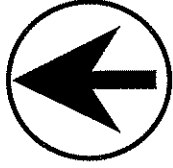


Date : 2/07/01

Count Number : TMC0105

Location : CSAH 23 (Lake Dr.) @

I 35W North Ramps



North

CSAH 23

8365

#2

3976	T	0
1865	F	2111
	L	

4389

Off Ramp from SB 35W

380	G	811
9	H	
422	J	

#3

811

0

2296

#1

0	C	0
0	B	0
0	A	0

On Ramp to SB 35W

CSAH 23 (Lake Dr.)

4431	M	422
4009	L	
0	K	

#4

2533

6964

	LANES OF APPROACH			TOTAL
	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	
#1	0	0	0	0
#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: Cloudy and Snowy
Counter TDC-8
Counted by: Josie/ Sean

Traffic Volume and Turning Movement Stud

File Name : TMC0105
Site Code : 01050202
Start Date : 02/07/2001
Page No : 1

Groups Printed- Unshifted

Start Time	CSAH 23 Southbound					Off Ramp from SB 35W Westbound					CSAH 23 Northbound					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	0	33	82	3	115	3	0	9	0	12	8	16	0	1	24	0	0	0	0	0	4	151	155
06:15	0	49	77	6	128	8	0	11	1	19	9	42	0	4	51	0	0	0	0	0	11	196	207
06:30	0	62	60	4	122	14	0	12	0	26	4	37	0	2	41	0	0	0	0	0	6	189	195
06:45	0	66	65	6	131	10	0	9	0	19	4	60	0	6	64	0	0	0	0	0	12	214	226
Total	0	210	284	19	494	35	0	41	1	76	25	155	0	13	180	0	0	0	0	0	33	750	783
07:00	0	94	79	5	173	16	0	10	1	26	8	56	0	5	64	0	0	0	0	0	11	263	274
07:15	0	96	80	8	176	23	0	9	0	32	16	82	0	11	98	0	0	0	0	0	19	306	325
07:30	0	73	64	7	137	11	0	15	0	26	13	70	0	11	83	0	0	0	0	0	18	246	264
07:45	0	58	59	9	117	21	0	24	3	45	5	80	0	10	85	0	0	0	0	0	22	247	269
Total	0	321	282	29	603	71	0	58	4	129	42	288	0	37	330	0	0	0	0	0	70	1062	1132
08:00	0	44	52	15	96	15	0	14	1	29	11	61	0	7	72	0	0	0	0	0	23	197	220
08:15	0	44	52	10	96	15	0	9	2	24	8	54	0	7	62	0	0	0	0	0	19	182	201
08:30	0	52	58	14	110	8	0	10	0	18	6	51	0	7	57	0	0	0	0	0	21	185	206
08:45	0	32	36	3	68	14	0	13	1	27	4	67	0	8	71	0	0	0	0	0	12	166	178
Total	0	172	198	42	370	52	0	46	4	98	29	233	0	29	262	0	0	0	0	0	75	730	805
09:00	0	42	31	9	73	3	0	9	2	12	15	47	0	11	62	0	0	0	0	0	22	147	169
09:15	0	35	36	7	71	7	0	9	1	16	8	34	0	7	42	0	0	0	0	0	15	129	144
09:30	0	33	35	12	68	3	0	9	1	12	10	53	0	10	63	0	0	0	0	0	23	143	166
09:45	0	29	24	9	53	9	0	8	1	17	9	41	0	8	50	0	0	0	0	0	18	120	138
Total	0	139	126	37	265	22	0	35	5	57	42	175	0	36	217	0	0	0	0	0	78	539	617
10:00	0	28	20	6	48	7	0	5	2	12	5	42	0	8	47	0	0	0	0	0	16	107	123
