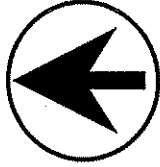


Date : 7/25/01

Count Number : TMC0123

Location : CSAH 116 @ Jefferson St.

138th Ave. NE



North

347

#2

198

149	D
46	E
77	F

CSAH 116

106	G
3570	H
719	J

#3

9440

5045

9186

#1

4716	A
3935	B
17	C

CSAH 116

Jefferson St.

1982	M
874	L
1033	K

#4

1529

3511

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

Traffic Volume and Turning Movement Stud

File Name : TMC 0123
Site Code : 01230201
Start Date : 07/25/2001
Page No : 1

Groups Printed- 1 - Unshifted

Start Time	138th Ave. NE Southbound					CSAH 116 Westbound					Jefferson St. 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			
	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	4	0	2	0	6	20	14	0	1	34	4	2	2	0	8	0	36	6	0	42	1	90	91
06:15	0	1	0	0	1	11	39	0	0	50	5	0	3	1	8	0	50	17	2	67	3	126	129
06:30	0	1	0	0	1	32	35	0	3	67	9	0	3	1	12	0	59	21	3	80	7	160	167
06:45	0	0	0	0	0	21	42	1	3	64	6	1	5	0	12	0	92	25	2	117	5	193	198
Total	4	2	2	0	8	84	130	1	7	215	24	3	13	2	40	0	237	69	7	306	16	569	585
07:00	3	0	0	1	3	25	45	2	3	72	8	0	11	0	19	1	75	20	8	96	12	190	202
07:15	1	1	0	0	2	17	52	0	7	69	8	0	6	0	14	0	102	32	10	134	17	219	236
07:30	0	1	2	0	3	19	38	1	2	58	6	1	11	0	18	0	95	20	5	115	7	194	201
07:45	1	4	1	1	6	22	52	4	2	78	11	1	15	1	27	0	106	13	4	119	8	230	238
Total	5	6	3	2	14	83	187	7	14	277	33	2	43	1	78	1	378	85	27	464	44	833	877
08:00	0	2	0	0	2	13	46	0	3	59	14	0	9	3	23	0	73	15	3	88	9	172	181
08:15	2	1	0	1	3	17	48	2	2	67	1	1	8	1	10	0	68	12	5	80	9	160	169
08:30	0	0	0	0	0	7	56	2	6	65	7	0	9	1	16	0	61	6	7	67	14	148	162
08:45	1	2	2	1	5	7	29	2	0	38	7	2	7	1	16	1	60	16	6	77	8	136	144
Total	3	5	2	2	10	44	179	6	11	229	29	3	33	6	65	1	262	49	21	312	40	616	656
09:00	1	1	1	0	3	8	41	1	5	50	3	2	14	0	19	0	51	14	5	65	10	137	147
09:15	0	1	0	0	1	10	43	1	2	54	6	2	14	2	22	0	45	8	2	53	6	130	136
09:30	2	1	0	1	3	8	39	1	5	48	3	0	8	0	11	0	52	9	3	61	9	123	132
09:45	2	0	1	1	3	12	43	1	4	56	11	2	9	2	22	1	57	12	5	70	12	151	163
Total	5	3	2	2	10	38	166	4	16	208	23	6	45	4	74	1	205	43	15	249	37	541	578
10:00	2	1	0	0	3	5	34	1	0	40	10	2	7	1	19	1	43	13	4	57	5	119	124
10:15	2	0	0	0	2	12	29	2	4	43	4	2	6	0	12	0	53	5	3	58	7	115	122
10:30	1	0	0	0	1	6	35	2	4	43	9	2	12	1	23	0	48	5	3	53	8	120	128
10:45	1	0	1	0	2	6	47	2	2	55	11	2	12	0	25	1	68	11	4	80	6	162	168
Total	6	1	1	0	8	29	145	7	10	181	34	8	37	2	79	2	212	34	14	248	26	516	542
