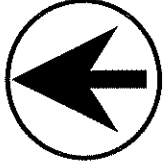


Date : 5/15/01

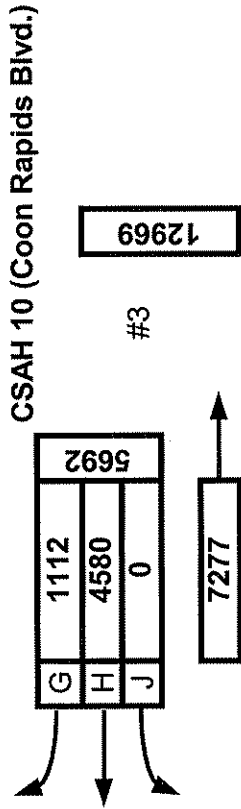
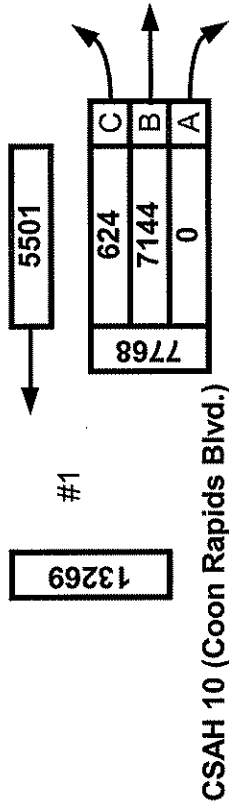
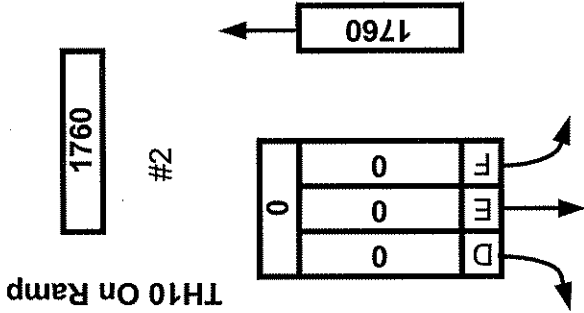
Count Number : TMC0107

Location : CSAH 10 (Coon Rapids Blvd.)

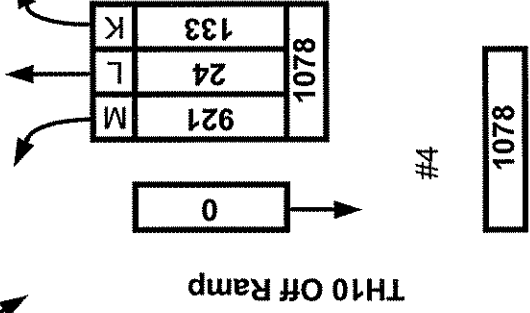
@ TH10/TH47 East Ramps



North



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



Anoka County Highway Department  
 Traffic Volume and Turning  
 Movement Study

# Anoka County Highway Department Traffic Engineering

Weather: Clear and Sunny  
 Counter TDC-8  
 Counted by: Sean/Justin

## Traffic Volume and Turning Movement Study

File Name : TMC0107  
 Site Code : 01010102  
 Start Date : 05/15/2001  
 Page No : 1