10:15	0	21	26	4	47	5	0	3	3	8	9	62	0	10	71	0	0	0	0	0	17	126	143
10:30	0	15	27	4	42	13	0	7	0	20	8	58	0	9	66	0	0	0	0	0	13	128	141
10:45	0	36	39	18	75	6	0	4	2	10	11	42	0	6	53	0	0	0	0	0	26	138	164
Total	0	100	112	32	212	31	0	19	7	50	33	204	0	33	237	0	0	0	0	0	72	499	571
11:00	0	40	30	6	70	6	0	6	4	12	13	39	0	9	52	0	0	0	0	0	19	134	153
11:15	0	22	23	11	45	12	0	7	4	19	9	57	0	11	66	0	0	0	0	0	26	130	156
11:30	0	33	19	8	52	5	0	2	2	7	8	40	0	6	48	0	0	0	0	0	16	107	123
11:45	0	38	28	9	66	5	0	4	2	9	7	69	0	13	76	0	0	0	0	0	24	151	175
Total	0	133	100	34	233	28	0	19	12	47	37	205	0	39	242	0	0	0	0	0	85	522	607
12:00	0	36	33	11	69	10	0	5	3	15	5	52	0	6	57	0	0	0	0	0	20	141	161
12:15	0	31	18	4	49	6	0	6	1	12	7	46	0	9	53	0	0	0	0	0	14	114	128
12:30	0	37	25	4	62	8	0	5	1	13	13	64	0	5	77	0	0	0	0	0	10	152	162
12:45	0	25	20	4	45	6	0	8	2	14	2	66	0	8	68	0	0	0	0	0	14	127	141
Total	0	129	96	23	225	30	0	24	7	54	27	228	0	28	255	0	0	0	0	0	58	534	592
13:00	0	31	29	10	60	5	2	1	0	8	2	62	0	9	64	0	0	0	0	0	19	132	151
13:15	0	28	23	2	51	7	1	3	0	11	1	62	0	10	63	0	0	0	0	0	12	125	137
13:30	0	29	54	9	83	6	0	3	1	9	8	55	0	7	63	0	0	0	0	0	17	155	172
13:45	0	26	24	5	50	2	1	4	1	7	4	66	0	6	70	0	0	0	0	0	12	127	139
Total	0	114	130	26	244	20	4	11	2	35	15	245	0	32	260	0	0	0	0	0	60	539	599
14:00	0	30	27	5	57	3	2	6	2	11	11	62	0	7	73	0	0	0	0	0	14	141	155
14:15	0	40	36	10	76	9	0	5	1	14	12	64	0	3	76	0	0	0	0	0	14	166	180
14:30	0	31	27	2	58	12	0	9	1	21	6	68	0	7	74	0	0	0	0	0	10	153	163
14:45	0	35	19	2	54	5	0	5	0	10	11	115	0	14	126	0	0	0	0	0	16	190	206
Total	0	136	109	19	245	29	2	25	4	56	40	309	0	31	349	0	0	0	0	0	54	650	704
15:00	0	46	26	5	72	7	0	5	1	12	9	100	0	5	109	0	0	0	0	0	11	193	204
15:15	0	45	26	2	71	5	0	12	0	17	12	137	0	9	149	0	0	0	0	0	11	237	248
15:30	0	49	34	6	83	13	0	8	1	21	11	126	0	7	137	0	0	0	0	0	14	241	255
15:45	0	43	34	2	77	6	2	5	2	13	9	119	0	5	128	0	0	0	0	0	9	218	227
Total	0	183	120	15	303	31	2	30	4	63	41	482	0	26	523	0	0	0	0	0	45	889	934
16:00	0	53	35	3	88	9	0	5	0	14	7	112	0	9	119	0	0	0	0	0	12	221	233
16:15	0	51	44	5	95	5	0	6	1	11	9	137	0	6	146	0	0	0	0	0	12	252	264
16:30	0	42	38	4	80	5	0	4	1	9	12	141	0	6	153	0	0	0	0	0	11	242	253
16:45	0	49	32	2	81	5	0	15	1	20	13	112	0	7	125	0	0	0	0	0	10	226	236
Total	0	195	149	14	344	24	0	30	3	54	41	502	0	28	543	0	0	0	0	0	45	941	986