11:00	0	1	0	0	1	14	38	3	4	55	13	0	11	1	24	0	76	10	6	86	11	166	177
11:15	1	0	2	0	3	12	45	1	3	58	9	1	9	1	19	0	65	11	4	76	8	156	164
11:30	2	0	0	0	2	8	32	2	5	42	14	0	8	2	22	1	63	9	3	73	10	139	149
11:45	1	0	2	0	3	4	27	3	3	34	10	1	11	1	22	2	48	10	4	60	8	119	127
Total	4	1	4	0	9	38	142	9	15	189	46	2	39	5	87	3	252	40	17	295	37	580	617
12:00	0	1	1	0	2	7	33	3	4	43	13	0	12	0	25	0	52	9	5	61	9	131	140
12:15	1	0	1	0	2	11	35	2	6	48	10	2	10	1	22	1	55	8	4	64	11	136	147
12:30	1	0	0	0	1	6	32	2	8	40	12	1	9	0	22	0	60	7	3	67	11	130	141
12:45	0	1	1	0	2	5	27	1	4	33	9	1	8	2	18	1	60	7	2	68	8	121	129
Total	2	2	3	0	7	29	127	8	22	164	44	4	39	3	87	2	227	31	14	260	39	518	557
13:00	1	1	0	0	2	12	35	1	5	48	8	0	13	1	21	0	52	11	6	63	12	134	146
13:15	2	0	2	0	4	11	43	0	4	54	11	2	11	2	24	1	49	12	5	62	11	144	155
13:30	0	2	0	0	2	10	36	1	7	47	13	0	15	1	28	0	51	13	4	64	12	141	153
13:45	1	0	2	0	3	13	34	1	5	48	14	1	8	0	23	1	57	6	4	64	9	138	147
Total	4	3	4	0	11	46	148	3	21	197	46	3	47	4	96	2	209	42	19	253	44	557	601
14:00	1	2	0	0	3	11	58	1	6	70	11	0	9	0	20	0	50	5	3	55	9	148	157
14:15	2	2	1	0	5	7	76	2	0	85	8	0	10	3	18	0	74	9	5	83	8	191	199
14:30	0	2	0	1	2	9	73	0	10	82	9	2	19	0	30	0	49	10	3	59	14	173	187
14:45	1	1	0	0	2	9	61	2	7	72	17	0	19	0	36	0	49	10	3	59	10	169	179
Total	4	7	1	1	12	36	268	5	23	309	45	2	57	3	104	0	222	34	14	256	41	681	722
15:00	1	0	0	0	1	6	45	2	8	53	12	2	29	1	43	1	60	13	2	74	11	171	182
15:15	0	2	0	0	2	13	76	2	6	91	16	2	27	1	45	0	76	9	1	85	8	223	231
15:30	2	1	0	0	3	12	67	4	4	83	24	2	22	2	48	1	67	10	3	78	9	212	221
15:45	2	0	0	0	2	20	87	2	4	109	24	1	34	1	59	0	73	15	3	88	8	258	266
Total	5	3	0	0	8	51	275	10	22	336	76	7	112	5	195	2	276	47	9	325	36	864	900
16:00	2	1	1	0	4	13	103	2	5	118	16	4	30	2	50	0	77	24	1	101	8	273	281
16:15	1	0	3	0	4	16	85	3	2	104	24	2	35	1	61	0	77	10	4	87	7	256	263
16:30	3	0	0	0	3	17	120	1	4	138	36	0	50	0	86	0	78	14	2	92	6	319	325
16:45	1	0	0	0	1	11	104	1	4	116	36	0	43	0	79	0	89	16	1	105	5	301	306
Total	7	1	4	0	12	57	412	7	15	476	112	6	158	3	276	0	321	64	8	385	26	1149	1175
17:00	1	2	0	0	3	12	129	1	4	142	31	1	45	1	77	0	85	12	6	97	11	319	330
17:15	2	0	0	0	2	11	99	9	4	119	47	5	53	2	105	1	82	16	3	99	9	325	334
17:30	3	1	0	0	4	10	93	2	3	105	29	4	37	0	70	0	75	13	1	88	4	267	271
17:45	1	0	0	0	1	9	113	3	1	125	21	3	39	1	63	0	96	13	2	109	4	298	302
Total	7	3	0	0	10	42	434	15	12	491	128	13	174	4	315	1	338	54	12	393</			

