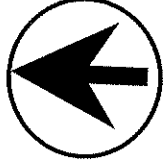


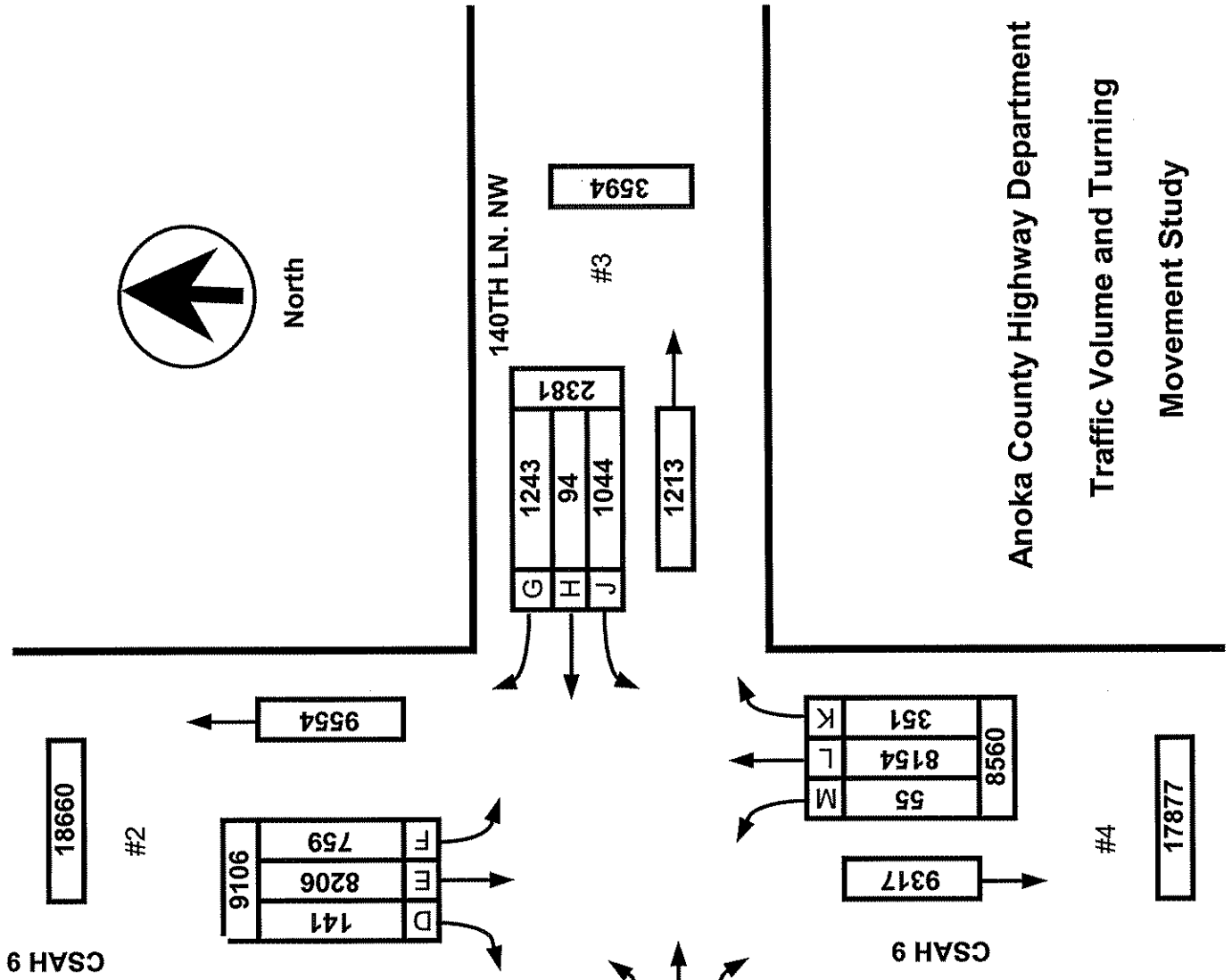
Date : 6/26/02

Count Number : TMC0211

Location : CSAH 9 @
140TH LN. NW



North



Anoka County Highway Department
Traffic Volume and Turning
Movement Study

	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	1	0	1	2

Anoka County Highway Department
Traffic Engineering

Weather: Sunny, Warm
Counter TDC-8
Counted by: Melissa/Jessica

Traffic Volume and Turning Movement Stud

File Name : TMC 0211
Site Code : 02110101
Start Date : 06/26/2002
Page No : 2

Groups Printed- Unshifted

Start Time	CSAH 9 Southbound					140th Ln. NW Westbound					CSAH 9 Northbound					140th Ln. NW Eastbound					Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Rig ht	Hea vy	App. Total	Left	Thru	Rig ht	Hea vy	App. Total	Left	Thru	Rig ht	Hea vy	App. Total	Left	Thru	Rig ht	Hea vy	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	20	146	10	4	176	13	2	37	3	52	2	197	15	7	214	5	4	0	0	9	14	451	465
18:15	16	155	9	7	180	19	0	38	0	57	2	235	13	9	250	2	5	0	0	7	16	494	510
18:30	18	111	2	3	131	30	4	46	2	80	1	192	14	4	207	4	2	2	1	8	10	426	436
18:45	15	133	2	3	150	31	1	17	3	49	0	174	9	1	183	4	1	1	0	6	7	388	395
Total	69	545	23	17	637	93	7	138	8	238	5	798	51	21	854	15	12	3	1	30	47	1759	1806
19:00	9	124	4	2	137	24	2	24	2	50	1	175	9	6	185	2	6	2	0	10	10	382	392
19:15	26	141	3	0	170	18	3	22	1	43	3	155	9	5	167	0	3	3	0	6	6	386	392
19:30	17	102	3	4	122	16	2	34	0	52	0	157	7	1	164	9	2	2	0	13	5	351	356
19:45	18	104	1	1	123	40	2	26	1	68	3	155	7	3	165	8	4	0	0	12	5	368	373
Total	70	471	11	7	552	98	9	106	4	213	7	642	32	15	681	19	15	7	0	41	26	1487	1513
