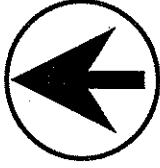


Date : 6/25/01

Count Number : TMC0115

Location : CSAH 52

@ Naples St.



North

CSAH 52

10555

#2

5969

4586			
644	3899	43	
D	F	T	L

Naples St.

1920

#1

3425

I 35W Service Rd.

1505			
426	72	1007	
C	B	A	

33	508		
57			
418			
G	H	J	

#3

1146

638

CSAH 52

523			
5510	1219		
7252			
K	L	M	

#4

5324

12576

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

Traffic Volume and Turning Movement Study

File Name : TMC0115  
Site Code : 01150201  
Start Date : 06/25/2001  
Page No : 1

Groups Printed- 1 - Unshifted

Start Time	CSAH 52 Southbound					Naples St. Westbound					CSAH 52 Northbound					I 35W Service Rd. 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	103	16	16	119	1	1	2	2	4	37	26	6	3	69	1	0	12	4	13	25	205	230
06:15	0	99	41	23	140	2	0	0	1	2	65	46	9	4	120	1	0	5	1	6	29	268	297
06:30	1	102	57	18	160	2	1	0	1	3	123	65	2	8	190	1	0	11	1	12	28	365	393
06:45	0	93	49	13	142	1	0	2	2	3	131	78	13	11	222	0	0	8	2	8	28	375	403
Total	1	397	163	70	561	6	2	4	6	12	356	215	30	26	601	3	0	36	8	39	110	1213	1323
07:00	0	108	42	12	150	3	0	0	2	3	52	65	6	14	123	2	0	6	2	8	30	284	314
07:15	2	95	50	16	147	2	0	0	1	2	53	56	7	8	116	5	0	10	1	15	26	280	306
07:30	3	88	38	15	129	0	0	0	0	0	63	67	9	12	139	1	0	11	4	12	31	280	311
07:45	1	103	31	15	135	2	0	1	1	3	64	75	17	12	156	3	1	8	5	12	33	306	339
Total	6	394	161	58	561	7	0	1	4	8	232	263	39	46	534	11	1	35	12	47	120	1150	1270
08:00	1	77	15	11	93	4	0	2	1	6	39	49	8	12	96	3	1	16	3	20	27	215	242
08:15	0	78	11	6	89	2	1	0	1	3	13	58	7	12	78	4	1	7	0	12	19	182	201
08:30	0	70	9	18	79	4	2	0	2	6	18	58	5	12	81	5	3	12	4	20	36	186	222
08:45	0	73	11	15	84	2	0	1	3	3	11	64	7	16	82	10	1	11	6	22	40	191	231
Total	1	298	46	50	345	12	3	3	7	18	81	229	27	52	337	22	6	46	13	74	122	774	896
09:00	0	69	4	14	73	4	2	0	0	6	11	57	6	14	74	3	3	7	1	13	29	166	195
09:15	0	53	2	8	55	3	0	0	0	3	12	72	4	17	88	4	0	10	2	14	27	160	187
09:30	0	64	8	13	72	2	0	0	0	2	8	49	3	16	60	2	1	10	4	13	33	147	180
09:45	0	58	6	14	64	6	1	0	2	7	4	65	8	14	77	6	0	4	2	10	32	158	190
Total	0	244	20	49	264	15	3	0	2	18	35	243	21	61	299	15	4	31	9	50	121	631	752
10:00	1	54	0	17	55	7	0	0	2	7	7	67	3	26	77	3	2	9	6	14	51	153	204
10:15	1	47	11	12	59	3	0	1	1	4	9	47	8	10	64	4	0	7	3	11	26	138	164
10:30	0	38	5	17	43	5	2	0	2	7	9	40	6	10	55	3	2	8	2	13	31	118	149
10:45	0	28	2	11	30	9	3	0	2	12	7	71	7	18	85	4	4	11	4	19	35	146	181
Total	2	167	18	57	187	24	5	1	7	30	32	225	24	64	281	14	8	35	15	57	143	555	698
11:00	0	55	4	13	59	12	0	0	0	12	18	49	5	14	72	5	2	8	3	15	30	158	188
11:15	1	51	4	5	56	7	2	0	0	9	8	57	12	16	77	4	2	7	3	13	24	155	179
11:30	1	42	7	15	50	7	0	4	0	11	5	60	7	14	72	3	2	11	4	16	33	149	182
11:45	0	11	1	2	12	1	1	0	1	2	8	79	9	20	96	6	1	14	1	21	24	131	155
Total	2	159	16	35	177	27	3	4	1	34	39	245	33	64	317	18	7	40	11	65	111	593	704
12:00	1	66	2	16	69	4	2	2	1	8	11	64	13	17	88	2	1	17	0	20	34	185	219
12:15	0	60	1	12	61	12	4	2	0	18	11	78	13	19	102	5	0	12	4	17	35	198	233
12:30	0	55	3	14	58	7	1	0	3	8	21	70	14	18	105	4	1	8	1	13	36	184	220
12:45	0	41	2	13	43	11	1	0	2	12	13	63	12	20	88	5	1	13	4	19	39	162	201
Total	1	222	8	55	231	34	8	4	6	46	56	275	52	74	383	16	3	50	9	69	144	729	873
13:00	0	40	2	10	42	4	2	0	2	6	5	71	11	18	87	8	3	11	3	22	33	157	190
13:15	2	52	4	15	58	6	0	1	2	7	8	66	8	21	82	5	3	12	2	20	40	167	207
13:30	1	51	11	15	63	7	0	3	1	10	11	70	12	23	93	1	2	8	1	11	40	177	217
13:45	1	48	9	16	58	7	4	2	2	13	11	63	9	14	83	3	1	3	1	7	33	161	194
Total	4	191	26	56	221	24	6	6	7	36	35	270	40	76	345	17	9	34	7	60	146	662	808
14:00	1	45	4	6	50	4	1	0	1	5	12	72	4	14	88	8	2	14	1	24	22	167	189
14:15	0	41	5	9	46	7	0	0	2	7	9	83	13	19	105	8	2	10	2	20	32	178	210
14:30	2	44	6	10	52	5	1	0	1	6	7	102	16	21	125	10	3	18	3	31	35	214	249
14:45	0	62	10	14	72	10	1	0	4	11	14	98	13	17	125	6	1	28	3	35	38	243	281
Total	3	192	25	39	220	26	3	0	8	29	42	355	46	71	443	32	8	70	9	110	127	802	929
15:00	2	53	5	7	60	7	5	0	0	12	11	115	18	20	144	9	1	17	6	27	33	243	276
15:15	5	66	4	9	75	12	0	0	3	12	8	128	17	22	153	4	4	19	3	27	37	267	304
15:30	0	63	2	8	65	14	1	0	2	15	10	141	13	22	164	10	0	46	4	56	36	300	336
15:45	1	65	9	6	75	15	0	0	1	15	12	173	11	24	196	10	2	30	3	42	34	328	362
Total	8	247	20	30	275	48	6	0	6	54	41	557	59	88	657	33	7	112	16	152	140	1138	1278
16:00	0	53	9	10	62	14	1	0	2	15	15	139	13	23	167	29	3	54	3	86	38	330	368
16:15	2	71	12	6	85	7	0	0	1	7	10	169	7	17	186	8	1	29	0	38	24	316	340
16:30	2	98	10	10	110	11	1	0	0	12	15	152	16	18	183	16	0	43	2	59	30	364	394
16:45	2	72	7	6	81	10	2	0	1	12	15	183	10	17	208	17	2	50	1	69	25	370	395
Total	6	294	38	32	338	42	4	0	4	46	55	643	46	75	744	70	6	176	6	252	117	1380	1497