Anoka County Highway Department
Traffic Engineering

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

Traffic Volume and Turning Movement Stud

File Name : TMC 0123
Site Code : 01230201
Start Date : 07/25/2001
Page No : 2

Groups Printed- 1 - Unshifted

Start Time	138th Ave. NE Southbound					CSAH 116 Westbound					Jefferson St. 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	4	2	0	0	6	13	79	1	2	93	14	1	29	1	44	0	73	13	4	86	7	229	236
18:15	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	2
18:30	1	0	0	0	1	6	89	1	1	96	11	3	10	0	24	0	60	24	0	84	1	205	206
18:45	1	1	0	1	2	13	77	0	1	90	21	2	17	1	40	0	72	15	4	87	7	219	226
Total	6	3	0	1	9	32	247	2	4	281	46	6	56	2	108	0	205	52	8	257	15	655	670
19:00	2	0	0	0	2	10	46	2	3	58	12	0	16	0	28	1	46	13	1	60	4	148	152
19:15	2	0	0	0	2	5	52	3	0	60	11	1	22	1	34	0	53	9	3	62	4	158	162
19:30	2	0	0	0	2	12	51	2	1	65	24	0	7	0	31	0	47	6	3	53	4	151	155
19:45	2	0	0	0	2	4	56	3	0	63	11	0	10	0	21	0	56	13	1	69	1	155	156
Total	8	0	0	0	8	31	205	10	4	246	56	1	55	1	114	1	202	41	8	244	13	612	625
20:00	0	0	0	0	0	11	60	2	1	73	23	2	12	0	37	0	39	15	0	54	1	164	165
20:15	2	0	0	0	2	10	54	3	1	67	11	1	14	0	26	0	59	13	3	72	4	167	171
20:30	3	1	0	0	4	10	66	4	0	80	20	3	14	1	37	0	49	12	3	61	4	182	186
20:45	0	0	0	0	0	9	63	3	0	75	20	2	18	0	40	0	50	9	0	59	0	174	174
Total	5	1	0	0	6	40	243	12	2	295	74	8	58	1	140	0	197	49	6	246	9	687	696
21:00	0	2	0	0	2	11	72	0	0	83	12	0	18	0	30	0	53	8	0	61	0	176	176
21:15	1	1	0	0	2	10	70	0	0	80	15	1	17	1	33	1	50	8	1	59	2	174	176
21:30	0	2	0	0	2	9	65	0	0	74	14	0	17	0	31	0	48	7	0	55	0	162	162
21:45	1	0	0	0	1	9	55	0	0	64	15	0	15	0	30	0	41	7	0	48	0	143	143
Total	2	5	0	0	7	39	262	0	0	301	56	1	67	1	124	1	192	30	1	223	2	655	657
Grand Total	77	46	26	8	149	719	3570	106	198	4395	874	75	1033	47	1982	17	3935	764	200	4716	453	11242	11695
Apprch %	51.7	30.9	17.4			16.4	81.2	2.4			44.1	3.8	52.1			0.4	83.4	16.2					
Total %	0.7	0.4	0.2		1.3	6.4	31.8	0.9		39.1	7.8	0.7	9.2		17.6	0.2	35.0	6.8		41.9	3.9	96.1	

Major Street Approaches:

Eastbound:

CSAH 116

Data File: C:\Program Files\PCWarrants\TMC0123.war

Count Type: IMC. Channel: 0. Count Date: 7/25/ 1

Number of Lanes: 1

Approach Speed: 50

Total Approach Traffic: 4716

Westbound:

CSAH 116

Data File: C:\Program Files\PCWarrants\TMC0123.war

Count Type: IMC. Channel: 0. Count Date: 7/25/ 1

Number of Lanes: 1

Approach Speed: 50

Total Approach Traffic: 4395

Minor Street Approaches:

Northbound:

Jefferson St.

