



# MINNESOTA DEPARTMENT OF TRANSPORTATION

## METRO DIVISION - TRAFFIC ENGINEERING

### SIGNAL WARRANTS ANALYSIS

LOCATION: TH 65 AT FIRESIDE DR NE IN FRIDLEY

COUNTY: ANOKA

REF. POINT: 008+00.861

DATE: 6/2/2004

OPERATOR: MAR

Speed	Approach Description	Lanes
50	Major App1: TH 65 NB	4
50	Major App3: TH 65 SB	4
30	Minor App2: FIRESIDE DR NE WB	2
10	Minor App4: TRAILER CT DRIVEWAY	2

0.70 FACTOR USED?

YES

POPULATION < 10,000?

EXISTING SIGNAL ?

THRESHOLDS 1A/1B:

420/630

140/70

140/70

HOUR	MAJOR APP. 1	MAJOR APP. 3	TOTAL 1+3	MAJOR 1A/1B	MINOR APP. 2	MINOR 2 1A/1B	MINOR APP. 4	MINOR 4 1A/1B	MET SAME 1A/1B
0:00 - 1:00	179	104	283	/	13	/	12	/	/
1:00 - 2:00	122	85	207	/	10	/	14	/	/
2:00 - 3:00	99	86	185	/	6	/	13	/	/
3:00 - 4:00	62	89	151	/	8	/	10	/	/
4:00 - 5:00	86	300	386	/	14	/	13	/	/
5:00 - 6:00	219	1026	1245	X/X	16	/	40	/	/
6:00 - 7:00	499	1835	2334	X/X	14	/	31	/	/
7:00 - 8:00	754	2072	2826	X/X	18	/	56	/	/
8:00 - 9:00	715	1417	2132	X/X	21	/	56	/	/
9:00 - 10:00	824	1067	1891	X/X	40	/	54	/	/
10:00 - 11:00	892	872	1764	X/X	40	/	48	/	/
11:00 - 12:00	1117	1003	2120	X/X	50	/	42	/	/
12:00 - 13:00	1144	1072	2216	X/X	60	/	43	/	/
13:00 - 14:00	1120	1009	2129	X/X	45	/	46	/	/
14:00 - 15:00	1423	1035	2458	X/X	49	/	45	/	/
15:00 - 16:00	1904	1061	2965	X/X	94	/X	48	/	/X
16:00 - 17:00	1983	992	2975	X/X	80	/X	57	/	/X
17:00 - 18:00	1984	1022	3006	X/X	65	/	58	/	/
18:00 - 19:00	1408	949	2357	X/X	52	/	61	/	/
19:00 - 20:00	961	770	1731	X/X	40	/	54	/	/
20:00 - 21:00	810	731	1541	X/X	36	/	50	/	/
21:00 - 22:00	686	600	1286	X/X	31	/	44	/	/
22:00 - 23:00	505	414	919	X/X	21	/	35	/	/
23:00 - 24:00	305	215	520	X/	10	/	22	/	/

Met (Hr)      Required (Hr)

Warrant 1A	0	8	Not satisfied
Warrant 1B	2	8	Not satisfied
Warrant 2	2	4	Not satisfied
Warrant 3	0	1	Not satisfied
Warrant 7	7	8	Not satisfied

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	115
1400	80	80	115
1500	80	80	115
1600	80	80	115
1700	80	80	115
1800	80	80	115

Peak Hour Warrant

Major App	Minor App		
	1 & 1	2 & 1	2 & 2
400	475	570	725
500	425	520	665
600	370	465	600
700	330	420	540
800	280	370	480
900	240	330	425
1000	204	285	375
1100	175	250	330
1200	150	220	285
1300	130	190	250
1400	115	160	220
1500	100	140	187
1600	100	115	165
1700	100	100	150
1800	100	100	150

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
1100	60	60	80
1200	60	60	80
1300	60	60	80
1400	60	60	80
1500	60	60	80
1600	60	60	80
1700	60	60	80
1800	60	60	80

Peak Hour Warrant Factored

Major App	Minor App		
	1 & 1	2 & 1	2 & 2
300	320	380	500
400	270	335	435
500	225	285	370
600	180	240	315
700	145	200	260
800	115	160	215
900	90	135	175
1000	75	110	140
1100	75	95	115
1200	75	75	100
1300	75	75	100
1400	75	75	100
1500	75	75	100
1600	75	75	100
1700	75	75	100
1800	75	75	100

LOCATION: TH 65 AT FIRESIDE DR NE IN FRIDLEY  
 COUNTY: ANOKA

REF. POINT: 008+00.861  
 DATE: 6/2/2004

OPERATOR: MAR

Speed	Approach Description	Lanes
50	Major App1: TH 65 NB	4
50	Major App3: TH 65 SB	4
30	Minor App2: FIRESIDE DR NE WB	2
10	Minor App4: TRAILER CT DRIVEWAY	2