20:00	17	116	0	1	133	24	3	24	1	51	3	135	4	3	142	3	4	1	0	8	5	334	339
20:15	11	78	1	1	90	15	2	23	1	40	2	159	10	2	171	1	0	0	0	1	4	302	306
20:30	14	77	3	4	94	19	0	36	1	55	1	168	7	1	176	4	0	1	0	5	6	330	336
20:45	11	84	3	1	98	9	1	32	3	42	1	144	7	3	152	1	0	1	0	2	7	294	301
Total	53	355	7	7	415	67	6	115	6	188	7	606	28	9	641	9	4	3	0	16	22	1260	1282
21:00	15	100	1	2	116	10	2	24	1	36	1	157	4	2	162	2	3	1	0	6	5	320	325
21:15	11	109	0	0	120	13	2	25	0	40	1	154	3	3	158	0	0	3	0	3	3	321	324
21:30	10	102	2	1	114	14	0	17	0	31	1	175	5	1	181	0	0	2	0	2	2	328	330
21:45	9	94	4	1	107	11	1	24	0	36	1	109	5	2	115	0	2	1	0	3	3	261	264
Total	45	405	7	4	457	48	5	90	1	143	4	595	17	8	616	2	5	7	0	14	13	1230	1243
Grand Total	759	820	141	275	9106	104	94	124	57	2381	55	815	351	242	8560	157	103	67	9	327	583	2037	2095
Apprch %	8.3	90.	1	1.5		43.	3.9	52.			0.6	95.	4.1		48.	31.	20.						
Total %	3.7	40.	0.7		44.7	5.1	0.5	6.1		11.7	0.3	40.	1.7		42.0	0.8	0.5	0.3		1.6	2.8	97.2	

Multiway Stop Warrant Analysis
TMC 0210 CSAH 9 @ 140TH LN. NW
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	1175	88	16	104	NO
7 AM - 8 AM	1226	105	15	120	NO
8 AM - 9 AM	904	70	13	83	NO
9 AM - 10 AM	846	75	11	86	NO
10 AM - 11 AM	963	100	20	120	NO
11 AM - 12 PM	985	112	11	123	NO
12 PM - 13 PM	1049	111	14	125	NO
1 PM - 2 PM	1011	94	15	109	NO
2 PM - 3 PM	1236	146	17	163	YES
3 PM - 4 PM	1513	212	23	235	YES
4 PM - 5 PM	1712	213	36	249	YES
5 PM - 6 PM	2017	237	35	272	YES
6 PM - 7 PM	1759	238	30	268	YES
7 PM - 8 PM	1487	213	41	254	YES
8 PM - 9 PM	1260	188	16	204	YES
9 PM - 10 PM	1230	143	14	157	YES

