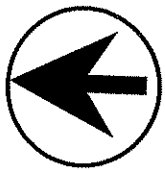


Date : 8/21/02

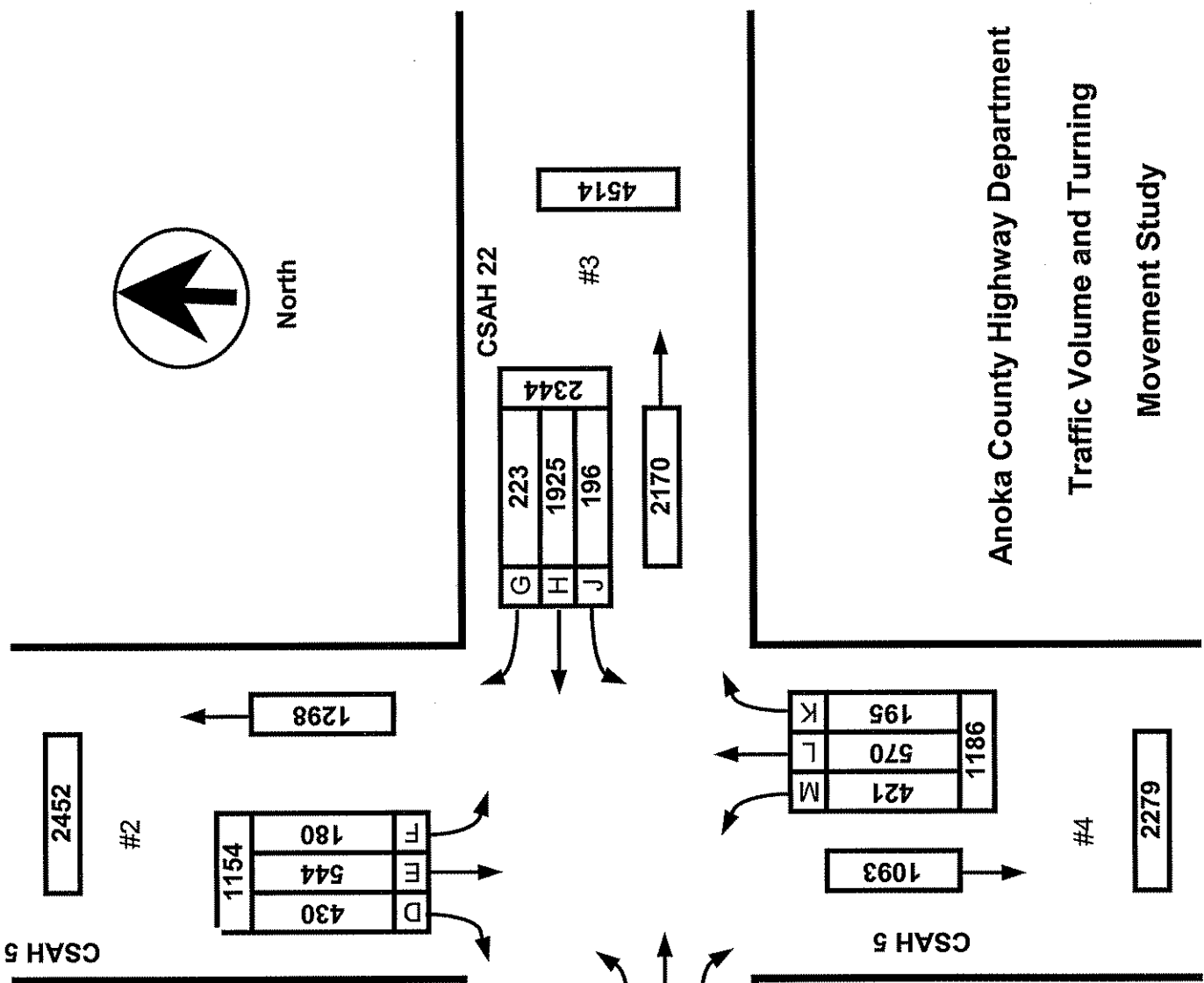
Count Number : TMC0224

Location : CSAH 22 (VIKING BLVD.) @

CSAH 5 (NOWTHEN BLVD.)



