

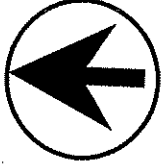
Date: 7/1/02

Count Number: TMC0212

Location: CSAH 12 @ MANKATO ST./

TOURNAMENT PLAYERS PKY

TOURNAMENT



North

3210

#2

1697		
1298	D	
38	E	
361	F	
	T	

1513

CSAH 12

379	G
3474	H
81	J
3934	

#3

8023

4089

MANKATO ST.

619		
440	M	
37	L	
142	K	

#4

510

1129

10286

#1

5074		
391	A	
3586	B	
1097	C	

CSAH 12

5212

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

Anoka County Highway Department
Traffic Volume and Turning
Movement Study

Anoka County Highway Department
Traffic Engineering

Weather: Hot, Humid
Counter TDC-8
Counted by: Melissa/Jessica

Traffic Volume and Turning Movement Stud

File Name : TMC 0212
Site Code : 02120101
Start Date : 07/01/2002
Page No : 1

Groups Printed- 1 - Unshifted

Start Time	Tournament Players Parkway Southbound					CSAH 12 Westbound					Mankato St. Northbound					CSAH 12 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	0	17	1	21	4	31	1	3	36	4	0	2	4	6	1	32	16	1	49	9	112	121
06:15	7	0	28	0	35	3	24	1	1	28	5	0	0	3	5	7	58	5	5	70	9	138	147
06:30	7	1	32	0	40	2	41	0	4	43	3	0	0	3	3	3	64	5	0	72	5	158	163
06:45	14	1	34	0	49	3	42	1	3	46	5	0	1	0	6	7	79	15	4	101	7	202	209
Total	32	2	111	1	145	12	138	3	11	153	17	0	3	8	20	18	233	41	10	292	30	610	640
07:00	16	2	39	0	57	5	41	4	2	50	5	0	1	1	6	12	56	9	4	77	7	190	197
07:15	24	2	50	2	76	2	42	2	2	46	0	0	2	0	2	9	59	15	6	83	10	207	217
07:30	16	3	39	0	58	1	56	0	5	57	6	0	2	0	8	10	72	10	7	92	12	215	227
07:45	17	2	36	2	55	2	58	1	3	61	0	0	2	0	2	8	71	12	5	91	10	209	219
Total	73	9	164	4	246	10	197	7	12	214	11	0	7	1	18	39	258	46	22	343	39	821	860
08:00	8	1	40	1	49	5	48	3	4	56	4	2	0	3	6	5	63	12	5	80	13	191	204
08:15	7	1	38	0	46	1	48	3	3	52	1	1	1	0	3	13	66	13	16	92	19	193	212
08:30	8	2	35	1	45	1	44	2	7	47	1	1	1	1	3	15	55	11	12	81	21	176	197
08:45	15	1	29	1	45	0	46	2	6	48	6	0	4	2	10	16	50	5	8	71	17	174	191
Total	38	5	142	3	185	7	186	10	20	203	12	4	6	6	22	49	234	41	41	324	70	734	804
09:00	10	1	24	0	35	2	55	4	5	61	6	1	7	2	14	8	41	2	1	51	8	161	169
09:15	9	0	24	2	33	1	56	4	7	61	2	1	3	0	6	9	34	6	3	49	12	149	161
09:30	7	1	24	0	32	1	52	7	11	60	9	0	3	2	12	3	52	9	4	64	17	168	185
09:45	3	0	15	0	18	0	34	5	6	39	4	1	2	2	7	9	61	9	4	79	12	143	155
Total	29	2	87	2	118	4	197	20	29	221	21	3	15	6	39	29	188	26	12	243	49	621	670
10:00	4	0	16	0	20	4	45	1	3	50	2	0	0	1	2	11	53	7	3	71	7	143	150
10:15	5	0	25	0	30	0	54	4	5	58	7	0	0	2	7	11	56	8	3	75	10	170	180
10:30	2	0	17	0	19	2	45	4	4	51	3	0	1	2	4	5	46	8	5	59	11	133	144
10:45	3	0	26	0	29	1	46	2	2	49	4	0	1	2	5	21	70	6	6	97	10	180	190
