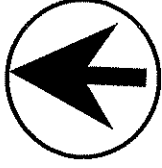


Date : 8/5/02

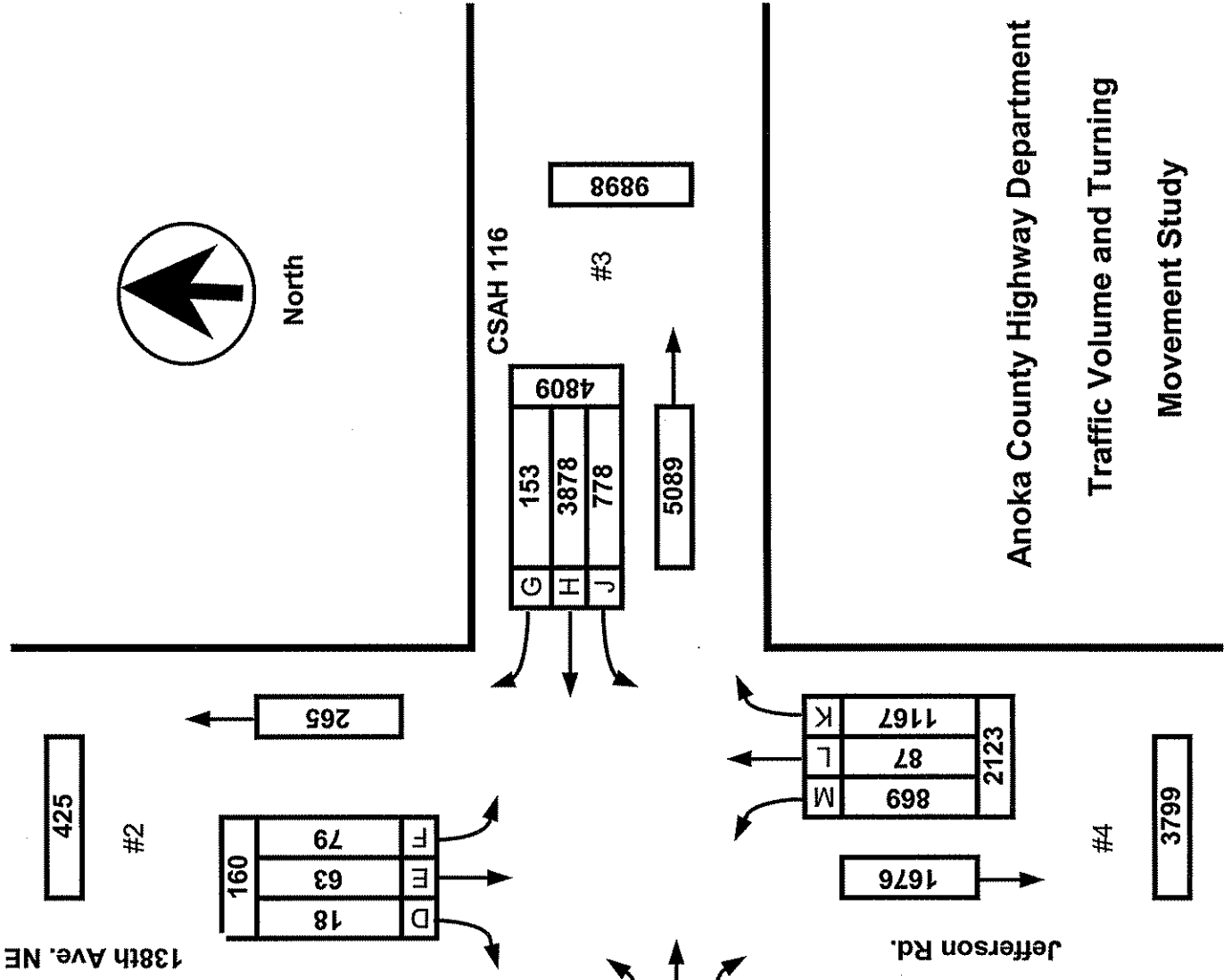
Count Number : TMC0220

Location : CSAH 116 (Industry Blvd.) @

Jefferson Rd./138th Ave. NE



North



138th Ave. NE

Jefferson Rd.

