



MINNESOTA DEPARTMENT OF TRANSPORTATION

METRO DIVISION - TRAFFIC ENGINEERING

SIGNAL WARRANTS ANALYSIS

LOCATION: TH-95 & CR 64 TANGER DR

COUNTY: CHISAGO

REF. POINT: 054.255

DATE: 3/13/1997

OPERATOR: DR

Speed	Approach Description	Lanes
40	Major App1: TH-95 EB, W OF CR 64 TANGER DR	2
40	Major App3: TH-95 WB, E OF CR 64 TANGER DR	3
30	Minor App2: TANGER DR NB, S OF TH-95	1
55	Minor App4: CR 64 SB, N OF TH-95	1

0.70 FACTOR USED? YES

POPULATION < 10,000? YES

EXISTING SIGNAL ? NO

HOUR	420/630				105/52		105/52		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	16	42	58	/	1	3	/	/	/
1:00 - 2:00	15	25	40	/	3	1	/	/	/
2:00 - 3:00	18	20	38	/	2	2	/	/	/
3:00 - 4:00	26	14	40	/	0	3	/	/	/
4:00 - 5:00	44	22	66	/	2	5	/	/	/
5:00 - 6:00	222	62	284	/	6	34	/	/	/
6:00 - 7:00	339	142	481	X/	7	73	/	/X	/
7:00 - 8:00	401	301	702	X/X	12	86	/	/X	/X
8:00 - 9:00	353	339	692	X/X	30	68	/	/X	/X
9:00 - 10:00	261	304	565	X/	48	50	/	/	/
10:00 - 11:00	228	315	543	X/	76	37	/X	/	/
11:00 - 12:00	252	378	630	X/X	117	50	X/X	/	X/X
12:00 - 13:00	265	380	645	X/X	136	58	X/X	/X	X/X
13:00 - 14:00	256	407	663	X/X	146	49	X/X	/	X/X
14:00 - 15:00	270	417	687	X/X	159	51	X/X	/	X/X
15:00 - 16:00	297	635	932	X/X	168	70	X/X	/X	X/X
16:00 - 17:00	359	698	1057	X/X	177	61	X/X	/X	X/X
17:00 - 18:00	334	680	1014	X/X	154	74	X/X	/X	X/X
18:00 - 19:00	262	428	690	X/X	107	51	X/X	/	X/X
19:00 - 20:00	168	279	447	X/	71	35	/X	/	/
20:00 - 21:00	143	231	374	/	71	31	/X	/	/
21:00 - 22:00	119	198	317	/	80	13	/X	/	/
22:00 - 23:00	78	129	207	/	14	12	/	/	/
23:00 - 24:00	26	79	105	/	5	6	/	/	/

	Met (Hr)	Required (Hr)	
Warrant 1	8	8	Satisfied
Warrant 2	10	8	Satisfied
Warrant 6	12	8	Satisfied, check accident record
Warrant 8	9	8	Satisfied
Warrant 9	7	4	Satisfied
Warrant 11	3	1	Satisfied

