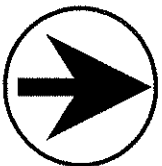


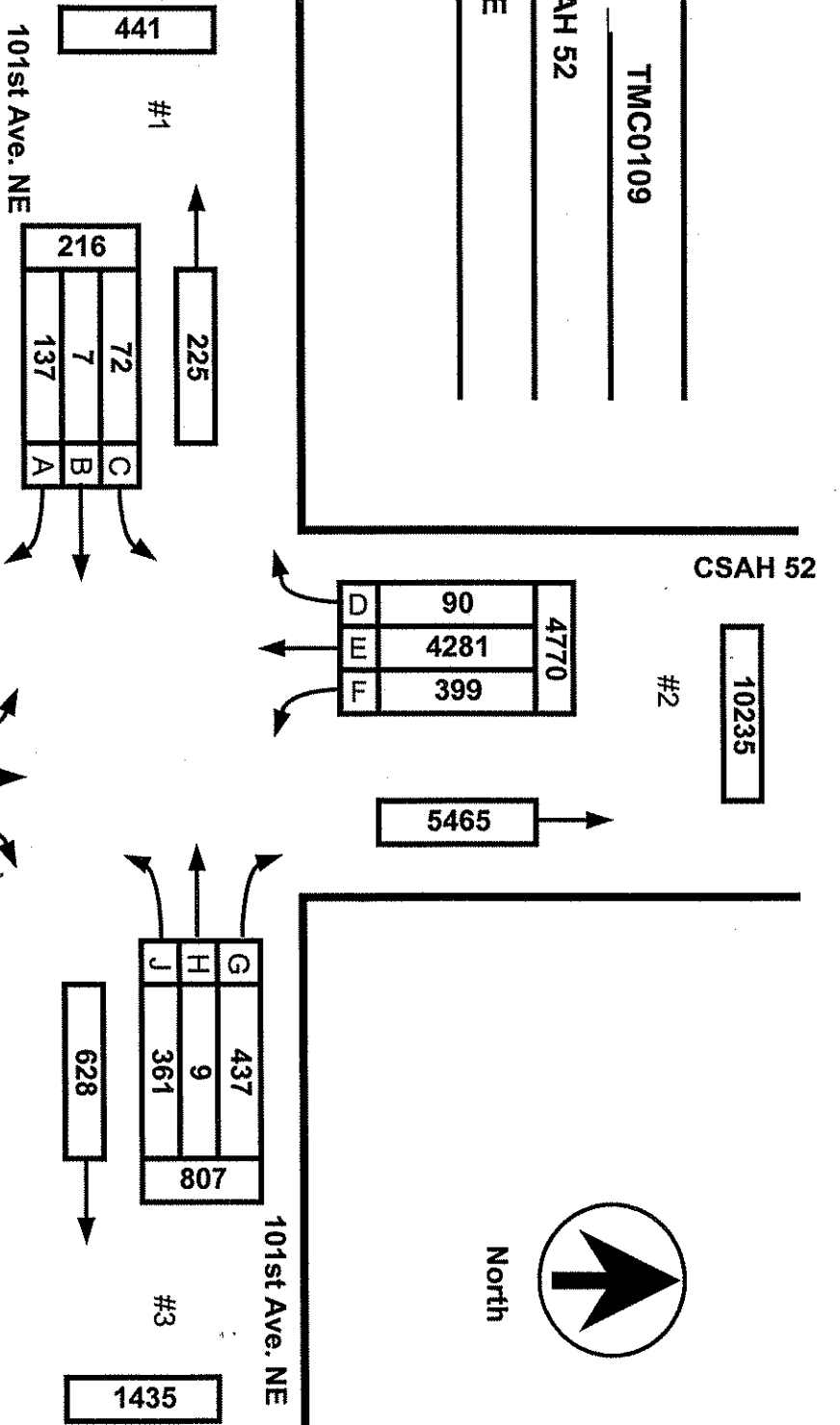
Date : 6/4/01

Count Number : TMC0109

Location : CSAH 52 @ 101st Ave. NE

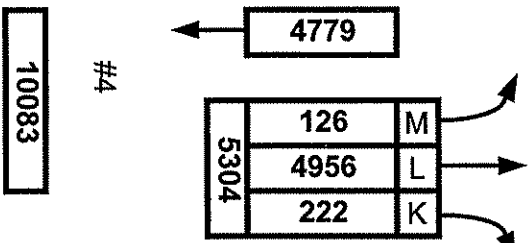


North



LANES OF APPROACH				
	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	TOTAL
#1	0	1	1	2
#2	1	1	2	4
#3	0	1	1	2
#4	1	1	2	4

