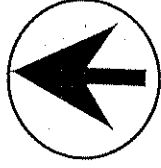


Date : 6/14/04

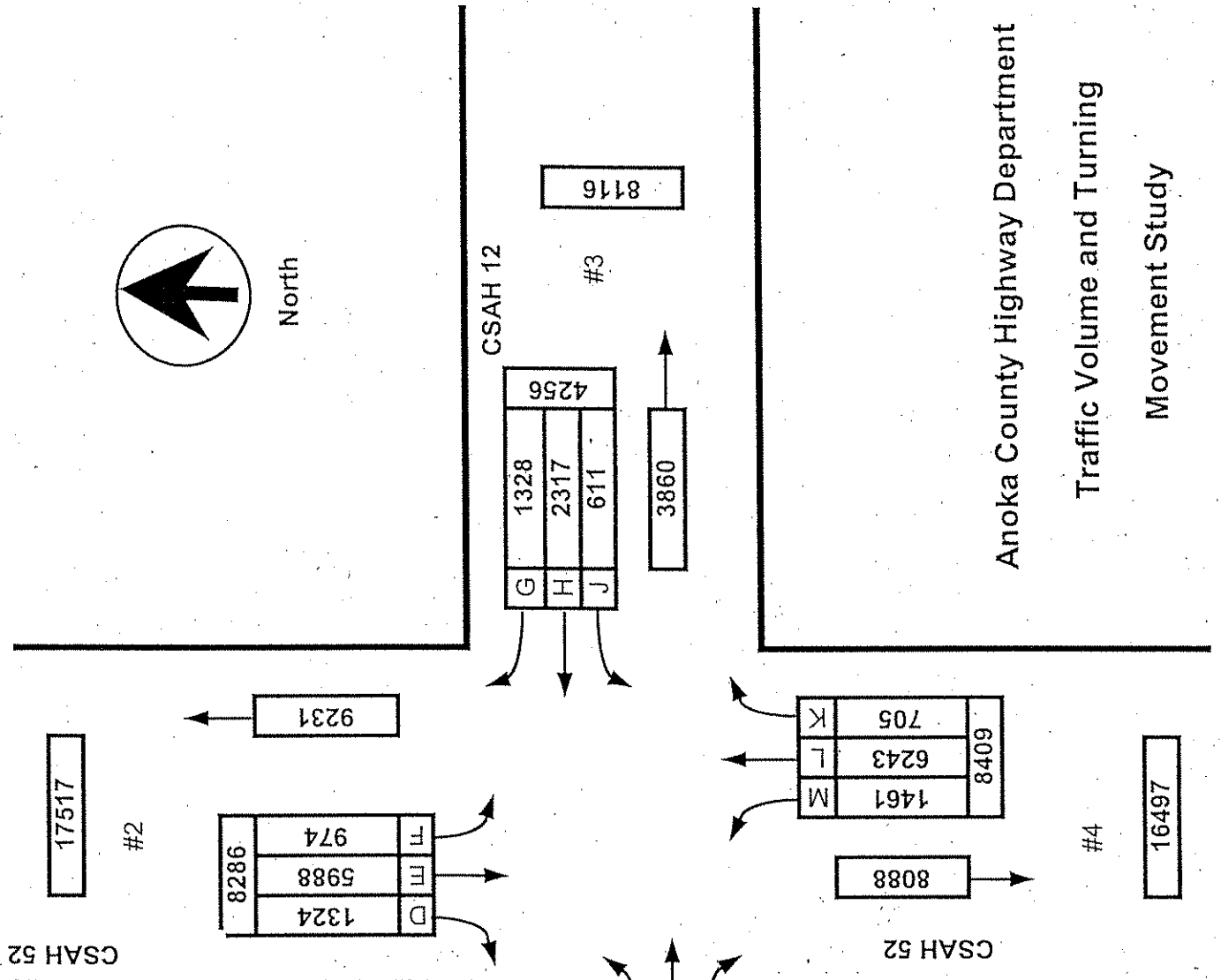
Count Number : TMC0407

Location : CSAH 12 (109th Ave.)

@ CSAH 52 (Radisson Rd.)