Anoka County Highway Department  
Traffic Engineering  
Traffic Volume and Turning Movement Stud

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

File Name : TMC0115  
Site Code : 01150201  
Start Date : 06/25/2001  
Page No : 2

Groups Printed- 1 - Unshifted

Start Time	CSAH 52 Southbound					Naples St. Westbound					CSAH 52 Northbound					I 35W Service Rd. 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	81	6	3	87	9	1	0	1	10	17	169	12	13	198	27	0	53	2	80	19	375	394
17:15	1	92	9	1	102	12	1	0	0	13	18	199	7	13	224	22	2	37	2	61	16	400	416
17:30	2	63	7	1	72	12	0	0	1	12	16	182	9	11	207	13	1	29	0	43	13	334	347
17:45	1	44	4	3	49	11	1	0	0	12	17	206	13	11	236	12	1	26	3	39	17	336	353
Total	4	280	26	8	310	44	3	0	2	47	68	756	41	48	865	74	4	145	7	223	65	1445	1510
18:00	1	64	7	1	72	12	0	0	0	12	13	192	14	11	219	11	1	33	2	45	14	348	362
18:15	0	41	3	0	44	11	0	0	0	11	10	146	0	0	156	29	2	15	0	46	0	257	257
18:30	1	45	8	1	54	6	4	0	0	10	16	98	5	8	119	8	1	19	0	28	9	211	220
18:45	2	29	4	2	35	11	2	0	0	13	10	87	6	7	103	11	1	19	6	31	15	182	197
Total	4	179	22	4	205	40	6	0	0	46	49	523	25	26	597	59	5	86	8	150	38	998	1036
19:00	0	41	4	1	45	3	0	0	0	3	11	88	11	0	110	4	1	15	1	20	2	178	180
19:15	0	35	1	0	36	4	2	0	0	6	12	73	6	4	91	8	1	8	0	17	4	150	154
19:30	1	39	3	2	43	7	0	0	0	7	9	76	6	1	91	4	0	7	0	11	3	152	155
19:45	0	50	7	1	57	7	2	0	0	9	12	88	1	6	101	4	0	16	2	20	9	187	196
Total	1	165	15	4	181	21	4	0	0	25	44	325	24	11	393	20	2	46	3	68	18	667	685
20:00	0	24	1	0	25	6	1	0	0	7	6	50	3	1	59	2	1	12	1	15	2	106	108
20:15	0	59	10	0	69	3	0	0	0	3	4	46	1	3	51	4	0	7	0	11	3	134	137
20:30	0	100	9	2	109	7	0	0	0	7	5	63	1	2	69	4	0	9	1	13	5	198	203
20:45	0	65	7	0	72	5	0	1	0	6	7	41	3	2	51	1	0	7	0	8	2	137	139
Total	0	248	27	2	275	21	1	1	0	23	22	200	8	8	230	11	1	35	2	47	12	575	587
21:00	0	87	2	0	89	4	0	0	0	4	6	40	3	3	49	2	1	9	0	12	3	154	157
21:15	0	48	4	1	52	10	0	1	0	11	7	60	1	1	68	5	0	12	2	17	4	148	152
21:30	0	55	6	0	61	3	0	8	0	11	8	50	2	0	60	1	0	4	1	5	1	137	138
21:45	0	32	1	0	33	10	0	0	0	10	11	36	2	0	49	3	0	5	1	8	1	100	101
Total	0	222	13	1	235	27	0	9	0	36	32	186	8	4	226	11	1	30	4	42	9	539	548
Grand Total	43	3899	644	550	4586	418	57	33	60	508	1219	5510	523	794	7252	4267	72	1007	139	1505	1543	13851	15394
Approch %	0.9	85.0	14.0			82.3	11.2	6.5			16.8	76.0	7.2			28.3	4.8	66.9					
Total %	0.3	28.1	4.6		33.1	3.0	0.4	0.2		3.7	8.8	39.8	3.8		52.4	3.1	0.5	7.3		10.9	10.0	90.0	

