



MINNESOTA DEPARTMENT OF TRANSPORTATION

METRO DIVISION - TRAFFIC ENGINEERING

SIGNAL WARRANTS ANALYSIS

LOCATION: TH-47 & 149TH AVE NW

COUNTY: ANOKA

REF. POINT: 023.374

DATE: 11/5/1998

OPERATOR: DR

Speed	Approach Description	Lanes
55	Major App1: TH-47 NB, S OF 149TH AVE NW	2
55	Major App3: TH-47 SB, N OF 149TH AVE NW	2
0	Minor App2: N/A	0
30	Minor App4: 149TH AVE NW WB, E OF TH-47	1

0.70 FACTOR USED? YES

POPULATION < 10,000? NO

EXISTING SIGNAL ? NO

HOUR	420/630			0/0			105/52		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	65	23	88	/	0	4	/	/	/
1:00 - 2:00	48	10	58	/	0	4	/	/	/
2:00 - 3:00	46	6	52	/	0	4	/	/	/
3:00 - 4:00	16	21	37	/	0	6	/	/	/
4:00 - 5:00	16	108	124	/	0	11	/	/	/
5:00 - 6:00	33	378	411	/	0	54	/	/X	/
6:00 - 7:00	110	677	787	X/X	0	108	/	X/X	X/X
7:00 - 8:00	212	634	846	X/X	0	144	/	X/X	X/X
8:00 - 9:00	196	384	580	X/	0	73	/	/X	/
9:00 - 10:00	218	306	524	X/	0	42	/	/	/
10:00 - 11:00	262	272	534	X/	0	48	/	/	/
11:00 - 12:00	283	240	523	X/	0	34	/	/	/
12:00 - 13:00	260	235	495	X/	0	38	/	/	/
13:00 - 14:00	292	222	514	X/	0	31	/	/	/
14:00 - 15:00	434	266	700	X/X	0	40	/	/	/
15:00 - 16:00	618	292	910	X/X	0	38	/	/	/
16:00 - 17:00	813	320	1133	X/X	0	59	/	/X	/X
17:00 - 18:00	838	362	1200	X/X	0	78	/	/X	/X
18:00 - 19:00	585	307	892	X/X	0	83	/	/X	/X
19:00 - 20:00	426	190	616	X/	0	51	/	/	/
20:00 - 21:00	377	154	531	X/	0	44	/	/	/
21:00 - 22:00	324	122	446	X/	0	22	/	/	/
22:00 - 23:00	176	82	258	/	0	14	/	/	/
23:00 - 24:00	127	42	169	/	0	4	/	/	/

	Met (Hr)	Required (Hr)	
Warrant 1	2	8	Not satisfied
Warrant 2	5	8	Not satisfied
Warrant 6	10	8	Satisfied, check accident record
Warrant 8	2	8	Not satisfied
Warrant 9	4	4	Satisfied
Warrant 11	1	1	Satisfied

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 POPULATION < 10,000? NO
 EXISTING SIGNAL ? NO

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55	Major App1: TH-47 NB, S OF 149TH AVE NW	2
55	Major App3: TH-47 SB, N OF 149TH AVE NW	2
0	Minor App2: N/A	0
30	Minor App4: 149TH AVE NW WB, E OF TH-47	1

