



# MINNESOTA DEPARTMENT OF TRANSPORTATION

## METRO DIVISION - TRAFFIC ENGINEERING

### SIGNAL WARRANTS ANALYSIS

LOCATION: TH-5 AT ARBORETUM DR.

COUNTY: CARVER

REF. POINT: 041.842

DATE: 7/1/1998

OPERATOR: DR

Speed	Approach Description	Lanes
55	Major App1: TH-5 EB, W OF ARBORETUM DR.	2
55	Major App3: TH-5 WB, E OF CRIMSON BAY RD	2
15	Minor App2: ABORETUM DR NB, S OF TH-5	2
30	Minor App4: CRIMSON BAY RD SB, N OF TH-5	1

0.70 FACTOR USED? YES

POPULATION < 10,000? NO

EXISTING SIGNAL ? NO

HOUR	420/630				140/70		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	52	113	165	/	0	1	/	/	/
1:00 - 2:00	30	61	91	/	0	0	/	/	/
2:00 - 3:00	21	58	79	/	0	0	/	/	/
3:00 - 4:00	48	28	76	/	1	1	/	/	/
4:00 - 5:00	137	30	167	/	0	0	/	/	/
5:00 - 6:00	652	85	737	X/X	0	1	/	/	/
6:00 - 7:00	1161	231	1392	X/X	0	4	/	/	/
7:00 - 8:00	1278	398	1676	X/X	5	1	/	/	/
8:00 - 9:00	858	438	1296	X/X	7	2	/	/	/
9:00 - 10:00	645	477	1122	X/X	18	3	/	/	/
10:00 - 11:00	575	436	1011	X/X	27	2	/	/	/
11:00 - 12:00	558	544	1102	X/X	59	2	/	/	/
12:00 - 13:00	536	587	1123	X/X	56	1	/	/	/
13:00 - 14:00	543	585	1128	X/X	48	0	/	/	/
14:00 - 15:00	597	761	1358	X/X	58	4	/	/	/
15:00 - 16:00	518	1033	1551	X/X	71	2	/X	/	/X
16:00 - 17:00	530	1333	1863	X/X	41	2	/	/	/
17:00 - 18:00	558	1315	1873	X/X	28	1	/	/	/
18:00 - 19:00	537	902	1439	X/X	17	2	/	/	/
19:00 - 20:00	360	580	940	X/X	21	0	/	/	/
20:00 - 21:00	346	493	839	X/X	42	1	/	/	/
21:00 - 22:00	313	470	783	X/X	6	1	/	/	/
22:00 - 23:00	216	336	552	X/	1	1	/	/	/
23:00 - 24:00	102	178	280	/	2	0	/	/	/

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

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55	Major App3: TH-5 WB, E OF CRIMSON BAY RD	2
15	Minor App2: ABORETUM DR NB, S OF TH-5	2
30	Minor App4: CRIMSON BAY RD SB, N OF TH-5	1