CSAH 52



Anoka County Highway Department
 Traffic Volume and Turning
 Movement Study

Anoka County Highway Department Traffic Engineering

Weather: Cloudy, Rainy
 Counter: TDC-8
 Counted by: Jessica/Melissa

Traffic Volume and Turning Movement Study

File Name : TMC0109B
 Site Code : 01090102
 Start Date : 05/23/2001
 Page No : 1

Groups Printed- 1 - 1 - Unshifted

Start Time	CSAH 52 Southbound					101st Ave. NE Westbound					CSAH 52 Northbound					101st Ave. NE Eastbound					Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	Heavy	App. Total	Left	Thru	Right	Heavy	App. Total	Left	Thru	Right	Heavy	App. Total	Left	Thru	Right	Heavy	App. Total			
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0				
06:00	4	116	2	7	122	7	0	3	8	10	0	24	3	0	27	0	0	0	0	0	15	159	174
06:15	7	145	0	8	152	7	0	4	11	11	1	30	2	3	33	0	0	1	0	1	22	197	219
06:30	8	118	2	5	128	4	0	5	5	9	1	40	2	2	43	1	0	0	1	1	13	181	194
06:45	12	164	3	10	179	4	0	2	3	6	3	40	15	4	58	0	0	0	0	0	17	243	260
Total	31	543	7	30	581	22	0	14	27	36	5	134	22	9	161	1	0	1	1	2	67	780	847
07:00	14	177	9	7	200	4	0	7	8	11	5	41	6	1	52	0	0	1	1	1	17	264	281
07:15	14	167	2	16	183	3	0	5	3	8	2	39	5	0	46	0	0	0	0	0	19	237	256
07:30	13	118	0	6	131	5	0	8	4	13	4	54	5	12	63	0	0	5	0	5	22	212	234
07:45	17	156	7	11	180	5	0	4	3	9	6	63	11	9	80	0	0	1	0	1	23	270	293
Total	58	618	18	40	694	17	0	24	18	41	17	197	27	22	241	0	0	7	1	7	81	983	1064
08:00	8	127	4	15	139	6	0	3	7	9	2	35	6	3	43	1	0	1	1	2	26	193	219
08:15	6	86	4	11	96	7	0	1	4	8	3	37	5	7	45	2	0	0	1	2	23	151	174
08:30	2	68	1	11	71	4	0	6	2	10	0	37	1	6	38	2	0	1	2	3	21	122	143
08:45	3	79	7	10	89	2	0	4	3	6	3	39	1	4	43	2	0	1	0	3	17	141	158
Total	19	360	16	47	395	19	0	14	16	33	8	148	13	20	169	7	0	3	4	10	87	607	694
09:00	6	62	2	14	70	7	0	5	2	12	4	41	11	22	56	1	0	5	1	6	39	144	183
09:15	6	65	2	11	73	8	0	3	2	11	4	47	4	10	55	0	0	2	0	2	23	141	164
09:30	4	65	0	16	69	5	1	2	2	8	2	33	3	10	38	0	0	3	0	3	28	118	146
09:45	3	49	4	11	56	5	1	1	2	7	0	36	4	7	40	3	0	0	0	3	20	106	126
Total	19	241	8	52	268	25	2	11	8	38	10	157	22	49	189	4	0	10	1	14	110	509	619
10:00	4	47	3	8	54	2	0	6	3	8	2	34	0	9	36	3	0	3	0	6	20	104	124
10:15	2	46	0	6	48	2	0	4	0	6	2	44	5	14	51	2	1	3	3	6	23	111	134
10:30	4	33	2	8	39	8	1	1	3	10	1	38	2	13	41	0	0	3	1	3	25	93	118