	LANES OF APPROACH			TOTAL
	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	
#1	1	0	1	2
#2	0	0	1	1
#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: Sunny, Warm
Counter TDC-8
Counted by: Melissa/Jessica

Traffic Volume and Turning Movement Stud

File Name : TMC 0220
Site Code : 02200102
Start Date : 08/05/2002
Page No : 1

Groups Printed- Unshifted

Start Time	138th Ave. NE Southbound					CSAH 116 Westbound					Jefferson Rd. Northbound					CSAH 116 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	1	1	0	0	2	19	27	1	0	47	0	1	6	0	7	0	42	19	3	61	3	117	120
06:15	0	0	0	0	0	23	23	0	2	46	2	0	5	0	7	0	59	21	1	80	3	133	136
06:30	0	0	0	0	0	25	31	1	2	57	3	0	7	0	10	0	70	19	4	89	6	156	162
06:45	0	3	0	0	3	21	50	1	5	72	5	0	10	0	15	1	79	25	2	105	7	195	202
Total	1	4	0	0	5	88	131	3	9	222	10	1	28	0	39	1	250	84	10	335	19	601	620
07:00	0	1	0	0	1	14	38	1	3	53	8	1	11	1	20	0	94	24	2	118	6	192	198
07:15	1	1	0	0	2	21	42	0	7	63	8	0	9	0	17	0	90	29	3	119	10	201	211
07:30	1	1	0	0	2	25	52	0	6	77	11	0	14	1	25	0	114	22	7	136	14	240	254
07:45	2	3	1	0	6	22	66	4	9	92	12	0	13	0	25	0	116	26	7	142	16	265	281
Total	4	6	1	0	11	82	198	5	25	285	39	1	47	2	87	0	414	101	19	515	46	898	944
08:00	1	0	0	0	1	19	50	2	9	71	5	2	6	1	13	0	75	18	10	93	20	178	198
08:15	1	0	0	0	1	17	49	0	6	66	7	1	11	0	19	0	70	10	12	80	18	166	184
08:30	5	2	0	0	7	13	48	1	11	62	4	0	12	0	16	0	89	9	11	98	22	183	205
08:45	0	1	0	0	1	16	51	1	6	68	5	0	17	0	22	0	78	7	12	85	18	176	194
Total	7	3	0	0	10	65	198	4	32	267	21	3	46	1	70	0	312	44	45	356	78	703	781
09:00	2	1	0	1	3	8	47	2	6	57	5	2	8	1	15	0	67	7	4	74	12	149	161
09:15	3	0	0	0	3	8	63	0	4	71	7	1	6	1	14	0	47	9	4	56	9	144	153
09:30	2	2	0	1	4	8	45	1	10	54	4	1	4	0	9	1	44	6	7	51	18	118	136
09:45	1	0	0	0	1	12	32	1	12	45	7	2	7	0	16	0	56	9	8	65	20	127	147
Total	8	3	0	2	11	36	187	4	32	227	23	6	25	2	54	1	214	31	23	246	59	538	597
10:00	0	1	0	0	1	11	53	2	9	66	4	0	14	0	18	1	46	8	5	55	14	140	154
10:15	1	0	0	0	1	12	44	3	7	59	2	0	10	0	12	0	37	9	5	46	12	118	130
10:30	0	1	0	1	1	6	49	0	2	55	10	0	11	3	21	0	49	6	4	55	10	132	142
10:45	0	0	0	0	0	16	53	0	2	69	10	0	11	0	21	0	63	5	9	68	11	158	169
Total	1	2	0	1	3	45	199	5	20	249	26	0	46	3	72	1	195	28	23	224	47	548	595
11:00	2	0	1	1	3	10	49	4	6	63	2	1	10	1	13	0	51	11	4	62	12	141	153
11:15	0	0	0	0	0	12	36	5	4	53	3	0	7	0	10	0	48	10	2	58	6	121	127
