



MINNESOTA DEPARTMENT OF TRANSPORTATION

METRO DIVISION - TRAFFIC ENGINEERING

SIGNAL WARRANTS ANALYSIS

LOCATION: TH-5 AT CSAH 19 - GAPLIN BLVD

COUNTY: CARVER

REF. POINT: 043.274

DATE: 2/5/1998

OPERATOR: DR

Speed	Approach Description	Lanes
55	Major App1: TH-5 EB, W OF CSAH 19 - GAPLIN BLVD	3
55	Major App3: TH-5 WB, E OF CSAH-19 - GAPLIN BLVD	3
40	Minor App2: CSAH 19 - GAPLIN BLVD NB, S OF TH-5	3
50	Minor App4: CO RD 117 - GAPLIN BLVD SB, N OF TH-5	2

0.70 FACTOR USED? YES

POPULATION < 10,000? NO

EXISTING SIGNAL ? NO

HOUR	420/630			140/70		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	49	42	91	/	6	3	/	/	/
1:00 - 2:00	48	34	82	/	6	0	/	/	/
2:00 - 3:00	38	25	63	/	3	1	/	/	/
3:00 - 4:00	39	24	63	/	2	2	/	/	/
4:00 - 5:00	119	17	136	/	7	4	/	/	/
5:00 - 6:00	482	82	564	X/	18	17	/	/	/
6:00 - 7:00	934	229	1163	X/X	99	61	/X	/	/X
7:00 - 8:00	1088	389	1477	X/X	152	108	X/X	/X	X/X
8:00 - 9:00	795	324	1119	X/X	120	105	/X	/X	/X
9:00 - 10:00	612	298	910	X/X	127	75	/X	/X	/X
10:00 - 11:00	548	299	847	X/X	92	55	/X	/	/X
11:00 - 12:00	586	368	954	X/X	136	62	/X	/	/X
12:00 - 13:00	583	462	1045	X/X	117	70	/X	/X	/X
13:00 - 14:00	530	475	1005	X/X	102	56	/X	/	/X
14:00 - 15:00	575	558	1133	X/X	114	54	/X	/	/X
15:00 - 16:00	641	794	1435	X/X	187	84	X/X	/X	X/X
16:00 - 17:00	683	879	1562	X/X	214	91	X/X	/X	X/X
17:00 - 18:00	647	833	1480	X/X	199	59	X/X	/	X/X
18:00 - 19:00	507	551	1058	X/X	119	66	/X	/	/X
19:00 - 20:00	312	358	670	X/X	68	35	/	/	/
20:00 - 21:00	263	266	529	X/	47	20	/	/	/
21:00 - 22:00	218	224	442	X/	34	15	/	/	/
22:00 - 23:00	146	155	301	/	23	6	/	/	/
23:00 - 24:00	79	75	154	/	14	3	/	/	/

	Met (Hr)	Required (Hr)	
Warrant 1	4	8	Not satisfied
Warrant 2	13	8	Satisfied
Warrant 6	14	8	Satisfied, check accident record
Warrant 8	10	8	Satisfied
Warrant 9	12	4	Satisfied
Warrant 11	6	1	Satisfied