10:45	2	54	4	17	60	4	0	5	2	9	1	58	6	11	65	0	1	1	1	2	31	136	167
Total	12	180	9	39	201	16	1	16	8	33	6	174	13	47	193	5	2	10	5	17	99	444	543
11:00	3	55	1	12	59	5	2	4	3	11	2	48	0	12	50	1	0	2	1	3	28	123	151
11:15	2	42	2	9	46	5	1	4	3	10	6	29	5	10	40	0	0	3	1	3	23	99	122
11:30	8	55	1	19	64	11	1	5	1	17	4	61	5	16	70	2	0	7	2	9	38	160	198
11:45	4	54	0	15	58	2	1	7	0	10	3	55	2	10	60	2	0	2	1	4	26	132	158
Total	17	206	4	55	227	23	5	20	7	48	15	193	12	48	220	5	0	14	5	19	115	514	629
12:00	4	55	1	17	60	7	0	12	2	19	3	60	4	15	67	3	0	4	0	7	34	153	187
12:15	4	48	1	10	53	5	0	6	3	11	3	71	9	18	83	2	1	1	0	4	31	151	182
12:30	7	49	2	8	58	4	1	10	0	15	0	46	3	13	49	3	0	4	1	7	22	129	151
12:45	11	50	3	22	64	5	0	6	2	11	3	61	7	24	71	0	0	1	1	1	49	147	196
Total	26	202	7	57	235	21	1	34	7	56	9	238	23	70	270	8	1	10	2	19	136	580	716
13:00	4	47	3	14	54	5	0	5	3	10	5	61	6	13	72	0	0	3	2	3	32	139	171
13:15	8	44	3	13	55	2	0	3	2	5	3	55	2	8	60	1	0	3	0	4	23	124	147
13:30	4	42	1	7	47	7	0	6	3	13	1	51	3	14	55	1	0	0	0	1	24	116	140
13:45	8	45	3	10	56	4	0	9	1	13	1	69	1	20	71	0	0	4	2	4	33	144	177
Total	24	178	10	44	212	18	0	23	9	41	10	236	12	55	258	2	0	10	4	12	112	523	635
14:00	11	42	3	5	56	9	0	6	3	15	7	56	6	16	69	1	1	6	3	8	27	148	175
14:15	8	58	2	12	68	8	0	12	5	20	2	67	8	16	77	0	0	4	1	4	34	169	203
14:30	12	64	0	16	76	13	0	10	9	23	3	94	4	11	101	1	0	2	2	3	38	203	241
14:45	12	51	1	10	64	3	0	15	3	18	2	97	2	14	101	1	0	3	2	4	29	187	216
Total	43	215	6	43	264	33	0	43	20	76	14	314	20	57	348	3	1	15	8	19	128	707	835
15:00	7	58	1	11	66	5	0	9	1	14	4	98	1	10	103	4	0	4	1	8	23	191	214
15:15	15	41	2	11	58	22	0	15	2	37	2	144	5	8	151	1	0	6	5	7	26	253	279
15:30	4	63	1	6	68	10	0	8	2	18	2	132	1	6	135	4	0	1	0	5	14	226	240
15:45	12	54	0	10	66	11	0	10	4	21	2	139	6	4	147	1	0	5	1	6	19	240	259
Total	38	216	4	38	258	48	0	42	9	90	10	513	13	28	536	10	0	16	7	26	82	910	992
16:00	7	71	0	10	78	13	0	21	2	34	4	169	6	13	179	0	1	4	0	5	25	296	321
16:15	5	52	0	6	57	9	0	9	2	18	8	157	8	9	173	5	1	3	1	9	18	257	275
16:30	8	104	0	6	112	27	0	18	3	45	2	170	2	10	174	5	0	12	1	17	20	348	388
16:45	14	71	0	2	85	14	0	17	1	31	1	216	1	4	218	3	0	3	1	6	8	340	348
Total	34	298	0	24	332	63	0	65	8	128	15	712	17	36	744	13	2	22	3	37	71	1241	1312