Data File: C:\Program Files\PCWarrants\TMC0123.war

Count Type: IMC. Channel: 0. Count Date: 7/25/ 1

Number of Lanes: 1

Approach Speed: 40

Total Approach Traffic: 1982

Southbound:

138th Ave. NE

Data File: C:\Program Files\PCWarrants\TMC0123.war

Count Type: IMC. Channel: 0. Count Date: 7/25/ 1

Number of Lanes: 1

Approach Speed: 30

Total Approach Traffic: 149

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	521	40	N	16	MAIN	105		52	MAIN	84
7	741	78	N	13	MAIN	105	--BOTH--	52	MAIN	84
8	541	65	N	15	MAIN	105	--BOTH--	52	MAIN	84
9	457	74	N	14	MAIN	105	SIDE	52	MAIN	84
10	429	79	N	12	MAIN	105	SIDE	52	MAIN	84
11	484	87	N	10	MAIN	105	SIDE	52	--BOTH--	84
12	424	87	N	11	MAIN	105	SIDE	52	--BOTH--	84
13	450	96	N	9	MAIN	105	SIDE	52	--BOTH--	84
14	565	104	N	8	MAIN	105	--BOTH--	52	--BOTH--	84
15	661	195	N	3	--BOTH--	105	--BOTH--	52	--BOTH--	84
16	861	276	N	2	--BOTH--	105	--BOTH--	52	--BOTH--	84
17	884	315	N	1	--BOTH--	105	--BOTH--	52	--BOTH--	84
18	538	108	N	7	--BOTH--	105	--BOTH--	52	--BOTH--	84
19	490	114	N	6	--BOTH--	105	SIDE	52	--BOTH--	84
20	541	140	N	4	--BOTH--	105	--BOTH--	52	--BOTH--	84
21	524	124	N	5	--BOTH--	105	SIDE	52	--BOTH--	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.: 350; Side St.: See Volume Summary.

Warrant 2 - Interruption of Continuous Traffic

SATISFIED for 8 hours. Criteria--Main St.: 525; 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: 1209.

EW- 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 11 hours. Criteria--Main: 420; Side: See Volume Summary.

Warrant 9 - Four Hour Volumes

SATISFIED for 8 hours.

