



MINNESOTA DEPARTMENT OF TRANSPORTATION

METRO DIVISION - TRAFFIC ENGINEERING

SIGNAL WARRANTS ANALYSIS

LOCATION: TH-952A UNIVERSITY AVE & CAPITAL BLVD

COUNTY: RAMSEY

REF. POINT: 132.352

DATE: 4/13/1998

OPERATOR: DR

Speed	Approach Description	Lanes
30	Major App1: UNIVERSITY AVE EB, W OF CAPITAL BLVD (ST F	2
30	Major App3: UNIVERSITY AVE WB, E OF CAPITAL BLVD (ST F	3
0	Minor App2: N/A	0
30	Minor App4: CAPITAL BLVD SB, N OF UNIVERSITY AVE (ST P	1

0.70 FACTOR USED? NO

POPULATION < 10,000? NO

EXISTING SIGNAL ? NO

HOUR	600/900			0/0			150/75		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	64	59	123	/	2	0	X/X	/	/
1:00 - 2:00	49	40	89	/	1	0	X/X	/	/
2:00 - 3:00	33	25	58	/	1	0	X/X	/	/
3:00 - 4:00	29	21	50	/	1	0	X/X	/	/
4:00 - 5:00	25	32	57	/	1	0	X/X	/	/
5:00 - 6:00	99	91	190	/	1	0	X/X	/	/
6:00 - 7:00	327	317	644	X/	11	0	X/X	/	X/
7:00 - 8:00	615	755	1370	X/X	10	0	X/X	/	X/X
8:00 - 9:00	612	644	1256	X/X	15	0	X/X	/	X/X
9:00 - 10:00	550	552	1102	X/X	20	0	X/X	/	X/X
10:00 - 11:00	504	400	904	X/X	26	0	X/X	/	X/X
11:00 - 12:00	632	650	1282	X/X	42	0	X/X	/	X/X
12:00 - 13:00	773	659	1432	X/X	26	0	X/X	/	X/X
13:00 - 14:00	795	658	1453	X/X	28	0	X/X	/	X/X
14:00 - 15:00	748	659	1407	X/X	32	0	X/X	/	X/X
15:00 - 16:00	841	739	1580	X/X	54	0	X/X	/	X/X
16:00 - 17:00	990	825	1815	X/X	51	0	X/X	/	X/X
17:00 - 18:00	840	676	1516	X/X	13	0	X/X	/	X/X
18:00 - 19:00	509	371	880	X/	8	0	X/X	/	X/
19:00 - 20:00	389	288	677	X/	7	0	X/X	/	X/
20:00 - 21:00	289	244	533	/	5	0	X/X	/	/
21:00 - 22:00	222	197	419	/	4	0	X/X	/	/
22:00 - 23:00	153	142	295	/	5	0	X/X	/	/
23:00 - 24:00	123	92	215	/	8	0	X/X	/	/

	Met (Hr)	Required (Hr)	
Warrant 1	14	8	Satisfied
Warrant 2	11	8	Satisfied
Warrant 6	15	8	Satisfied, check accident record
Warrant 8	12	8	Satisfied
Warrant 9	0	4	Not satisfied
Warrant 11	0	1	Not satisfied

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OPERATOR: DR

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

Speed	Approach Description	Lanes
30	Major App1: UNIVERSITY AVE EB, W OF CAPITAL BLVD (ST F	2
30	Major App3: UNIVERSITY AVE WB, E OF CAPITAL BLVD (ST F	3
0	Minor App2: N/A	0
30	Minor App4: CAPITAL BLVD SB, N OF UNIVERSITY AVE (ST P	1