Major Street Approaches:

Northbound:

CSAH 52

Data File: C:\Program Files\PCWarrants\TMC0109B.war
 Count Type: IMC. Channel: 0. Count Date: 5/23/ 1
 Number of Lanes: 2
 Approach Speed: 55
 Total Approach Traffic: 5304

Southbound:

CSAH 52

Data File: C:\Program Files\PCWarrants\TMC0109B.war
 Count Type: IMC. Channel: 0. Count Date: 5/23/ 1
 Number of Lanes: 2
 Approach Speed: 55
 Total Approach Traffic: 4770

Minor Street Approaches:

Eastbound:

101st Ave. NE

Data File: C:\Program Files\PCWarrants\TMC0109B.war
 Count Type: IMC. Channel: 0. Count Date: 5/23/ 1
 Number of Lanes: 2
 Approach Speed: 30
 Total Approach Traffic: 216

Westbound:

101st Ave. NE

Data File: C:\Program Files\PCWarrants\TMC0109B.war
 Count Type: IMC. Channel: 0. Count Date: 5/23/ 1
 Number of Lanes: 2
 Approach Speed: 30
 Total Approach Traffic: 807

Analysis of 8-Hour Volume Warrants (Criteria refers to high volume side street for that hour):

Hour	Main Begin (Total)	Side			Warrant 1		Warrant 2		Warrant 8	
		Vol.	Dir.	Rank	Meets?	Criteria	Meets?	Criteria	Meets?	Criteria
0	0	0	W	17		140		70		112
1	0	0	W	18		140		70		112
2	0	0	W	19		140		70		112
3	0	0	W	20		140		70		112
4	0	0	W	21		140		70		112
5	0	0	W	22		140		70		112
6	742	36	W	10	MAIN	140	MAIN	70	MAIN	112
7	935	41	W	7	MAIN	140	MAIN	70	MAIN	112
8	564	33	W	12	MAIN	140		70	MAIN	112
9	457	38	W	9	MAIN	140		70		112
10	394	33	W	13		140		70		112
11	447	48	W	6	MAIN	140		70		112
12	505	56	W	5	MAIN	140		70	MAIN	112
13	470	41	W	8	MAIN	140		70		112
14	612	76	W	3	MAIN	140	SIDE	70	MAIN	112
15	794	90	W	2	MAIN	140	--BOTH--	70	MAIN	112
16	1076	128	W	1	MAIN	140	--BOTH--	70	--BOTH--	112
17	1087	75	W	4	MAIN	140	--BOTH--	70	MAIN	112
18	792	35	W	11	MAIN	140	MAIN	70	MAIN	112
19	446	33	W	14	MAIN	140		70		112
20	456	33	W	15	MAIN	140		70		112
21	297	11	W	16		140		70		112
22	0	0	W	23		140		70		112
23	0	0	W	24		140		70		112

Warrant Summary:

Rural values apply.

Warrant 1 - Minimum Vehicular Volumes

NOT SATISFIED. Required values reached for 0 hours. Criteria--Main St.: 420; Side St.: See Volume Summary.

Warrant 2 - Interruption of Continuous Traffic

NOT SATISFIED. Required values reached for 3 hours. Criteria--Main St.: 630; Side St.: See Volume Summary.

Warrant 3 - Minimum Pedestrian Volumes

NOT SATISFIED. Ped volumes too low. Criteria--190 Peds in peak hour, 100 peds in 4th high hour.

Warrant 4 - School Crossing

NOT APPLICABLE. Gap data has not been defined.

Warrant 5 - Progressive Movement

NOT SATISFIED. Adjacent signals closer than 1000 feet and/or not part of coordinated system.

Warrant 6 - Accident Experience

NOT SATISFIED. 0 correctable accidents is fewer than required 5.

Correctable Accidents: 0; Right Angle Accidents: 0; Left Turn Accidents: 0; Other Accidents: 0.