or Street Approaches:

Northbound:

CSAH 52

Data File: C:\Program Files\JAMAR\PETRA\Data Files\TMC0115.war  
 Count Type: IMC. Channel: 0. Count Date: 6/25/ 1  
 Number of Lanes: 1  
 Approach Speed: 50  
 Total Approach Traffic: 7252

Southbound:

CSAH 52

Data File: C:\Program Files\JAMAR\PETRA\Data Files\TMC0115.war  
 Count Type: IMC. Channel: 0. Count Date: 6/25/ 1  
 Number of Lanes: 1  
 Approach Speed: 50  
 Total Approach Traffic: 4586

Minor Street Approaches:

Eastbound:

I 35W Service Rd.

Data File: C:\Program Files\JAMAR\PETRA\Data Files\TMC0115.war  
 Count Type: IMC. Channel: 0. Count Date: 6/25/ 1  
 Number of Lanes: 1  
 Approach Speed: 30  
 Total Approach Traffic: 1505

Westbound:

Naples St.

Data File: C:\Program Files\JAMAR\PETRA\Data Files\TMC0115.war  
 Count Type: IMC. Channel: 0. Count Date: 6/25/ 1  
 Number of Lanes: 1  
 Approach Speed: 30  
 Total Approach Traffic: 508

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 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	1162	39 E 16	MAIN 105	MAIN 52	MAIN 84
7	1095	47 E 13	MAIN 105	MAIN 52	MAIN 84
8	682	74 E 6	MAIN 105	--BOTH-- 52	MAIN 84
9	563	50 E 12	MAIN 105	MAIN 52	MAIN 84
10	468	57 E 11	MAIN 105	SIDE 52	MAIN 84
11	494	65 E 9	MAIN 105	SIDE 52	MAIN 84
12	614	69 E 7	MAIN 105	--BOTH-- 52	MAIN 84
13	566	60 E 10	MAIN 105	--BOTH-- 52	MAIN 84
14	663	110 E 5	--BOTH-- 105	--BOTH-- 52	--BOTH-- 84
15	932	152 E 3	--BOTH-- 105	--BOTH-- 52	--BOTH-- 84
16	1082	252 E 1	--BOTH-- 105	--BOTH-- 52	--BOTH-- 84
17	1175	223 E 2	--BOTH-- 105	--BOTH-- 52	--BOTH-- 84
18	802	150 E 4	--BOTH-- 105	--BOTH-- 52	--BOTH-- 84
19	574	68 E 8	MAIN 105	--BOTH-- 52	MAIN 84
20	505	47 E 14	MAIN 105	52	MAIN 84
21	461	42 E 15	MAIN 105	52	MAIN 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 5 hours. Criteria--Main St.: 350; Side St.: See Volume Summary.

## Warrant 2 - Interruption of Continuous Traffic

SATISFIED for 9 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

SATISFIED. Peak hour total entering volume: 1445. Approaches on both streets satisfy one of the following criteria:

NSEW- 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 5 hours. Criteria--Main: 420; Side: See Volume Summary.

## Warrant 9 - Four Hour Volumes

SATISFIED for 6 hours.

