



MINNESOTA DEPARTMENT OF TRANSPORTATION

METRO DIVISION - TRAFFIC ENGINEERING

SIGNAL WARRANTS ANALYSIS

LOCATION: TH 8 @ TH 95 N IN TAYLERS FALLS

COUNTY: CHISAGO

REF. POINT: 22.071

DATE: 12/4/2000

OPERATOR: M.A.R.

Speed	Approach Description	Lanes
30	Major App1: TH 8 EAST BOUND	2
30	Major App3: TH 8 WEST BOUND	2
30	Minor App2: TH 95 N SOUTH BOUND	3
0	Minor App4: 0	0

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

HOUR	MAJOR APP. 1	MAJOR APP. 3	TOTAL 1+3	600/900		200/100		0/0		MET SAME HOURS
				WARRANT MET	MINOR APP. 2	MINOR APP. 4	WARRANT MET APP. 2	WARRANT MET APP. 4		
0:00 - 1:00	52	17	69	/	4	0	/	/	/	
1:00 - 2:00	31	23	54	/	5	0	/	/	/	
2:00 - 3:00	18	38	56	/	8	0	/	/	/	
3:00 - 4:00	16	50	66	/	8	0	/	/	/	
4:00 - 5:00	32	158	190	/	23	0	/	/	/	
5:00 - 6:00	52	418	470	/	45	0	/	/	/	
6:00 - 7:00	116	441	557	/	101	0	/X	/	/	
7:00 - 8:00	214	443	657	X/	121	0	/X	/	/	
8:00 - 9:00	162	416	578	/	118	0	/X	/	/	
9:00 - 10:00	224	362	586	/	101	0	/X	/	/	
10:00 - 11:00	218	380	598	/	106	0	/X	/	/	
11:00 - 12:00	215	393	608	X/	121	0	/X	/	/	
12:00 - 13:00	236	396	632	X/	124	0	/X	/	/	
13:00 - 14:00	241	403	644	X/	123	0	/X	/	/	
14:00 - 15:00	296	394	690	X/	129	0	/X	/	/	
15:00 - 16:00	462	275	737	X/	89	0	/	/	/	
16:00 - 17:00	533	481	1014	X/X	138	0	/X	/	/X	
17:00 - 18:00	458	383	841	X/	135	0	/X	/	/	
18:00 - 19:00	276	246	522	/	99	0	/	/	/	
19:00 - 20:00	187	195	382	/	86	0	/	/	/	
20:00 - 21:00	136	127	263	/	50	0	/	/	/	
21:00 - 22:00	123	108	231	/	43	0	/	/	/	
22:00 - 23:00	80	85	165	/	23	0	/	/	/	
23:00 - 24:00	82	45	127	/	11	0	/	/	/	

	Met (Hr)	Required (Hr)	
Warrant 1	0	8	Not satisfied
Warrant 2	1	8	Not satisfied
Warrant 6	3	8	Not satisfied
Warrant 8	0	8	Not satisfied
Warrant 9	0	4	Not satisfied
Warrant 11	0	1	Not satisfied

LOCATION: TH 8 @ TH 95 N IN TAYLERS FALLS

COUNTY: CHISAGO

REF. POINT: 22.071

DATE: 12/4/2000

OPERATOR: M.A.R.

Speed	Approach Description	Lanes
30	Major App1: TH 8 EAST BOUND	2
30	Major App3: TH 8 WEST BOUND	2
30	Minor App2: TH 95 N SOUTH BOUND	3
0	Minor App4: 0	0