Warrant 7 - Systems Warrant

SATISFIED. Peak hour total entering volume: 1241. Approaches on both streets satisfy one of the following criteria:

NSEW- Approaches which are part of the principal through traffic roadway network.

- Approaches which include rural or suburban highways outside, entering or traversing a city.
- Approaches which appear as a major route in an official transportation plan.

Warrant 8 - Combination of Warrants

NOT SATISFIED. Required values reached for 1 hours. Criteria--Main: 504; Side: See Volume Summary.

Warrant 9 - Four Hour Volumes

NOT SATISFIED. Required values reached for 1 hours.

Warrant 10 - Peak Hour Delay

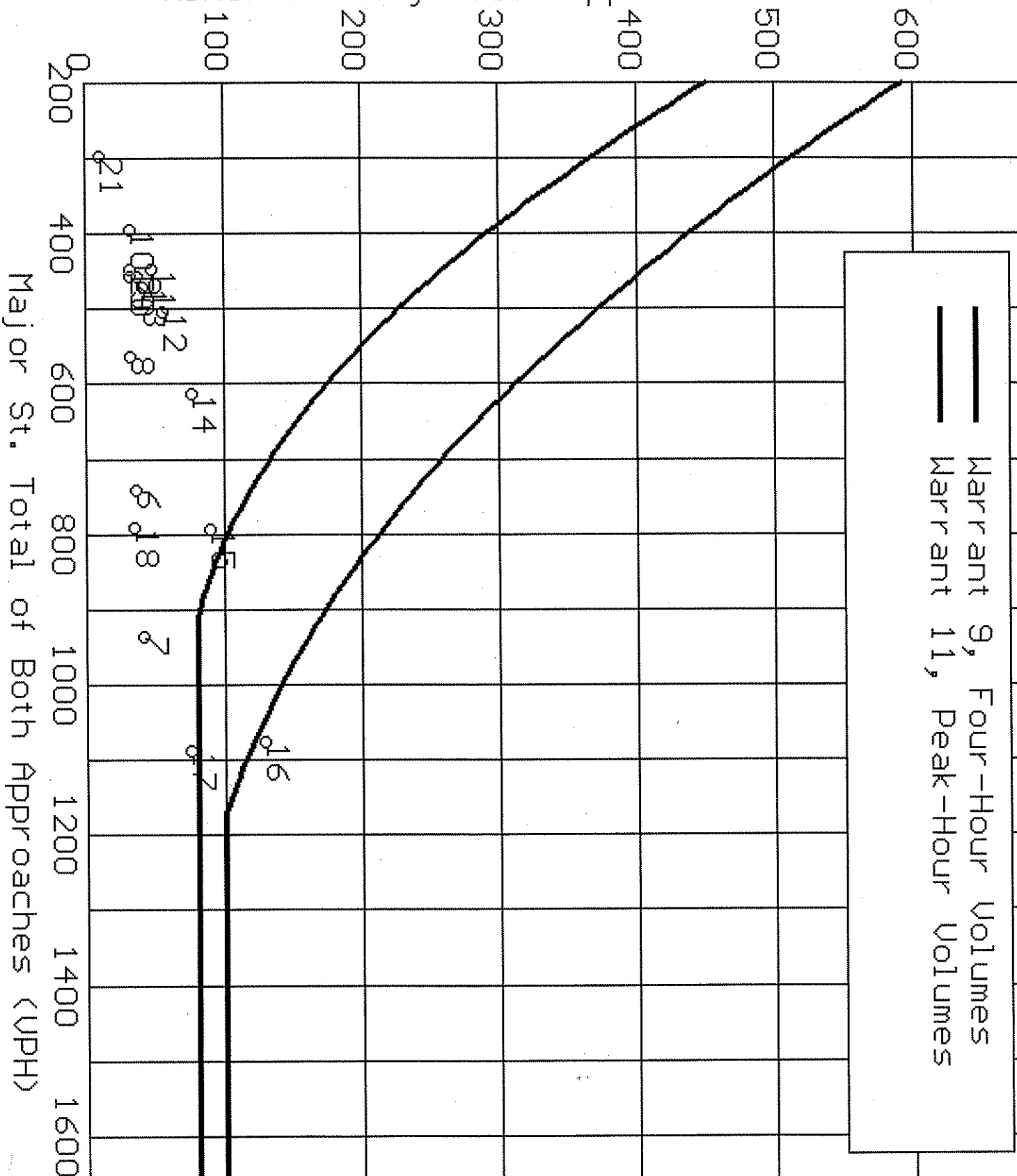
NOT SATISFIED. Peak hour (1600 hours) volume not adequate.