North



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

Anoka County Highway Department
 Traffic Volume and Turning
 Movement Study

Anoka County Highway Department
 Traffic Engineering
 Traffic Volume and Turning Movement Stud

File Name : TMC0407
 Site Code : 04070101
 Start Date : 06/14/2004
 Page No : 2

Weather:
 Counter: TDC-8
 Counted by: Katelyn/Kyle

Groups Printed- Unshifted

Start Time	CSAH 52 Southbound					CSAH 12 Westbound					CSAH 52 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				
18:00	22	77	20	9	119	18	83	68	3	169	19	90	13	7	122	23	33	26	5	82	24	492	516
18:15	18	78	24	5	120	12	71	46	3	129	7	98	13	7	118	32	31	6	0	69	15	436	451
18:30	15	55	19	4	89	15	92	55	3	162	58	158	13	3	229	34	36	17	2	87	12	567	579
18:45	18	80	28	4	126	7	39	23	0	69	32	93	16	3	141	25	41	19	1	85	8	421	429
Total	73	290	91	22	454	52	285	192	9	529	116	439	55	20	610	114	141	68	8	323	59	1916	1975
19:00	27	75	26	2	128	5	55	17	1	77	40	103	21	2	164	30	46	23	0	99	5	468	473
19:15	13	43	21	2	77	4	32	17	2	53	25	100	10	3	135	24	39	10	0	73	7	338	345
19:30	10	48	19	2	77	9	21	26	0	56	32	96	13	1	141	34	49	21	2	104	5	378	383
19:45	10	40	16	2	66	3	34	29	1	66	21	73	6	1	100	26	34	17	1	77	5	309	314
Total	60	206	82	8	348	21	142	89	4	252	118	372	50	7	540	114	168	71	3	353	22	1493	1515
20:00	12	36	11	2	59	2	52	19	0	73	17	92	6	2	115	28	43	14	1	85	5	332	337
20:15	7	47	15	0	69	4	34	19	2	57	17	71	7	1	95	23	40	20	0	83	3	304	307
20:30	8	28	17	0	53	2	33	13	0	48	21	99	7	1	127	27	29	15	1	71	2	299	301
20:45	14	34	9	0	57	4	36	12	0	52	22	65	11	1	98	22	41	16	0	79	1	286	287
Total	41	145	52	2	238	12	155	63	2	230	77	327	31	5	435	100	153	65	2	318	11	1221	1232
21:00	13	30	18	2	61	3	33	22	0	58	28	87	13	0	128	28	30	7	1	65	3	312	315
21:15	8	30	12	1	50	5	33	17	2	55	25	83	4	1	112	20	20	4	0	44	4	261	265
21:30	10	15	11	3	36	4	24	17	0	45	28	66	1	2	95	20	20	9	0	49	5	225	230
21:45	7	24	5	0	36	2	37	13	1	52	17	65	4	1	86	14	31	10	0	55	2	229	231
Total	38	99	46	6	183	14	127	69	3	210	98	301	22	4	421	82	101	30	1	213	14	1027	1041
Grand Total	974	598	132	490	8286	611	231	132	140	4256	146	624	705	400	8409	166	218	148	485	5330	1515	26281	27796
Apprch %	11.8	72.3	16.0			14.4	54.4	31.2			17.4	74.2	8.4			31.1	40.9	27.9					
Total %	3.7	22.8	5.0		31.5	2.3	8.8	5.1		16.2	5.6	23.8	2.7		32.0	6.3	8.3	5.7		20.3	5.5	94.5	

**ANOKA COUNTY HIGHWAY
PC-WARRANTS
TRAFFIC SIGNAL WARRANT ANALYSIS**

Study Name : TMC0407
Study Date : 06/18/04
Page No. : 1

Signal Warrants - Summary

Major Street Approaches

Northbound: CSAH 52
Number of Lanes: 2
Approach Speed: 55
Total Approach Volume: 8,410

Southbound: CSAH 52
Number of Lanes: 2
Approach Speed: 55
Total Approach Volume: 8,286