TOTAL HOURS MET: 8

MULTIWAY STOP WARRANT IS MET

Major Street Approaches:

Northbound:

CSAH 9

Data File: C:\Program Files\PC-Warrants\TMC 0211.war
 Count Type: IMC. Channel: 0. Count Date: 6/26/ 2
 Number of Lanes: 2
 Approach Speed: 45
 Total Approach Traffic: 8560

Southbound:

CSAH 9

Data File: C:\Program Files\PC-Warrants\TMC 0211.war
 Count Type: IMC. Channel: 0. Count Date: 6/26/ 2
 Number of Lanes: 2
 Approach Speed: 45
 Total Approach Traffic: 9106

Minor Street Approaches:

Eastbound:

140th Ln. NW

Data File: C:\Program Files\PC-Warrants\TMC 0211.war
 Count Type: IMC. Channel: 0. Count Date: 6/26/ 2
 Number of Lanes: 1
 Approach Speed: 30
 Total Approach Traffic: 327

Westbound:

140th Ln. NW

Data File: C:\Program Files\PC-Warrants\TMC 0211.war
 Count Type: IMC. Channel: 0. Count Date: 6/26/ 2
 Number of Lanes: 1
 Approach Speed: 30
 Total Approach Traffic: 2381

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
0	0	0	W	17	105		52	84
1	0	0	W	18	105		52	84
2	0	0	W	19	105		52	84
3	0	0	W	20	105		52	84
4	0	0	W	21	105		52	84
5	0	0	W	22	105		52	84
6	1071	88	W	14	MAIN 105	--BOTH--	52	--BOTH-- 84
7	1106	105	W	11	--BOTH-- 105	--BOTH--	52	--BOTH-- 84
8	821	70	W	16	MAIN 105	--BOTH--	52	MAIN 84
9	760	75	W	15	MAIN 105	--BOTH--	52	MAIN 84
10	843	100	W	12	MAIN 105	--BOTH--	52	--BOTH-- 84
11	862	112	W	9	--BOTH-- 105	--BOTH--	52	--BOTH-- 84
12	924	111	W	10	--BOTH-- 105	--BOTH--	52	--BOTH-- 84
13	902	94	W	13	MAIN 105	--BOTH--	52	--BOTH-- 84
14	1074	146	W	7	--BOTH-- 105	--BOTH--	52	--BOTH-- 84
15	1278	212	W	5	--BOTH-- 105	--BOTH--	52	--BOTH-- 84
16	1463	213	W	3	--BOTH-- 105	--BOTH--	52	--BOTH-- 84
17	1709	273	W	1	--BOTH-- 105	--BOTH--	52	--BOTH-- 84
18	1491	238	W	2	--BOTH-- 105	--BOTH--	52	--BOTH-- 84
19	1233	213	W	4	--BOTH-- 105	--BOTH--	52	--BOTH-- 84
20	1056	188	W	6	--BOTH-- 105	--BOTH--	52	--BOTH-- 84
21	1073	143	W	8	--BOTH-- 105	--BOTH--	52	--BOTH-- 84
22	0	0	W	23	105		52	84
23	0	0	W	24	105		52	84

Warrant Summary:

Rural values apply.

Warrant 1 - Minimum Vehicular Volumes

SATISFIED for 11 hours. Criteria--Main St.: 420; Side St.: See Volume Summary.

Warrant 2 - Interruption of Continuous Traffic

SATISFIED for 16 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

NOT SATISFIED. At least one street has no major approaches. Peak hour total entering volume: 2017.

- 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

SATISFIED for 14 hours. Criteria--Main: 504; Side: See Volume Summary.

Warrant 9 - Four Hour Volumes

SATISFIED for 14 hours.