Total	14	0	84	0	98	7	190	11	14	208	16	0	2	7	18	48	225	29	17	302	38	626	664
11:00	3	1	21	3	25	3	39	4	9	46	8	0	2	1	10	11	69	4	3	84	16	165	181
11:15	5	0	13	0	18	1	44	10	5	55	8	1	2	1	11	13	53	5	9	71	15	155	170
11:30	1	0	15	2	16	2	49	4	4	55	15	0	1	2	16	16	57	12	3	85	11	172	183
11:45	4	0	18	1	22	1	52	6	7	59	16	1	3	5	20	18	56	7	2	81	15	182	197
Total	13	1	67	6	81	7	184	24	25	215	47	2	8	9	57	58	235	28	17	321	57	674	731
12:00	5	1	17	2	23	4	59	5	10	68	14	1	4	1	19	16	64	8	0	88	13	198	211
12:15	3	1	10	1	14	4	60	9	3	73	8	1	3	1	12	14	59	14	4	87	9	186	195
12:30	8	0	15	1	23	1	62	3	2	66	10	0	4	2	14	14	70	11	4	95	9	198	207
12:45	5	0	18	0	23	2	42	2	3	46	10	0	3	4	13	15	46	10	7	71	14	153	167
Total	21	2	60	4	83	11	223	19	18	253	42	2	14	8	58	59	239	43	15	341	45	735	780
13:00	5	0	16	1	21	3	45	5	4	53	9	1	3	4	13	14	50	10	5	74	14	161	175
13:15	6	1	14	0	21	1	38	8	5	47	10	0	4	3	14	17	53	9	4	79	12	161	173
13:30	3	0	17	2	20	1	46	6	5	53	15	1	4	3	20	15	48	13	6	76	16	169	185
13:45	4	1	18	1	23	2	52	3	3	57	9	0	3	3	12	15	50	8	0	73	7	165	172
Total	18	2	65	4	85	7	181	22	17	210	43	2	14	13	59	61	201	40	15	302	49	656	705
14:00	0	1	12	0	13	0	59	5	6	64	4	1	1	1	6	22	61	5	5	88	12	171	183
14:15	1	0	13	0	14	1	60	4	4	65	7	1	0	1	8	16	45	9	6	70	11	157	168
14:30	2	0	18	4	20	0	54	3	5	57	4	1	0	0	5	11	56	3	8	70	17	152	169
14:45	4	1	4	1	9	4	50	5	4	59	6	0	1	3	7	15	63	4	6	82	14	157	171
Total	7	2	47	5	56	5	223	17	19	245	21	3	2	5	26	64	225	21	25	310	54	637	691
15:00	3	0	18	1	21	0	64	5	7	69	15	2	5	4	22	27	57	9	4	93	16	205	221
15:15	2	2	20	2	24	0	68	9	2	77	3	1	2	0	6	17	47	2	3	66	7	173	180
15:30	5	1	22	3	28	0	76	6	6	82	9	2	2	3	13	21	48	8	7	77	19	200	219
15:45	2	0	19	1	21	1	99	2	5	102	4	1	4	2	9	22	63	7	6	92	14	224	238
Total	12	3	79	7	94	1	307	22	20	330	31	6	13	9	50	87	215	26	20	328	56	802	858
16:00	5	0	15	0	20	0	85	13	5	98	15	1	3	3	19	24	69	6	2	99	10	236	246
16:15	4	1	19	0	24	1	75	8	5	84	13	0	6	3	19	25	59	4	3	88	11	215	226
16:30	1	0	16	0	17	0	97	9	1	106	53	2	10	1	65	40	83	2	5	125	7	313	320
16:45	0	0	19	0	19	0	68	9	6	77	12	0	5	0	17	32	78	3	6	113	12	226	238
Total	10	1	69	0	80	1	325	39	17	365	93	3	24	7	120	121	289	15	16	425	40	990	1030
17:00	4	0	14	1	18	0	78	8	0	86	24	0	4	1	28	34	70	4	2	108	4	240	244
17:15	9	0	14	0	23	1	68	14	1	83	7	0	1	0	8	35	83	1	2	119	3	233	236
17:30	4	2	14	0	20	0	84	13	8	97	9	0	5	0	14	44	75	0	2	119	10	250	260
17:45	5	2	25	3	32	2	59	15	3	76	5	1	4	1	10	47	83	4	4	134	11	252	263
Total	22	4	67	4	93	3	289	50	12	342	45	1	14	2	60	160	311	9	10	480	28	975	1003

or Street Approaches:

