



# MINNESOTA DEPARTMENT OF TRANSPORTATION

## METRO DIVISION - TRAFFIC ENGINEERING

### SIGNAL WARRANTS ANALYSIS

LOCATION: TH-61 & ROSELAWN AVE.

COUNTY: RAMSEY

REF. POINT: 140.566

DATE: 5/7/1997

OPERATOR: RE

Speed	Approach Description	Lanes
40	Major App1: TH-61 NB, S OF ROSELAWN AVE.	3
40	Major App3: TH-61 SB, N OF ROSELAWN AVE.	3
30	Minor App2: ROSELAWN AVE. EB, W OF TH-61	2
30	Minor App4: KELLER REGIONAL PARK ENTRANCE	1

0.70 FACTOR USED? YES

POPULATION < 10,000? NO

EXISTING SIGNAL ? YES

HOUR	MAJOR APP. 1	MAJOR APP. 3	TOTAL 1+3	600/900		200/100		150/75		MET SAME HOURS
				WARRANT MET	MINOR APP. 2	MINOR APP. 4	WARRANT MET APP.2	WARRANT MET APP. 4		
0:00 - 1:00	65	64	129	/	5	0	/	/	/	
1:00 - 2:00	36	51	87	/	7	0	/	/	/	
2:00 - 3:00	19	33	52	/	7	0	/	/	/	
3:00 - 4:00	20	19	39	/	4	0	/	/	/	
4:00 - 5:00	31	36	67	/	4	0	/	/	/	
5:00 - 6:00	115	127	242	/	10	0	/	/	/	
6:00 - 7:00	378	683	1061	X/X	60	3	/	/	/	
7:00 - 8:00	572	1326	1898	X/X	107	3	/X	/	/X	
8:00 - 9:00	506	669	1175	X/X	100	1	/X	/	/X	
9:00 - 10:00	518	443	961	X/X	103	13	/X	/	/X	
10:00 - 11:00	473	462	935	X/X	94	11	/	/	/	
11:00 - 12:00	564	527	1091	X/X	104	13	/X	/	/X	
12:00 - 13:00	548	554	1102	X/X	126	19	/X	/	/X	
13:00 - 14:00	521	560	1081	X/X	121	17	/X	/	/X	
14:00 - 15:00	610	623	1233	X/X	122	11	/X	/	/X	
15:00 - 16:00	921	751	1672	X/X	166	10	/X	/	/X	
16:00 - 17:00	1360	756	2116	X/X	212	8	X/X	/	X/X	
17:00 - 18:00	1325	716	2041	X/X	213	8	X/X	/	X/X	
18:00 - 19:00	672	621	1293	X/X	142	5	/X	/	/X	
19:00 - 20:00	465	511	976	X/X	113	8	/X	/	/X	
20:00 - 21:00	356	472	828	X/	72	3	/	/	/	
21:00 - 22:00	253	390	643	X/	50	1	/	/	/	
22:00 - 23:00	185	208	393	/	31	0	/	/	/	
23:00 - 24:00	98	120	218	/	20	0	/	/	/	

	Met (Hr)	Required (Hr)	
Warrant 1	2	8	Not satisfied
Warrant 2	12	8	Satisfied
Warrant 6	13	8	Satisfied, check accident record
Warrant 8	3	8	Not satisfied
Warrant 9	4	4	Satisfied
Warrant 11	3	1	Satisfied

LOCATION: TH-61 & ROSELAWN AVE.

COUNTY: RAMSEY

REF. POINT: 140.566

DATE: 5/7/1997

OPERATOR: RE

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

Speed	Approach Description	Lanes
40	Major App1: TH-61 NB, S OF ROSELAWN AVE.	3
40	Major App3: TH-61 SB, N OF ROSELAWN AVE.	3
30	Minor App2: ROSELAWN AVE. EB, W OF TH-61	2
30	Minor App4: KELLER REGIONAL PARK ENTRANCE	1