North



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

Anoka County Highway Department
 Traffic Volume and Turning
 Movement Study

Anoka County Highway Department
Traffic Engineering

Weather: Cloudy, Humid
Counter TDC-8

Traffic Volume and Turning Movement Stud

File Name : TMC 0224
Site Code : 02240102
Start Date : 08/21/2002
Page No : 1

Counted by: Melissa/Jessica

Groups Printed- Unshifted

Start Time	CR 5 From North					CSAH 22 From East					CR 5 From South					CSAH 22 From West					Excl. 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	1	21	10	0	32	6	47	7	2	60	4	3	2	1	9	4	14	7	1	25	4	126	130
06:15	2	11	8	3	21	1	34	3	4	38	4	5	4	2	13	5	14	13	4	32	13	104	117
06:30	1	17	8	2	26	7	42	2	13	51	6	0	3	1	9	7	19	13	10	39	26	125	151
06:45	3	20	5	4	28	7	50	6	8	63	4	3	2	1	9	5	29	8	10	42	23	142	165
Total	7	69	31	9	107	21	173	18	27	212	18	11	11	5	40	21	76	41	25	138	66	497	563
07:00	3	16	4	2	23	2	52	5	10	59	5	6	1	3	12	1	22	8	6	31	21	125	146
07:15	3	18	13	3	34	0	56	5	11	61	3	3	4	2	10	2	27	13	10	42	26	147	173
07:30	5	9	7	3	21	2	38	5	11	45	2	5	4	1	11	6	29	7	6	42	21	119	140
07:45	3	12	8	3	23	2	38	3	8	43	3	9	1	2	13	10	24	11	8	45	21	124	145
Total	14	55	32	11	101	6	184	18	40	208	13	23	10	8	46	19	102	39	30	160	89	515	604
08:00	5	12	9	6	26	1	38	7	12	46	3	4	2	1	9	4	30	6	9	40	28	121	149
08:15	2	9	9	6	20	0	39	2	8	41	10	5	3	7	18	7	16	5	5	28	26	107	133
08:30	2	6	6	1	14	6	31	3	6	40	4	2	4	1	10	6	17	8	4	31	12	95	107
08:45	4	8	4	2	16	2	39	1	9	42	3	3	3	2	9	5	22	4	6	31	19	98	117
Total	13	35	28	15	76	9	147	13	35	169	20	14	12	11	46	22	85	23	24	130	85	421	506
09:00	1	10	5	3	16	3	32	0	4	35	7	4	3	2	14	2	26	3	7	31	16	96	112
09:15	4	5	5	4	14	3	15	2	6	20	5	5	2	3	12	4	19	8	2	31	15	77	92
09:30	5	9	4	3	18	2	23	1	5	26	4	5	2	3	11	2	28	6	7	36	18	91	109
09:45	2	5	7	1	14	3	26	3	5	32	2	5	2	1	9	7	22	5	8	34	15	89	104
Total	12	29	21	11	62	11	96	6	20	113	18	19	9	9	46	15	95	22	24	132	64	353	417
10:00	6	6	5	7	17	1	28	6	9	35	7	2	2	0	11	5	25	1	5	31	21	94	115
10:15	2	12	8	3	22	0	13	3	5	16	3	2	2	0	7	6	17	2	2	25	10	70	80
10:30	0	9	11	1	20	2	24	4	5	30	9	8	4	1	21	2	25	2	1	29	8	100	108
10:45	3	10	7	3	20	4	32	0	9	36	2	5	5	4	12	7	21	4	9	32	25	100	125
Total	11	37	31	14	79	7	97	13	28	117	21	17	13	5	51	20	88	9	17	117	64	364	428
11:00	5	9	3	3	17	2	22	2	7	26	7	4	0	0	11	5	14	3	3	22	13	76	89
11:15	3	5	2	4	10	4	28	1	6	33	6	2	4	1	12	5	20	3	1	28	12	83	95
11:30	4	4	10	4	18	2	23	0	4	25	6	5	1	3	12	5	18	3	3	26	14	81	95
11:45	3	3	7	4	13	3	32	4	5	39	4	7	1	1	12	3	29	7	3	39	13	103	116
Total	15	21	22	15	58	11	105	7	22	123	23	18	6	5	47	18	81	16	10	115	52	343	395
12:00	2	4	5	3	11	3	35	3	5	41	7	9	3	1	19	5	30	9	2	44	11	115	126
12:15	3	6	5	4	14	4	39	2	4	45	8	5	1	1	14	7	33	8	4	48	13	121	134
12:30	2	10	5	4	17	5	44	4	6	53	7	7	5	0	19	7	35	3	2	45	12	134	146
12:45	3	12	7	5	22	4	47	3	7	54	6	8	2	2	16	6	37	10	3	53	17	145	162
Total	10	32	22	16	64	16	165	12	22	193	28	29	11	4	68	25	135	30	11	190	53	515	568
13:00	2	9	8	5	19	5	48	4	4	57	4	10	3	1	17	11	34	4	2	49	12	142	154
13:15	5	11	10	3	26	6	37	6	5	49	8	6	5	2	19	5	28	8	3	41	13	135	148
13:30	3	7	13	6	23	3	35	5	7	43	4	8	1	1	13	8	23	6	5	37	19	116	135
13:45	6	10	7	4	23	4	31	4	6	39	9	11	5	0	25	10	33	3	4	46	14	133	147
Total	16	37	38	18	91	18	151	19	22	188	25	35	14	4	74	34	118	21	14	173	58	526	584
14:00	3	8	9	0	20	3	28	3	8	34	7	9	3	4	19	5	16	5	3	26	15	99	114
14:15	4	6	9	0	19	2	30	5	8	37	10	7	2	1	19	8	39	4	7	51	16	126	142
14:30	2	9	5	2	16	3	21	4	4	28	5	10	5	3	20	7	28	6	6	41	15	105	120
14:45	4	5	5	4	14	2	26	3	6	31	2	8	1	0	11	19	38	9	5	66	15	122	137
Total	13	28	28	6	69	10	105	15	26	130	24	34	11	8	69	39	121	24	21	184	61	452	513
15:00	1	13	12	1	26	3	22	6	5	31	7	11	5	0	23	8	33	7	5	48	11	128	139
15:15	7	13	7	0	27	0	33	3	10	36	7	22	7	1	36	10	32	2	8	44	19	143	162
15:30	6	8	9	1	23	5	39	3	6	47	7	12	3	2	22	14	43	8	8	65	17	157	174
15:45	4	3	7	1	14	2	25	4	3	31	12	18	5	1	35	12	46	5	5	63	10	143	153
Total	18	37	35	3	90	10	119	16	24	145	33	63	20	4	116	44	154	22	26	220	57	571	628