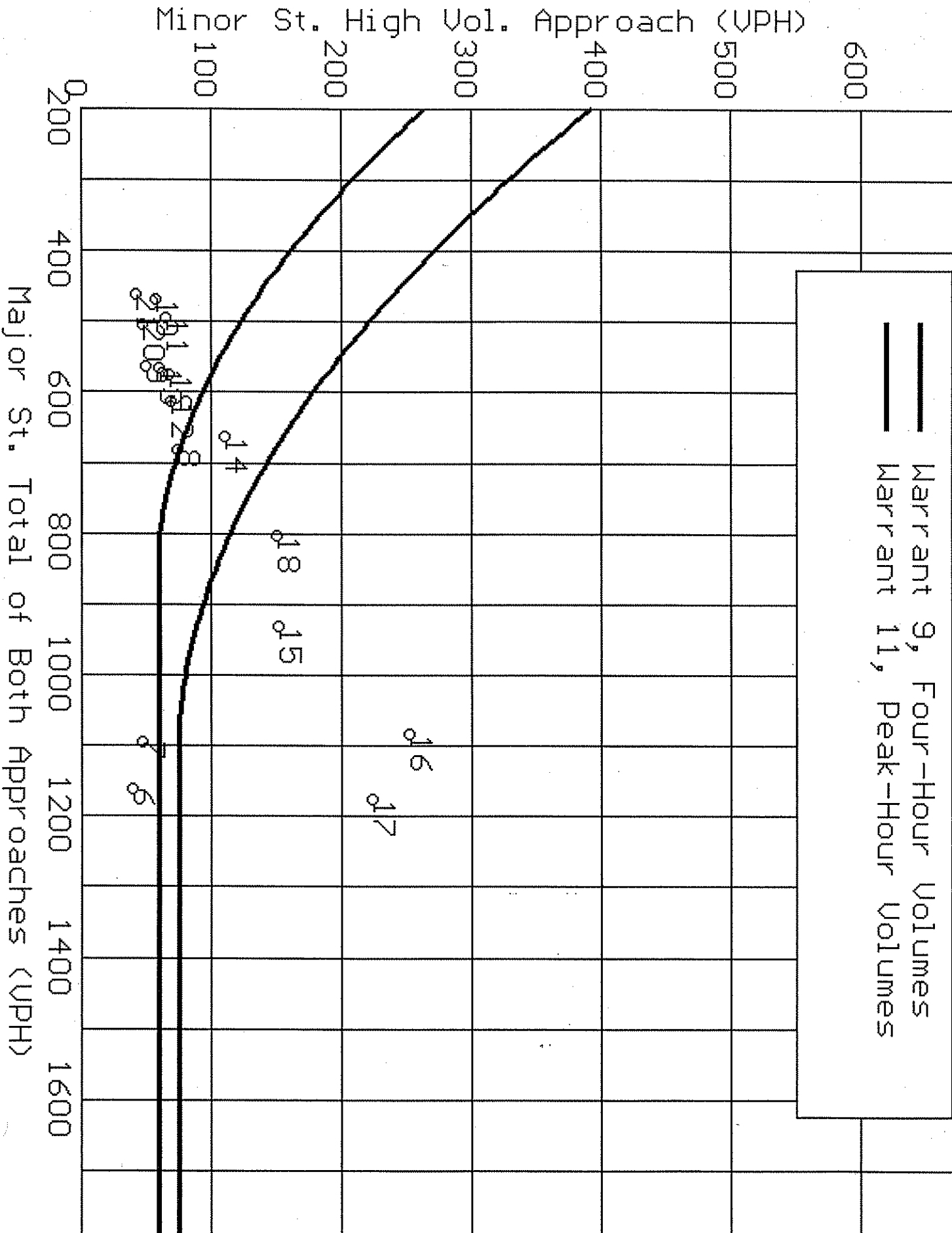
## Warrant 10 - Peak Hour Delay

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 4 hours.



**Multiway Stop Warrant Analysis**  
**TMC 0116 CSAH 52@ Naples St.**  
**Speed Limit of Major Roadway..... 50**

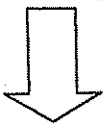
**Minimum Traffic Volumes Multiway Stop Warrant Criteria:**

- 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	1213	12	39	51	0
7 AM - 8 AM	1150	8	47	55	0
8 AM - 9 AM	774	18	74	92	0
9 AM - 10 AM	638	3	66	69	0
10 AM - 11 AM	561	7	78	85	0
11 AM - 12 PM	600	11	87	98	0
12 PM - 13 PM	736	16	103	119	0
1 PM - 2 PM	688	18	77	95	0
2 PM - 3 PM	840	3	148	151	0
3 PM - 4 PM	1199	6	231	237	1
4 PM - 5 PM	1467	4	358	362	1
5 PM - 6 PM	1467	3	294	297	1
6 PM - 7 PM	979	6	177	183	0
7 PM - 8 PM	666	4	94	98	0
8 PM - 9 PM	592	3	71	74	0
9 PM - 10 PM	529	18	61	79	0

**TOTAL HOURS MET: 3**

**MULTIWAY STOP WARRANT IS NOT MET**



NORTH

COUNT LOCATION:

CSAH 52 @

DATE:

6/25/01

Naples St.

APP. #1 = Naples St.

APP. #2 = CSAH 52

APP. #3 = Naples St.