Groups Printed- 1 - 1 - Unshifted

Start Time	TH 10 On Ramp Southbound					CSAH 10 Westbound					TH 10 Off Ramp Northbound					CSAH 10 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			
	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				
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	0	0	0	0	0	0	58	11	3	69	5	0	0	0	5	2	98	0	2	100	5	174	179
06:15	0	0	0	0	0	0	77	8	4	85	11	0	0	2	11	5	146	0	9	151	15	247	262
06:30	0	0	0	0	0	0	70	19	5	89	6	0	0	0	6	5	199	0	7	204	12	299	311
06:45	0	0	0	0	0	0	117	16	6	133	14	1	1	2	16	2	188	0	2	190	10	339	349
Total	0	0	0	0	0	0	322	54	18	376	36	1	1	4	38	14	631	0	20	645	42	1059	1101
07:00	0	0	0	0	0	0	98	23	5	121	15	0	0	0	15	3	207	0	7	210	12	346	358
07:15	0	0	0	0	0	0	127	26	5	153	21	0	2	0	23	5	228	0	4	233	9	409	418
07:30	0	0	0	0	0	0	110	22	8	132	22	0	3	0	25	9	278	0	10	287	18	444	462
07:45	0	0	0	0	0	0	159	26	5	185	20	0	1	1	21	11	305	0	7	316	13	522	535
Total	0	0	0	0	0	0	494	97	23	591	78	0	6	1	84	28	1018	0	28	1046	52	1721	1773
08:00	0	0	0	0	0	0	127	19	5	146	19	0	0	2	19	12	197	0	7	209	14	374	388
08:15	0	0	0	0	0	0	109	23	8	132	12	0	2	1	14	10	183	0	5	193	14	339	353
08:30	0	0	0	0	0	0	115	20	10	135	22	0	0	1	22	14	156	0	3	170	14	327	341
08:45	0	0	0	0	0	0	125	20	8	145	22	2	0	5	24	10	151	0	2	161	15	330	345
Total	0	0	0	0	0	0	476	82	31	558	75	2	2	9	79	46	687	0	17	733	57	1370	1427
09:00	0	0	0	0	0	0	115	22	9	137	19	0	7	7	26	21	157	0	2	178	18	341	359
09:15	0	0	0	0	0	0	104	28	8	132	31	0	1	2	32	15	170	0	3	185	13	349	362
09:30	0	0	0	0	0	0	112	28	9	140	17	0	2	1	19	14	162	0	0	176	10	335	345
09:45	0	0	0	0	0	0	116	27	6	143	19	0	3	3	22	18	203	0	2	221	11	386	397
Total	0	0	0	0	0	0	447	105	32	552	86	0	13	13	99	68	692	0	7	760	52	1411	1463
10:00	0	0	0	0	0	0	114	26	12	140	15	1	4	1	20	13	187	0	4	200	17	360	377
10:15	0	0	0	0	0	0	93	26	7	119	29	0	4	5	33	23	163	0	3	186	15	338	353
10:30	0	0	0	0	0	0	111	37	6	148	25	1	3	2	29	30	176	0	1	206	9	383	392
10:45	0	0	0	0	0	0	128	41	11	169	25	2	4	2	31	19	176	0	1	195	14	395	409
Total	0	0	0	0	0	0	446	130	36	576	94	4	15	10	113	85	702	0	9	787	55	1476	1531
11:00	0	0	0	0	0	0	120	43	6	163	18	0	3	2	21	29	175	0	3	204	11	388	399
11:15	0	0	0	0	0	0	113	32	8	145	32	1	3	2	36	20	208	0	5	228	15	409	424
11:30	0	0	0	0	0	0	161	26	3	187	29	1	9	2	39	20	240	0	2	260	7	486	493
11:45	0	0	0	0	0	0	173	45	1	218	29	0	5	0	34	28	211	0	3	239	4	491	495
Total	0	0	0	0	0	0	567	146	18	713	108	2	20	6	130	97	834	0	13	931	37	1774	1811
12:00	0	0	0	0	0	0	141	35	9	176	29	1	10	1	40	20	274	0	5	294	15	510	525
12:15	0	0	0	0	0	0	145	47	10	192	34	1	5	1	40	13	227	0	1	240	12	472	484
12:30	0	0	0	0	0	0	130	42	10	172	43	0	6	5	49	23	231	0	4	254	19	475	494
12:45	0	0	0	0	0	0	135	32	14	167	48	0	7	1	55	14	239	0	1	253	16	475	491
Total	0	0	0	0	0	0	551	156	43	707	154	2	28	8	184	70	971	0	11	1041	62	1932	1994
13:00	0	0	0	0	0	0	168	29	4	197	36	0	6	4	42	19	198	0	1	217	9	456	465
13:15	0	0	0	0	0	0	137	36	2	173	34	0	2	1	36	16	202	0	2	218	5	427	432
13:30	0	0	0	0	0	0	137	28	5	165	27	0	6	2	33	30	182	0	5	212	12	410	422
13:45	0	0	0	0	0	0	185	34	10	219	30	0	5	1	35	37	207	0	3	244	14	498	512
Total	0	0	0	0	0	0	627	127	21	754	127	0	19	8	146	102	789	0	11	891	40	1791	1831
14:00	0	0	0	0	0	0	166	47	5	213	25	3	11	2	39	26	184	0	1	210	8	462	470
14:15	0	0	0	0	0	0	150	60	4	210	44	2	9	1	55	23	212	0	2	235	7	500	507
14:30	0	0	0	0	0	0	160	49	8	209	53	3	5	4	61	31	206	0	2	237	14	507	521
14:45	0	0	0	0	0	0	174	59	5	233	41	5	4	0	50	34	218	0	4	252	9	535	544
Total	0	0	0	0	0	0	650	215	22	865	163	13	29	7	205	114	820	0	9	934	38	2004	2042
Grand Total	0	0	0	0	0	0	458	111	244	5692	921	24	133	66	1078	624	7144	0	125	7768	435	14538	14973
Approch %	0.0	0.0	0.0			0.0	80.5	19.5			85.4	2.2	12.3			8.0	92.0	0.0					
Total %	0.0	0.0	0.0		0.0	0.0	31.5	7.6		39.2	6.3	0.2	0.9		7.4	4.3	49.1	0.0		53.4	2.9	97.1	

or Street Approaches:

Eastbound:

CSAH 10

Data File: C:\Program Files\JAMAR\PETRA\Data Files\TMC0107.war  
 Count Type: IMC. Channel: 0. Count Date: 5/15/ 1  
 Number of Lanes: 2  
 Approach Speed: 50  
 Total Approach Traffic: 7768

Westbound:

CSAH 10

Data File: C:\Program Files\JAMAR\PETRA\Data Files\TMC0107.war  
 Count Type: IMC. Channel: 0. Count Date: 5/15/ 1  
 Number of Lanes: 2  
 Approach Speed: 50  
 Total Approach Traffic: 5692

Minor Street Approaches:

Northbound:

TH 10 Off Ramp

Data File: C:\Program Files\JAMAR\PETRA\Data Files\TMC0107.war  
 Count Type: IMC. Channel: 0. Count Date: 5/15/ 1  
 Number of Lanes: 2  
 Approach Speed: 30  
 Total Approach Traffic: 1078

Southbound:

TH 10 On Ramp

Data File: C:\Program Files\JAMAR\PETRA\Data Files\TMC0107.war  
 Count Type: IMC. Channel: 0. Count Date: 5/15/ 1  
 Number of Lanes: 1  
 Approach Speed: 30  
 Total Approach Traffic: 0

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	N	10		140		70		112
1	0	0	N	11		140		70		112
2	0	0	N	12		140		70		112
3	0	0	N	13		140		70		112
4	0	0	N	14		140		70		112
5	0	0	N	15		140		70		112
6	1021	38	N	9	MAIN	140	MAIN	70	MAIN	112
7	1637	84	N	7	MAIN	140	--BOTH--	70	MAIN	112
8	1291	79	N	8	MAIN	140	--BOTH--	70	MAIN	112
9	1312	99	N	6	MAIN	140	--BOTH--	70	MAIN	112
10	1363	113	N	5	MAIN	140	--BOTH--	70	--BOTH--	112
11	1644	130	N	4	MAIN	140	--BOTH--	70	--BOTH--	112
12	1748	184	N	2	--BOTH--	140	--BOTH--	70	--BOTH--	112
13	1645	146	N	3	--BOTH--	140	--BOTH--	70	--BOTH--	112
14	1799	205	N	1	--BOTH--	140	--BOTH--	70	--BOTH--	112
15	0	0	N	16		140		70		112
16	0	0	N	17		140		70		112
17	0	0	N	18		140		70		112
18	0	0	N	19		140		70		112
19	0	0	N	20		140		70		112
20	0	0	N	21		140		70		112
21	0	0	N	22		140		70		112
22	0	0	N	23		140		70		112
23	0	0	N	24		140		70		112

## Warrant Summary:

Rural values apply.

High-volume minor approach is wide enough for two lanes. Re-striping may be desirable.

## Warrant 1 - Minimum Vehicular Volumes

NOT SATISFIED. Required values reached for 3 hours. Criteria--Main St.: 420; Side St.: See Volume Summary.

## Warrant 2 - Interruption of Continuous Traffic

SATISFIED for 8 hours. Criteria--Main St.: 630; Side St.: See Volume Summary.

## Warrant 3 - Minimum Pedestrian Volumes

NOT SATISFIED. 8th-High Hour--Pedestrians: 0. Criteria--Pedestrians: 105; Vehicles: 700.

## 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: 2004. Approaches on both streets satisfy one of the following criteria:

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

- Approaches which connect areas of principal traffic generation.

- Approaches which include rural or suburban highways outside, entering or traversing a city.

- Approaches which have surface street freeway or expressway ramp terminals.

- Approaches which appear as a major route in an official transportation plan.

## Warrant 8 - Combination of Warrants

NOT SATISFIED. Required values reached for 5 hours. Criteria--Main: 504; Side: See Volume Summary.

## Warrant 9 - Four Hour Volumes

SATISFIED for 7 hours.

