



MINNESOTA DEPARTMENT OF TRANSPORTATION

METRO DIVISION - TRAFFIC ENGINEERING

SIGNAL WARRANTS ANALYSIS

LOCATION: TH-8 AT TH-61 N RAMPS
 COUNTY: WASHINGTON
 REF. POINT: 001.078
 DATE: 10/31/1995
 OPERATOR: DR

Speed	Approach Description	Lanes
45	Major App1: TH-61 NB, S OF N RAMPS OF TH-8	3
45	Major App3: TH-61 SB, N OF N RAMPS OF TH-8	3
30	Minor App2: FOREST RD / TH-61 CENNECTION EB, W OF TH-	2
30	Minor App4: TH-8 WB RAMP TO TH-61	2

0.70 FACTOR USED? YES
 POPULATION < 10,000? YES
 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	20	9	29	/	11	4	/	/	/
1:00 - 2:00	15	12	27	/	5	6	/	/	/
2:00 - 3:00	5	9	14	/	1	7	/	/	/
3:00 - 4:00	8	15	23	/	3	6	/	/	/
4:00 - 5:00	13	39	52	/	1	21	/	/	/
5:00 - 6:00	37	145	182	/	2	66	/	/	/
6:00 - 7:00	119	361	480	X/	25	123	/	/X	/
7:00 - 8:00	163	410	573	X/	40	150	/	X/X	X/
8:00 - 9:00	125	292	417	/	36	187	/	X/X	/
9:00 - 10:00	175	276	451	X/	19	156	/	X/X	X/
10:00 - 11:00	180	219	399	/	19	131	/	/X	/
11:00 - 12:00	181	262	443	X/	14	173	/	X/X	X/
12:00 - 13:00	213	267	480	X/	24	178	/	X/X	X/
13:00 - 14:00	245	260	505	X/	28	158	/	X/X	X/
14:00 - 15:00	304	232	536	X/	28	147	/	X/X	X/
15:00 - 16:00	376	324	700	X/X	90	183	/X	X/X	X/X
16:00 - 17:00	463	339	802	X/X	130	193	/X	X/X	X/X
17:00 - 18:00	402	293	695	X/X	132	152	/X	X/X	X/X
18:00 - 19:00	230	243	473	X/	70	115	/X	/X	/
19:00 - 20:00	198	178	376	/	34	62	/	/	/
20:00 - 21:00	171	100	271	/	34	52	/	/	/
21:00 - 22:00	119	74	193	/	18	40	/	/	/
22:00 - 23:00	63	43	106	/	16	25	/	/	/
23:00 - 24:00	28	18	46	/	18	15	/	/	/

	Met (Hr)	Required (Hr)	
Warrant 1	9	8	Satisfied
Warrant 2	3	8	Not satisfied
Warrant 6	13	8	Satisfied, check accident record
Warrant 8	6	8	Not satisfied
Warrant 9	3	4	Not satisfied
Warrant 11	0	1	Not satisfied

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 EXISTING SIGNAL ? NO

Speed	Approach Description	Lanes
45	Major App1: TH-61 NB, S OF N RAMPS OF TH-8	3
45	Major App3: TH-61 SB, N OF N RAMPS OF TH-8	3
30	Minor App2: FOREST RD / TH-61 CENNECTION EB, W OF TH-	2
30	Minor App4: TH-8 WB RAMP TO TH-61	2

