



MINNESOTA DEPARTMENT OF TRANSPORTATION

METRO DIVISION - TRAFFIC ENGINEERING

SIGNAL WARRANTS ANALYSIS

LOCATION: TH-169 63RD AVE & MAGDA DR

COUNTY: RAMSEY

REF. POINT: 136.904

DATE: 5/25/1995

OPERATOR: DR

Speed	Approach Description	Lanes
30	Major App1: 63RD AVE N EB, W OF JCT OF MAGDA DR	1
30	Major App3: 63RD AVE N WB, E OF JCT OF MAGDA DR	1
30	Minor App2: MAGDA DR NB, S OF JCT OF 63RD AVE N	1
30	Minor App4: MAGDA DR SB, N OF JCT OF 63RD AVE N	1

0.70 FACTOR USED? NO

POPULATION < 10,000? NO

EXISTING SIGNAL ? NO

HOUR	500/750			150/75		150/75		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	4	36	40	/	13	23	/	/	/
1:00 - 2:00	6	25	31	/	12	9	/	/	/
2:00 - 3:00	1	19	20	/	10	5	/	/	/
3:00 - 4:00	1	14	15	/	4	5	/	/	/
4:00 - 5:00	1	26	27	/	9	13	/	/	/
5:00 - 6:00	14	100	114	/	38	49	/	/	/
6:00 - 7:00	47	258	305	/	97	156	/X	X/X	/
7:00 - 8:00	67	340	407	/	133	385	/X	X/X	/
8:00 - 9:00	37	231	268	/	119	175	/X	X/X	/
9:00 - 10:00	28	205	233	/	91	126	/X	/X	/
10:00 - 11:00	28	168	196	/	73	115	/	/X	/
11:00 - 12:00	31	208	239	/	77	114	/X	/X	/
12:00 - 13:00	40	226	266	/	102	148	/X	/X	/
13:00 - 14:00	27	207	234	/	85	130	/X	/X	/
14:00 - 15:00	31	264	295	/	94	163	/X	X/X	/
15:00 - 16:00	34	387	421	/	120	186	/X	X/X	/
16:00 - 17:00	49	535	584	X/	89	206	/X	X/X	X/
17:00 - 18:00	71	687	758	X/X	130	237	/X	X/X	X/X
18:00 - 19:00	64	370	434	/	114	221	/X	X/X	/
19:00 - 20:00	54	305	359	/	114	182	/X	X/X	/
20:00 - 21:00	28	267	295	/	91	170	/X	X/X	/
21:00 - 22:00	27	222	249	/	76	111	/X	/X	/
22:00 - 23:00	7	129	136	/	43	77	/	/X	/
23:00 - 24:00	4	82	86	/	30	34	/	/	/

	Met (Hr)	Required (Hr)	
Warrant 1	2	8	Not satisfied
Warrant 2	1	8	Not satisfied
Warrant 6	5	8	Not satisfied
Warrant 8	1	8	Not satisfied
Warrant 9	2	4	Not satisfied
Warrant 11	0	1	Not satisfied

LOCATION: TH-169 63RD AVE & MAGDA DR

COUNTY: RAMSEY

REF. POINT: 136.904

DATE: 5/25/1995

OPERATOR: DR

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

Speed	Approach Description	Lanes
30	Major App1: 63RD AVE N EB, W OF JCT OF MAGDA DR	1
30	Major App3: 63RD AVE N WB, E OF JCT OF MAGDA DR	1
30	Minor App2: MAGDA DR NB, S OF JCT OF 63RD AVE N	1
30	Minor App4: MAGDA DR SB, N OF JCT OF 63RD AVE N	1