11:30	2	3	0	1	5	8	53	2	4	63	14	1	9	1	24	0	60	6	6	66	12	158	170
11:45	1	0	0	0	1	9	41	2	5	52	7	0	19	1	26	1	57	17	2	75	8	154	162
Total	5	3	1	2	9	39	179	13	19	231	26	2	45	3	73	1	216	44	14	261	38	574	612
12:00	0	0	1	0	1	11	47	4	3	62	10	0	15	0	25	0	61	14	5	75	8	163	171
12:15	1	1	0	0	2	13	45	3	4	61	9	2	11	1	22	1	58	16	3	75	8	160	168
12:30	0	0	1	0	1	9	51	7	5	67	13	1	16	1	30	1	57	13	4	71	10	169	179
12:45	1	0	0	0	1	7	49	5	2	61	9	1	18	0	28	2	65	17	4	84	6	174	180
Total	2	1	2	0	5	40	192	19	14	251	41	4	60	2	105	4	241	60	16	305	32	666	698
13:00	1	2	0	1	3	10	52	5	4	67	11	0	16	2	27	0	55	14	4	69	11	166	177
13:15	0	0	1	0	1	11	56	6	6	73	12	3	22	0	37	2	60	18	2	80	8	191	199
13:30	2	1	1	0	4	8	54	4	4	66	15	2	15	0	32	3	67	16	3	86	7	188	195
13:45	2	1	0	0	3	9	61	3	4	73	12	2	17	1	31	0	63	12	3	75	8	182	190
Total	5	4	2	1	11	38	223	18	18	279	50	7	70	3	127	5	245	60	12	310	34	727	761
14:00	0	0	0	0	0	11	64	5	5	80	10	0	20	1	30	1	59	15	1	75	7	185	192
14:15	3	0	1	0	4	8	69	2	6	79	15	2	14	0	31	1	55	11	3	67	9	181	190
14:30	1	2	0	0	3	9	71	4	7	84	18	0	18	1	36	1	61	16	4	78	12	201	213
14:45	0	0	0	0	0	13	74	5	4	92	16	1	16	1	33	0	68	15	2	83	7	208	215
Total	4	2	1	0	7	41	278	16	22	335	59	3	68	3	130	3	243	57	10	303	35	775	810
15:00	1	4	1	0	6	17	69	3	7	89	21	3	12	0	36	1	60	13	3	74	10	205	215
15:15	0	1	0	0	1	10	81	3	5	94	17	4	19	0	40	0	58	9	5	67	10	202	212
15:30	0	0	0	0	0	7	64	1	9	72	12	2	27	3	41	0	62	3	2	65	14	178	192
15:45	2	2	1	0	5	10	96	2	5	108	15	0	40	0	55	0	63	19	1	82	6	250	256
Total	3	7	2	0	12	44	310	9	26	363	65	9	98	3	172	1	243	44	11	288	40	835	875
16:00	2	0	0	0	2	12	95	2	6	109	30	1	25	0	56	1	73	14	3	88	9	255	264
16:15	4	0	1	0	5	16	94	3	5	113	33	1	37	3	71	2	75	26	2	103	10	292	302
16:30	4	1	2	0	7	15	104	4	3	123	32	6	46	1	84	0	84	17	5	101	9	315	324
16:45	2	0	0	0	2	10	117	4	1	131	36	3	45	1	84	0	75	14	4	89	6	306	312
Total	12	1	3	0	16	53	410	13	15	476	131	11	153	5	295	3	307	71	14	381	34	1168	1202
17:00	0	3	0	0	3	22	130	4	3	156	31	3	51	1	85	0	99	16	4	115	8	359	367
17:15	7	3	0	0	10	24	113	4	3	141	39	3	61	2	103	1	73	15	2	89	7	343	350
17:30	2	1	0	0	3	8	92	5	2	105	43	4	60	1	107	0	66	7	1	73	4	288	292
17:45	1	1	0	0	2	18	105	3	2	126	33	4	48	1	85	0	65	9	0	74	3	287	290
Total	10	8	0	0	18	72	440	16	10	528	146	14	220	5	380	1	303	47	7	351	22	1277	1299