APP. #4 = CSAH 52

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						24		3
6:15-6:30						29		2
6:30-6:45		1			1	27		1
6:45-7:00						29		2
<b>HOURLY TOTAL</b>					<b>1</b>	<b>HOURLY TOTAL</b>		<b>117</b>
7:00-7:15		1	1		2	24		4
7:15-7:30				2	2	22		3
7:30-7:45						30		3
7:45-8:00						31		2
<b>HOURLY TOTAL</b>					<b>4</b>	<b>HOURLY TOTAL</b>		<b>119</b>
8:00-8:15						33		2
8:15-8:30						12		1
8:30-8:45						34		3
8:45-9:00						37		
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>122</b>
9:00-9:15						31		
9:15-9:30						26		1
9:30-9:45						29		2
9:45-10:00						28		
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>117</b>
10:00-10:15						51		
10:15-10:30						22		
10:30-10:45			2		2	30		
10:45-11:00						33		
<b>HOURLY TOTAL</b>					<b>2</b>	<b>HOURLY TOTAL</b>		<b>136</b>
11:00-11:15						30		
11:15-11:30		2			2	23		
11:30-11:45						16		
11:45-12:00						37		1
<b>HOURLY TOTAL</b>					<b>2</b>	<b>HOURLY TOTAL</b>		<b>107</b>
12:00-12:15						33		1
12:15-12:30						33		1
12:30-12:45						34		2
12:45-1:00						38		
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>142</b>
1:00-1:15						30		1
1:15-1:30						37		
1:30-1:45						39		
1:45-2:00	1	1			2	33		
<b>HOURLY TOTAL</b>					<b>2</b>	<b>HOURLY TOTAL</b>		<b>140</b>



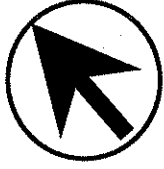


Date : 6/25/01

Count Number : TMC0115/0116

Location : CSAH 52 (Radisson Rd.)

@ Naples St. /95th Ave.



North

CSAH 52

10430

#2

6021

4409	43	F
3899		E
467		D

Naples St.

1205

#1

2336

1131	C
478	B
0	A
653	

95th Ave.

33	508
57	
418	

#3

1074

566

CSAH 52

4970

#4

11684

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

Anoka County Highway Department

Traffic Volume and Turning

Movement Study

# Anoka County Highway Department Traffic Engineering

## Traffic Volume and Turning Movement Study

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

File Name : tmc011516  
Site Code : 01150201  
Start Date : 06/25/2001  
Page No : 1

Groups Printed- 1 - Unshifted

Start Time	CSAH 52 Southbound					Naples St. Westbound					CSAH 52 Northbound					95th Ave. 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	103	4	16	107	1	1	2	2	4	1	26	6	3	33	0	0	8	2	8	23	152	175
06:15	0	99	7	23	106	2	0	0	1	2	15	46	9	4	70	1	0	2	1	3	29	181	210
06:30	1	102	8	18	111	2	1	0	1	3	24	65	2	8	91	6	0	9	0	15	27	220	247
06:45	0	93	15	13	108	1	0	2	2	3	25	78	13	11	116	5	0	8	1	13	27	240	267
Total	1	397	34	70	432	6	2	4	6	12	65	215	30	26	310	12	0	27	4	39	106	793	899
07:00	0	108	17	12	125	3	0	0	2	3	27	65	6	14	98	5	0	10	1	15	29	241	270
07:15	2	95	14	16	111	2	0	0	1	2	8	56	7	8	71	5	0	7	2	12	27	196	223
07:30	3	88	21	15	112	0	0	0	0	0	7	67	9	12	83	10	0	9	5	19	32	214	246
07:45	1	103	21	15	125	2	0	1	1	3	15	75	17	12	107	11	0	9	2	20	30	255	285
Total	6	394	73	58	473	7	0	1	4	8	57	263	39	46	359	31	0	35	10	66	118	906	1024
08:00	1	77	8	11	86	4	0	2	1	6	13	49	8	12	70	8	0	9	6	17	30	179	209
08:15	0	78	12	6	90	2	1	0	1	3	11	58	7	12	76	7	0	9	1	16	20	185	205