Anoka County Highway Department
Traffic Engineering

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

Traffic Volume and Turning Movement Stud

File Name : TMC 0224
Site Code : 02240102
Start Date : 08/21/2002
Page No : 2

Groups Printed- Unshifted

Start Time	CR 5 From North					CSAH 22 From East					CR 5 From South					CSAH 22 From West					Excl. 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				
16:00	4	8	9	5	21	4	20	7	5	31	7	11	2	1	20	8	32	0	4	40	15	112	127
16:15	1	7	8	0	16	3	32	4	6	39	11	17	3	1	31	12	43	4	4	59	11	145	156
16:30	3	9	6	2	18	2	40	2	2	44	14	21	13	2	48	8	52	11	5	71	11	181	192
16:45	8	10	11	5	29	4	42	1	4	47	15	32	4	2	51	14	52	2	3	68	14	195	209
Total	16	34	34	12	84	13	134	14	17	161	47	81	22	6	150	42	179	17	16	238	51	633	684
17:00	6	9	8	2	23	2	47	5	4	54	25	22	8	3	55	21	44	11	3	76	12	208	220
17:15	2	6	6	2	14	3	36	6	1	45	12	20	5	0	37	13	63	3	5	79	8	175	183
17:30	5	9	8	0	22	6	32	3	2	41	7	25	6	1	38	13	46	5	2	64	5	165	170
17:45	1	14	11	1	26	4	40	8	9	52	15	20	5	3	40	22	58	5	8	85	21	203	224
Total	14	38	33	5	85	15	155	22	16	192	59	87	24	7	170	69	211	24	18	304	46	751	797
18:00	1	6	10	1	17	2	33	10	2	45	13	21	2	2	36	21	40	8	2	69	7	167	174
18:15	6	4	11	0	21	7	29	6	3	42	8	19	2	4	29	15	39	8	2	62	9	154	163
18:30	1	7	9	2	17	1	24	5	2	30	5	17	7	1	29	11	32	6	8	49	13	125	138
18:45	3	12	7	1	22	7	32	2	3	41	5	18	1	0	24	7	34	3	1	44	5	131	136
Total	11	29	37	4	77	17	118	23	10	158	31	75	12	7	118	54	145	25	13	224	34	577	611
19:00	2	4	9	0	15	3	17	1	2	21	1	19	2	0	22	13	21	8	2	42	4	100	104
19:15	0	7	6	1	13	3	18	1	3	22	7	7	1	0	15	11	25	5	1	41	5	91	96
19:30	1	8	4	1	13	4	17	3	2	24	8	6	2	1	16	10	23	5	2	38	6	91	97
19:45	1	6	3	0	10	3	15	4	2	22	8	4	3	0	15	6	20	4	1	30	3	77	80
Total	4	25	22	2	51	13	67	9	9	89	24	36	8	1	68	40	89	22	6	151	18	359	377
20:00	0	4	3	2	7	3	19	2	1	24	5	3	3	0	11	7	18	2	1	27	4	69	73
20:15	1	6	2	0	9	2	16	3	2	21	6	5	1	1	12	5	16	2	0	23	3	65	68
20:30	0	5	2	1	7	3	14	3	1	20	5	4	2	0	11	6	15	3	0	24	2	62	64
20:45	0	6	3	0	9	3	15	2	0	20	5	3	1	0	9	6	17	2	1	25	1	63	64
Total	1	21	10	3	32	11	64	10	4	85	21	15	7	1	43	24	66	9	2	99	10	259	269
21:00	0	4	2	0	6	1	12	3	0	16	2	3	1	0	6	5	13	2	1	20	1	48	49
21:15	2	4	1	0	7	2	13	2	0	17	4	2	1	1	7	5	12	2	0	19	1	50	51
21:30	2	5	2	1	9	3	11	1	0	15	5	5	3	0	13	6	12	3	0	21	1	58	59
21:45	1	4	1	0	6	2	9	2	0	13	5	3	0	0	8	3	13	2	0	18	0	45	45
Total	5	17	6	1	28	8	45	8	0	61	16	13	5	1	34	19	50	9	1	78	3	201	204
Grand Total	180	544	430	145	1154	196	1925	223	322	2344	421	570	195	86	1186	505	1795	353	258	2653	811	7337	8148
Apprch %	15.6	47.1	37.3			8.4	82.1	9.5			35.5	48.1	16.4			19.0	67.7	13.3					
Total %	2.5	7.4	5.9		15.7	2.7	26.2	3.0		31.9	5.7	7.8	2.7		16.2	6.9	24.5	4.8		36.2	10.0	90.0	