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

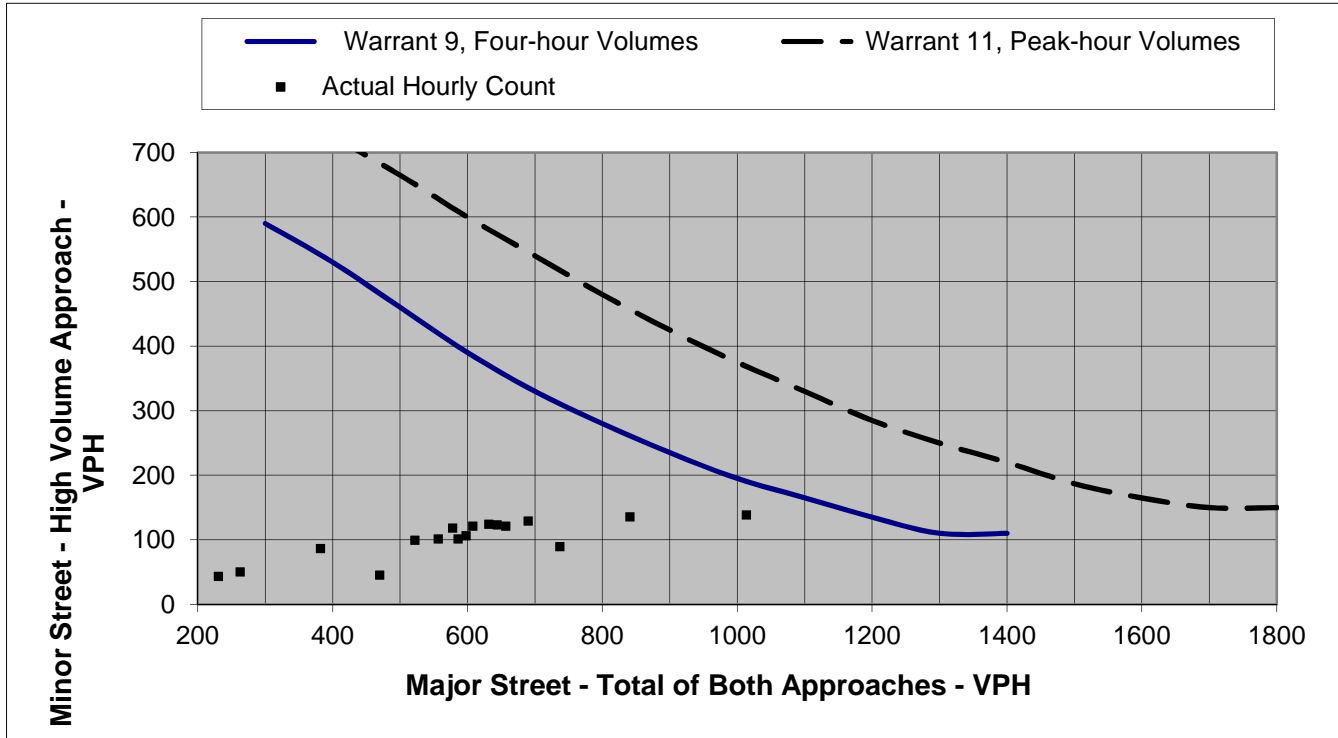


Figure 1. Four Hour and Peak Hour Warrant Analysis

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			69	4
300	590		54	5
400	530	725	56	8
500	460	665	66	8
600	390	600	190	23
700	330	540	470	45
800	280	480	557	101
900	235	425	657	121
1000	195	375	578	118
1100	165	330	586	101
1200	135	285	598	106
1300	110	250	608	121
1400	110	220	632	124
1500		187	644	123
1600		165	690	129
1700		150	737	89
1800		150	1014	138
			841	135
			522	99
			382	86
			263	50
			231	43
			165	23
			127	11

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 @ TH 95 N IN TAYLERS FALLS

COUNTY: CHISAGO

REF. POINT: 22.071

DATE: 12/4/2000

OPERATOR: M.A.R.