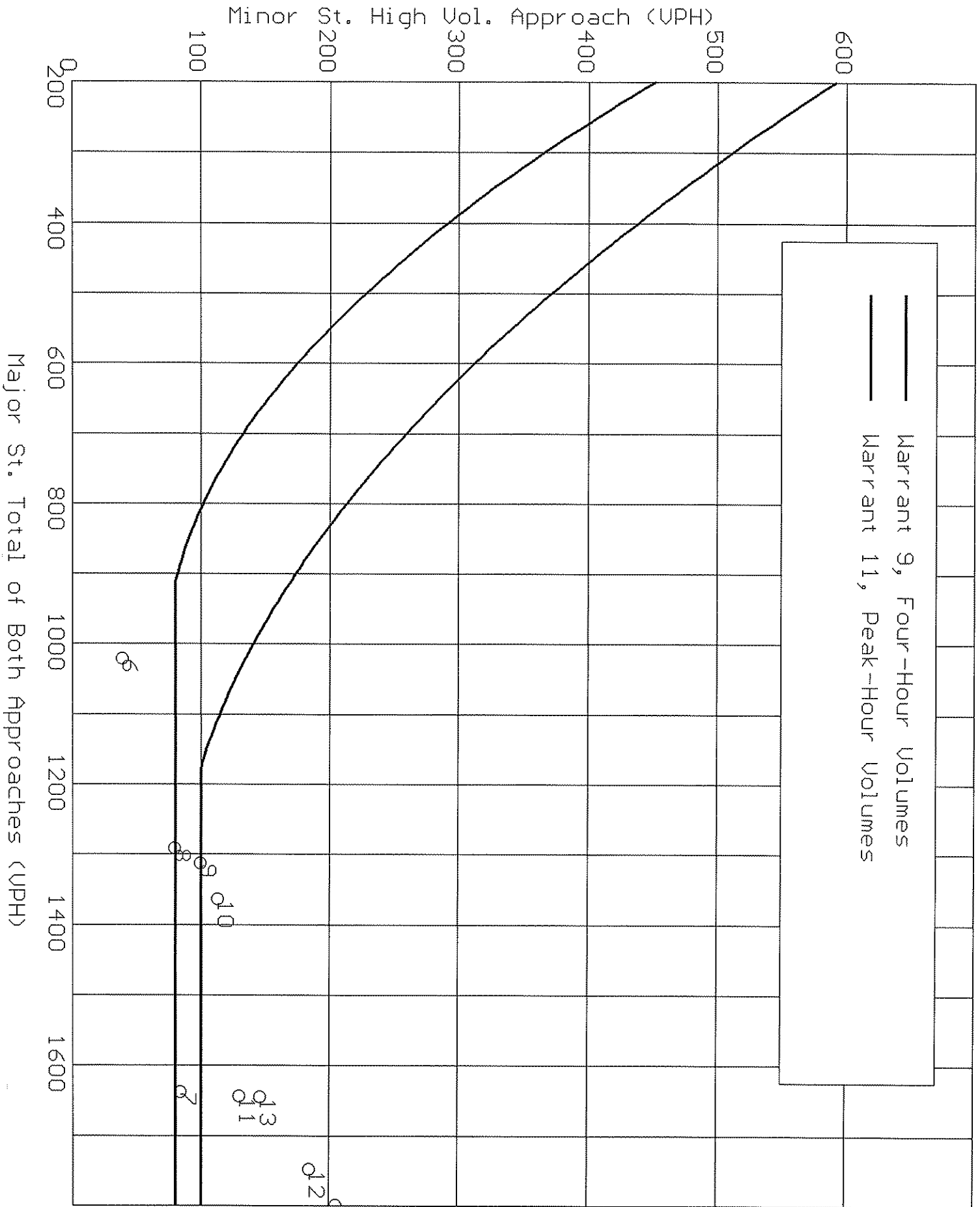
## Warrant 10 - Peak Hour Delay

NOT APPLICABLE. Volume requirements satisfied, but side street peak hour delay not defined.

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

## Warrant 11 - Peak Hour Volume

SATISFIED for 5 hours.