08:30	0	70	7	18	77	4	2	0	2	6	7	58	5	12	70	13	0	6	2	19	34	172	206
08:45	0	73	7	15	80	2	0	1	3	3	10	64	7	16	81	10	0	11	3	21	37	185	222
Total	1	298	34	50	333	12	3	3	7	18	41	229	27	52	297	38	0	35	12	73	121	721	842
09:00	0	69	4	14	73	4	2	0	0	6	12	57	6	14	75	6	0	9	3	15	31	169	200
09:15	0	53	7	8	60	3	0	0	0	3	12	72	4	17	88	8	0	5	4	13	29	164	193
09:30	0	64	5	13	69	2	0	0	0	2	8	49	3	16	60	6	0	4	1	10	30	141	171
09:45	0	58	4	14	62	6	1	0	2	7	9	65	8	14	82	7	0	4	1	11	31	162	193
Total	0	244	20	49	264	15	3	0	2	18	41	243	21	61	305	27	0	22	9	49	121	636	757
10:00	1	54	0	17	55	7	0	0	2	7	9	67	3	26	79	4	0	10	1	14	46	155	201
10:15	1	47	3	12	51	3	0	1	1	4	14	47	8	10	69	2	0	9	0	11	23	135	158
10:30	0	38	8	17	46	5	2	0	2	7	8	40	6	10	54	1	0	10	1	11	30	118	148
10:45	0	28	11	11	39	9	3	0	2	12	7	71	7	18	85	4	0	14	3	18	34	154	188
Total	2	167	22	57	191	24	5	1	7	30	38	225	24	64	287	11	0	43	5	54	133	562	695
11:00	0	55	6	13	61	12	0	0	0	12	9	49	5	14	63	6	0	7	0	13	27	149	176
11:15	1	51	10	5	62	7	2	0	0	9	7	57	12	16	76	0	0	15	0	15	21	162	183
11:30	1	42	4	15	47	7	0	4	0	11	11	60	7	14	78	4	0	12	2	16	31	152	183
11:45	0	11	3	2	14	1	1	0	1	2	12	79	9	20	100	6	0	8	1	14	24	130	154
Total	2	159	23	35	184	27	3	4	1	34	39	245	33	64	317	16	0	42	3	58	103	593	696
12:00	1	66	5	16	72	4	2	2	1	8	8	64	13	17	85	10	0	8	3	18	37	183	220
12:15	0	60	8	12	68	12	4	2	0	18	10	78	13	19	101	7	0	6	2	13	33	200	233
12:30	0	55	10	14	65	7	1	0	3	8	9	70	14	18	93	7	0	16	3	23	38	189	227
12:45	0	41	7	13	48	11	1	0	2	12	12	63	12	20	87	7	0	10	1	17	36	164	200
Total	1	222	30	55	253	34	8	4	6	46	39	275	52	74	366	31	0	40	9	71	144	736	880
13:00	0	40	3	10	43	4	2	0	2	6	11	71	11	18	93	5	0	4	2	9	32	151	183
13:15	2	52	3	15	57	6	0	1	2	7	6	66	8	21	80	6	0	8	0	14	38	158	196
13:30	1	51	8	15	60	7	0	3	1	10	8	70	12	23	90	3	0	20	2	23	41	183	224
13:45	1	48	11	16	60	7	4	2	2	13	9	63	9	14	81	10	0	11	1	21	33	175	208
Total	4	191	25	56	220	24	6	6	7	36	34	270	40	76	344	24	0	43	5	67	144	667	811
14:00	1	45	5	6	51	4	1	0	1	5	7	72	4	14	83	2	0	11	2	13	23	152	175
14:15	0	41	4	9	45	7	0	0	2	7	11	83	13	19	107	5	0	14	1	19	31	178	209
14:30	2	44	4	10	50	5	1	0	1	6	13	102	16	21	131	6	0	8	0	14	32	201	233
14:45	0	62	9	14	71	10	1	0	4	11	16	98	13	17	127	5	0	13	1	18	36	227	263
Total	3	192	22	39	217	26	3	0	8	29	47	355	46	71	448	18	0	46	4	64	122	758	880
15:00	2	53	6	7	61	7	5	0	0	12	8	115	18	20	141	5	0	17	2	22	29	236	265
15:15	5	66	7	9	78	12	0	0	3	12	11	128	17	22	156	9	0	4	0	13	34	259	293
15:30	0	63	3	8	66	14	1	0	2	15	10	141	13	22	164	8	0	14	2	22	34	267	301
15:45	1	65	4	6	70	15	0	0	1	15	10	173	11	24	194	9	0	18	2	27	33	306	339
Total	8	247	20	30	275	48	6	0	6	54	39	557	59	88	655	31	0	53	6	84	130	1068	1198
16:00	0	53	9	10	62	14	1	0	2	15	14	139	13	23	166	10	0	16	1	26	36	269	305
16:15	2	71	7	6	80	7	0	0	1	7	9	169	7	17	185	15	0	14	1	29	25	301	326
16:30	2	98	5	10	105	11	1	0	0	12	7	152	16	18	175	15	0	14	0	29	28	321	349
16:45	2	72	10	6	84	10	2	0	1	12	17	183	10	17	210	19	0	15	1	34	25	340	365
Total	6	294	31	32	331	42	4	0	4	46	47	643	46	75	736	59	0	59	3	118	114	1231	1345