Major Street Approaches:

Eastbound:

CSAH 22

Data File: C:\Program Files\PC-Warrants\TMC0224.war
 Count Type: IMC. Channel: 0. Count Date: 8/21/ 2
 Number of Lanes: 1
 Approach Speed: 55
 Total Approach Traffic: 2653

Westbound:

CSAH 22

Data File: C:\Program Files\PC-Warrants\TMC0224.war
 Count Type: IMC. Channel: 0. Count Date: 8/21/ 2
 Number of Lanes: 2
 Approach Speed: 55
 Total Approach Traffic: 2344

Minor Street Approaches:

Northbound:

CR 5

Data File: C:\Program Files\PC-Warrants\TMC0224.war
 Count Type: IMC. Channel: 0. Count Date: 8/21/ 2
 Number of Lanes: 1
 Approach Speed: 40
 Total Approach Traffic: 1186

Southbound:

CR 5

Data File: C:\Program Files\PC-Warrants\TMC0224.war
 Count Type: IMC. Channel: 0. Count Date: 8/21/ 2
 Number of Lanes: 2
 Approach Speed: 40
 Total Approach Traffic: 1154

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

Hour	Main (Total)	Side Vol.	Dir.	Rank	Warrant 1 Meets?	Warrant 1 Criteria	Warrant 2 Meets?	Warrant 2 Criteria	Warrant 8 Meets?	Warrant 8 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	350	107	S	5		140	SIDE	70		112
7	368	101	S	6		140	SIDE	70		112
8	299	76	S	9		140	SIDE	70		112
9	245	62	S	13		140		70		112
10	234	79	S	8		140	SIDE	70		112
11	238	58	S	14		140		70		112
12	383	68	N	11		105	SIDE	52		84
13	361	91	S	7		140	SIDE	70		112
14	314	69	S	10		140		70		112
15	365	116	N	4	SIDE	105	SIDE	52	SIDE	84
16	399	150	N	2	SIDE	105	SIDE	52	SIDE	84
17	496	170	N	1	--BOTH--	105	SIDE	52	SIDE	84
18	382	118	N	3	SIDE	105	SIDE	52	SIDE	84
19	240	68	N	12		105	SIDE	52		84
20	184	43	N	15		105		52		84
21	139	34	N	16		105		52		84
22	0	0	S	23		140		70		112
23	0	0	S	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 1 hours. Criteria--Main St.: 420; Side St.: See Volume Summary.

