



MINNESOTA DEPARTMENT OF TRANSPORTATION

METRO DIVISION - TRAFFIC ENGINEERING

SIGNAL WARRANTS ANALYSIS

LOCATION: TH-244 & HOFFMAN RD E

COUNTY: RAMSEY

REF. POINT: 000.231

DATE: 5/8/1995

OPERATOR: DR

Speed	Approach Description	Lanes
40	Major App1: TH-244/CO RD E EB, W OF HOFFMAN RD E	2
40	Major App3: TH-244/CO RD E WB, E OF HOFFMAN RD E	2
30	Minor App2: HOFFMAN RD E NB, S OF TH-244/CO RD E	2
30	Minor App4: HOFFMAN RD E SB, N OF TH-244/CO RD E	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	48	26	74	/	1	27	/	/	/
1:00 - 2:00	28	14	42	/	2	14	/	/	/
2:00 - 3:00	12	7	19	/	1	3	/	/	/
3:00 - 4:00	10	9	19	/	1	3	/	/	/
4:00 - 5:00	9	17	26	/	1	2	/	/	/
5:00 - 6:00	43	98	141	/	4	3	/	/	/
6:00 - 7:00	195	433	628	X/	22	25	/	/	/
7:00 - 8:00	626	748	1374	X/X	32	35	/	/	/
8:00 - 9:00	387	448	835	X/X	35	33	/	/	/
9:00 - 10:00	387	357	744	X/X	41	43	/	/	/
10:00 - 11:00	395	344	739	X/X	42	46	/	/	/
11:00 - 12:00	478	404	882	X/X	73	42	/X	/	/X
12:00 - 13:00	578	520	1098	X/X	67	69	/	/	/
13:00 - 14:00	481	452	933	X/X	44	63	/	/	/
14:00 - 15:00	510	478	988	X/X	53	57	/	/	/
15:00 - 16:00	690	490	1180	X/X	73	44	/X	/	/X
16:00 - 17:00	860	506	1366	X/X	82	52	/X	/	/X
17:00 - 18:00	884	482	1366	X/X	71	55	/X	/	/X
18:00 - 19:00	665	438	1103	X/X	31	68	/	/	/
19:00 - 20:00	463	338	801	X/X	32	80	/	/X	/X
20:00 - 21:00	388	317	705	X/X	26	94	/	/X	/X
21:00 - 22:00	308	216	524	X/	10	94	/	/X	/
22:00 - 23:00	170	112	282	/	10	88	/	/X	/
23:00 - 24:00	87	46	133	/	2	52	/	/	/

	Met (Hr)	Required (Hr)	
Warrant 1	0	8	Not satisfied
Warrant 2	6	8	Not satisfied
Warrant 6	11	8	Satisfied, check accident record
Warrant 8	0	8	Not satisfied
Warrant 9	1	4	Not satisfied
Warrant 11	0	1	Not satisfied

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OPERATOR: DR

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

Speed	Approach Description	Lanes
40	Major App1: TH-244/CO RD E EB, W OF HOFFMAN RD E	2
40	Major App3: TH-244/CO RD E WB, E OF HOFFMAN RD E	2
30	Minor App2: HOFFMAN RD E NB, S OF TH-244/CO RD E	2
30	Minor App4: HOFFMAN RD E SB, N OF TH-244/CO RD E	2