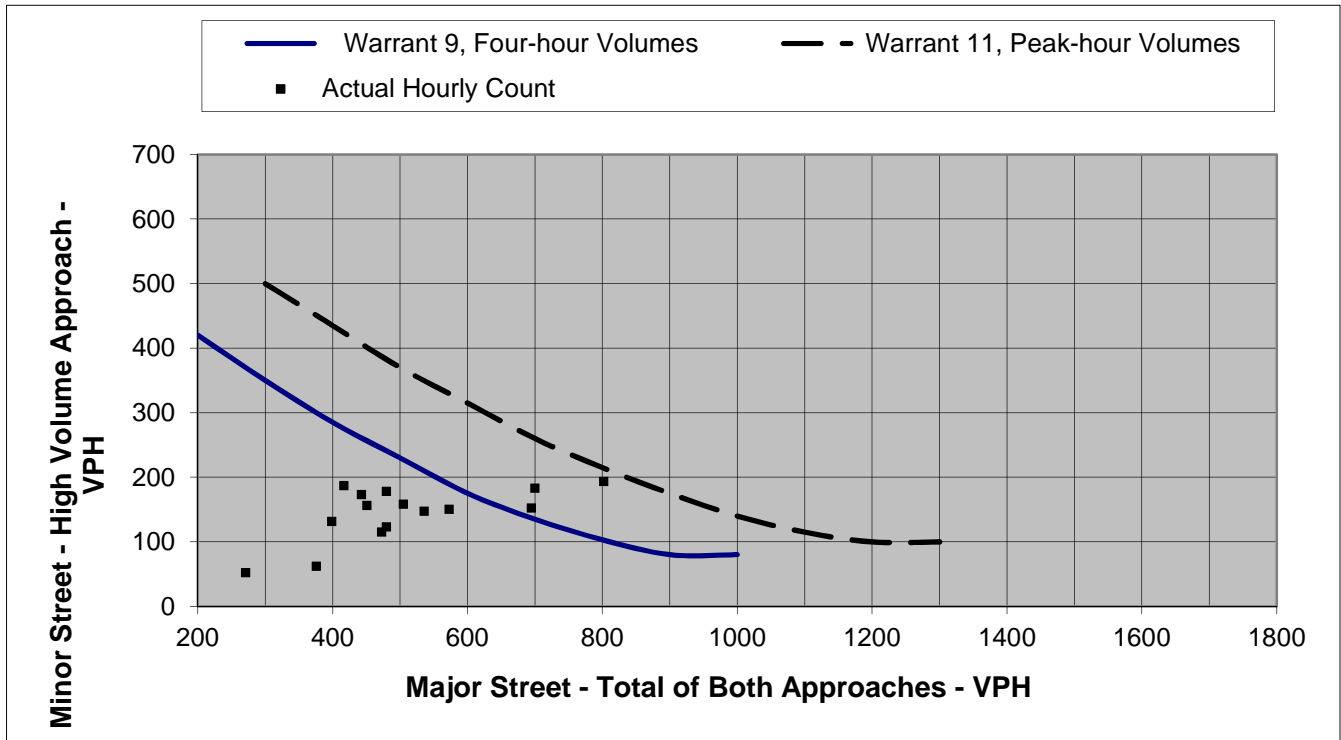


Figure 1. Four Hour and Peak Hour Warrant Analysis

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		29	11
300	350	500	27	6
400	285	435	14	7
500	230	370	23	6
600	175	315	52	21
700	135	260	182	66
800	103	215	480	123
900	80	175	573	150
1000	80	140	417	187
1100		115	451	156
1200		100	399	131
1300		100	443	173
1400			480	178
1500			505	158
1600			536	147
1700			700	183
1800			802	193
			695	152
			473	115
			376	62
			271	52
			193	40
			106	25
			46	18

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-8 AT TH-61 N RAMPS

COUNTY: WASHINGTON

REF. POINT: 001.078

DATE: 10/31/1995

OPERATOR: DR

Speed	Approach Description	Lanes
45	Major App1: TH-61 NB, S OF N RAMPS OF TH-8	3
45	Major App3: TH-61 SB, N OF N RAMPS OF TH-8	3
30	Minor App2: FOREST RD / TH-61 CENNECTION EB, W OF TH	2
30	Minor App4: TH-8 WB RAMP TO TH-61	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	20	9	11	4	44	15	/
1:00 - 2:00	15	12	5	6	38	11	/
2:00 - 3:00	5	9	1	7	22	8	/
3:00 - 4:00	8	15	3	6	32	9	/
4:00 - 5:00	13	39	1	21	74	22	/
5:00 - 6:00	37	145	2	66	250	68	/
6:00 - 7:00	119	361	25	123	628	148	X/X
7:00 - 8:00	163	410	40	150	763	190	X/X
8:00 - 9:00	125	292	36	187	640	223	X/X
9:00 - 10:00	175	276	19	156	626	175	X/X
10:00 - 11:00	180	219	19	131	549	150	X/X
11:00 - 12:00	181	262	14	173	630	187	X/X
12:00 - 13:00	213	267	24	178	682	202	X/X
13:00 - 14:00	245	260	28	158	691	186	X/X
14:00 - 15:00	304	232	28	147	711	175	X/X
15:00 - 16:00	376	324	90	183	973	273	X/X
16:00 - 17:00	463	339	130	193	1125	323	X/X
17:00 - 18:00	402	293	132	152	979	284	X/X
18:00 - 19:00	230	243	70	115	658	185	X/X
19:00 - 20:00	198	178	34	62	472	96	X/
20:00 - 21:00	171	100	34	52	357	86	X/
21:00 - 22:00	119	74	18	40	251	58	/
22:00 - 23:00	63	43	16	25	147	41	/
23:00 - 24:00	28	18	18	15	79	33	/

Met (Hr) Required (Hr)

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

REMARKS: _____