Warrant 2 - Interruption of Continuous Traffic

NOT SATISFIED. Required values reached for 0 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. Peak hour total entering volume 751 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 0 hours. Criteria--Main: 504; Side: See Volume Summary.

Warrant 9 - Four Hour Volumes

NOT SATISFIED. Required values reached for 1 hours.

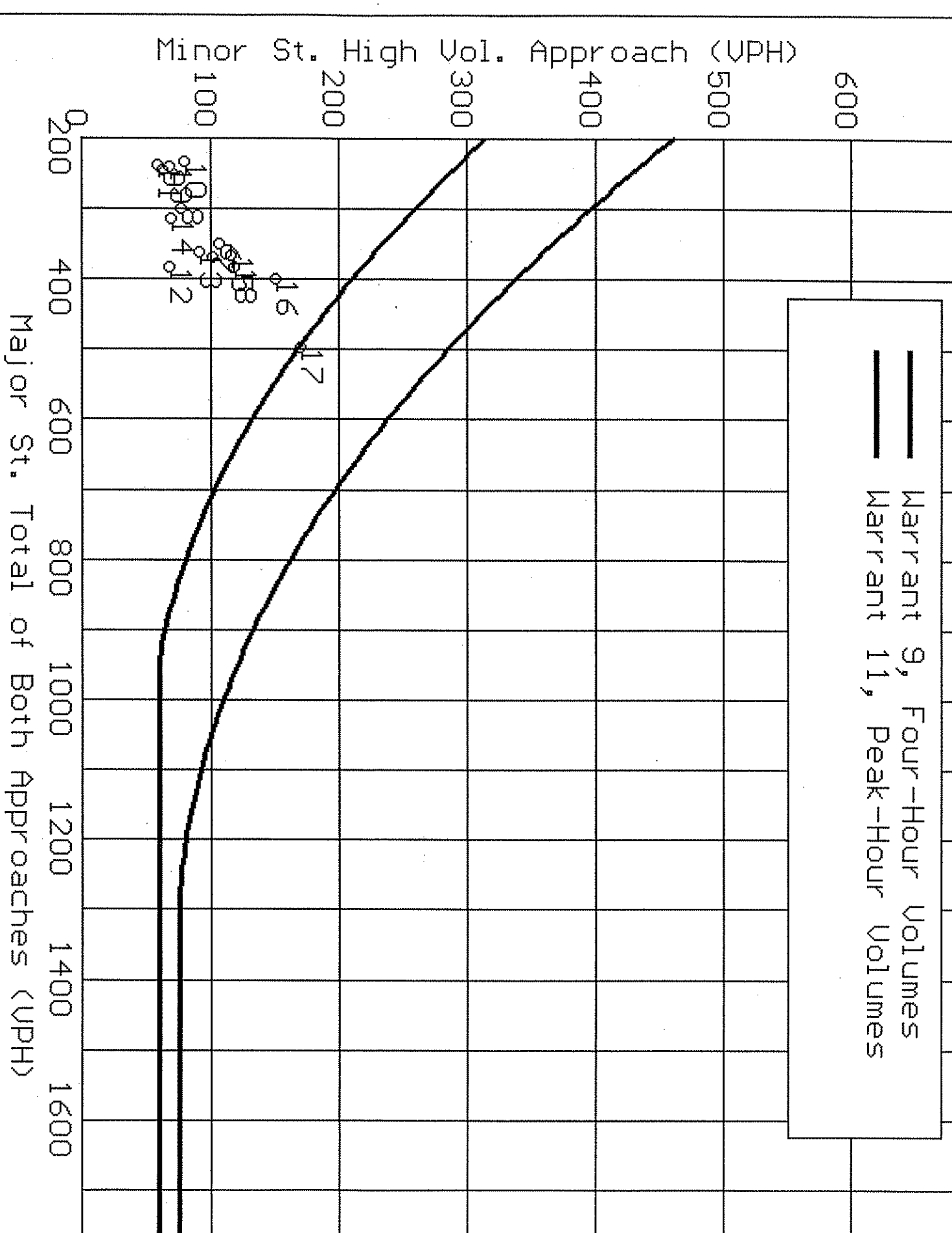
Warrant 10 - Peak Hour Delay

NOT SATISFIED. Peak hour (1700 hours) volume not adequate.

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

Warrant 11 - Peak Hour Volume

NOT SATISFIED.