Speed	Approach Description	Lanes
30	Major App1: TH 8 EAST BOUND	2
30	Major App3: TH 8 WEST BOUND	2
30	Minor App2: TH 95 N SOUTH BOUND	3
0	Minor App4: 0	0

0.70 FACTOR USED? No

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	500	200	WARRANT MET
					TOTAL Σ (APP.1 to APP. 4)	MINOR TOTAL APP. 2 + APP. 4	
0:00 - 1:00	52	17	4	0	73	4	/
1:00 - 2:00	31	23	5	0	59	5	/
2:00 - 3:00	18	38	8	0	64	8	/
3:00 - 4:00	16	50	8	0	74	8	/
4:00 - 5:00	32	158	23	0	213	23	/
5:00 - 6:00	52	418	45	0	515	45	X/
6:00 - 7:00	116	441	101	0	658	101	X/
7:00 - 8:00	214	443	121	0	778	121	X/
8:00 - 9:00	162	416	118	0	696	118	X/
9:00 - 10:00	224	362	101	0	687	101	X/
10:00 - 11:00	218	380	106	0	704	106	X/
11:00 - 12:00	215	393	121	0	729	121	X/
12:00 - 13:00	236	396	124	0	756	124	X/
13:00 - 14:00	241	403	123	0	767	123	X/
14:00 - 15:00	296	394	129	0	819	129	X/
15:00 - 16:00	462	275	89	0	826	89	X/
16:00 - 17:00	533	481	138	0	1152	138	X/
17:00 - 18:00	458	383	135	0	976	135	X/
18:00 - 19:00	276	246	99	0	621	99	X/
19:00 - 20:00	187	195	86	0	468	86	/
20:00 - 21:00	136	127	50	0	313	50	/
21:00 - 22:00	123	108	43	0	274	43	/
22:00 - 23:00	80	85	23	0	188	23	/
23:00 - 24:00	82	45	11	0	138	11	/

Met (Hr) Required (Hr)

Allway Stop Warrant: 0 8 Not satisfied

REMARKS: _____



MINNESOTA DEPARTMENT OF TRANSPORTATION

METRO DIVISION - TRAFFIC ENGINEERING

TRAFFIC COUNT DATA

ROUTE #: TH 8 EAST BOUND
 COUNTY: CHISAGO
 REF. PT.: 22.071

SITE CODE: 80379501

OPERATOR: M.A.R.

FOR COUNTS BEGINNING: **December 4, 2000**

DATE HOUR \ DAY	4 MON.	5 TUE.	6 WED.	7 THU.	8 FRI.	9 SAT.	10 SUN.	AVE. WK.DAY	AVE. WKEND
0:00 - 1:00		50	54					52	
1:00 - 2:00		28	35					31	
2:00 - 3:00		24	13					18	
3:00 - 4:00		13	20					16	
4:00 - 5:00		35	29					32	
5:00 - 6:00		42	62					52	
6:00 - 7:00		133	100					116	
7:00 - 8:00		203	226					214	
8:00 - 9:00		219	105					162	
9:00 - 10:00	221	228						224	
10:00 - 11:00	216	220						218	
11:00 - 12:00	217	214						215	
12:00 - 13:00	251	222						236	
13:00 - 14:00	245	238						241	
14:00 - 15:00	292	301						296	
15:00 - 16:00	458	466						462	
16:00 - 17:00	554	512						533	
17:00 - 18:00	470	446						458	
18:00 - 19:00	273	279						276	
19:00 - 20:00	169	206						187	
20:00 - 21:00	131	141						136	
21:00 - 22:00	106	140						123	
22:00 - 23:00	87	74						80	
23:00 - 24:00	79	85						82	
TOTAL	3769	4519	644					4460	

24 HOURS FACTOR:

FACTORED ADT:

REMARKS: _____

CORRECTED AADT: _____

DATA FILE --> a:\89515530



MINNESOTA DEPARTMENT OF TRANSPORTATION

METRO DIVISION - TRAFFIC ENGINEERING

TRAFFIC COUNT DATA

ROUTE #: TH 95 N SOUTH BOUND

COUNTY: CHISAGO

REF. PT.: 22.071

SITE CODE: 80379501

OPERATOR: M.A.R.

