



# MINNESOTA DEPARTMENT OF TRANSPORTATION

## METRO DIVISION - TRAFFIC ENGINEERING

### SIGNAL WARRANTS ANALYSIS

LOCATION: TH-55 & NIAGRA LN/PLYMOUTH BLVD

COUNTY: HENNEPIN

REF. POINT: 179.737

DATE: 3/6/1995

OPERATOR: DR

Speed	Approach Description	Lanes
55	Major App1: TH-55 EB, W OF NIAGRA LN	4
55	Major App3: TH-55 WB, E OF PLYMOUTH BLVD	4
45	Minor App2: NIAGRA LN NB, S OF TH-55	3
35	Minor App4: PLYMOUTH BLVD SB, N OF TH-55	3

0.70 FACTOR USED? YES

POPULATION < 10,000? NO

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	39	99	138	/	28	5	/	/	/
1:00 - 2:00	33	89	122	/	16	3	/	/	/
2:00 - 3:00	22	43	65	/	24	6	/	/	/
3:00 - 4:00	45	46	91	/	6	3	/	/	/
4:00 - 5:00	139	79	218	/	10	7	/	/	/
5:00 - 6:00	558	221	779	X/X	13	1	/	/	/
6:00 - 7:00	1523	545	2068	X/X	54	144	/	X/X	X/X
7:00 - 8:00	2007	775	2782	X/X	121	262	/X	X/X	X/X
8:00 - 9:00	1249	680	1929	X/X	133	174	/X	X/X	X/X
9:00 - 10:00	752	616	1368	X/X	156	146	X/X	X/X	X/X
10:00 - 11:00	609	648	1257	X/X	169	146	X/X	X/X	X/X
11:00 - 12:00	659	721	1380	X/X	265	182	X/X	X/X	X/X
12:00 - 13:00	694	884	1578	X/X	298	285	X/X	X/X	X/X
13:00 - 14:00	614	889	1503	X/X	194	256	X/X	X/X	X/X
14:00 - 15:00	722	985	1707	X/X	224	272	X/X	X/X	X/X
15:00 - 16:00	773	1436	2209	X/X	532	300	X/X	X/X	X/X
16:00 - 17:00	787	1595	2382	X/X	555	342	X/X	X/X	X/X
17:00 - 18:00	716	1695	2411	X/X	476	287	X/X	X/X	X/X
18:00 - 19:00	494	1024	1518	X/X	157	117	X/X	/X	X/X
19:00 - 20:00	321	655	976	X/X	71	6	/X	/	/X
20:00 - 21:00	222	517	739	X/X	44	55	/	/	/
21:00 - 22:00	242	495	737	X/X	38	41	/	/	/
22:00 - 23:00	191	312	503	X/	26	22	/	/	/
23:00 - 24:00	100	192	292	/	38	15	/	/	/

	Met (Hr)	Required (Hr)	
Warrant 1	13	8	Satisfied
Warrant 2	14	8	Satisfied
Warrant 6	14	8	Satisfied, check accident record
Warrant 8	13	8	Satisfied
Warrant 9	13	4	Satisfied
Warrant 11	13	1	Satisfied

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

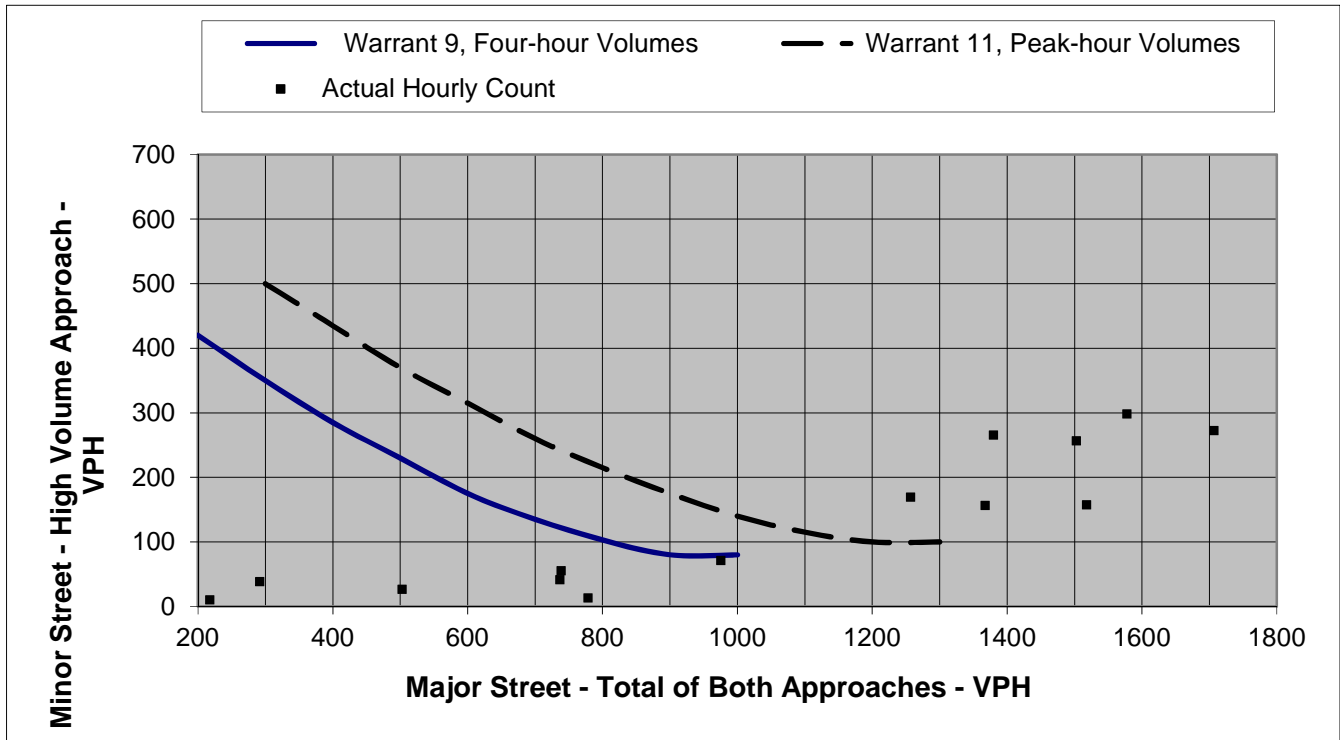


Figure 1. Four Hour and Peak Hour Warrant Analysis

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		138	28
300	350	500	122	16
400	285	435	65	24
500	230	370	91	6
600	175	315	218	10
700	135	260	779	13
800	103	215	2068	144
900	80	175	2782	262
1000	80	140	1929	174
1100		115	1368	156
1200		100	1257	169
1300		100	1380	265
1400			1578	298
1500			1503	256
1600			1707	272
1700			2209	532
1800			2382	555
			2411	476
			1518	157
			976	71
			739	55
			737	41
			503	26
			292	38

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