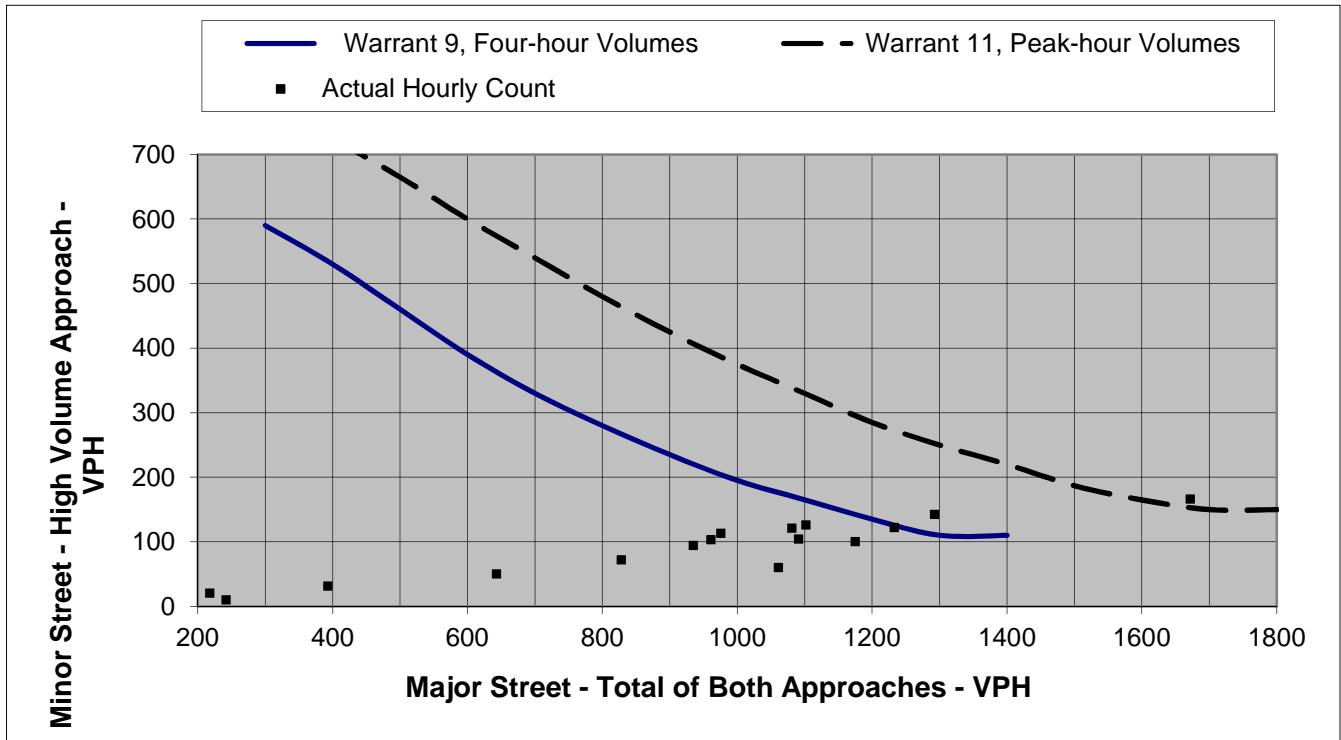


Figure 1. Four Hour and Peak Hour Warrant Analysis

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			129	5
300	590		87	7
400	530	725	52	7
500	460	665	39	4
600	390	600	67	4
700	330	540	242	10
800	280	480	1061	60
900	235	425	1898	107
1000	195	375	1175	100
1100	165	330	961	103
1200	135	285	935	94
1300	110	250	1091	104
1400	110	220	1102	126
1500		187	1081	121
1600		165	1233	122
1700		150	1672	166
1800		150	2116	212
			2041	213
			1293	142
			976	113
			828	72
			643	50
			393	31
			218	20

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-61 & ROSELAWN AVE.

COUNTY: RAMSEY

REF. POINT: 140.566

DATE:

OPERATOR: RE

Speed	Approach Description	Lanes
40	Major App1: TH-61 NB, S OF ROSELAWN AVE.	3
40	Major App3: TH-61 SB, N OF ROSELAWN AVE.	3
30	Minor App2: ROSELAWN AVE. EB, W OF TH-61	2
30	Minor App4: KELLER REGIONAL PARK ENTRANCE	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	65	64	5	0	134	5	/
1:00 - 2:00	36	51	7	0	94	7	/
2:00 - 3:00	19	33	7	0	59	7	/
3:00 - 4:00	20	19	4	0	43	4	/
4:00 - 5:00	31	36	4	0	71	4	/
5:00 - 6:00	115	127	10	0	252	10	/
6:00 - 7:00	378	683	60	3	1124	63	X/
7:00 - 8:00	572	1326	107	3	2008	110	X/
8:00 - 9:00	506	669	100	1	1276	101	X/
9:00 - 10:00	518	443	103	13	1077	116	X/
10:00 - 11:00	473	462	94	11	1040	105	X/
11:00 - 12:00	564	527	104	13	1208	117	X/
12:00 - 13:00	548	554	126	19	1247	145	X/X
13:00 - 14:00	521	560	121	17	1219	138	X/
14:00 - 15:00	610	623	122	11	1366	133	X/
15:00 - 16:00	921	751	166	10	1848	176	X/X
16:00 - 17:00	1360	756	212	8	2336	220	X/X
17:00 - 18:00	1325	716	213	8	2262	221	X/X
18:00 - 19:00	672	621	142	5	1440	147	X/X
19:00 - 20:00	465	511	113	8	1097	121	X/
20:00 - 21:00	356	472	72	3	903	75	X/
21:00 - 22:00	253	390	50	1	694	51	X/
22:00 - 23:00	185	208	31	0	424	31	X/
23:00 - 24:00	98	120	20	0	238	20	/

Allway Stop Warrant: Met (Hr) 5 Required (Hr) 8 Not satisfied

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