Anoka County Highway Department
Traffic Engineering

Weather: Sunny, Warm
Counter TDC-8

Traffic Volume and Turning Movement Stud

File Name : TMC 0220
Site Code : 02200102
Start Date : 08/05/2002
Page No : 2

Groups Printed- Unshifted

Start Time	138th Ave. NE Southbound					CSAH 116 Westbound					Jefferson Rd. Northbound					CSAH 116 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	0	1	0	0	1	8	88	4	6	100	35	7	39	0	81	0	53	16	2	69	8	251	259
18:15	3	1	0	0	4	11	100	3	4	114	31	3	40	0	74	1	48	10	3	59	7	251	258
18:30	2	2	2	0	6	13	91	2	2	106	23	2	19	1	44	0	43	19	0	62	3	218	221
18:45	1	2	1	0	4	9	77	2	3	88	21	4	25	0	50	0	47	10	0	57	3	199	202
Total	6	6	3	0	15	41	356	11	15	408	110	16	123	1	249	1	191	55	5	247	21	919	940
19:00	2	0	0	0	2	6	66	0	1	72	10	2	20	0	32	0	39	13	1	52	2	158	160
19:15	2	1	0	0	3	11	43	3	1	57	11	1	16	1	28	0	43	9	1	52	3	140	143
19:30	0	1	0	0	1	8	65	2	2	75	6	0	9	0	15	1	52	9	3	62	5	153	158
19:45	1	1	0	0	2	8	66	2	2	76	10	1	11	0	22	0	46	8	2	54	4	154	158
Total	5	3	0	0	8	33	240	7	6	280	37	4	56	1	97	1	180	39	7	220	14	605	619
20:00	1	0	0	0	1	9	57	1	1	67	15	1	15	0	31	0	42	11	0	53	1	152	153
20:15	0	2	0	0	2	10	54	0	0	64	11	0	13	1	24	0	39	9	1	48	2	138	140
20:30	2	2	1	0	5	7	47	2	2	56	12	2	8	1	22	0	40	12	1	52	4	135	139
20:45	1	3	0	0	4	7	46	3	1	56	9	1	11	0	21	1	36	9	0	46	1	127	128
Total	4	7	1	0	12	33	204	6	4	243	47	4	47	2	98	1	157	41	2	199	8	552	560
21:00	0	1	1	0	2	8	42	0	0	50	10	0	12	0	22	0	32	8	2	40	2	114	116
21:15	1	0	1	0	2	9	35	1	1	45	7	1	7	1	15	1	33	7	1	41	3	103	106
21:30	1	1	0	0	2	6	31	2	1	39	9	1	9	0	19	0	37	8	0	45	1	105	106
21:45	0	1	0	0	1	5	25	1	0	31	12	0	7	0	19	0	30	6	0	36	0	87	87
Total	2	3	2	0	7	28	133	4	2	165	38	2	35	1	75	1	132	29	3	162	6	409	415
Grand Total	79	63	18	6	160	778	3878	153	269	4809	869	87	1167	37	2123	25	3843	835	221	4703	533	11795	12328
Apprch %	49.	39.	11.			16.	80.	3.2			40.	4.1	55.			0.5	81.	17.					
Total %	0.7	0.5	0.2		1.4	6.6	32.9	1.3		40.8	7.4	0.7	9.9		18.0	0.2	32.6	7.1		39.9	4.3	95.7	

Major Street Approaches:

astbound:

CSAH 116

Data File: C:\Program Files\PC-Warrants\TMC0220.war
 Count Type: IMC. Channel: 0. Count Date: 8/ 5/ 2
 Number of Lanes: 2
 Approach Speed: 55
 Total Approach Traffic: 4703

Westbound:

CSAH 116

Data File: C:\Program Files\PC-Warrants\TMC0220.war
 Count Type: IMC. Channel: 0. Count Date: 8/ 5/ 2
 Number of Lanes: 1
 Approach Speed: 50
 Total Approach Traffic: 4809

Minor Street Approaches:

Northbound:

Jefferson Rd.

