



MINNESOTA DEPARTMENT OF TRANSPORTATION

METRO DIVISION - TRAFFIC ENGINEERING

SIGNAL WARRANTS ANALYSIS

LOCATION: TH-242 & LARCH ST
 COUNTY: ANOKA
 REF. POINT: 005.497
 DATE: 10/27/1997
 OPERATOR: DR

Speed	Approach Description	Lanes
50	Major App1: TH-242 EB, W OF LARCH ST	1
50	Major App3: TH-242 WB, E OF LARCH ST	2
0	Minor App2: N/A	0
30	Minor App4: LARCH ST SB, N OF TH-242	1

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

HOUR	420/630				0/0		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	58	52	110	/	0	2	/	/	/
1:00 - 2:00	39	33	72	/	0	0	/	/	/
2:00 - 3:00	32	26	58	/	0	0	/	/	/
3:00 - 4:00	20	26	46	/	0	0	/	/	/
4:00 - 5:00	46	49	95	/	0	1	/	/	/
5:00 - 6:00	146	169	315	/	0	11	/	/	/
6:00 - 7:00	456	469	925	X/X	0	6	/	/	/
7:00 - 8:00	687	697	1384	X/X	0	9	/	/	/
8:00 - 9:00	488	524	1012	X/X	0	10	/	/	/
9:00 - 10:00	423	428	851	X/X	0	7	/	/	/
10:00 - 11:00	416	428	844	X/X	0	11	/	/	/
11:00 - 12:00	443	454	897	X/X	0	5	/	/	/
12:00 - 13:00	467	470	937	X/X	0	7	/	/	/
13:00 - 14:00	513	462	975	X/X	0	9	/	/	/
14:00 - 15:00	571	632	1203	X/X	0	9	/	/	/
15:00 - 16:00	672	707	1379	X/X	0	10	/	/	/
16:00 - 17:00	788	793	1581	X/X	0	8	/	/	/
17:00 - 18:00	807	859	1666	X/X	0	7	/	/	/
18:00 - 19:00	639	713	1352	X/X	0	14	/	/	/
19:00 - 20:00	500	450	950	X/X	0	8	/	/	/
20:00 - 21:00	424	357	781	X/X	0	6	/	/	/
21:00 - 22:00	349	335	684	X/X	0	6	/	/	/
22:00 - 23:00	195	187	382	/	0	3	/	/	/
23:00 - 24:00	123	88	211	/	0	2	/	/	/

	Met (Hr)	Required (Hr)	
Warrant 1	0	8	Not satisfied
Warrant 2	0	8	Not satisfied
Warrant 6	0	8	Not satisfied
Warrant 8	0	8	Not satisfied
Warrant 9	18	4	Satisfied
Warrant 11	17	1	Satisfied

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OPERATOR: DR

0.70 FACTOR USED? YES

POPULATION < 10,000? NO

EXISTING SIGNAL ? NO

Speed	Approach Description	Lanes
50	Major App1: TH-242 EB, W OF LARCH ST	1
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0	Minor App2: N/A	0
30	Minor App4: LARCH ST SB, N OF TH-242	1