Criteria--Main St.: 800 (4 approaches), 650 (3 approaches); Side St.: 150.

Warrant 11 - Peak Hour Volume

SATISFIED for 1 hours.

Minor St. High Vol. Approach (UPH)



— Warrant 9, Four-Hour Volumes
 — Warrant 11, Peak-Hour Volumes

Major St. Total of Both Approaches (UPH)

Multiway Stop Warrant Analysis
TMC 0109 CSAH 52@ 101st Ave. NE
Speed Limit of Major Roadway..... 55

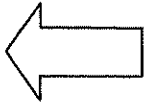
Minimum Traffic Volumes Multiway Stop Warrant Criteria:

- a) The total vehicular volume entering the intersection from all approaches must average at least 500 vehicles per hour (vph) for any 8 hours of an average day, AND:
- b) The combined vehicular and pedestrian volume from the minor street or highway must average at least 200 vph for the same 8 hours, with an average delay to minor street vehicular traffic of at least 30 seconds per vehicle during the maximum hour, BUT:
- c) When the 85-percentile approach speed of the major street traffic exceeds 40 miles per hour, the minimum volume warrant is 70% of the above requirements.

Hour	Total Vehicular Traffic Entering the Intersection	Vehicular Traffic Entering on First Minor Roadway	Vehicular Traffic Entering on Second Minor Roadway	Sum of Minor Approaches	Hours Stop Warrant Met
6 AM - 7 AM	780	36	2	38	0
7 AM - 8 AM	983	41	7	48	0
8 AM - 9 AM	607	33	10	43	0
9 AM - 10 AM	509	38	14	52	0
10 AM - 11 AM	444	33	17	50	0
11 AM - 12 PM	514	48	19	67	0
12 PM - 13 PM	580	56	19	75	0
1 PM - 2 PM	523	41	12	53	0
2 PM - 3 PM	707	76	19	95	0
3 PM - 4 PM	910	90	26	116	0
4 PM - 5 PM	1241	128	37	165	0
5 PM - 6 PM	1179	75	17	92	0
6 PM - 7 PM	833	35	6	41	0
7 PM - 8 PM	486	33	7	40	0
8 PM - 9 PM	491	33	2	35	0
9 PM - 10 PM	310	11	2	13	0

TOTAL HOURS MET: 0

MULTIWAY STOP WARRANT IS NOT MET



COUNT LOCATION:

CSAH 52 @

DATE:

5/24/01

101st Ave. NE

NORTH

APP. #1 = CSAH 52

APP. #2 = 101st Ave. NE

APP. #3 = CSAH 52

APP. #4 = 101st Ave. NE

APP. #2

APP. #1

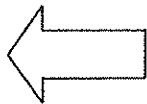
APP. #3

APP. #4

HEAVY VEHICLE- ANY VEHICLE HAVING MORE THAN FOUR TIRES TOUCHING THE PAVEMENT

- A. TRUCKS- A HEAVY VEHICLE INVOLVED PRIMARILY IN THE TRANSPORT OF GOODS OR IN THE DELIVERY OF A SERVICE.
- B. RV- A HEAVY VEHICLE OPERATED BY A PRIVATE MOTORIST AND INVOLVED IN THE TRANSPORT OF RECREATIONAL EQUIPMENT OR FACILITIES.
- C. BUSES- A HEAVY VEHICLE INVOLVED IN THE TRANSPORTATION OF GROUPS OF PEOPLE.