Data File: C:\Program Files\PC-Warrants\TMC0220.war
 Count Type: IMC. Channel: 0. Count Date: 8/ 5/ 2
 Number of Lanes: 1
 Approach Speed: 40
 Total Approach Traffic: 2123

Southbound:

138th Ave. NE

Data File: C:\Program Files\PC-Warrants\TMC0220.war
 Count Type: IMC. Channel: 0. Count Date: 8/ 5/ 2
 Number of Lanes: 1
 Approach Speed: 30
 Total Approach Traffic: 160

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	S	17		105		52		84
1	0	0	S	18		105		52		84
2	0	0	S	19		105		52		84
3	0	0	S	20		105		52		84
4	0	0	S	21		105		52		84
5	0	0	S	22		105		52		84
6	557	39	N	16	MAIN	105		52	MAIN	84
7	800	87	N	10	MAIN	105	--BOTH--	52	--BOTH--	84
8	623	70	N	14	MAIN	105	SIDE	52	MAIN	84
9	473	54	N	15	MAIN	105	SIDE	52		84
10	473	72	N	13	MAIN	105	SIDE	52		84
11	492	73	N	12	MAIN	105	SIDE	52		84
12	556	105	N	7	--BOTH--	105	SIDE	52	--BOTH--	84
13	589	127	N	6	--BOTH--	105	SIDE	52	--BOTH--	84
14	638	130	N	5	--BOTH--	105	--BOTH--	52	--BOTH--	84
15	651	172	N	4	--BOTH--	105	--BOTH--	52	--BOTH--	84
16	857	295	N	2	--BOTH--	105	--BOTH--	52	--BOTH--	84
17	879	380	N	1	--BOTH--	105	--BOTH--	52	--BOTH--	84
18	655	249	N	3	--BOTH--	105	--BOTH--	52	--BOTH--	84
19	500	97	N	9	MAIN	105	SIDE	52	SIDE	84
20	442	98	N	8	MAIN	105	SIDE	52	SIDE	84
21	327	75	N	11		105	SIDE	52		84
22	0	0	S	23		105		52		84
23	0	0	S	24		105		52		84

Warrant Summary:

Rural values apply.

Warrant 1 - Minimum Vehicular Volumes

NOT SATISFIED. Required values reached for 7 hours. Criteria--Main St.: 420; Side St.: See Volume Summary.

Warrant 2 - Interruption of Continuous Traffic

NOT SATISFIED. Required values reached for 6 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: 1277.

- 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 8 hours. Criteria--Main: 504; Side: See Volume Summary.

Warrant 9 - Four Hour Volumes

SATISFIED for 6 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 3 hours.

Minor St. High Vol. Approach (UPH)