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OPERATOR: DR

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

Speed	Approach Description	Lanes
55	Major App1: TH-5 EB, W OF CSAH 19 - GAPLIN BLVD	3
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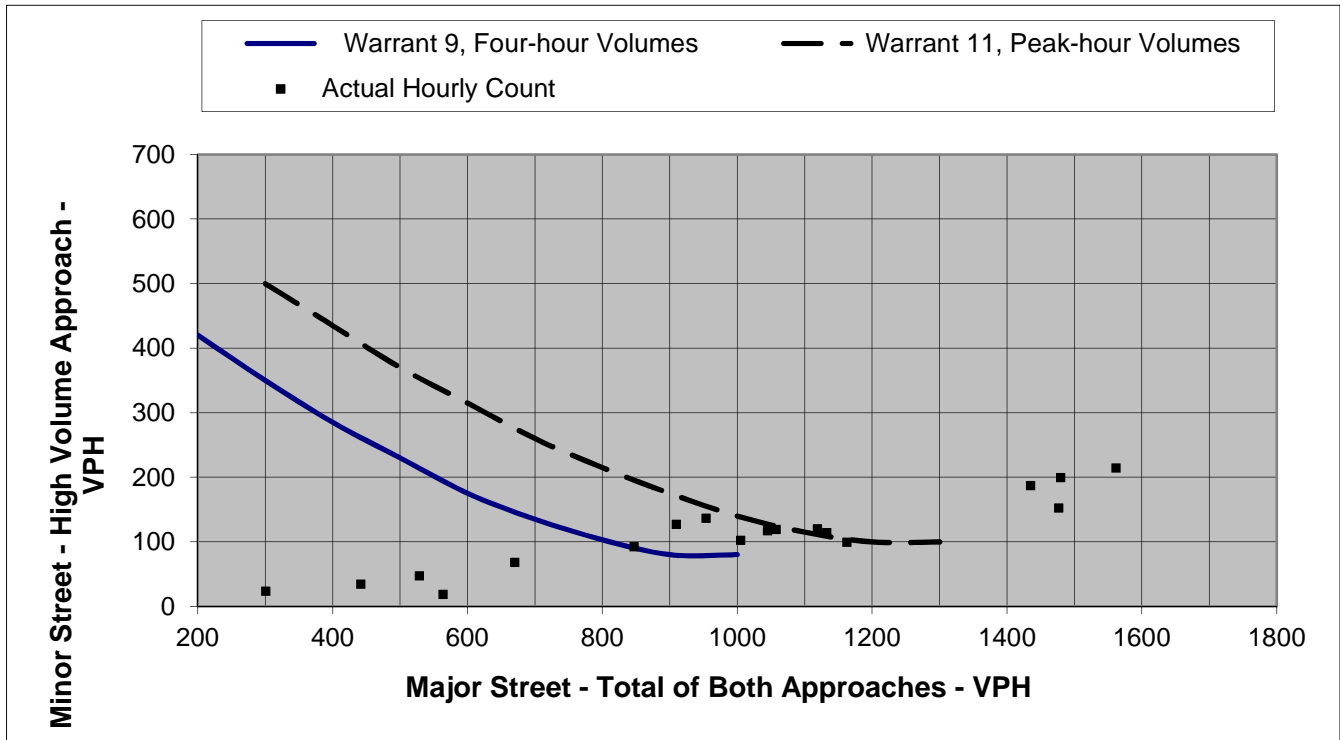


Figure 1. Four Hour and Peak Hour Warrant Analysis

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		91	6
300	350	500	82	6
400	285	435	63	3
500	230	370	63	2
600	175	315	136	7
700	135	260	564	18
800	103	215	1163	99
900	80	175	1477	152
1000	80	140	1119	120
1100		115	910	127
1200		100	847	92
1300		100	954	136
1400			1045	117
1500			1005	102
1600			1133	114
1700			1435	187
1800			1562	214
			1480	199
			1058	119
			670	68
			529	47
			442	34
			301	23
			154	14

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 CSAH 19 - GAPLIN BLVD

COUNTY: CARVER

REF. POINT: 043.274

DATE: 2/5/1998

OPERATOR: DR

Speed	Approach Description	Lanes
55	Major App1: TH-5 EB, W OF CSAH 19 - GAPLIN BLVD	3
55	Major App3: TH-5 WB, E OF CSAH-19 - GAPLIN BLVD	3
40	Minor App2: CSAH 19 - GAPLIN BLVD NB, S OF TH-5	3
50	Minor App4: CO RD 117 - GAPLIN BLVD SB, N OF TH-5	2

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	49	42	6	3	100	9	/
1:00 - 2:00	48	34	6	0	88	6	/
2:00 - 3:00	38	25	3	1	67	4	/
3:00 - 4:00	39	24	2	2	67	4	/
4:00 - 5:00	119	17	7	4	147	11	/
5:00 - 6:00	482	82	18	17	599	35	X/
6:00 - 7:00	934	229	99	61	1323	160	X/X
7:00 - 8:00	1088	389	152	108	1737	260	X/X
8:00 - 9:00	795	324	120	105	1344	225	X/X
9:00 - 10:00	612	298	127	75	1112	202	X/X
10:00 - 11:00	548	299	92	55	994	147	X/X
11:00 - 12:00	586	368	136	62	1152	198	X/X
12:00 - 13:00	583	462	117	70	1232	187	X/X
13:00 - 14:00	530	475	102	56	1163	158	X/X
14:00 - 15:00	575	558	114	54	1301	168	X/X
15:00 - 16:00	641	794	187	84	1706	271	X/X
16:00 - 17:00	683	879	214	91	1867	305	X/X
17:00 - 18:00	647	833	199	59	1738	258	X/X
18:00 - 19:00	507	551	119	66	1243	185	X/X
19:00 - 20:00	312	358	68	35	773	103	X/
20:00 - 21:00	263	266	47	20	596	67	X/
21:00 - 22:00	218	224	34	15	491	49	X/
22:00 - 23:00	146	155	23	6	330	29	/
23:00 - 24:00	79	75	14	3	171	17	/

Met (Hr) Required (Hr)

Allway Stop Warrant: **13** 8 **Satisfied**

REMARKS: _____