Eastbound:

CSAH 12

Data File: C:\Program Files\PC-Warrants\TMC0212.war
 Count Type: IMC. Channel: 0. Count Date: 7/ 1/ 2
 Number of Lanes: 1
 Approach Speed: 55
 Total Approach Traffic: 5074

Westbound:

CSAH 12

Data File: C:\Program Files\PC-Warrants\TMC0212.war
 Count Type: IMC. Channel: 0. Count Date: 7/ 1/ 2
 Number of Lanes: 1
 Approach Speed: 55
 Total Approach Traffic: 3934

Minor Street Approaches:

Northbound:

Mankato St.

Data File: C:\Program Files\PC-Warrants\TMC0212.war
 Count Type: IMC. Channel: 0. Count Date: 7/ 1/ 2
 Number of Lanes: 1
 Approach Speed: 30
 Total Approach Traffic: 619

Southbound:

Tournament Players Parkway

Data File: C:\Program Files\PC-Warrants\TMC0212.war
 Count Type: IMC. Channel: 0. Count Date: 7/ 1/ 2
 Number of Lanes: 2
 Approach Speed: 30
 Total Approach Traffic: 1697

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

Hour	Main	Side	Warrant 1	Warrant 2	Warrant 8
Begin	(Total)	Vol. Dir. Rank	Meets? Criteria	Meets? Criteria	Meets? Criteria
0	0	0 S 17	140	70	112
1	0	0 S 18	140	70	112
2	0	0 S 19	140	70	112
3	0	0 S 20	140	70	112
4	0	0 S 21	140	70	112
5	0	0 S 22	140	70	112
6	445	145 S 3	--BOTH-- 140	SIDE 70	--BOTH-- 112
7	557	246 S 1	--BOTH-- 140	--BOTH-- 70	--BOTH-- 112
8	527	185 S 2	--BOTH-- 140	--BOTH-- 70	--BOTH-- 112
9	464	118 S 6	MAIN 140	SIDE 70	--BOTH-- 112
10	510	98 S 7	MAIN 140	SIDE 70	MAIN 112
11	536	81 S 12	MAIN 140	--BOTH-- 70	MAIN 112
12	594	83 S 11	MAIN 140	--BOTH-- 70	MAIN 112
13	512	85 S 10	MAIN 140	SIDE 70	MAIN 112
14	555	56 S 15	MAIN 140	MAIN 70	MAIN 112
15	658	94 S 8	MAIN 140	--BOTH-- 70	MAIN 112
16	790	120 N 5	--BOTH-- 105	--BOTH-- 52	--BOTH-- 84
17	822	93 S 9	MAIN 140	--BOTH-- 70	MAIN 112
18	652	125 S 4	MAIN 140	--BOTH-- 70	--BOTH-- 112
19	531	80 S 13	MAIN 140	--BOTH-- 70	MAIN 112
20	447	73 S 14	MAIN 140	SIDE 70	MAIN 112
21	408	55 S 16	MAIN 140	70	112
22	0	0 S 23	140	70	112
23	0	0 S 24	140	70	112

Warrant Summary:

Rural values apply.

Warrant 1 - Minimum Vehicular Volumes

NOT SATISFIED. Required values reached for 4 hours. Criteria--Main St.: 350; Side St.: See Volume Summary.

Warrant 2 - Interruption of Continuous Traffic

SATISFIED for 9 hours. Criteria--Main St.: 525; 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

NOT SATISFIED. Peak hour total entering volume 990 does not meet criteria of 1000

- 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 6 hours. Criteria--Main: 420; Side: See Volume Summary.

Warrant 9 - Four Hour Volumes

SATISFIED for 5 hours.