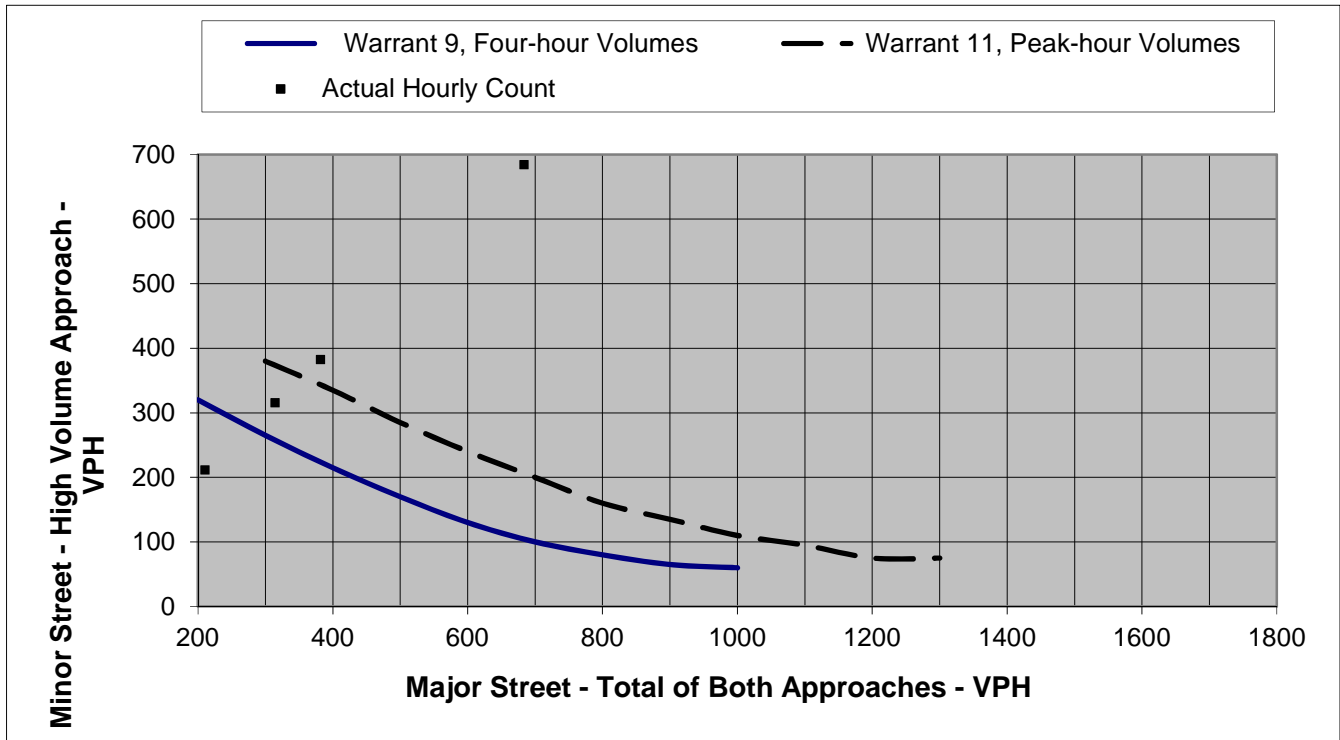


Figure 1. Four Hour and Peak Hour Warrant Analysis

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		110	110
300	265	380	72	72
400	215	335	58	58
500	170	285	46	46
600	130	240	95	95
700	100	200	315	315
800	80	160	925	925
900	65	135	1384	1384
1000	60	110	1012	1012
1100		95	851	851
1200		75	844	844
1300		75	897	897
1400			937	937
1500			975	975
1600			1203	1203
1700			1379	1379
1800			1581	1581
			1666	1666
			1352	1352
			950	950
			781	781
			684	684
			382	382
			211	211

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-242 & LARCH ST

COUNTY: ANOKA

REF. POINT: 005.497

DATE: 10/27/1997

OPERATOR: DR

Speed	Approach Description	Lanes
50	Major App1: TH-242 EB, W OF LARCH ST	1
50	Major App3: TH-242 WB, E OF LARCH ST	2
0	Minor App2: N/A	0
30	Minor App4: LARCH ST SB, N OF TH-242	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	58	52	0	2	112	2	/
1:00 - 2:00	39	33	0	0	72	0	/
2:00 - 3:00	32	26	0	0	58	0	/
3:00 - 4:00	20	26	0	0	46	0	/
4:00 - 5:00	46	49	0	1	96	1	/
5:00 - 6:00	146	169	0	11	326	11	/
6:00 - 7:00	456	469	0	6	931	6	X/
7:00 - 8:00	687	697	0	9	1393	9	X/
8:00 - 9:00	488	524	0	10	1022	10	X/
9:00 - 10:00	423	428	0	7	858	7	X/
10:00 - 11:00	416	428	0	11	855	11	X/
11:00 - 12:00	443	454	0	5	902	5	X/
12:00 - 13:00	467	470	0	7	944	7	X/
13:00 - 14:00	513	462	0	9	984	9	X/
14:00 - 15:00	571	632	0	9	1212	9	X/
15:00 - 16:00	672	707	0	10	1389	10	X/
16:00 - 17:00	788	793	0	8	1589	8	X/
17:00 - 18:00	807	859	0	7	1673	7	X/
18:00 - 19:00	639	713	0	14	1366	14	X/
19:00 - 20:00	500	450	0	8	958	8	X/
20:00 - 21:00	424	357	0	6	787	6	X/
21:00 - 22:00	349	335	0	6	690	6	X/
22:00 - 23:00	195	187	0	3	385	3	X/
23:00 - 24:00	123	88	0	2	213	2	/

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

REMARKS: _____