Anoka County Highway Department  
Traffic Engineering  
Traffic Volume and Turning Movement Stud

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

File Name : tmc011516  
Site Code : 01150201  
Start Date : 06/25/2001  
Page No : 2

Groups Printed- 1 - Unshifted

Start Time	CSAH 52 Southbound					Naples St. Westbound					CSAH 52 Northbound					95th Ave. 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	81	32	3	113	9	1	0	1	10	8	169	12	13	189	20	0	14	1	34	18	346	364			
17:15	1	92	5	1	98	12	1	0	0	13	10	199	7	13	216	19	0	17	2	36	16	363	379			
17:30	2	63	6	1	71	12	0	0	1	12	10	182	9	11	201	22	0	16	1	38	14	322	336			
17:45	1	44	3	3	48	11	1	0	0	12	11	206	13	11	230	24	0	19	0	43	14	333	347			
Total	4	280	46	8	330	44	3	0	2	47	39	756	41	48	836	85	0	66	4	151	62	1364	1426			
18:00	1	84	3	1	68	12	0	0	0	12	11	192	14	11	217	8	0	11	2	19	14	316	330			
18:15	0	41	16	0	57	11	0	0	0	11	11	146	0	0	157	16	0	9	0	25	0	250	250			
18:30	1	45	2	1	48	6	4	0	0	10	14	98	5	8	117	20	0	6	2	26	11	201	212			
18:45	2	29	6	2	37	11	2	0	0	13	7	87	6	7	100	12	0	13	3	25	12	175	187			
Total	4	179	27	4	210	40	6	0	0	46	43	523	25	26	591	56	0	39	7	95	37	942	979			
19:00	0	41	7	1	48	3	0	0	0	3	13	88	11	0	112	7	0	7	1	14	2	177	179			
19:15	0	35	5	0	40	4	2	0	0	6	9	73	6	4	88	5	0	18	0	23	4	157	161			
19:30	1	39	5	2	45	7	0	0	0	7	6	76	6	1	88	2	0	13	1	15	4	155	159			
19:45	0	50	3	1	53	7	2	0	0	9	11	88	1	6	100	5	0	8	0	13	7	175	182			
Total	1	165	20	4	186	21	4	0	0	25	39	325	24	11	388	19	0	46	2	65	17	664	681			
20:00	0	24	11	0	35	6	1	0	0	7	8	50	3	1	61	1	0	13	0	14	1	117	118			
20:15	0	59	1	0	60	3	0	0	0	3	11	46	1	3	58	4	0	7	0	11	3	132	135			
20:30	0	100	4	2	104	7	0	0	0	7	16	63	1	2	80	2	0	3	1	5	5	196	201			
20:45	0	65	4	0	69	5	0	1	0	6	8	41	3	2	52	1	0	9	0	10	2	137	139			
Total	0	248	20	2	268	21	1	1	0	23	43	200	8	8	251	8	0	32	1	40	11	582	593			
21:00	0	87	0	0	87	4	0	0	0	4	11	40	3	3	54	3	0	3	0	6	3	151	154			
21:15	0	48	3	1	51	10	0	1	0	11	9	60	1	1	70	5	0	4	0	9	2	141	143			
21:30	0	55	9	0	64	3	0	8	0	11	3	50	2	0	55	2	0	10	0	12	0	142	142			
21:45	0	32	8	0	40	10	0	0	0	10	7	36	2	0	45	2	0	8	0	10	0	105	105			
Total	0	222	20	1	242	27	0	9	0	36	30	186	8	4	224	12	0	25	0	37	5	539	544			
Grand Total	43	389	467	550	4409	418	57	33	60	508	681	551	523	794	6714	478	0	653	84	1131	1488	12762	14250			
Apprch %	1.0	88.4	10.6			82.3	11.2	6.5			10.1	82.1	7.8			42.3	0.0	57.7								
Total %	0.3	30.6	3.7		34.5	3.3	0.4	0.3		4.0	5.3	43.2	4.1		52.6	3.7	0.0	5.1		8.9	10.4	89.6				

Major Street Approaches:

Northbound:

CSAH 52

Data File: E:\2001 COUNT FILES\TMC011516.war  
 Count Type: IMC. Channel: 0. Count Date: 6/25/ 1  
 Number of Lanes: 2  
 Approach Speed: 50  
 Total Approach Traffic: 6714

Southbound:

CSAH 52

Data File: E:\2001 COUNT FILES\TMC011516.war  
 Count Type: IMC. Channel: 0. Count Date: 6/25/ 1  
 Number of Lanes: 2  
 Approach Speed: 50  
 Total Approach Traffic: 4409

Minor Street Approaches:

Eastbound:

95th Ave.

Data File: E:\2001 COUNT FILES\TMC011516.war  
 Count Type: IMC. Channel: 0. Count Date: 6/25/ 1  
 Number of Lanes: 2  
 Approach Speed: 30  
 Total Approach Traffic: 1131

Westbound:

Naples St.

Data File: E:\2001 COUNT FILES\TMC011516.war  
 Count Type: IMC. Channel: 0. Count Date: 6/25/ 1  
 Number of Lanes: 2  
 Approach Speed: 30  
 Total Approach Traffic: 508

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? Criteria	Warrant 2 Meets? Criteria	Warrant 8 Meets? Criteria
0	0	0	W	17	140	70	112
1	0	0	W	18	140	70	112
2	0	0	W	19	140	70	112
3	0	0	W	20	140	70	112
4	0	0	W	21	140	70	112
5	0	0	W	22	140	70	112
6	742	39	E	15	MAIN 140	MAIN 70	MAIN 112
7	832	66	E	8	MAIN 140	MAIN 70	MAIN 112
8	630	73	E	5	MAIN 140	--BOTH-- 70	MAIN 112
9	569	49	E	13	MAIN 140	70	MAIN 112
10	478	54	E	12	MAIN 140	70	112
11	501	58	E	11	MAIN 140	70	112
12	619	71	E	6	MAIN 140	SIDE 70	MAIN 112
13	564	67	E	7	MAIN 140	70	MAIN 112
14	665	64	E	10	MAIN 140	MAIN 70	MAIN 112
15	930	84	E	4	MAIN 140	--BOTH-- 70	MAIN 112
16	1067	118	E	2	MAIN 140	--BOTH-- 70	--BOTH-- 112
17	1166	151	E	1	--BOTH-- 140	--BOTH-- 70	--BOTH-- 112
18	801	95	E	3	MAIN 140	--BOTH-- 70	MAIN 112
19	574	65	E	9	MAIN 140	70	MAIN 112
20	519	40	E	14	MAIN 140	70	MAIN 112
21	466	37	E	16	MAIN 140	70	112
22	0	0	W	23	140	70	112
23	0	0	W	24	140	70	112

## Warrant Summary:

al 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 5 hours. Criteria--Main St.: 630; 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

SATISFIED. Peak hour total entering volume: 1364. Approaches on both streets satisfy one of the following criteria:

NSEW- 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: 504; Side: See Volume Summary.