Anoka County Highway Department
Traffic Engineering

Weather: Cloudy and Snowy
Counter TDC-8
Counted by: Josie/ Sean

Traffic Volume and Turning Movement Stud

File Name : TMC0105
Site Code : 01050202
Start Date : 02/07/2001
Page No : 2

Groups Printed- Unshifted

Start Time	CSAH 23 Southbound					Off Ramp from SB 35W Westbound					CSAH 23 Northbound					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				
17:00	0	45	24	3	69	8	0	6	1	14	8	198	0	7	206	0	0	0	0	0	11	289	300
17:15	0	43	31	5	74	10	1	6	1	17	11	139	0	2	150	0	0	0	0	0	8	241	249
17:30	0	34	15	0	49	5	0	8	0	13	4	136	0	1	140	0	0	0	0	0	1	202	203
17:45	0	36	19	1	55	6	0	1	1	7	6	107	0	4	113	0	0	0	0	0	6	175	181
Total	0	158	89	9	247	29	1	21	3	51	29	580	0	14	609	0	0	0	0	0	26	907	933
18:00	0	36	21	5	57	5	0	4	1	9	7	109	0	3	116	0	0	0	0	0	9	182	191
18:15	0	40	19	2	59	3	0	6	1	9	5	118	0	3	123	0	0	0	0	0	6	191	197
18:30	0	19	15	0	34	5	0	5	0	10	5	88	0	2	93	0	0	0	0	0	2	137	139
18:45	0	26	15	2	41	7	0	6	4	13	4	88	0	2	92	0	0	0	0	0	8	146	154
Total	0	121	70	9	191	20	0	21	6	41	21	403	0	10	424	0	0	0	0	0	25	656	681
Grand Total	0	211	186	308	3976	422	9	380	62	811	422	4009	0	356	4431	0	0	0	0	0	726	9218	9944
Apprch %	0.0	53.1	46.9			52.0	1.1	46.9			9.5	90.5	0.0			0.0	0.0	0.0					
Total %	0.0	22.9	20.2		43.1	4.6	0.1	4.1		8.8	4.6	43.5	0.0		48.1	0.0	0.0	0.0		0.0	7.3	92.7	

or Street Approaches:

Northbound:

CSAH 23

Data File: C:\Program Files\JAMAR\PETRA\Data Files\TMC0105A.war
 Count Type: IMC. Channel: 0. Count Date: 2/ 7/ 1
 Number of Lanes: 1
 Approach Speed: 50
 Total Approach Traffic: 4431

Southbound:

CSAH 23

Data File: C:\Program Files\JAMAR\PETRA\Data Files\TMC0105A.war
 Count Type: IMC. Channel: 0. Count Date: 2/ 7/ 1
 Number of Lanes: 1
 Approach Speed: 50
 Total Approach Traffic: 3976

Minor Street Approaches:

Eastbound:

Data File: C:\Program Files\JAMAR\PETRA\Data Files\TMC0105A.war
 Count Type: IMC. Channel: 0. Count Date: 2/ 7/ 1
 Number of Lanes: 1
 Approach Speed: 0
 Total Approach Traffic: 0

Westbound:

Off Ramp from SB 35W

Data File: C:\Program Files\JAMAR\PETRA\Data Files\TMC0105A.war
 Count Type: IMC. Channel: 0. Count Date: 2/ 7/ 1
 Number of Lanes: 1
 Approach Speed: 0
 Total Approach Traffic: 811

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 W	14	105	52	84
1	0	0 W	15	105	52	84
2	0	0 W	16	105	52	84
3	0	0 W	17	105	52	84
4	0	0 W	18	105	52	84
5	0	0 W	19	105	52	84
6	674	76 W	3	MAIN 105	--BOTH-- 52	MAIN 84
7	933	129 W	1	--BOTH-- 105	--BOTH-- 52	--BOTH-- 84
8	632	98 W	2	MAIN 105	--BOTH-- 52	--BOTH-- 84
9	482	57 W	5	MAIN 105	SIDE 52	MAIN 84
10	449	50 W	10	MAIN 105	52	MAIN 84
11	475	47 W	11	MAIN 105	52	MAIN 84
12	480	54 W	7	MAIN 105	SIDE 52	MAIN 84
13	504	35 W	13	MAIN 105	52	MAIN 84
14	594	56 W	6	MAIN 105	--BOTH-- 52	MAIN 84
15	826	63 W	4	MAIN 105	--BOTH-- 52	MAIN 84
16	887	54 W	8	MAIN 105	--BOTH-- 52	MAIN 84
17	856	51 W	9	MAIN 105	MAIN 52	MAIN 84
18	615	41 W	12	MAIN 105	MAIN 52	MAIN 84
19	0	0 W	20	105	52	84
20	0	0 W	21	105	52	84
21	0	0 W	22	105	52	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

NOT SATISFIED. Required values reached for 1 hours. Criteria--Main St.: 350; Side St.: See Volume Summary.

Warrant 2 - Interruption of Continuous Traffic

NOT SATISFIED. Required values reached for 6 hours. Criteria--Main St.: 525; Side St.: See Volume Summary.

Warrant 3 - Minimum Pedestrian Volumes

NOT SATISFIED. 8th-High Hour--Pedestrians: 0. Criteria--Pedestrians: 105; Vehicles: 420.

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: 1062.

NS - 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 2 hours. Criteria--Main: 420; Side: See Volume Summary.