Minor Street Approaches

Eastbound: CSAH 12
Number of Lanes: 2
Total Approach Volume: 5,330

Westbound: CSAH 12
Number of Lanes: 2
Total Approach Volume: 4,256

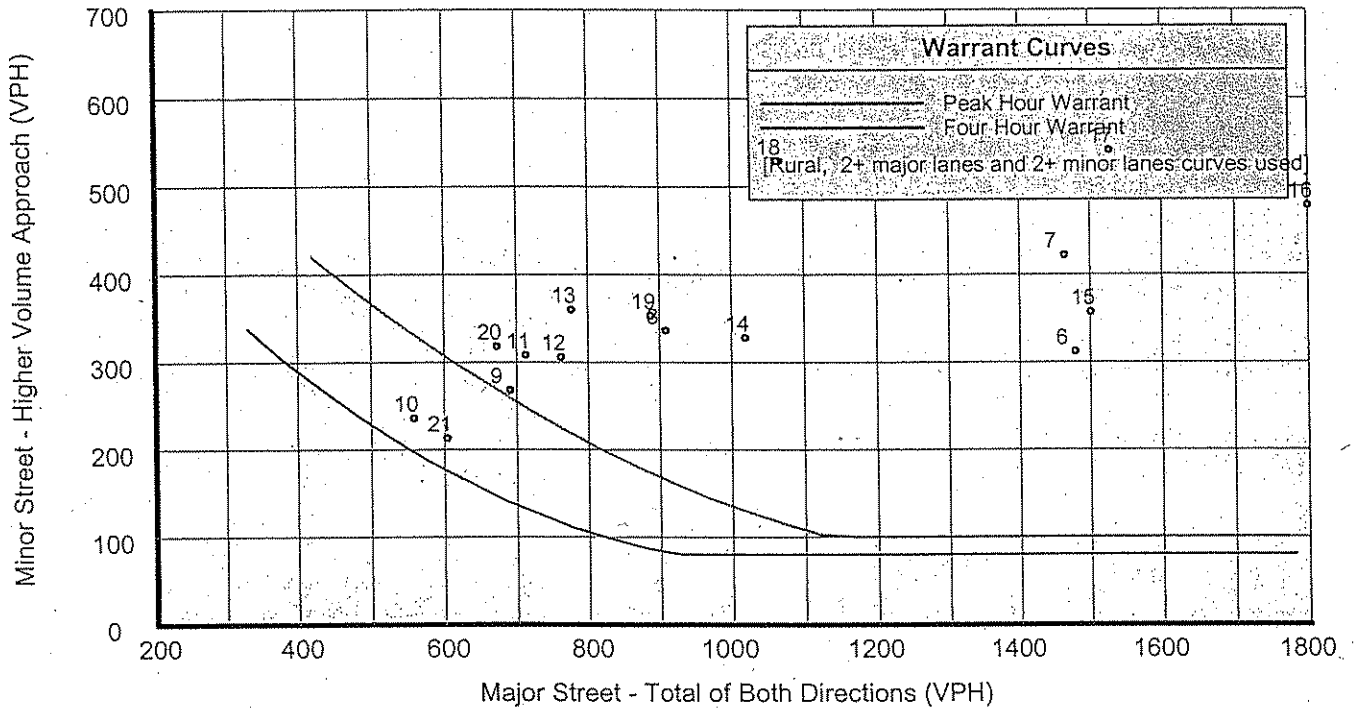
Warrant Summary (Rural values apply.)

Warrant 1 - Eight Hour Vehicular Volumes	Satisfied
Warrant 1A - Minimum Vehicular Volume	Satisfied
Required volumes reached for 16 hours, 8 are needed	
Warrant 1B - Interruption of Continuous Traffic	Satisfied
Required volumes reached for 14 hours, 8 are needed	
Warrant 1 A&B - Combination of Warrants	Satisfied
Required volumes reached for 16 hours, 8 are needed	
Warrant 2 - Four Hour Volumes	Satisfied
Number of hours (16) volumes exceed minimum >= minimum required (4).	
Warrant 3 - Peak Hour	Satisfied
Warrant 3A - Peak Hour Volumes	Satisfied
Volumes exceed minimums for at least one hour.	
Warrant 3B - Peak Hour Delay	Satisfied
Number of hours (62) volumes exceed minimum >= required (1). Delay data not evaluated.	
Warrant 4 - Pedestrian Volumes	Not Evaluated
Warrant 5 - School Crossing	Not Evaluated
Warrant 6 - Coordinated Signal System	Not Evaluated
Warrant 7 - Crash Experience	Not Evaluated
Warrant 8 - Roadway Network	Not Evaluated