600

500

400

300

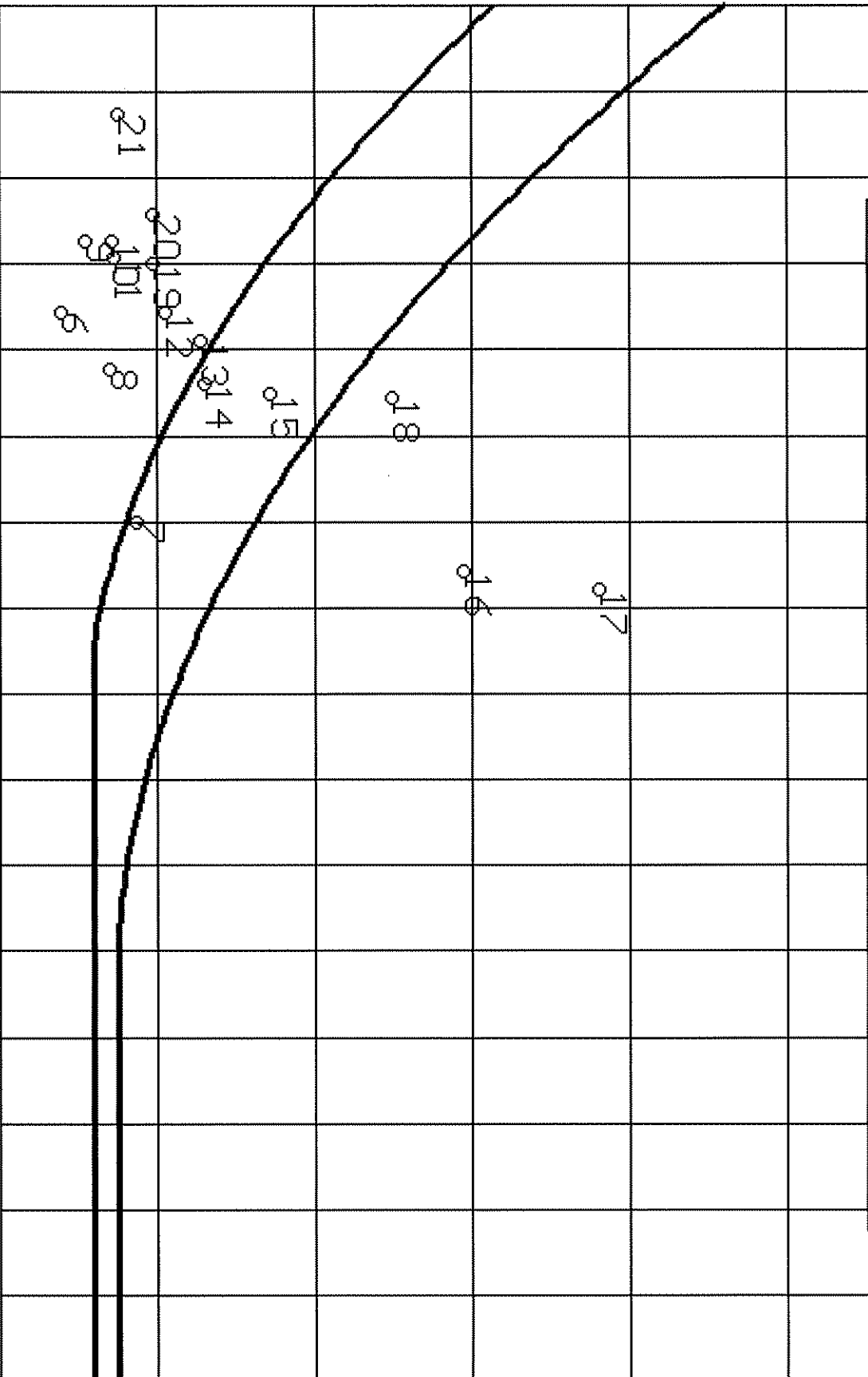
200

100

0

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

Major St. Total of Both Approaches (UPH)



Multiway Stop Warrant Analysis
TMC 0220 CSAH 116 @ Jefferson Rd./138th Ave. NE
Speed Limit of Major Roadway..... 50

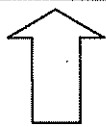
Minimum Traffic Volumes Multiway Stop Warrant Criteria:

- 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	Is Stop Warrant Met?
6 AM - 7 AM	601	5	39	44	NO
7 AM - 8 AM	898	11	87	98	NO
8 AM - 9 AM	703	10	70	80	NO
9 AM - 10 AM	538	11	54	65	NO
10 AM - 11 AM	548	3	72	75	NO
11 AM - 12 PM	574	9	73	82	NO
12 PM - 13 PM	666	5	105	110	NO
1 PM - 2 PM	727	11	127	138	NO
2 PM - 3 PM	775	7	130	137	NO
3 PM - 4 PM	835	12	172	184	YES
4 PM - 5 PM	1168	16	295	311	YES
5 PM - 6 PM	1277	18	380	398	YES
6 PM - 7 PM	919	15	249	264	YES
7 PM - 8 PM	605	8	97	105	NO
8 PM - 9 PM	552	12	98	110	NO
9 PM - 10 PM	409	7	75	82	NO