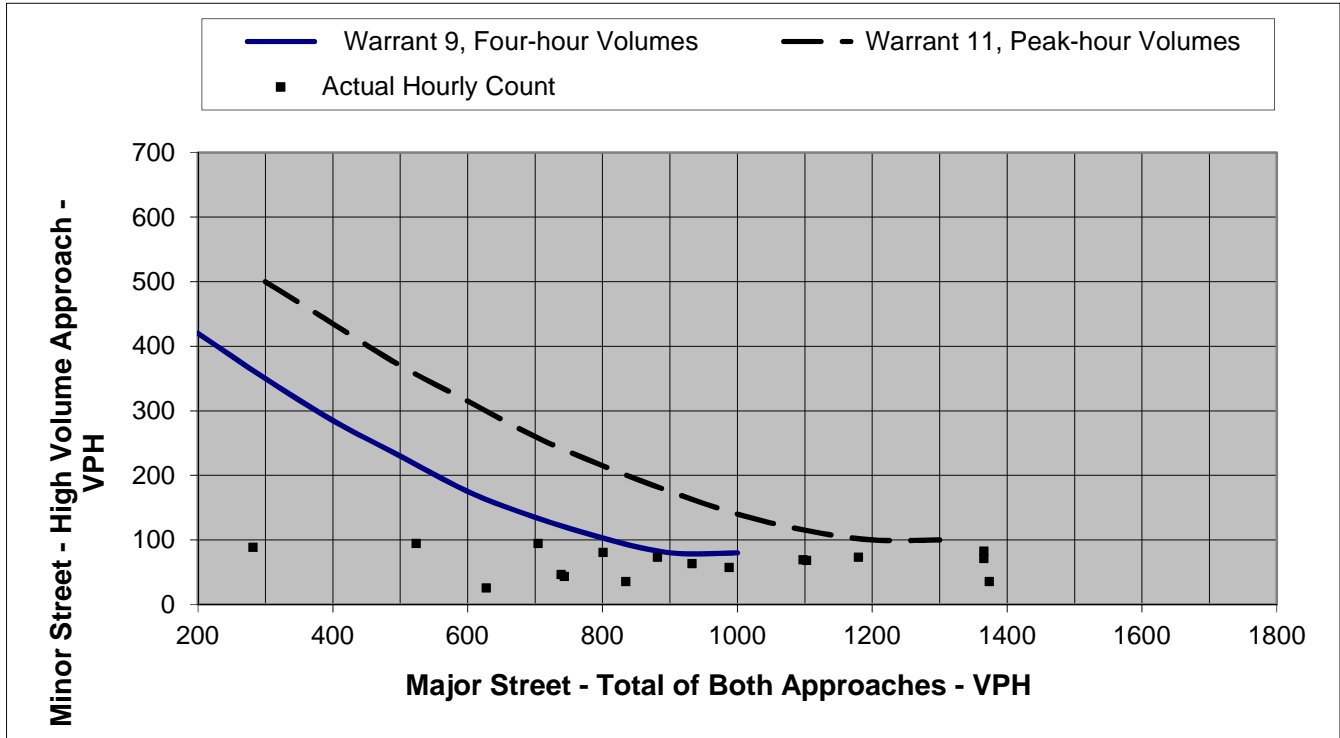


Figure 1. Four Hour and Peak Hour Warrant Analysis

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		74	27
300	350	500	42	14
400	285	435	19	3
500	230	370	19	3
600	175	315	26	2
700	135	260	141	4
800	103	215	628	25
900	80	175	1374	35
1000	80	140	835	35
1100		115	744	43
1200		100	739	46
1300		100	882	73
1400			1098	69
1500			933	63
1600			988	57
1700			1180	73
1800			1366	82
			1366	71
			1103	68
			801	80
			705	94
			524	94
			282	88
			133	52

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-244 & HOFFMAN RD E

COUNTY: RAMSEY

REF. POINT: 000.231

DATE: 5/8/1995

OPERATOR: DR

Speed	Approach Description	Lanes
40	Major App1: TH-244/CO RD E EB, W OF HOFFMAN RD E	2
40	Major App3: TH-244/CO RD E WB, E OF HOFFMAN RD E	2
30	Minor App2: HOFFMAN RD E NB, S OF TH-244/CO RD E	2
30	Minor App4: HOFFMAN RD E SB, N OF TH-244/CO RD E	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	48	26	1	27	102	28	/
1:00 - 2:00	28	14	2	14	58	16	/
2:00 - 3:00	12	7	1	3	23	4	/
3:00 - 4:00	10	9	1	3	23	4	/
4:00 - 5:00	9	17	1	2	29	3	/
5:00 - 6:00	43	98	4	3	148	7	/
6:00 - 7:00	195	433	22	25	675	47	X/
7:00 - 8:00	626	748	32	35	1441	67	X/
8:00 - 9:00	387	448	35	33	903	68	X/
9:00 - 10:00	387	357	41	43	828	84	X/
10:00 - 11:00	395	344	42	46	827	88	X/
11:00 - 12:00	478	404	73	42	997	115	X/
12:00 - 13:00	578	520	67	69	1234	136	X/
13:00 - 14:00	481	452	44	63	1040	107	X/
14:00 - 15:00	510	478	53	57	1098	110	X/
15:00 - 16:00	690	490	73	44	1297	117	X/
16:00 - 17:00	860	506	82	52	1500	134	X/
17:00 - 18:00	884	482	71	55	1492	126	X/
18:00 - 19:00	665	438	31	68	1202	99	X/
19:00 - 20:00	463	338	32	80	913	112	X/
20:00 - 21:00	388	317	26	94	825	120	X/
21:00 - 22:00	308	216	10	94	628	104	X/
22:00 - 23:00	170	112	10	88	380	98	X/
23:00 - 24:00	87	46	2	52	187	54	/

Allway Stop Warrant: Met (Hr) 0 Required (Hr) 8 Not satisfied

REMARKS: _____