TIME	PEDESTRIANS					HEAVY VEHICLES		
	APP. #1	APP. #2	APP. #3	APP. #4	15 MIN TOT	TRUCKS	RV	BUS
6:00-6:15AM						14		
6:15-6:30						22		
6:30-6:45						13		
6:45-7:00						17		
HOURLY TOTAL						HOURLY TOTAL		66
7:00-7:15						16		
7:15-7:30			1		1	22		1
7:30-7:45						20		
7:45-8:00						21		
HOURLY TOTAL					1	HOURLY TOTAL		80
8:00-8:15						26		
8:15-8:30						21		
8:30-8:45						21		
8:45-9:00						17		
HOURLY TOTAL						HOURLY TOTAL		85
9:00-9:15						39		
9:15-9:30						23		1
9:30-9:45						26		
9:45-10:00						20		
HOURLY TOTAL						HOURLY TOTAL		109
10:00-10:15						28		
10:15-10:30						31		
10:30-10:45						9		
10:45-11:00						27		
HOURLY TOTAL						HOURLY TOTAL		95
11:00-11:15						27		
11:15-11:30						24		
11:30-11:45						36		
11:45-12:00						26		
HOURLY TOTAL						HOURLY TOTAL		113
12:00-12:15						33		
12:15-12:30						32		
12:30-12:45						23		
12:45-1:00						47		
HOURLY TOTAL						HOURLY TOTAL		135
1:00-1:15						34		
1:15-1:30						20		
1:30-1:45						24		
1:45-2:00						34		
HOURLY TOTAL						HOURLY TOTAL		112



NORTH

COUNT LOCATION:

CSAH 52 @

DATE:

5/23/01

101st Ave. NE

APP. #1 = CSAH 52

APP. #2 = 101st Ave. NE

APP. #3 = CSAH 52

APP. #4 = 101st Ave. NE

APP.
#2

APP.
#1

APP.
#3

APP.
#4

- HEAVY VEHICLE- ANY VEHICLE HAVING MORE THAN FOUR TIRES TOUCHING THE PAVEMENT
- A. TRUCKS- A HEAVY VEHICLE INVOLVED PRIMARILY IN THE TRANSPORT OF GOODS OR IN THE DELIVERY OF A SERVICE.
 - B. RV- A HEAVY VEHICLE OPERATED BY A PRIVATE MOTORIST AND INVOLVED IN THE TRANSPORT OF RECREATIONAL EQUIPMENT OR FACILITIES.
 - C. BUSES- A HEAVY VEHICLE INVOLVED IN THE TRANSPORTATION OF GROUPS OF PEOPLE.

TIME	PEDESTRIANS					HEAVY VEHICLES		
	APP. #1	APP. #2	APP. #3	APP. #4	15 MIN TOT	TRUCKS	RV	BUS
2:00-2:15PM						28		
2:15-2:30						35		
2:30-2:45						38		
2:45-3:00						29		
HOURLY TOTAL						HOURLY TOTAL		130
3:00-3:15						29		1
3:15-3:30						17		1
3:30-3:45						13		1
3:45-4:00						19		
HOURLY TOTAL						HOURLY TOTAL		81
4:00-4:15						22		1
4:15-4:30						17		
4:30-4:45						20		1
4:45-5:00						7		
HOURLY TOTAL						HOURLY TOTAL		68
5:00-5:15						8		
5:15-5:30						10		
5:30-5:45						6		
5:45-6:00						9		1
HOURLY TOTAL						HOURLY TOTAL		34
6:00-6:15						5		
6:15-6:30						4		
6:30-6:45						9		
6:45-7:00						5		
HOURLY TOTAL						HOURLY TOTAL		23
7:00-7:15						4		
7:15-7:30						3		
7:30-7:45						6	1	
7:45-8:00						3		
HOURLY TOTAL						HOURLY TOTAL		17
8:00-8:15						3		
8:15-8:30						4		
8:30-8:45								
8:45-9:00						1		
HOURLY TOTAL						HOURLY TOTAL		8
9:00-9:15						1		
9:15-9:30						1		
9:30-9:45						1		
9:45-10:00								
HOURLY TOTAL						HOURLY TOTAL		3