



# MINNESOTA DEPARTMENT OF TRANSPORTATION

## METRO DIVISION - TRAFFIC ENGINEERING

### SIGNAL WARRANTS ANALYSIS

LOCATION: TH-5 AT CSAH 17 W JCT

COUNTY: WASHINGTON

REF. POINT: 198.105

DATE: 6/29/1998

OPERATOR: DR

Speed	Approach Description	Lanes
40	Major App1: TH-5 / STILLWATER BLVD EB, W OF CSAH 17 W	2
40	Major App3: TH-5 / STILLWATER BLVD WB, E OF CSAH 17 W	2
0	Minor App2: N/A	0
55	Minor App4: CSAH 17 SB, N OF TH-5	2

0.70 FACTOR USED? YES

POPULATION < 10,000? NO

EXISTING SIGNAL ? NO

HOUR	420/630			0/0			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	36	32	68	/	0	8	/	/	/
1:00 - 2:00	30	19	49	/	0	7	/	/	/
2:00 - 3:00	13	10	23	/	0	4	/	/	/
3:00 - 4:00	13	4	17	/	0	3	/	/	/
4:00 - 5:00	13	20	33	/	0	8	/	/	/
5:00 - 6:00	87	135	222	/	0	24	/	/	/
6:00 - 7:00	210	401	611	X/	0	91	/	/X	/
7:00 - 8:00	390	551	941	X/X	0	191	/	X/X	X/X
8:00 - 9:00	367	398	765	X/X	0	169	/	X/X	X/X
9:00 - 10:00	318	295	613	X/	0	87	/	/X	/
10:00 - 11:00	319	321	640	X/X	0	92	/	/X	/X
11:00 - 12:00	365	344	709	X/X	0	94	/	/X	/X
12:00 - 13:00	397	394	791	X/X	0	139	/	/X	/X
13:00 - 14:00	357	364	721	X/X	0	94	/	/X	/X
14:00 - 15:00	384	383	767	X/X	0	78	/	/X	/X
15:00 - 16:00	501	389	890	X/X	0	100	/	/X	/X
16:00 - 17:00	707	467	1174	X/X	0	155	/	X/X	X/X
17:00 - 18:00	780	467	1247	X/X	0	142	/	X/X	X/X
18:00 - 19:00	507	372	879	X/X	0	103	/	/X	/X
19:00 - 20:00	312	329	641	X/X	0	85	/	/X	/X
20:00 - 21:00	268	308	576	X/	0	62	/	/	/
21:00 - 22:00	211	264	475	X/	0	68	/	/	/
22:00 - 23:00	119	141	260	/	0	25	/	/	/
23:00 - 24:00	76	81	157	/	0	10	/	/	/

	Met (Hr)	Required (Hr)	
Warrant 1	4	8	Not satisfied
Warrant 2	12	8	Satisfied
Warrant 6	15	8	Satisfied, check accident record
Warrant 8	5	8	Not satisfied
Warrant 9	7	4	Satisfied
Warrant 11	3	1	Satisfied

LOCATION: TH-5 AT CSAH 17 W JCT

COUNTY: WASHINGTON

REF. POINT: 198.105

DATE: 6/29/1998

OPERATOR: DR

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

Speed	Approach Description	Lanes
40	Major App1: TH-5 / STILLWATER BLVD EB, W OF CSAH 17 W	2
40	Major App3: TH-5 / STILLWATER BLVD WB, E OF CSAH 17 W	2
0	Minor App2: N/A	0
55	Minor App4: CSAH 17 SB, N OF TH-5	2

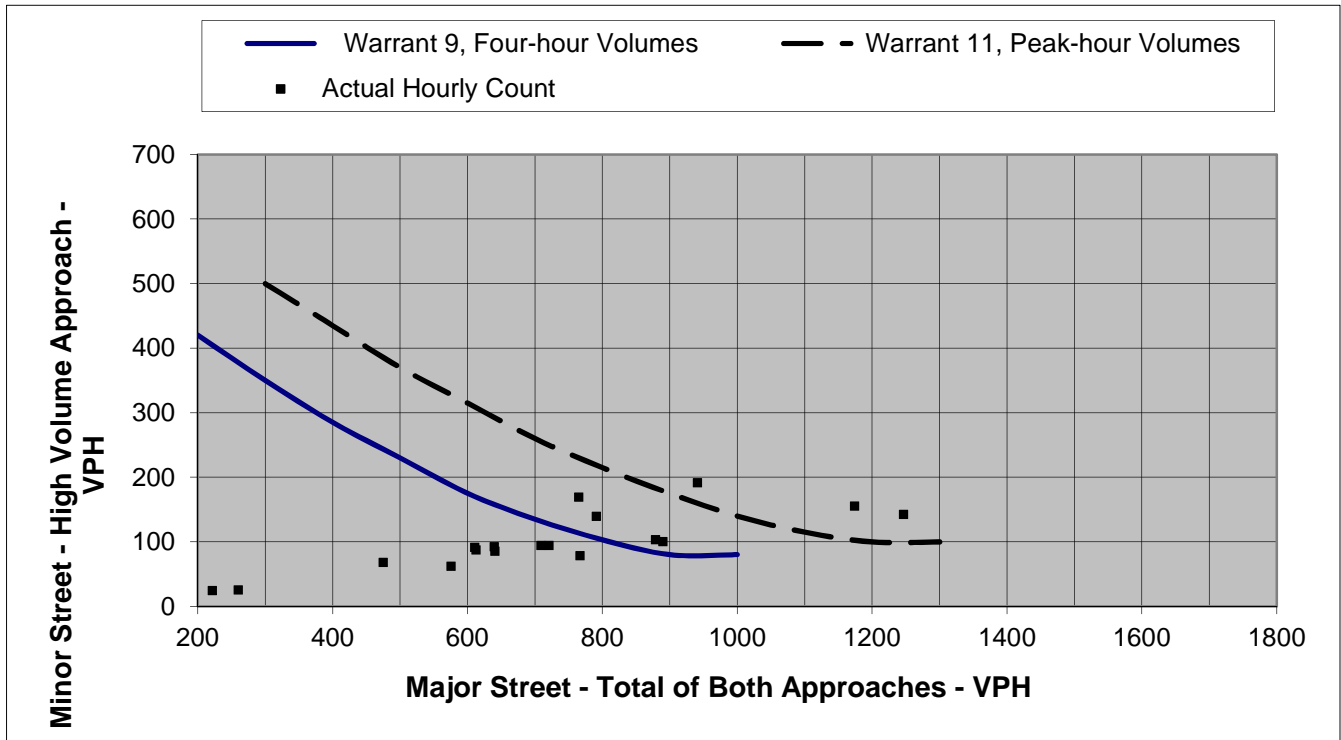


Figure 1. Four Hour and Peak Hour Warrant Analysis

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		68	8
300	350	500	49	7
400	285	435	23	4
500	230	370	17	3
600	175	315	33	8
700	135	260	222	24
800	103	215	611	91
900	80	175	941	191
1000	80	140	765	169
1100		115	613	87
1200		100	640	92
1300		100	709	94
1400			791	139
1500			721	94
1600			767	78
1700			890	100
1800			1174	155
			1247	142
			879	103
			641	85
			576	62
			475	68
			260	25
			157	10

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