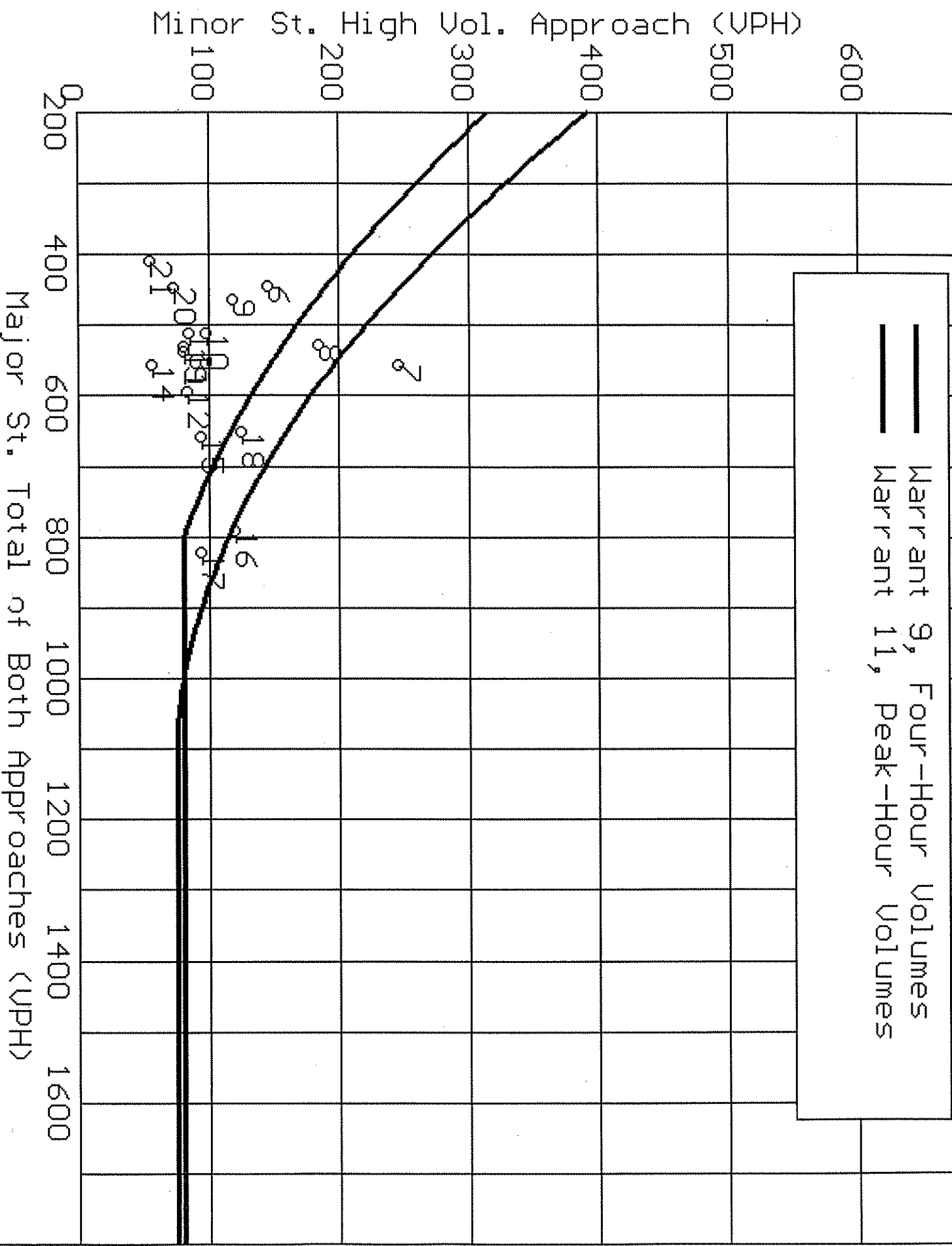
Warrant 10 - Peak Hour Delay

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

Criteria--Main St.: 800 (4 approaches), 650 (3 approaches); Side St.: 100.

Warrant 11 - Peak Hour Volume

SATISFIED for 1 hours.



Multiway Stop Warrant Analysis
TMC 0212 CSAH 12 @ Mankato St./ Tournament Players Pky
Speed Limit of Major Roadway..... 45

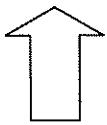
Minimum Traffic Volumes Multiway Stop Warrant Criteria:

