	1692	52	X/
20:00 - 21:00	562	750	0	39	1351	39	X/
21:00 - 22:00	474	729	0	30	1233	30	X/
22:00 - 23:00	352	461	0	22	835	22	X/
23:00 - 24:00	204	316	0	9	529	9	X/

Met (Hr) Required (Hr)

Allway Stop Warrant: 0 8 Not satisfied

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

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