FOR COUNTS BEGINNING: **November 27, 2000**

DATE HOUR \ DAY	27 MON.	28 TUE.	29 WED.	30 THU.	1 FRI.	2 SAT.	3 SUN.	AVE. WK.DAY	AVE. WKEND
0:00 - 1:00		4						4	
1:00 - 2:00		5						5	
2:00 - 3:00		8						8	
3:00 - 4:00		8						8	
4:00 - 5:00		23						23	
5:00 - 6:00		45						45	
6:00 - 7:00		101						101	
7:00 - 8:00		121						121	
8:00 - 9:00		118						118	
9:00 - 10:00		101						101	
10:00 - 11:00		106						106	
11:00 - 12:00	129	113						121	
12:00 - 13:00	116	132						124	
13:00 - 14:00	146	101						123	
14:00 - 15:00	144	114						129	
15:00 - 16:00	151	<u>28</u>						89	
16:00 - 17:00	138							138	
17:00 - 18:00	135							135	
18:00 - 19:00	99							99	
19:00 - 20:00	86							86	
20:00 - 21:00	50							50	
21:00 - 22:00	43							43	
22:00 - 23:00	23							23	
23:00 - 24:00	11							11	
TOTAL	1271	1128						1811	

24 HOURS FACTOR:

FACTORED ADT:

REMARKS: _____

CORRECTED AADT: _____

DATA FILE --> a:\95034615



MINNESOTA DEPARTMENT OF TRANSPORTATION

METRO DIVISION - TRAFFIC ENGINEERING

TRAFFIC COUNT DATA

ROUTE #: TH 8 WEST BOUND
 COUNTY: CHISAGO
 REF. PT.: 22.071

SITE CODE: 80379501

OPERATOR: M.A.R.

FOR COUNTS BEGINNING: **November 27, 2000**

DATE	27	28	29	30	1	2	3	AVE.	AVE.
HOUR DAY	MON.	TUE.	WED.	THU.	FRI.	SAT.	SUN.	WK.DAY	WKEND
0:00 - 1:00		17						17	
1:00 - 2:00		23						23	
2:00 - 3:00		38						38	
3:00 - 4:00		50						50	
4:00 - 5:00		158						158	
5:00 - 6:00		418						418	
6:00 - 7:00		441						441	
7:00 - 8:00		443						443	
8:00 - 9:00		416						416	
9:00 - 10:00		362						362	
10:00 - 11:00		380						380	
11:00 - 12:00	437	350						393	
12:00 - 13:00	385	408						396	
13:00 - 14:00	417	389						403	
14:00 - 15:00	382	406						394	
15:00 - 16:00	456	<u>95</u>						275	
16:00 - 17:00	481							481	
17:00 - 18:00	383							383	
18:00 - 19:00	246							246	
19:00 - 20:00	195							195	
20:00 - 21:00	127							127	
21:00 - 22:00	108							108	
22:00 - 23:00	85							85	
23:00 - 24:00	45							45	
TOTAL	3747	4394						6277	

24 HOURS FACTOR:

FACTORED ADT:

REMARKS: _____

CORRECTED AADT: _____

DATA FILE --> a:\89525529



MINNESOTA DEPARTMENT OF TRANSPORTATION

METRO DIVISION - TRAFFIC ENGINEERING

TRAFFIC COUNT DATA

ROUTE #:

COUNTY:

REF. PT.:

SITE CODE:

OPERATOR:

FOR COUNTS BEGINNING:

DATE HOUR \ DAY	MON.	TUE.	WED.	THU.	FRI.	SAT.	SUN.	AVE. WK.DAY	AVE. WKEND
0:00 - 1:00									
1:00 - 2:00									
2:00 - 3:00									
3:00 - 4:00									
4:00 - 5:00									
5:00 - 6:00									
6:00 - 7:00									
7:00 - 8:00									
8:00 - 9:00									
9:00 - 10:00									
10:00 - 11:00									
11:00 - 12:00									
12:00 - 13:00									
13:00 - 14:00									
14:00 - 15:00									
15:00 - 16:00									
16:00 - 17:00									
17:00 - 18:00									
18:00 - 19:00									
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									

TOTAL

24 HOURS FACTOR:

FACTORED ADT:

REMARKS: _____

CORRECTED AADT: _____

DATA FILE -->