## Warrant 9 - Four Hour Volumes

NOT SATISFIED. Required values reached for 3 hours.

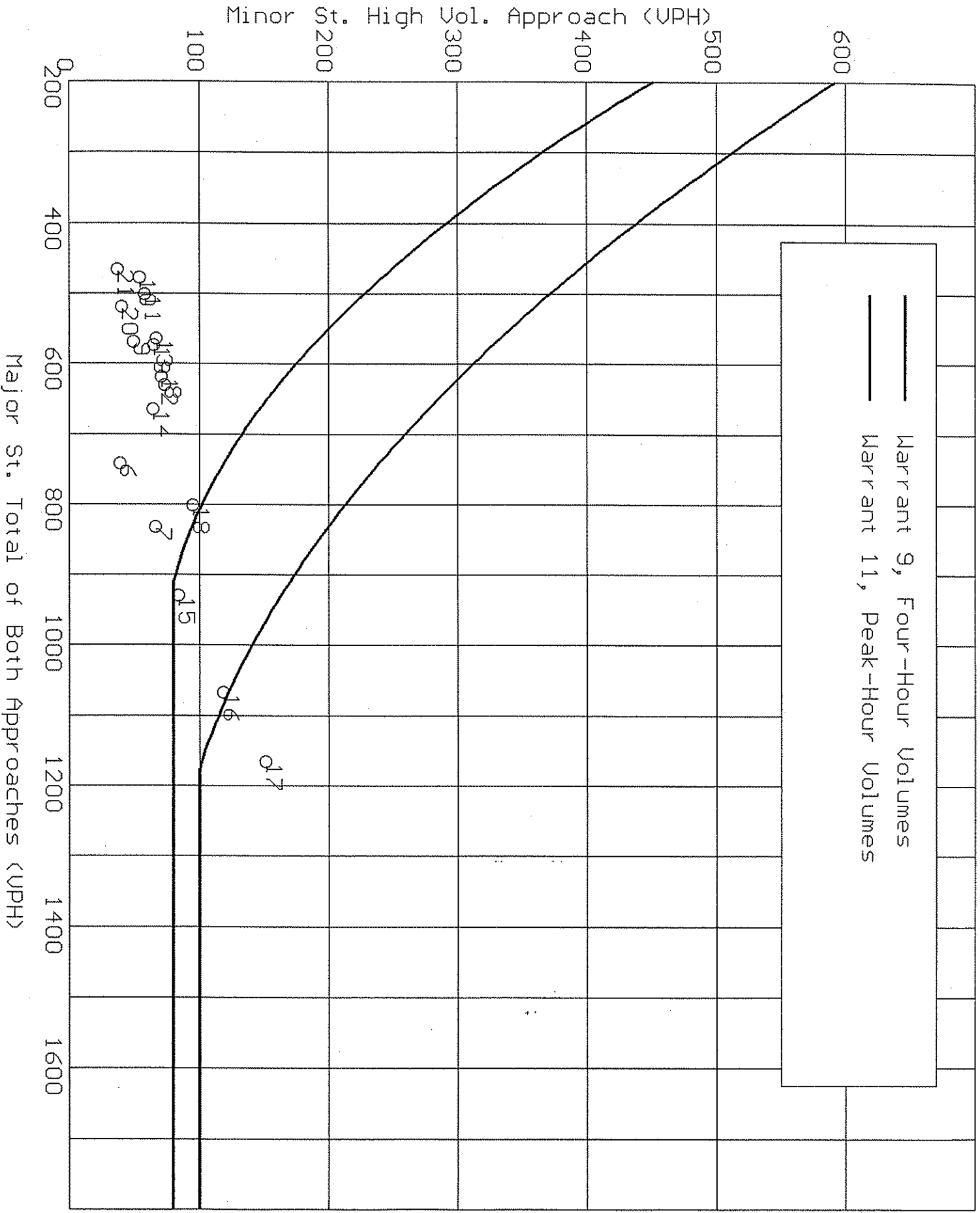
## Warrant 10 - Peak Hour Delay

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

Criteria--Main St.: 800 (4 approaches), 650 (3 approaches); Side St.: 150.

## Warrant 11 - Peak Hour Volume

SATISFIED for 2 hours.



**Multiway Stop Warrant Analysis**  
**TMC 0115/0116 CSAH 52 @ 95th Av./Naples 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	793	12	39	51	0
7 AM - 8 AM	906	8	66	74	0
8 AM - 9 AM	721	18	73	91	0
9 AM - 10 AM	636	18	49	67	0
10 AM - 11 AM	562	30	54	84	0
11 AM - 12 PM	593	34	58	92	0
12 PM - 13 PM	736	46	71	117	0
1 PM - 2 PM	667	36	67	103	0
2 PM - 3 PM	758	29	64	93	0
3 PM - 4 PM	1068	54	84	138	0
4 PM - 5 PM	1231	46	118	164	0
5 PM - 6 PM	1364	47	151	198	0
6 PM - 7 PM	942	46	95	141	0
7 PM - 8 PM	664	25	65	90	0
8 PM - 9 PM	582	23	40	63	0
9 PM - 10 PM	539	36	37	73	0

**TOTAL HOURS MET: 0**

**MULTIWAY STOP WARRANT IS NOT MET**