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OPERATOR: DR

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

Speed	Approach Description	Lanes
40	Major App1: TH-95 EB, W OF CR 64 TANGER DR	2
40	Major App3: TH-95 WB, E OF CR 64 TANGER DR	3
30	Minor App2: TANGER DR NB, S OF TH-95	1
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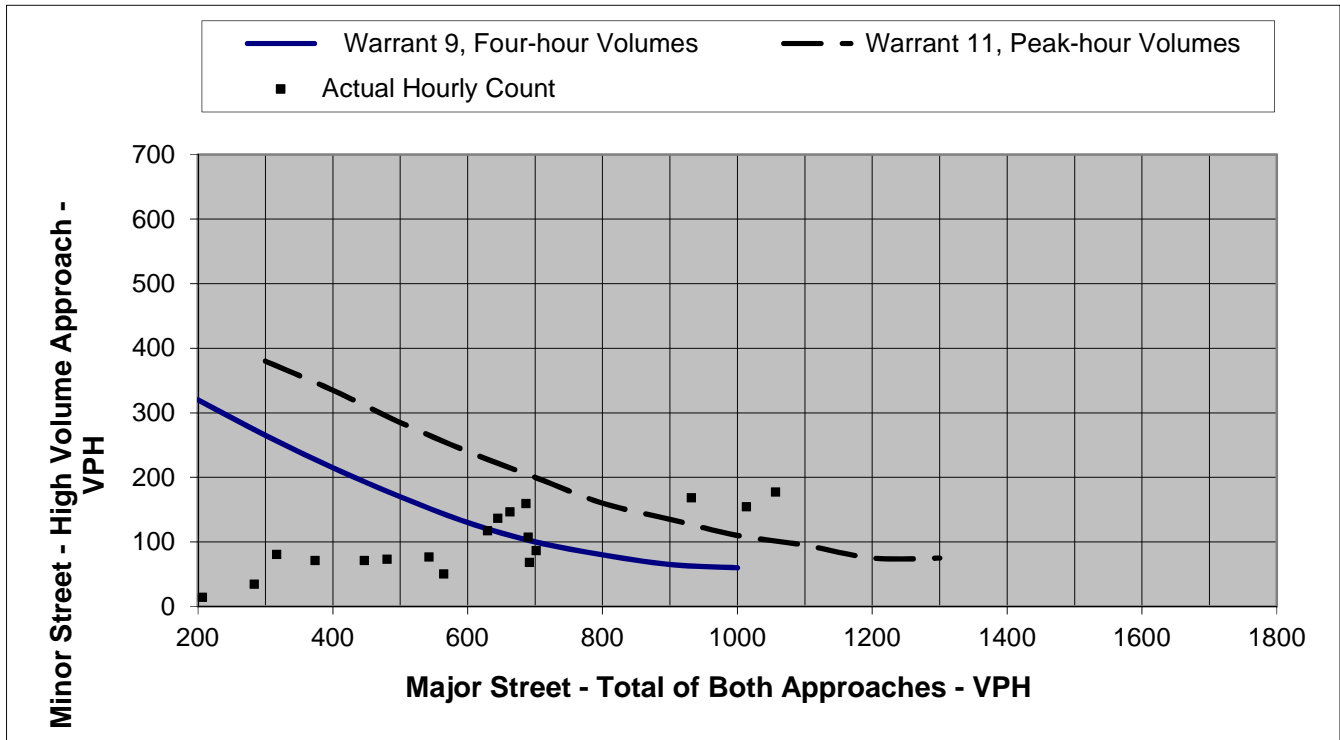


Figure 1. Four Hour and Peak Hour Warrant Analysis

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	320		58	3
300	265	380	40	3
400	215	335	38	2
500	170	285	40	3
600	130	240	66	5
700	100	200	284	34
800	80	160	481	73
900	65	135	702	86
1000	60	110	692	68
1100		95	565	50
1200		75	543	76
1300		75	630	117
1400			645	136
1500			663	146
1600			687	159
1700			932	168
1800			1057	177
			1014	154
			690	107
			447	71
			374	71
			317	80
			207	14
			105	6

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-95 & CR 64 TANGER DR

COUNTY: CHISAGO

REF. POINT: 054.255

DATE: 3/13/1997

OPERATOR: DR

Speed	Approach Description	Lanes
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40	Major App3: TH-95 WB, E OF CR 64 TANGER DR	3
30	Minor App2: TANGER DR NB, S OF TH-95	1
55	Minor App4: CR 64 SB, N OF TH-95	1

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	16	42	1	3	62	4	/
1:00 - 2:00	15	25	3	1	44	4	/
2:00 - 3:00	18	20	2	2	42	4	/
3:00 - 4:00	26	14	0	3	43	3	/
4:00 - 5:00	44	22	2	5	73	7	/
5:00 - 6:00	222	62	6	34	324	40	/
6:00 - 7:00	339	142	7	73	561	80	X/
7:00 - 8:00	401	301	12	86	800	98	X/
8:00 - 9:00	353	339	30	68	790	98	X/
9:00 - 10:00	261	304	48	50	663	98	X/
10:00 - 11:00	228	315	76	37	656	113	X/
11:00 - 12:00	252	378	117	50	797	167	X/X
12:00 - 13:00	265	380	136	58	839	194	X/X
13:00 - 14:00	256	407	146	49	858	195	X/X
14:00 - 15:00	270	417	159	51	897	210	X/X
15:00 - 16:00	297	635	168	70	1170	238	X/X
16:00 - 17:00	359	698	177	61	1295	238	X/X
17:00 - 18:00	334	680	154	74	1242	228	X/X
18:00 - 19:00	262	428	107	51	848	158	X/X
19:00 - 20:00	168	279	71	35	553	106	X/
20:00 - 21:00	143	231	71	31	476	102	X/
21:00 - 22:00	119	198	80	13	410	93	X/
22:00 - 23:00	78	129	14	12	233	26	/
23:00 - 24:00	26	79	5	6	116	11	/

Met (Hr) Required (Hr)

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

REMARKS: _____