**ANOKA COUNTY HIGHWAY
PC-WARRANTS
TRAFFIC SIGNAL WARRANT ANALYSIS**

Study Name : TMC0407
Study Date : 06/18/04
Page No. : 2

Signal Warrants - Summary



Analysis of 8-Hour Volume Warrants:

Hour Begin	Major Total	Higher Minor Vol	Dir	War-1A			War-1B			War-1A&B		
				Major Crit	Minor Crit	Meets?	Major Crit	Minor Crit	Meets?	Major Crit	Minor Crit	Meets?
00:00	0	0	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
01:00	0	0	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
02:00	0	0	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
03:00	0	0	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
04:00	0	0	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
05:00	0	0	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
06:00	1,479	312	EB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
07:00	1,464	422	EB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
08:00	909	336	EB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
09:00	691	268	EB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
10:00	559	236	EB	420-Yes	140-Yes	Both	630-No	70-Yes	Minor	504-Yes	112-Yes	Both
11:00	713	308	EB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
12:00	762	306	EB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
13:00	777	360	EB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
14:00	1,019	328	EB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
15:00	1,501	357	EB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
16:00	2,065	478	EB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
17:00	1,528	541	WB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
18:00	1,064	529	WB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
19:00	888	353	EB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
20:00	673	318	EB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
21:00	604	213	EB	420-Yes	140-Yes	Both	630-No	70-Yes	Minor	504-Yes	112-Yes	Both
22:00	0	0	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
23:00	0	0	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---

**ANOKA COUNTY HIGHWAY
PC-WARRANTS
TRAFFIC SIGNAL WARRANT ANALYSIS**

Study Name : TMC0407
Study Date : 06/18/04

Multi-Way Stop Warrant Report

Major Street Approaches

Northbound: CSAH 52
Total Approach Volume: 8,410
Approach Speed: 55

Southbound: CSAH 52
Total Approach Volume: 8,286
Approach Speed: 55

Minor Street Approaches

Eastbound: CSAH 12
Total Approach Volume: 5,330

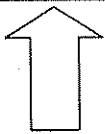
Westbound: CSAH 12
Total Approach Volume: 4,256

Warrant Summary

- Criteria A - Interim Measure** Not Evaluated
If traffic signals are justified, stop signs can be installed as an interim measure.
- Criteria B - Crash Experience** Not Evaluated
Number of crashes (0) is less than the minimum required (5).
- Criteria C - Minimum Volumes and Delays** Satisfied
Delay data not evaluated
Required volumes reached for 16 hours, 8 are needed
- Criteria D - 80% of Volumes, Delays, and Crashes** Not Evaluated
Delay data not evaluated
Required volumes reached for 16 hours, 8 are needed

Analysis of 8-Hour Volume Warrants:

Time	Major Crit	Minor	Crit C			Crit D		
	Total	Total	Major Crit	Minor Crit	Meets?	Major Crit	Minor Crit	Meets?
00:00 - 01:00	0	0	210-No	140-No	No	240-No	160-No	No
01:00 - 02:00	0	0	210-No	140-No	No	240-No	160-No	No
02:00 - 03:00	0	0	210-No	140-No	No	240-No	160-No	No
03:00 - 04:00	0	0	210-No	140-No	No	240-No	160-No	No
04:00 - 05:00	0	0	210-No	140-No	No	240-No	160-No	No
05:00 - 06:00	0	0	210-No	140-No	No	240-No	160-No	No
06:00 - 07:00	1,479	486	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
07:00 - 08:00	1,464	620	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
08:00 - 09:00	909	493	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
09:00 - 10:00	691	460	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
10:00 - 11:00	559	384	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
11:00 - 12:00	713	504	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
12:00 - 13:00	762	502	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
13:00 - 14:00	777	567	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
14:00 - 15:00	1,019	569	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
15:00 - 16:00	1,501	701	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
16:00 - 17:00	2,065	919	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
17:00 - 18:00	1,528	953	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
18:00 - 19:00	1,064	852	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
19:00 - 20:00	888	605	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
20:00 - 21:00	673	548	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
21:00 - 22:00	604	423	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
22:00 - 23:00	0	0	210-No	140-No	No	240-No	160-No	No
23:00 - 00:00	0	0	210-No	140-No	No	240-No	160-No	No



COUNT LOCATION:

CSAH 12 (109th AVE.) @

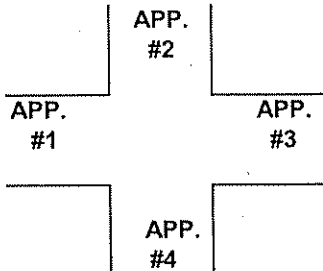
DATE:

06/14/2004

CSAH 52 (Radisson Rd.)