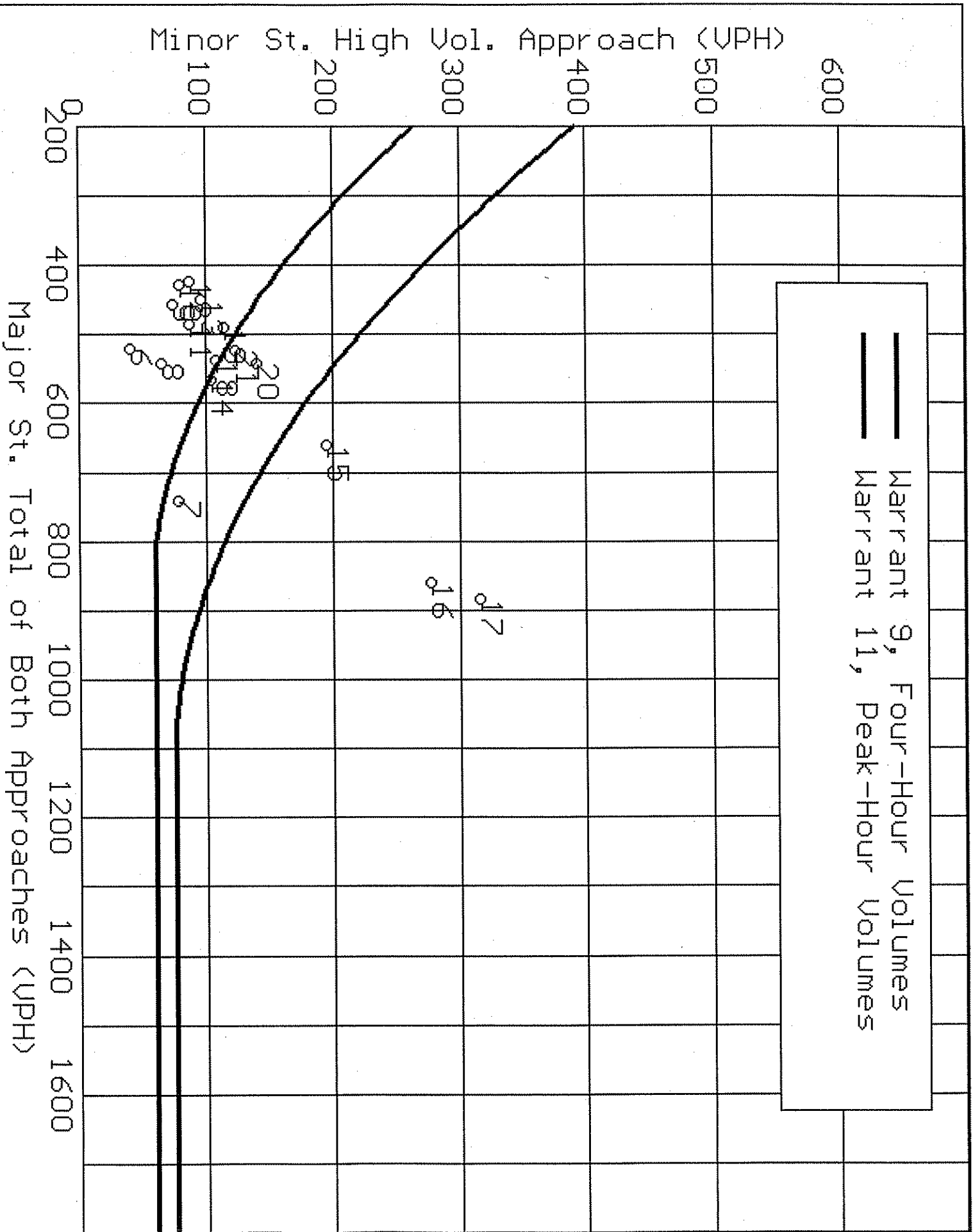
Warrant 10 - Peak Hour Delay

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.



Multiway Stop Warrant Analysis
TMC 0123 CSAH 116 @ Jefferson St.
Speed Limit of Major Roadway..... 50

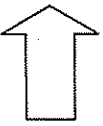
Minimum Traffic Volumes Multiway Stop Warrant Criteria:

- 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	569	8	40	48	0
7 AM - 8 AM	833	14	78	92	0
8 AM - 9 AM	616	10	65	75	0
9 AM - 10 AM	541	10	74	84	0
10 AM - 11 AM	516	8	79	87	0
11 AM - 12 PM	580	9	87	96	0
12 PM - 13 PM	518	7	87	94	0
1 PM - 2 PM	557	11	96	107	0
2 PM - 3 PM	681	12	104	116	0
3 PM - 4 PM	864	8	195	203	1
4 PM - 5 PM	1149	12	276	288	1
5 PM - 6 PM	1209	10	315	325	1
6 PM - 7 PM	655	9	108	117	0
7 PM - 8 PM	612	8	114	122	0
8 PM - 9 PM	687	6	140	146	1
9 PM - 10 PM	655	7	124	131	0

TOTAL HOURS MET: 4

MULTIWAY STOP WARRANT IS NOT MET



NORTH

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

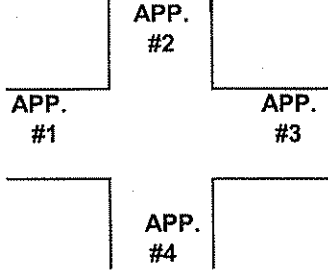
COUNT LOCATION:

CSAH 116 (Bunker Lake Blvd.) @

DATE:

7/25/01

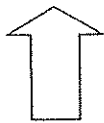
Jefferson St.