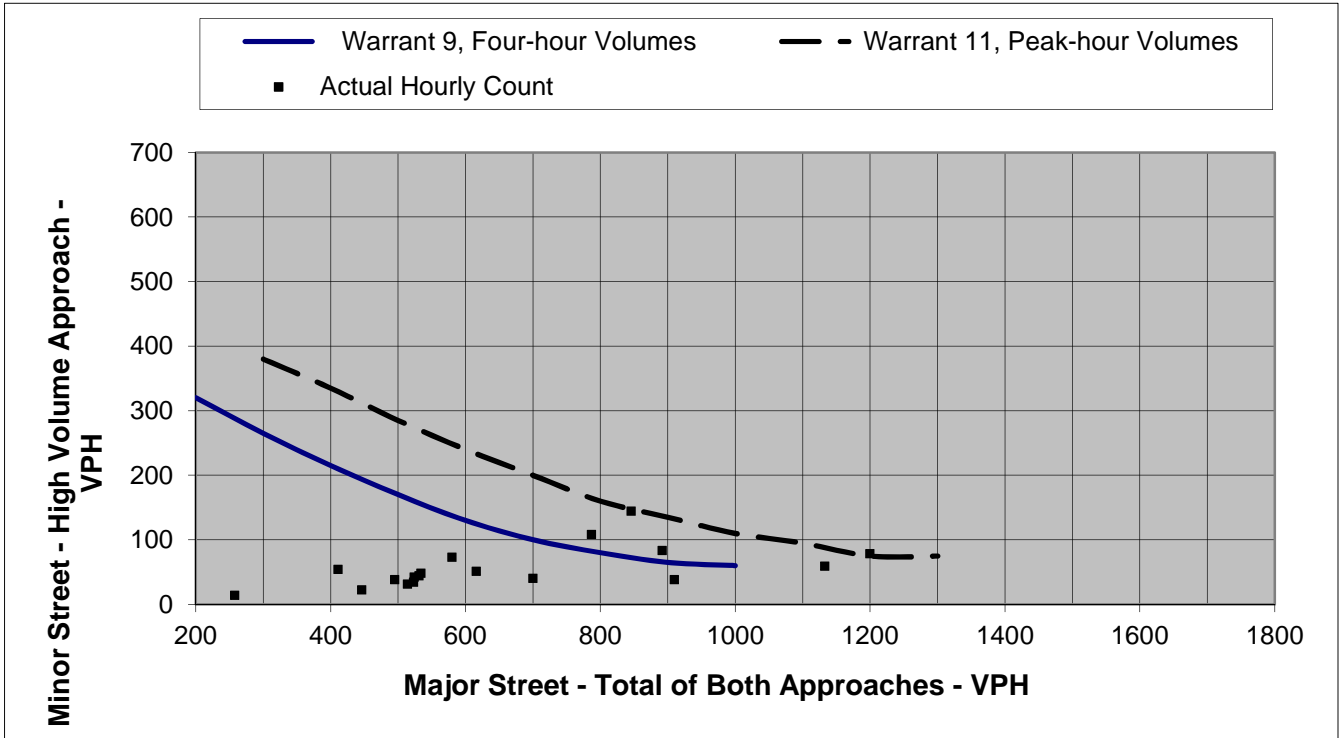


Figure 1. Four Hour and Peak Hour Warrant Analysis

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		88	4
300	265	380	58	4
400	215	335	52	4
500	170	285	37	6
600	130	240	124	11
700	100	200	411	54
800	80	160	787	108
900	65	135	846	144
1000	60	110	580	73
1100		95	524	42
1200		75	534	48
1300		75	523	34
1400			495	38
1500			514	31
1600			700	40
1700			910	38
1800			1133	59
			1200	78
			892	83
			616	51
			531	44
			446	22
			258	14
			169	4

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-47 & 149TH AVE NW

COUNTY: ANOKA

REF. POINT: 023.374

DATE: 11/5/1998

OPERATOR: DR

Speed	Approach Description	Lanes
55	Major App1: TH-47 NB, S OF 149TH AVE NW	2
55	Major App3: TH-47 SB, N OF 149TH AVE NW	2
0	Minor App2: N/A	0
30	Minor App4: 149TH AVE NW WB, E OF TH-47	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	23	0	4	92	4	/
1:00 - 2:00	48	10	0	4	62	4	/
2:00 - 3:00	46	6	0	4	56	4	/
3:00 - 4:00	16	21	0	6	43	6	/
4:00 - 5:00	16	108	0	11	135	11	/
5:00 - 6:00	33	378	0	54	465	54	X/
6:00 - 7:00	110	677	0	108	895	108	X/
7:00 - 8:00	212	634	0	144	990	144	X/X
8:00 - 9:00	196	384	0	73	653	73	X/
9:00 - 10:00	218	306	0	42	566	42	X/
10:00 - 11:00	262	272	0	48	582	48	X/
11:00 - 12:00	283	240	0	34	557	34	X/
12:00 - 13:00	260	235	0	38	533	38	X/
13:00 - 14:00	292	222	0	31	545	31	X/
14:00 - 15:00	434	266	0	40	740	40	X/
15:00 - 16:00	618	292	0	38	948	38	X/
16:00 - 17:00	813	320	0	59	1192	59	X/
17:00 - 18:00	838	362	0	78	1278	78	X/
18:00 - 19:00	585	307	0	83	975	83	X/
19:00 - 20:00	426	190	0	51	667	51	X/
20:00 - 21:00	377	154	0	44	575	44	X/
21:00 - 22:00	324	122	0	22	468	22	X/
22:00 - 23:00	176	82	0	14	272	14	/
23:00 - 24:00	127	42	0	4	173	4	/

Allway Stop Warrant: Met (Hr) 1 Required (Hr) 8 Not satisfied

REMARKS: _____

