



# MINNESOTA DEPARTMENT OF TRANSPORTATION

## METRO DIVISION - TRAFFIC ENGINEERING

### SIGNAL WARRANTS ANALYSIS

LOCATION: TH-55 & FERNBROOK LN

COUNTY: HENNEPIN

REF. POINT: 180.286

DATE: 1/6/1995

OPERATOR: DR

Speed	Approach Description	Lanes
55	Major App1: TH-55 EB, W OF FERNBROOK LN	5
55	Major App3: TH-55 WB, E OF FERNBROOK LN	5
40	Minor App2: FERNBROOK LN NB, S OF TH-55	3
40	Minor App4: FERNBROOK LN SB, N OF TH-55	4

0.70 FACTOR USED? YES

POPULATION < 10,000? NO

EXISTING SIGNAL ? NO

HOUR	420/630		140/70		140/70		WARRANT MET APP. 2	WARRANT MET APP. 4	MET SAME HOURS
	MAJOR APP. 1	MAJOR APP. 3	TOTAL 1+3	WARRANT MET	MINOR APP. 2	MINOR APP. 4			
0:00 - 1:00	72	132	204	/	78	41	/X	/	/
1:00 - 2:00	50	108	158	/	47	34	/	/	/
2:00 - 3:00	42	62	104	/	41	24	/	/	/
3:00 - 4:00	51	62	113	/	21	23	/	/	/
4:00 - 5:00	122	175	297	/	15	62	/	/	/
5:00 - 6:00	543	354	897	X/X	24	150	/	X/X	X/X
6:00 - 7:00	1459	972	2431	X/X	98	522	/X	X/X	X/X
7:00 - 8:00	2084	1386	3470	X/X	213	1021	X/X	X/X	X/X
8:00 - 9:00	1446	1255	2701	X/X	229	570	X/X	X/X	X/X
9:00 - 10:00	937	1005	1942	X/X	283	401	X/X	X/X	X/X
10:00 - 11:00	802	967	1769	X/X	295	342	X/X	X/X	X/X
11:00 - 12:00	904	1232	2136	X/X	599	521	X/X	X/X	X/X
12:00 - 13:00	966	1395	2361	X/X	652	689	X/X	X/X	X/X
13:00 - 14:00	837	1349	2186	X/X	481	539	X/X	X/X	X/X
14:00 - 15:00	920	1477	2397	X/X	422	483	X/X	X/X	X/X
15:00 - 16:00	1129	1877	3006	X/X	791	472	X/X	X/X	X/X
16:00 - 17:00	1099	2104	3203	X/X	756	504	X/X	X/X	X/X
17:00 - 18:00	1034	2225	3259	X/X	686	518	X/X	X/X	X/X
18:00 - 19:00	689	1352	2041	X/X	320	369	X/X	X/X	X/X
19:00 - 20:00	435	865	1300	X/X	227	253	X/X	X/X	X/X
20:00 - 21:00	298	737	1035	X/X	170	176	X/X	X/X	X/X
21:00 - 22:00	284	659	943	X/X	121	158	/X	X/X	X/X
22:00 - 23:00	218	453	671	X/X	79	108	/X	/X	/X
23:00 - 24:00	149	279	428	X/	91	68	/X	/	/

	Met (Hr)	Required (Hr)	
Warrant 1	17	8	Satisfied
Warrant 2	18	8	Satisfied
Warrant 6	18	8	Satisfied, check accident record
Warrant 8	17	8	Satisfied
Warrant 9	17	4	Satisfied
Warrant 11	15	1	Satisfied

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OPERATOR: DR

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

Speed	Approach Description	Lanes
55	Major App1: TH-55 EB, W OF FERNBROOK LN	5
55	Major App3: TH-55 WB, E OF FERNBROOK LN	5
40	Minor App2: FERNBROOK LN NB, S OF TH-55	3
40	Minor App4: FERNBROOK LN SB, N OF TH-55	4