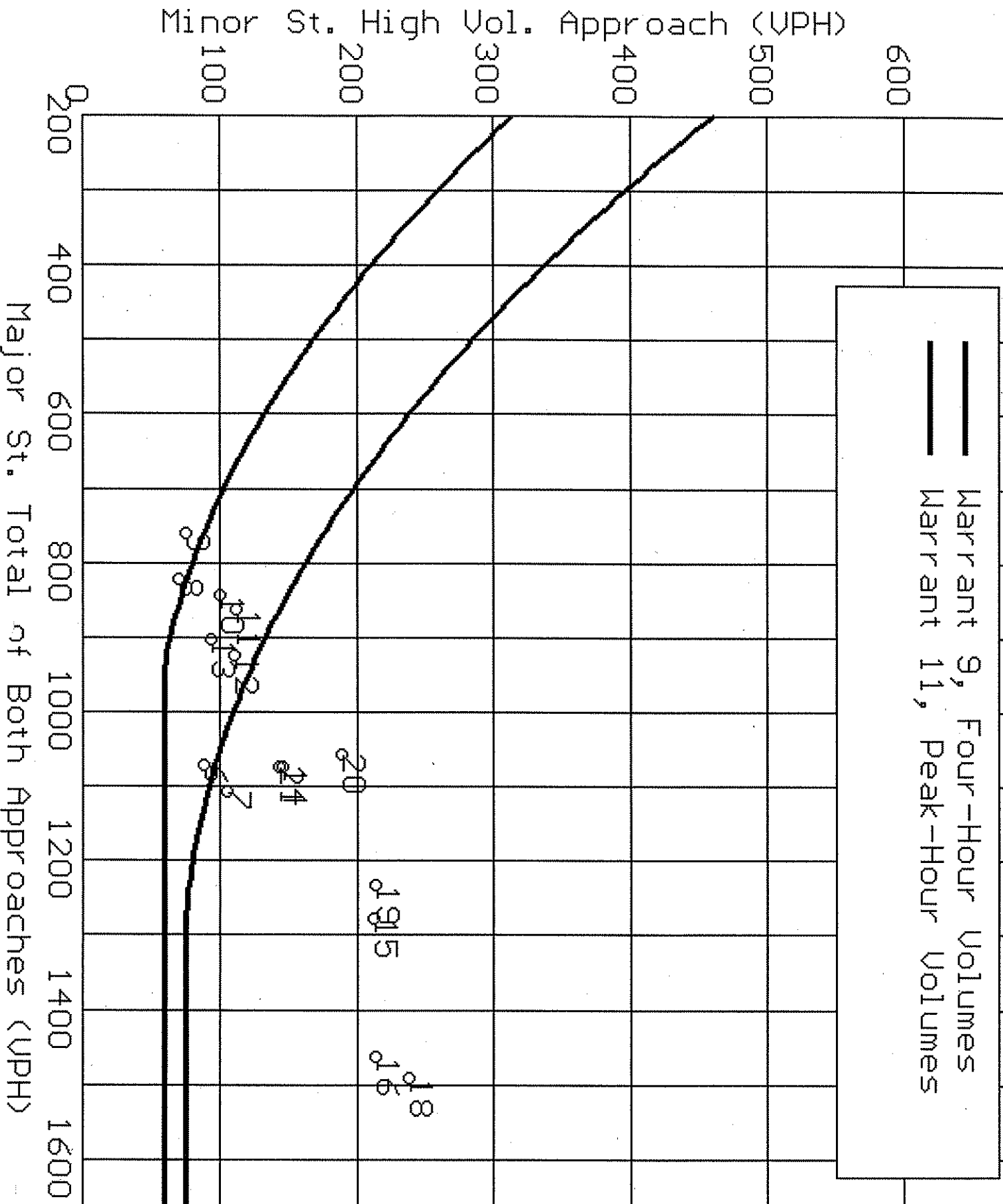
Warrant 10 - Peak Hour Delay

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

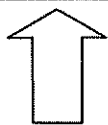
Criteria--Main St.: 800 (4 approaches), 650 (3 approaches); Side St.: 100.

Warrant 11 - Peak Hour Volume

SATISFIED for 9 hours.