Multiway Stop Warrant Analysis
TMC 0224 CSAH 22 @ CR 5
Speed Limit of Major Roadway..... 55

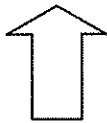
Minimum Traffic Volumes Multiway Stop Warrant Criteria:

- 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	497	107	40	147	1
7 AM - 8 AM	515	101	46	147	1
8 AM - 9 AM	421	76	46	122	0
9 AM - 10 AM	353	62	46	108	0
10 AM - 11 AM	364	79	51	130	0
11 AM - 12 PM	343	58	47	105	0
12 PM - 13 PM	515	64	68	132	0
1 PM - 2 PM	526	91	74	165	1
2 PM - 3 PM	452	69	69	138	0
3 PM - 4 PM	571	90	116	206	1
4 PM - 5 PM	633	84	150	234	1
5 PM - 6 PM	751	85	170	255	1
6 PM - 7 PM	577	77	118	195	1
7 PM - 8 PM	359	51	68	119	0
8 PM - 9 PM	259	32	43	75	0
9 PM - 10 PM	201	28	34	62	0

TOTAL HOURS MET: 7

MULTIWAY STOP WARRANT IS NOT MET



NORTH

COUNT LOCATION:

CSAH 22

DATE:

8/21/02

@ CR 5

APP. #1 = CSAH 22

APP. #2 = CR 5

APP. #3 = CSAH 22

APP. #4 = CR 5

APP. #2

APP. #1

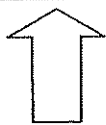
APP. #3

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						15		
2:15-2:30						16		
2:30-2:45				1	1	15		
2:45-3:00	4	1			5	15		
HOURLY TOTAL					6	HOURLY TOTAL		61
3:00-3:15						11		
3:15-3:30						19		
3:30-3:45						16	1	
3:45-4:00			3		3	9	1	
HOURLY TOTAL					3	HOURLY TOTAL		57
4:00-4:15						15		
4:15-4:30						11		
4:30-4:45						11		
4:45-5:00						14		
HOURLY TOTAL						HOURLY TOTAL		51
5:00-5:15			1		1	11	1	
5:15-5:30		3	1		4	8		
5:30-5:45						5		
5:45-6:00						21		
HOURLY TOTAL					5	HOURLY TOTAL		46
6:00-6:15						7		
6:15-6:30						9		
6:30-6:45						13		
6:45-7:00						5		
HOURLY TOTAL						HOURLY TOTAL		34
7:00-7:15						4		
7:15-7:30						5		
7:30-7:45						6		
7:45-8:00						3		
HOURLY TOTAL						HOURLY TOTAL		18
8:00-8:15						4		
8:15-8:30						3		
8:30-8:45						2		
8:45-9:00						1		
HOURLY TOTAL						HOURLY TOTAL		10
9:00-9:15						1		
9:15-9:30						1		
9:30-9:45						1		
9:45-10:00								
HOURLY TOTAL						HOURLY TOTAL		3



NORTH

COUNT LOCATION:

CSAH 22

DATE:

8/21/02

@ CR 5

APP. #1 = CSAH 22

APP. #2 = CR 5

APP. #3 = CSAH 22

APP. #4 = CR 5

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						4		
6:15-6:30						13		
6:30-6:45						26		
6:45-7:00						23		
HOURLY TOTAL						HOURLY TOTAL		66
7:00-7:15	1				1	21		
7:15-7:30						25	1	
7:30-7:45						21		
7:45-8:00						21		
HOURLY TOTAL					1	HOURLY TOTAL		89
8:00-8:15						27	1	
8:15-8:30						25	1	
8:30-8:45						11		1
8:45-9:00						18		1
HOURLY TOTAL						HOURLY TOTAL		85
9:00-9:15						16		
9:15-9:30						15		
9:30-9:45						18		
9:45-10:00						15		
HOURLY TOTAL						HOURLY TOTAL		64
10:00-10:15						21		
10:15-10:30						10		
10:30-10:45						8		
10:45-11:00						25		
HOURLY TOTAL						HOURLY TOTAL		64
11:00-11:15						13		
11:15-11:30						12		
11:30-11:45						13	1	
11:45-12:00						12		1
HOURLY TOTAL						HOURLY TOTAL		52
12:00-12:15						11		
12:15-12:30						13		
12:30-12:45						12		
12:45-1:00						17		
HOURLY TOTAL						HOURLY TOTAL		53
1:00-1:15						12		
1:15-1:30						13		
1:30-1:45						19		
1:45-2:00						14		
HOURLY TOTAL						HOURLY TOTAL		58