Warrant 9 - Four Hour Volumes

SATISFIED for 4 hours.

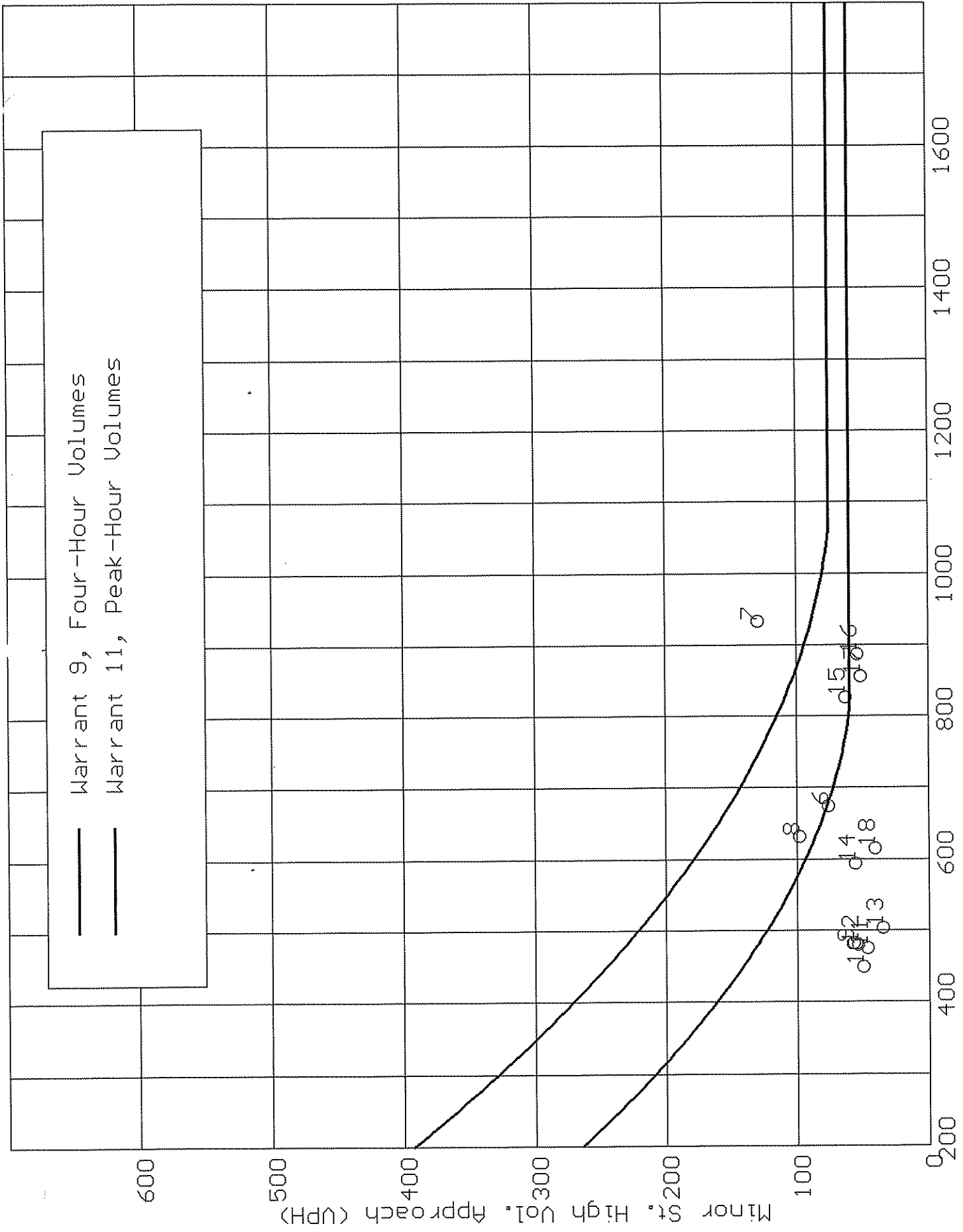
Warrant 10 - Peak Hour Delay

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 1 hours.