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



NORTH

COUNT LOCATION:

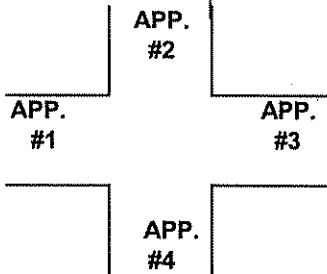
CSAH 9 @

DATE:

6/26/02

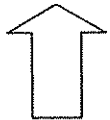
140th Ln NW

APP. #1 = 140th Ln. NW
APP. #2 = CSAH 9
APP. #3 = 140th Ln NW
APP. #4 = CSAH 9



- 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						6		
6:15-6:30		1			1	7		
6:30-6:45						9		
6:45-7:00		2		1	3	6		1
HOURLY TOTAL					4	HOURLY TOTAL		29
7:00-7:15						6	1	2
7:15-7:30						3		2
7:30-7:45		1	2		3	11		4
7:45-8:00	1		1	1	3	10		
HOURLY TOTAL					6	HOURLY TOTAL		39
8:00-8:15	1				1	9		2
8:15-8:30	1				1	8		1
8:30-8:45						13		1
8:45-9:00		2			2	7		
HOURLY TOTAL					4	HOURLY TOTAL		41
9:00-9:15						11		1
9:15-9:30						11		
9:30-9:45		1			1	9		1
9:45-10:00						10		
HOURLY TOTAL					1	HOURLY TOTAL		43
10:00-10:15						16		
10:15-10:30	1				1	7		
10:30-10:45	2	2			4	6		
10:45-11:00		3			3	6		1
HOURLY TOTAL					8	HOURLY TOTAL		36
11:00-11:15						13		1
11:15-11:30						14		
11:30-11:45		2			2	8		1
11:45-12:00	1				1	4	1	1
HOURLY TOTAL					3	HOURLY TOTAL		43
12:00-12:15			4		4	6	1	
12:15-12:30						12		
12:30-12:45			1		1	5		1
12:45-1:00			1		1	6		2
HOURLY TOTAL					6	HOURLY TOTAL		33
1:00-1:15		1			1	15		2
1:15-1:30	3				3	8		
1:30-1:45						9		
1:45-2:00						9		
HOURLY TOTAL					4	HOURLY TOTAL		43



NORTH

COUNT LOCATION:

CSAH 9 @

DATE:

6/26/02

140th Ln NW

APP. #1 = 140th Ln. NW

APP. #2 = CSAH 9

APP. #3 = 140th Ln NW

APP. #4 = CSAH 9

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			1		1	7	1	1
2:15-2:30	1				1	7		
2:30-2:45						7		
2:45-3:00		1			1	3		
HOURLY TOTAL					3	HOURLY TOTAL		26
3:00-3:15						15		
3:15-3:30						11		
3:30-3:45		2			2	3		
3:45-4:00		1	3		4	13		
HOURLY TOTAL					6	HOURLY TOTAL		42
4:00-4:15						11	2	
4:15-4:30		1			1	6		2
4:30-4:45		1			1	7		
4:45-5:00	1				1	11		1
HOURLY TOTAL					3	HOURLY TOTAL		40
5:00-5:15		1			1	11	1	
5:15-5:30			1		1	5		
5:30-5:45						11		
5:45-6:00		1	1		2	9	1	
HOURLY TOTAL					4	HOURLY TOTAL		38
6:00-6:15	2				2	13	1	
6:15-6:30						13	2	
6:30-6:45	2		2		4	9	1	
6:45-7:00						8		
HOURLY TOTAL					6	HOURLY TOTAL		47
7:00-7:15						10		
7:15-7:30		2			2	4		
7:30-7:45						4	1	
7:45-8:00						4	1	
HOURLY TOTAL					2	HOURLY TOTAL		24
8:00-8:15		1			1	4	1	
8:15-8:30		1			1	4		
8:30-8:45						6		
8:45-9:00		1			1	7		
HOURLY TOTAL					3	HOURLY TOTAL		22
9:00-9:15	1				1	5		
9:15-9:30						3		
9:30-9:45						2		
9:45-10:00						3		
HOURLY TOTAL					1	HOURLY TOTAL		13