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						1		
6:15-6:30						3		
6:30-6:45				1	1	5		
6:45-7:00						5		
HOURLY TOTAL					1	HOURLY TOTAL		14
7:00-7:15						8		5
7:15-7:30						13		3
7:30-7:45	1		1		2	6		2
7:45-8:00	1				1	7		1
HOURLY TOTAL					3	HOURLY TOTAL		45
8:00-8:15	1				1	9		
8:15-8:30						8		1
8:30-8:45				1	1	12		1
8:45-9:00				1	1	8		
HOURLY TOTAL					3	HOURLY TOTAL		39
9:00-9:15			1		1	10		
9:15-9:30				1	1	8		
9:30-9:45				1	1	7		
9:45-10:00						10		
HOURLY TOTAL					3	HOURLY TOTAL		35
10:00-10:15				1	1	5		
10:15-10:30						6		
10:30-10:45						7		
10:45-11:00		2	2	1	5	6		
HOURLY TOTAL					6	HOURLY TOTAL		24
11:00-11:15				1	1	11		2
11:15-11:30						8		
11:30-11:45						10		
11:45-12:00						8		
HOURLY TOTAL					1	HOURLY TOTAL		39
12:00-12:15						9		
12:15-12:30						11		
12:30-12:45			1	1	2	11		
12:45-1:00						8		
HOURLY TOTAL					2	HOURLY TOTAL		39
1:00-1:15						12		
1:15-1:30						11		
1:30-1:45		1			1	12		
1:45-2:00						9		
HOURLY TOTAL					1	HOURLY TOTAL		44



NORTH

COUNT LOCATION:

CSAH 116 (Bunker Lake Blvd.) @

DATE:

7/25/01

Jefferson St.

APP. #1 = CSAH 116

APP. #2 = 138th Ave. NE

APP. #3 = CSAH 116

APP. #4 = Jefferson St.

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						10		
2:15-2:30						8		
2:30-2:45		1		1	2	16		
2:45-3:00				1	1	11		
HOURLY TOTAL					3	HOURLY TOTAL		45
3:00-3:15		2			2	10		
3:15-3:30						8		1
3:30-3:45						9		
3:45-4:00						8		
HOURLY TOTAL					2	HOURLY TOTAL		36
4:00-4:15				2	2	7		
4:15-4:30						9		
4:30-4:45				2	2	7		
4:45-5:00						4		
HOURLY TOTAL					4	HOURLY TOTAL		27
5:00-5:15						9	1	
5:15-5:30						7	1	
5:30-5:45						4		
5:45-6:00	1				1	4		
HOURLY TOTAL					1	HOURLY TOTAL		26
6:00-6:15						6	1	
6:15-6:30								
6:30-6:45	3			1	4	1		
6:45-7:00				1	1	8		
HOURLY TOTAL					5	HOURLY TOTAL		16
7:00-7:15	3			1	4	3		
7:15-7:30	1				6	4		
7:30-7:45	2			3	5	3		
7:45-8:00	1				1	1		
HOURLY TOTAL					16	HOURLY TOTAL		11
8:00-8:15						1		
8:15-8:30						4		
8:30-8:45	1			1	2	3	1	
8:45-9:00	2				2	2		
HOURLY TOTAL					4	HOURLY TOTAL		11
9:00-9:15								
9:15-9:30								
9:30-9:45								
9:45-10:00								
HOURLY TOTAL						HOURLY TOTAL		