0.70 FACTOR USED? YES  
 POPULATION < 10,000? N  
 EXISTING SIGNAL ? N

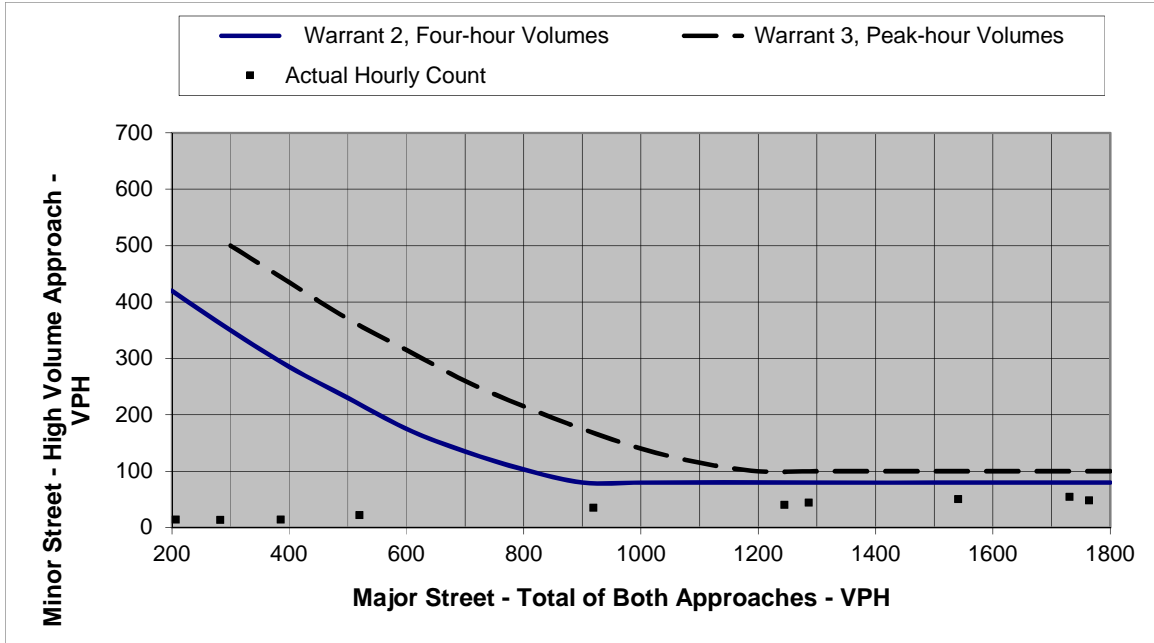


Figure 1. Four Hour and Peak Hour Warrant Analysis

Note: For data points outside the graph range, check the minor street volume against the lower thresholds

Major	Warrant Criteria		Actual Hourly Count	
	Warrant 2, F	Warrant 3, Pe	Major	Actual Hourly Count
200	420		283	13
300	350	500	207	14
400	285	435	185	13
500	230	370	151	10
600	175	315	386	14
700	135	260	1245	40
800	103	215	2334	31
900	80	175	2826	56
1000	80	140	2132	56
1100	80	115	1891	54
1200	80	100	1764	48
1300	80	100	2120	50
1400	80	100	2216	60
1500	80	100	2129	46
1600	80	100	2458	49
1700	80	100	2965	94
1800	80	100	2975	80
			3006	65
			2357	61
			1731	54
			1541	50
			1286	44
			919	35
			520	22



# MINNESOTA DEPARTMENT OF TRANSPORTATION

## METRO DIVISION - TRAFFIC ENGINEERING

### ALL WAY STOP WARRANT

LOCATION: TH 65 AT FIRESIDE DR NE IN FRIDLEY

COUNTY: ANOKA

REF. POINT: 008+00.861

DATE: 6/2/2004

OPERATOR: MAR

Speed	Approach Description	Lanes
50	Major App1: TH 65 NB	4
50	Major App3: TH 65 SB	4
30	Minor App2: FIRESIDE DR NE WB	2
10	Minor App4: TRAILER CT DRIVEWAY	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	179	104	13		296	13	/
1:00 - 2:00	122	85	10		217	10	/
2:00 - 3:00	99	86	6		191	6	/
3:00 - 4:00	62	89	8		159	8	/
4:00 - 5:00	86	300	14		400	14	X/
5:00 - 6:00	219	1026	16		1261	16	X/
6:00 - 7:00	499	1835	14		2348	14	X/
7:00 - 8:00	754	2072	18		2844	18	X/
8:00 - 9:00	715	1417	21		2153	21	X/
9:00 - 10:00	824	1067	40		1931	40	X/
10:00 - 11:00	892	872	40		1804	40	X/
11:00 - 12:00	1117	1003	50		2170	50	X/
12:00 - 13:00	1144	1072	60		2276	60	X/
13:00 - 14:00	1120	1009	45		2174	45	X/
14:00 - 15:00	1423	1035	49		2507	49	X/
15:00 - 16:00	1904	1061	94		3059	94	X/
16:00 - 17:00	1983	992	80		3055	80	X/
17:00 - 18:00	1984	1022	65		3071	65	X/
18:00 - 19:00	1408	949	52		2409	52	X/
19:00 - 20:00	961	770	40		1771	40	X/
20:00 - 21:00	810	731	36		1577	36	X/
21:00 - 22:00	686	600	31		1317	31	X/
22:00 - 23:00	505	414	21		940	21	X/
23:00 - 24:00	305	215	10		530	10	X/

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

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