- 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	Is Stop Warrant Met?
6 AM - 7 AM	610	145	20	165	YES
7 AM - 8 AM	821	246	18	264	YES
8 AM - 9 AM	734	185	22	207	YES
9 AM - 10 AM	621	118	39	157	YES
10 AM - 11 AM	626	98	18	116	NO
11 AM - 12 PM	674	81	57	138	NO
12 PM - 13 PM	735	83	58	141	YES
1 PM - 2 PM	656	85	59	144	YES
2 PM - 3 PM	673	56	26	82	NO
3 PM - 4 PM	802	94	50	144	YES
4 PM - 5 PM	990	80	120	200	YES
5 PM - 6 PM	975	93	60	153	YES
6 PM - 7 PM	801	125	24	149	YES
7 PM - 8 PM	633	80	22	102	NO
8 PM - 9 PM	537	73	17	90	NO
9 PM - 10 PM	472	55	9	64	NO

TOTAL HOURS MET: 10

MULTIWAY STOP WARRANT IS MET



NORTH

COUNT LOCATION:

CSAH 12 @ Mankato St. /

DATE:

7/1/02

Tournament Players Pky

APP. #1 = CSAH 12

APP. #2 = Tournament

APP. #3 = CSAH 12

APP. #4 = Mankato St.

APP. #2

APP. #1

APP. #3

APP. #4

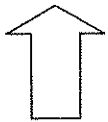
HEAVY VEHICLE- ANY VEHICLE HAVING MORE THAN FOUR TIRES TOUCHING THE PAVEMENT

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						7		2
6:15-6:30						9		
6:30-6:45						5		
6:45-7:00						7		
HOURLY TOTAL						HOURLY TOTAL		30
7:00-7:15						7		
7:15-7:30						9		1
7:30-7:45						10		
7:45-8:00		1			1	10		
HOURLY TOTAL					1	HOURLY TOTAL		37
8:00-8:15						12		1
8:15-8:30						18		1
8:30-8:45						20		1
8:45-9:00						14		4
HOURLY TOTAL						HOURLY TOTAL		71
9:00-9:15						7		1
9:15-9:30						12		1
9:30-9:45						17		
9:45-10:00						12		
HOURLY TOTAL						HOURLY TOTAL		50
10:00-10:15						7		
10:15-10:30						10		
10:30-10:45						11		
10:45-11:00						10		
HOURLY TOTAL						HOURLY TOTAL		38
11:00-11:15						16		
11:15-11:30						13		
11:30-11:45						11		
11:45-12:00						15		
HOURLY TOTAL						HOURLY TOTAL		55
12:00-12:15						12		1
12:15-12:30	1	1	1		3	9		
12:30-12:45						8		1
12:45-1:00						13		1
HOURLY TOTAL					3	HOURLY TOTAL		45
1:00-1:15						14		
1:15-1:30						12		
1:30-1:45						16		
1:45-2:00						7		
HOURLY TOTAL						HOURLY TOTAL		49



NORTH

COUNT LOCATION:

CSAH 12 @ Mankato St. /

DATE:

7/1/02

Tournament Players Pky

APP. #1 = CSAH 12

APP. #2 = Tournament

APP. #3 = CSAH 12

APP. #4 = Mankato St.

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						10		
2:15-2:30						12		
2:30-2:45						17		
2:45-3:00				2	2	14		
HOURLY TOTAL					2	HOURLY TOTAL		53
3:00-3:15						16		
3:15-3:30						7		
3:30-3:45						19		
3:45-4:00						13		
HOURLY TOTAL						HOURLY TOTAL		55
4:00-4:15		1			1	9		1
4:15-4:30						11		
4:30-4:45						7		
4:45-5:00						12		
HOURLY TOTAL					1	HOURLY TOTAL		40
5:00-5:15			1		1	3		
5:15-5:30						3		
5:30-5:45						13		
5:45-6:00						10		1
HOURLY TOTAL					1	HOURLY TOTAL		30
6:00-6:15						5		
6:15-6:30						1		2
6:30-6:45						4	1	1
6:45-7:00			1		1	2		1
HOURLY TOTAL					1	HOURLY TOTAL		17
7:00-7:15						7		
7:15-7:30						5		
7:30-7:45						3		
7:45-8:00	1			1	2	4		
HOURLY TOTAL					2	HOURLY TOTAL		19
8:00-8:15	2	2			4	3		
8:15-8:30		1			1	1		
8:30-8:45						3		
8:45-9:00							1	
HOURLY TOTAL					5	HOURLY TOTAL		8
9:00-9:15			1		1	1		
9:15-9:30								
9:30-9:45								
9:45-10:00								
HOURLY TOTAL					1	HOURLY TOTAL		1