TOTAL HOURS MET: 4

MULTIWAY STOP WARRANT IS NOT MET



COUNT LOCATION:

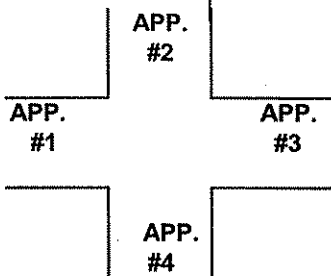
CSAH 116 @

DATE:

8/5/02

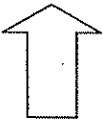
Jefferson Rd./138th Ave. NE

APP. #1 = CSAH 116
APP. #2 = 138th Ave. NE
APP. #3 = CSAH 116
P. #4= Jefferson Rd.



- 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						7		
2:15-2:30						8		
2:30-2:45						12		
2:45-3:00						6		
HOURLY TOTAL						HOURLY TOTAL		33
3:00-3:15						10		
3:15-3:30	1			1	2	6	1	1
3:30-3:45		5	1		6	13		1
3:45-4:00						6		
HOURLY TOTAL					8	HOURLY TOTAL		38
4:00-4:15						9		
4:15-4:30						9		
4:30-4:45						9		
4:45-5:00						6		
HOURLY TOTAL						HOURLY TOTAL		33
5:00-5:15						8		
5:15-5:30						7		
5:30-5:45						4		
5:45-6:00						3		
HOURLY TOTAL						HOURLY TOTAL		22
6:00-6:15						8		
6:15-6:30	1				1	7		
6:30-6:45	1		1		2	3		
6:45-7:00						3		
HOURLY TOTAL					3	HOURLY TOTAL		21
7:00-7:15	1				1	2		
7:15-7:30						3		
7:30-7:45						5		
7:45-8:00	1			1	2	3	1	
HOURLY TOTAL					3	HOURLY TOTAL		14
8:00-8:15						1		
8:15-8:30						2		
8:30-8:45						4		
8:45-9:00						1		
HOURLY TOTAL						HOURLY TOTAL		8
9:00-9:15						2		
9:15-9:30						3		
9:30-9:45						1		
9:45-10:00								
HOURLY TOTAL						HOURLY TOTAL		6



NORTH

COUNT LOCATION:

CSAH 116 @

DATE:

8/5/02

Jefferson Rd./138th Ave. NE

APP. #1 = CSAH 116

APP. #2 = 138th Ave. NE

APP. #3 = CSAH 116

P. #4 = Jefferson Rd.

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						3		
6:15-6:30	1				1	3		
6:30-6:45						5		1
6:45-7:00						6		
HOURLY TOTAL					1	HOURLY TOTAL		18
7:00-7:15						6		
7:15-7:30						10		
7:30-7:45						14		
7:45-8:00						15		
HOURLY TOTAL						HOURLY TOTAL		45
8:00-8:15	1		1		2	20		
8:15-8:30						19		
8:30-8:45				1	1	21		
8:45-9:00				1	1	17		
HOURLY TOTAL					4	HOURLY TOTAL		77
9:00-9:15						12		
9:15-9:30						8		
9:30-9:45						18		
9:45-10:00			1		1	20		
HOURLY TOTAL					1	HOURLY TOTAL		58
10:00-10:15						14		
10:15-10:30						12		
10:30-10:45				2	2	10		
10:45-11:00						10		1
HOURLY TOTAL					2	HOURLY TOTAL		47
11:00-11:15						12		
11:15-11:30		1			1	7		
11:30-11:45						7	1	
11:45-12:00			1		1	8		
HOURLY TOTAL					2	HOURLY TOTAL		35
12:00-12:15						8		
12:15-12:30						8		
12:30-12:45						10		
12:45-1:00						6		
HOURLY TOTAL						HOURLY TOTAL		32
1:00-1:15						11		
1:15-1:30						8		
1:30-1:45						7		
1:45-2:00						8		
HOURLY TOTAL						HOURLY TOTAL		34