NORTH

APP. #1 = CSAH 12
APP. #2 = CSAH 52
APP. #3 = CSAH 12
APP. #4 = CSAH 52



- 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						11		
6:15-6:30						12		
6:30-6:45						16	1	
6:45-7:00						26		
HOURLY TOTAL						HOURLY TOTAL		66
7:00-7:15						25		
7:15-7:30	1	1				30		
7:30-7:45				1	1	33		
7:45-8:00						30		
HOURLY TOTAL					3	HOURLY TOTAL		118
8:00-8:15						36		
8:15-8:30						38		
8:30-8:45						24		
8:45-9:00						36		1
HOURLY TOTAL						HOURLY TOTAL		135
9:00-9:15		2			2	21		1
9:15-9:30						29		
9:30-9:45						30		
9:45-10:00		2			2	45		
HOURLY TOTAL					4	HOURLY TOTAL		126
10:00-10:15						14		
10:15-10:30						23		1
10:30-10:45		1			1	32		
10:45-11:00						36		
HOURLY TOTAL					1	HOURLY TOTAL		106
11:00-11:15						36		
11:15-11:30						31		
11:30-11:45						30	1	
11:45-12:00						30		
HOURLY TOTAL						HOURLY TOTAL		128
12:00-12:15						24		
12:15-12:30						27		
12:30-12:45						24		
12:45-1:00						31		1
HOURLY TOTAL						HOURLY TOTAL		107
1:00-1:15						44		1
1:15-1:30						29		
1:30-1:45	1				1	28		
1:45-2:00						44		
HOURLY TOTAL					1	HOURLY TOTAL		146
TOTAL						TOTAL		866

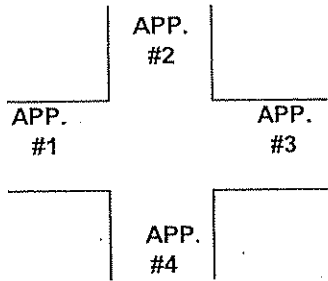
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32



COUNT LOCATION: CSAH 12 (109th AVE.) @
CSAH 52 (Radisson Rd.)

DATE: 06/17/2004

APP. #1 = CSAH 12
APP. #2 = CSAH 52
APP. #3 = CSAH 12
APP. #4 = CSAH 52



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				15 MIN-TOT	HEAVY VEHICLES		
	APP. #1	APP. #2	APP. #3	APP. #4		TRUCKS	RV	BUS
2:00-2:15PM						36		
2:15-2:30						36		
2:30-2:45						28		
2:45-3:00			1		1	33		1
HOURLY TOTAL					1	HOURLY TOTAL		134
3:00-3:15						35		
3:15-3:30						36	1	
3:30-3:45						35		
3:45-4:00	1	1	1		3	30		
HOURLY TOTAL					3	HOURLY TOTAL		137
4:00-4:15	1				1	30		
4:15-4:30						36		
4:30-4:45						39		
4:45-5:00						32	1	
HOURLY TOTAL					1	HOURLY TOTAL		138
5:00-5:15						20		
5:15-5:30						11		
5:30-5:45						15		
5:45-6:00						27		
HOURLY TOTAL						HOURLY TOTAL		73
6:00-6:15						24		
6:15-6:30						15		
6:30-6:45						11		1
6:45-7:00						6		2
HOURLY TOTAL					2	HOURLY TOTAL		59
7:00-7:15						3		2
7:15-7:30			2			6		
7:30-7:45						5		
7:45-8:00						4	1	
HOURLY TOTAL					1	HOURLY TOTAL		21
8:00-8:15						5		
8:15-8:30						3		
8:30-8:45						2		
8:45-9:00			1		1	1		
HOURLY TOTAL					1	HOURLY TOTAL		11
9:00-9:15						2	1	
9:15-9:30						3		
9:30-9:45						4		
9:45-10:00						2		
HOURLY TOTAL						HOURLY TOTAL		12
					TOTAL	TOTAL		911

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
24
25
26
27
28
29
30
31
32