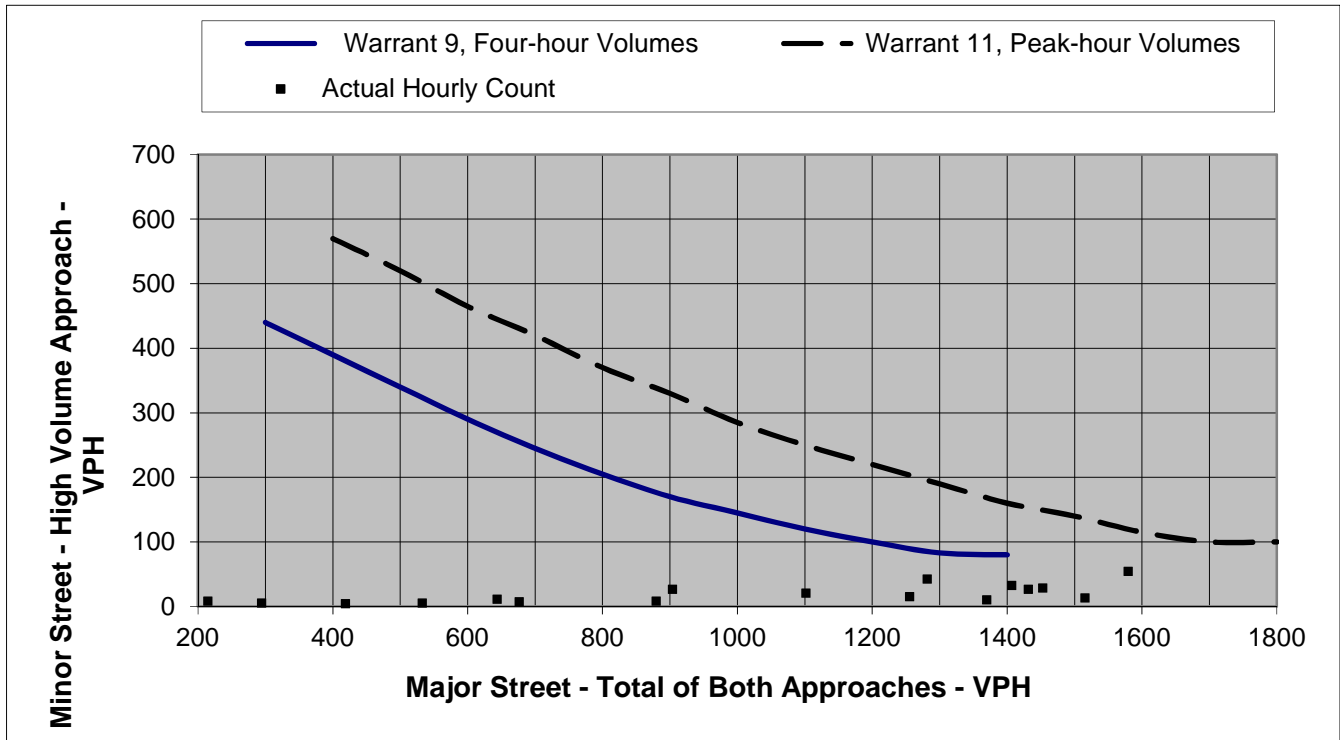


Figure 1. Four Hour and Peak Hour Warrant Analysis

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			123	2
300	440		89	1
400	390	570	58	1
500	340	520	50	1
600	290	465	57	1
700	245	420	190	1
800	205	370	644	11
900	170	330	1370	10
1000	145	285	1256	15
1100	120	250	1102	20
1200	100	220	904	26
1300	83	190	1282	42
1400	80	160	1432	26
1500		140	1453	28
1600		115	1407	32
1700		100	1580	54
1800		100	1815	51
			1516	13
			880	8
			677	7
			533	5
			419	4
			295	5
			215	8

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-952A UNIVERSITY AVE & CAPITAL BLVD

COUNTY: RAMSEY

REF. POINT: 132.352

DATE: 4/13/1998

OPERATOR: DR

Speed	Approach Description	Lanes
30	Major App1: UNIVERSITY AVE EB, W OF CAPITAL BLVD (ST	2
30	Major App3: UNIVERSITY AVE WB, E OF CAPITAL BLVD (ST	3
0	Minor App2: N/A	0
30	Minor App4: CAPITAL BLVD SB, N OF UNIVERSITY AVE (ST	1

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	64	59	2	0	125	2	/
1:00 - 2:00	49	40	1	0	90	1	/
2:00 - 3:00	33	25	1	0	59	1	/
3:00 - 4:00	29	21	1	0	51	1	/
4:00 - 5:00	25	32	1	0	58	1	/
5:00 - 6:00	99	91	1	0	191	1	/
6:00 - 7:00	327	317	11	0	655	11	X/
7:00 - 8:00	615	755	10	0	1380	10	X/
8:00 - 9:00	612	644	15	0	1271	15	X/
9:00 - 10:00	550	552	20	0	1122	20	X/
10:00 - 11:00	504	400	26	0	930	26	X/
11:00 - 12:00	632	650	42	0	1324	42	X/
12:00 - 13:00	773	659	26	0	1458	26	X/
13:00 - 14:00	795	658	28	0	1481	28	X/
14:00 - 15:00	748	659	32	0	1439	32	X/
15:00 - 16:00	841	739	54	0	1634	54	X/
16:00 - 17:00	990	825	51	0	1866	51	X/
17:00 - 18:00	840	676	13	0	1529	13	X/
18:00 - 19:00	509	371	8	0	888	8	X/
19:00 - 20:00	389	288	7	0	684	7	X/
20:00 - 21:00	289	244	5	0	538	5	X/
21:00 - 22:00	222	197	4	0	423	4	/
22:00 - 23:00	153	142	5	0	300	5	/
23:00 - 24:00	123	92	8	0	223	8	/

Met (Hr) Required (Hr)

Allway Stop Warrant: 0 8 Not satisfied

REMARKS: _____