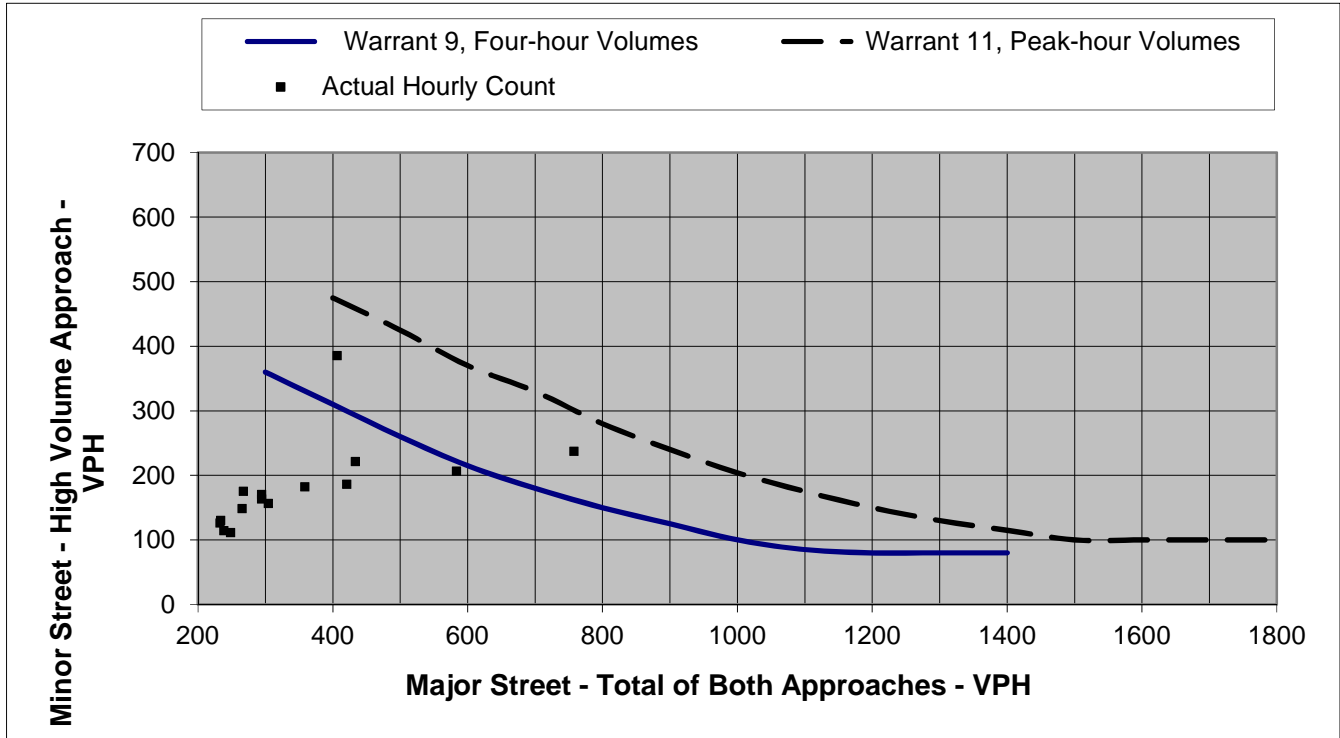


Figure 1. Four Hour and Peak Hour Warrant Analysis

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			40	23
300	360		31	12
400	310	475	20	10
500	260	425	15	5
600	215	370	27	13
700	180	330	114	49
800	150	280	305	156
900	125	240	407	385
1000	100	204	268	175
1100	85	175	233	126
1200	80	150	196	115
1300	80	130	239	114
1400	80	115	266	148
1500		100	234	130
1600		100	295	163
1700		100	421	186
1800		100	584	206
			758	237
			434	221
			359	182
			295	170
			249	111
			136	77
			86	34

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-169 63RD AVE & MAGDA DR

COUNTY: RAMSEY

REF. POINT: 136.904

DATE: 5/25/1995

OPERATOR: DR

Speed	Approach Description	Lanes
30	Major App1: 63RD AVE N EB, W OF JCT OF MAGDA DR	1
30	Major App3: 63RD AVE N WB, E OF JCT OF MAGDA DR	1
30	Minor App2: MAGDA DR NB, S OF JCT OF 63RD AVE N	1
30	Minor App4: MAGDA DR SB, N OF JCT OF 63RD AVE N	1

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	4	36	13	23	76	36	/
1:00 - 2:00	6	25	12	9	52	21	/
2:00 - 3:00	1	19	10	5	35	15	/
3:00 - 4:00	1	14	4	5	24	9	/
4:00 - 5:00	1	26	9	13	49	22	/
5:00 - 6:00	14	100	38	49	201	87	/
6:00 - 7:00	47	258	97	156	558	253	X/X
7:00 - 8:00	67	340	133	385	925	518	X/X
8:00 - 9:00	37	231	119	175	562	294	X/X
9:00 - 10:00	28	205	91	126	450	217	/X
10:00 - 11:00	28	168	73	115	384	188	/
11:00 - 12:00	31	208	77	114	430	191	/
12:00 - 13:00	40	226	102	148	516	250	X/X
13:00 - 14:00	27	207	85	130	449	215	/X
14:00 - 15:00	31	264	94	163	552	257	X/X
15:00 - 16:00	34	387	120	186	727	306	X/X
16:00 - 17:00	49	535	89	206	879	295	X/X
17:00 - 18:00	71	687	130	237	1125	367	X/X
18:00 - 19:00	64	370	114	221	769	335	X/X
19:00 - 20:00	54	305	114	182	655	296	X/X
20:00 - 21:00	28	267	91	170	556	261	X/X
21:00 - 22:00	27	222	76	111	436	187	/
22:00 - 23:00	7	129	43	77	256	120	/
23:00 - 24:00	4	82	30	34	150	64	/

Met (Hr) Required (Hr)

Allway Stop Warrant: **11** 8 **Satisfied**

REMARKS: _____