Major St. Total of Both Approaches (UPH)

Multiway Stop Warrant Analysis
TMC 0105 CSAH 23 (Lake Dr.) @ I 35W North Ramps
Speed Limit of Major Roadway..... 50

Minimum Traffic Volumes Multiway Stop Warrant Criteria:

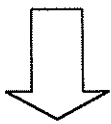
- a) The total vehicular volume entering the intersection from all approaches must average at least 500 vehicles per hour (vph) for any 8 hours of an average day, AND:
- b) The combined vehicular and pedestrian volume from the minor street or highway must average at least 200 vph for the same 8 hours, 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	783	76	0	76	0
7 AM - 8 AM	1132	129	0	129	0
8 AM - 9 AM	805	98	0	98	0
9 AM - 10 AM	617	57	0	57	0
10 AM - 11 AM	571	50	0	50	0
11 AM - 12 PM	607	47	0	47	0
12 PM - 13 PM	592	54	0	54	0
1 PM - 2 PM	599	35	0	35	0
2 PM - 3 PM	704	56	0	56	0
3 PM - 4 PM	934	63	0	63	0
4 PM - 5 PM	986	54	0	54	0
5 PM - 6 PM	933	51	0	51	0
6 PM - 7 PM	681	41	0	41	0

TOTAL HOURS MET: 0

MULTIWAY STOP WARRANT IS NOT MET

I 35W North Ramps



NORTH

APP. #1= Off Ramp from SB 35W

APP. #2 =NB CSAH 23

APP. #3= On Ramp to SB 35W

APP. #4= SB CSAH 23

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						5		
6:15-6:30						9		1
6:30-6:45						5		1
6:45-7:00						9		3
HOURLY TOTAL						HOURLY TOTAL		33
7:00-7:15						9		2
7:15-7:30						16		2
7:30-7:45						13		6
7:45-8:00						19		3
HOURLY TOTAL						HOURLY TOTAL		70
8:00-8:15						17		4
8:15-8:30						18		1
8:30-8:45						17		4
8:45-9:00						8		4
HOURLY TOTAL						HOURLY TOTAL		73
9:00-9:15						19		3
9:15-9:30						14		1
9:30-9:45						18		4
9:45-10:00						18		1
HOURLY TOTAL						HOURLY TOTAL		78
10:00-10:15						17		
10:15-10:30						16		
10:30-10:45						13		
10:45-11:00						25		1
HOURLY TOTAL						HOURLY TOTAL		72
11:00-11:15						15		3
11:15-11:30						30		1
11:30-11:45						15		
11:45-12:00						22		2
HOURLY TOTAL						HOURLY TOTAL		88
12:00-12:15						16		3
12:15-12:30						13		3
12:30-12:45						9		
12:45-1:00						12		1
HOURLY TOTAL						HOURLY TOTAL		57
1:00-1:15						20		1
1:15-1:30						15		
1:30-1:45						12		
1:45-2:00						11		
HOURLY TOTAL						HOURLY TOTAL		59



NORTH

COUNT LOCATION:

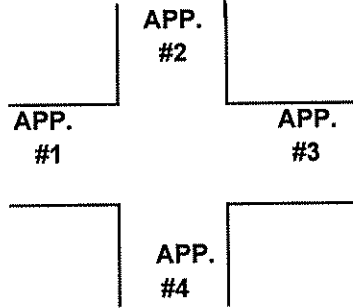
CSAH 23 (Lake Dr.) @

DATE:

2/8/01

I 35W North Ramps

APP. #1= Off Ramp from SB 35W
APP. #2 =NB CSAH 23
APP. #3= On Ramp to SB 35W
APP. #4= SB CSAH 23



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						12		1
2:15-2:30						14		2
2:30-2:45						4		6
2:45-3:00						15		
HOURLY TOTAL						HOURLY TOTAL		54
3:00-3:15						9		1
3:15-3:30						9		3
3:30-3:45						13		
3:45-4:00						11		
HOURLY TOTAL						HOURLY TOTAL		46
4:00-4:15						9		2
4:15-4:30						9		3
4:30-4:45						10		1
4:45-5:00						9		1
HOURLY TOTAL						HOURLY TOTAL		44
5:00-5:15						11		
5:15-5:30						7		
5:30-5:45						1		
5:45-6:00						3		2
HOURLY TOTAL						HOURLY TOTAL		24
6:00-6:15						9		1
6:15-6:30						6		
6:30-6:45						2		1
6:45-7:00						6		1
HOURLY TOTAL						HOURLY TOTAL		26
7:00-7:15								
7:15-7:30								
7:30-7:45								
7:45-8:00								
HOURLY TOTAL						HOURLY TOTAL		
8:00-8:15								
8:15-8:30								
8:30-8:45								
8:45-9:00								
HOURLY TOTAL						HOURLY TOTAL		
9:00-9:15								
9:15-9:30								
9:30-9:45								
9:45-10:00								
HOURLY TOTAL						HOURLY TOTAL		