**Multiway Stop Warrant Analysis**  
**TMC 0107 CSAH 10 (Coon Rapids Blvd.) @ TH10/TH47 East Ramps**  
**Speed Limit of Major Roadway..... 50**

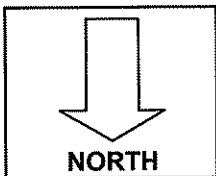
Minimum Traffic Volumes Multiway Stop Warrant Criteria:

- 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	1059	38	0	38	0
7 AM - 8 AM	1721	84	0	84	0
8 AM - 9 AM	1370	79	0	79	0
9 AM - 10 AM	1411	99	0	99	0
10 AM - 11 AM	1476	113	0	113	0
11 AM - 12 PM	1774	130	0	130	0
12 PM - 13 PM	1932	184	0	184	0
1 PM - 2 PM	1791	146	0	146	0
2 PM - 3 PM	2004	205	0	205	1

**TOTAL HOURS MET: 1**

**MULTIWAY STOP WARRANT IS NOT MET**



**COUNT LOCATION:**

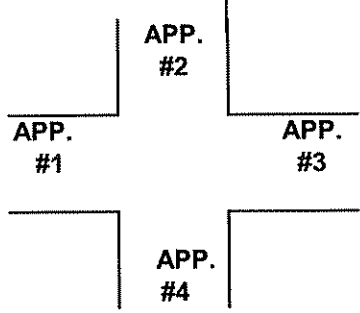
CSAH 10 (Coon Rapids Blvd.)

**DATE:**

5/15/01

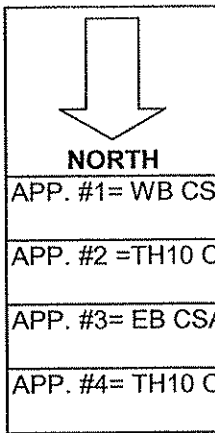
@ TH10/TH47 East Ramps

APP. #1= WB CSAH 10
APP. #2 =TH10 Off Ramp
APP. #3= EB CSAH 10
APP. #4= TH10 On Ramp



- 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						3		2
6:15-6:30						13		2
6:30-6:45						11		1
6:45-7:00						9		1
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>42</b>
7:00-7:15				1	1	11		1
7:15-7:30		1			1	8		1
7:30-7:45				1	1	15		3
7:45-8:00						8		5
<b>HOURLY TOTAL</b>					<b>3</b>	<b>HOURLY TOTAL</b>		<b>52</b>
8:00-8:15						13		1
8:15-8:30						13		1
8:30-8:45						14		
8:45-9:00						13		2
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>57</b>
9:00-9:15						17		1
9:15-9:30						9		4
9:30-9:45						10		
9:45-10:00						9		2
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>52</b>
10:00-10:15						15		2
10:15-10:30						13		2
10:30-10:45						7		2
10:45-11:00						13		1
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>55</b>
11:00-11:15						11		
11:15-11:30						14		1
11:30-11:45				1	1	7		
11:45-12:00						3		1
<b>HOURLY TOTAL</b>					<b>1</b>	<b>HOURLY TOTAL</b>		<b>37</b>
12:00-12:15						11	1	3
12:15-12:30						11		1
12:30-12:45						19		
12:45-1:00						14		2
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>62</b>
1:00-1:15						9		
1:15-1:30						4		1
1:30-1:45						12		
1:45-2:00						12		2
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>40</b>



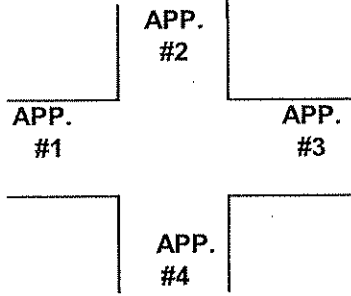
**COUNT LOCATION:**

CSAH 10 (Coon Rapids Blvd.)

**DATE:**

5/15/01

@ TH10/TH47 East Ramps



- 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						8		
2:15-2:30						4		3
2:30-2:45						12		2
2:45-3:00						8		1
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>38</b>
3:00-3:15								
3:15-3:30								
3:30-3:45								
3:45-4:00								
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		
4:00-4:15								
4:15-4:30								
4:30-4:45								
4:45-5:00								
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		
5:00-5:15								
5:15-5:30								
5:30-5:45								
5:45-6:00								
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		
6:00-6:15								
6:15-6:30								
6:30-6:45								
6:45-7:00								
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		
7:00-7:15								
7:15-7:30								
7:30-7:45								
7:45-8:00								
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		
8:00-8:15								
8:15-8:30								
8:30-8:45								
8:45-9:00								
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		
9:00-9:15								
9:15-9:30								
9:30-9:45								
9:45-10:00								
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		
9:15-9:30								
9:30-9:45								
9:45-10:00								
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		