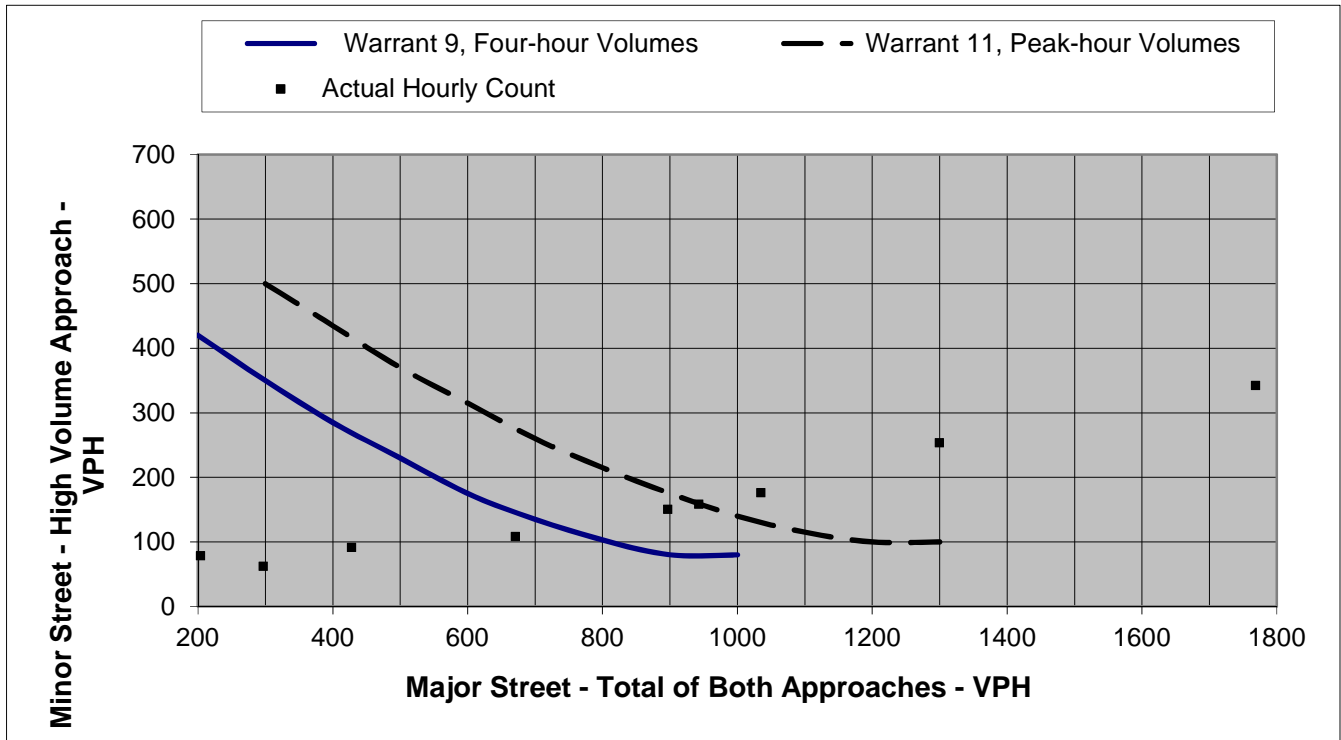


Figure 1. Four Hour and Peak Hour Warrant Analysis

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		204	78
300	350	500	158	47
400	285	435	104	41
500	230	370	113	23
600	175	315	297	62
700	135	260	897	150
800	103	215	2431	522
900	80	175	3470	1021
1000	80	140	2701	570
1100		115	1942	401
1200		100	1769	342
1300		100	2136	599
1400			2361	689
1500			2186	539
1600			2397	483
1700			3006	791
1800			3203	756
			3259	686
			2041	369
			1300	253
			1035	176
			943	158
			671	108
			428	91

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-55 & FERNBROOK LN

COUNTY: HENNEPIN

REF. POINT: 180.286

DATE: 1/6/1995

OPERATOR: DR

Speed	Approach Description	Lanes
55	Major App1: TH-55 EB, W OF FERNBROOK LN	5
55	Major App3: TH-55 WB, E OF FERNBROOK LN	5
40	Minor App2: FERNBROOK LN NB, S OF TH-55	3
40	Minor App4: FERNBROOK LN SB, N OF TH-55	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	72	132	78	41	323	119	/
1:00 - 2:00	50	108	47	34	239	81	/
2:00 - 3:00	42	62	41	24	169	65	/
3:00 - 4:00	51	62	21	23	157	44	/
4:00 - 5:00	122	175	15	62	374	77	X/
5:00 - 6:00	543	354	24	150	1071	174	X/X
6:00 - 7:00	1459	972	98	522	3051	620	X/X
7:00 - 8:00	2084	1386	213	1021	4704	1234	X/X
8:00 - 9:00	1446	1255	229	570	3500	799	X/X
9:00 - 10:00	937	1005	283	401	2626	684	X/X
10:00 - 11:00	802	967	295	342	2406	637	X/X
11:00 - 12:00	904	1232	599	521	3256	1120	X/X
12:00 - 13:00	966	1395	652	689	3702	1341	X/X
13:00 - 14:00	837	1349	481	539	3206	1020	X/X
14:00 - 15:00	920	1477	422	483	3302	905	X/X
15:00 - 16:00	1129	1877	791	472	4269	1263	X/X
16:00 - 17:00	1099	2104	756	504	4463	1260	X/X
17:00 - 18:00	1034	2225	686	518	4463	1204	X/X
18:00 - 19:00	689	1352	320	369	2730	689	X/X
19:00 - 20:00	435	865	227	253	1780	480	X/X
20:00 - 21:00	298	737	170	176	1381	346	X/X
21:00 - 22:00	284	659	121	158	1222	279	X/X
22:00 - 23:00	218	453	79	108	858	187	X/X
23:00 - 24:00	149	279	91	68	587	159	X/X

Met (Hr) Required (Hr)

Allway Stop Warrant: **19** 8 **Satisfied**

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