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

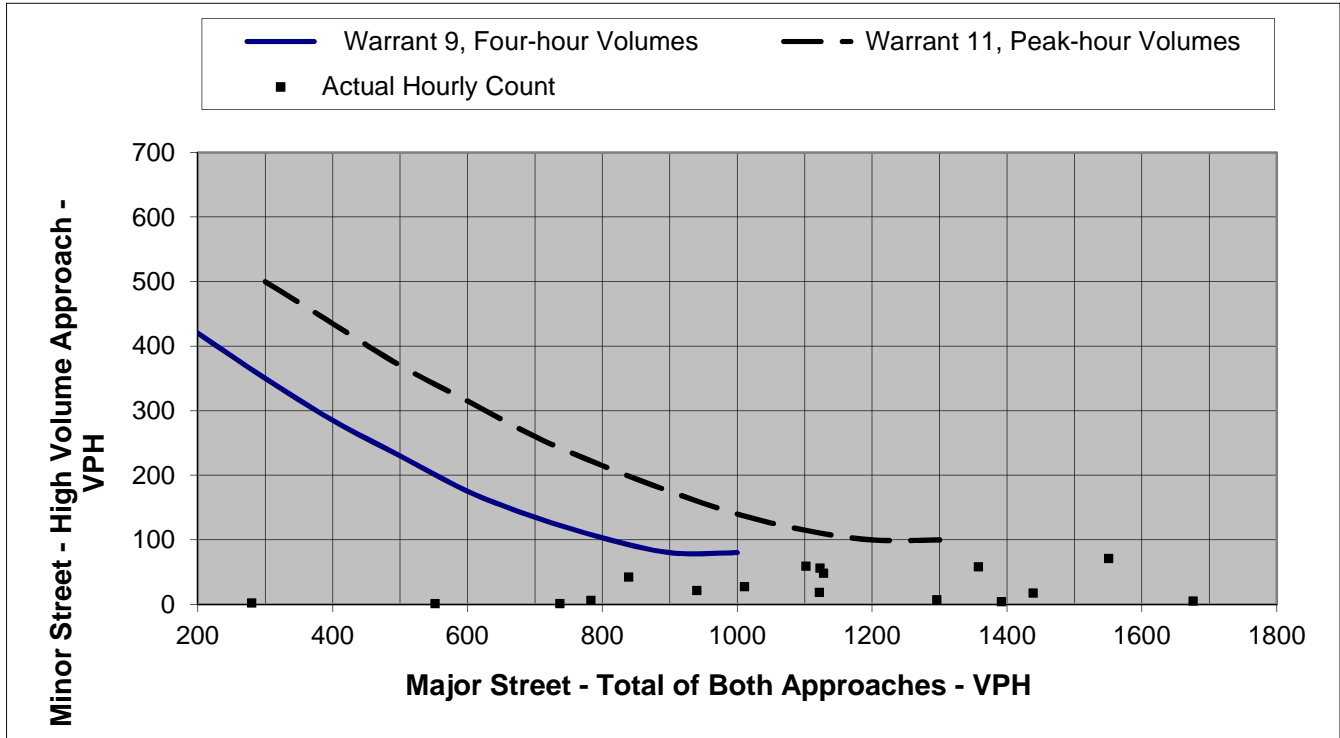


Figure 1. Four Hour and Peak Hour Warrant Analysis

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		165	1
300	350	500	91	0
400	285	435	79	0
500	230	370	76	1
600	175	315	167	0
700	135	260	737	1
800	103	215	1392	4
900	80	175	1676	5
1000	80	140	1296	7
1100		115	1122	18
1200		100	1011	27
1300		100	1102	59
1400			1123	56
1500			1128	48
1600			1358	58
1700			1551	71
1800			1863	41
			1873	28
			1439	17
			940	21
			839	42
			783	6
			552	1
			280	2

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-5 AT ARBORETUM DR.

COUNTY: CARVER

REF. POINT: 041.842

DATE: 7/1/1998

OPERATOR: DR

Speed	Approach Description	Lanes
55	Major App1: TH-5 EB, W OF ARBORETUM DR.	2
55	Major App3: TH-5 WB, E OF CRIMSON BAY RD	2
15	Minor App2: ABORETUM DR NB, S OF TH-5	2
30	Minor App4: CRIMSON BAY RD SB, N OF TH-5	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	52	113	0	1	166	1	/
1:00 - 2:00	30	61	0	0	91	0	/
2:00 - 3:00	21	58	0	0	79	0	/
3:00 - 4:00	48	28	1	1	78	2	/
4:00 - 5:00	137	30	0	0	167	0	/
5:00 - 6:00	652	85	0	1	738	1	X/
6:00 - 7:00	1161	231	0	4	1396	4	X/
7:00 - 8:00	1278	398	5	1	1682	6	X/
8:00 - 9:00	858	438	7	2	1305	9	X/
9:00 - 10:00	645	477	18	3	1143	21	X/
10:00 - 11:00	575	436	27	2	1040	29	X/
11:00 - 12:00	558	544	59	2	1163	61	X/
12:00 - 13:00	536	587	56	1	1180	57	X/
13:00 - 14:00	543	585	48	0	1176	48	X/
14:00 - 15:00	597	761	58	4	1420	62	X/
15:00 - 16:00	518	1033	71	2	1624	73	X/
16:00 - 17:00	530	1333	41	2	1906	43	X/
17:00 - 18:00	558	1315	28	1	1902	29	X/
18:00 - 19:00	537	902	17	2	1458	19	X/
19:00 - 20:00	360	580	21	0	961	21	X/
20:00 - 21:00	346	493	42	1	882	43	X/
21:00 - 22:00	313	470	6	1	790	7	X/
22:00 - 23:00	216	336	1	1	554	2	X/
23:00 - 24:00	102	178	2	0	282	2	/

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

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