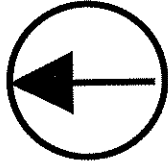


Date : 6/26/98 AM 6/25/98 PM

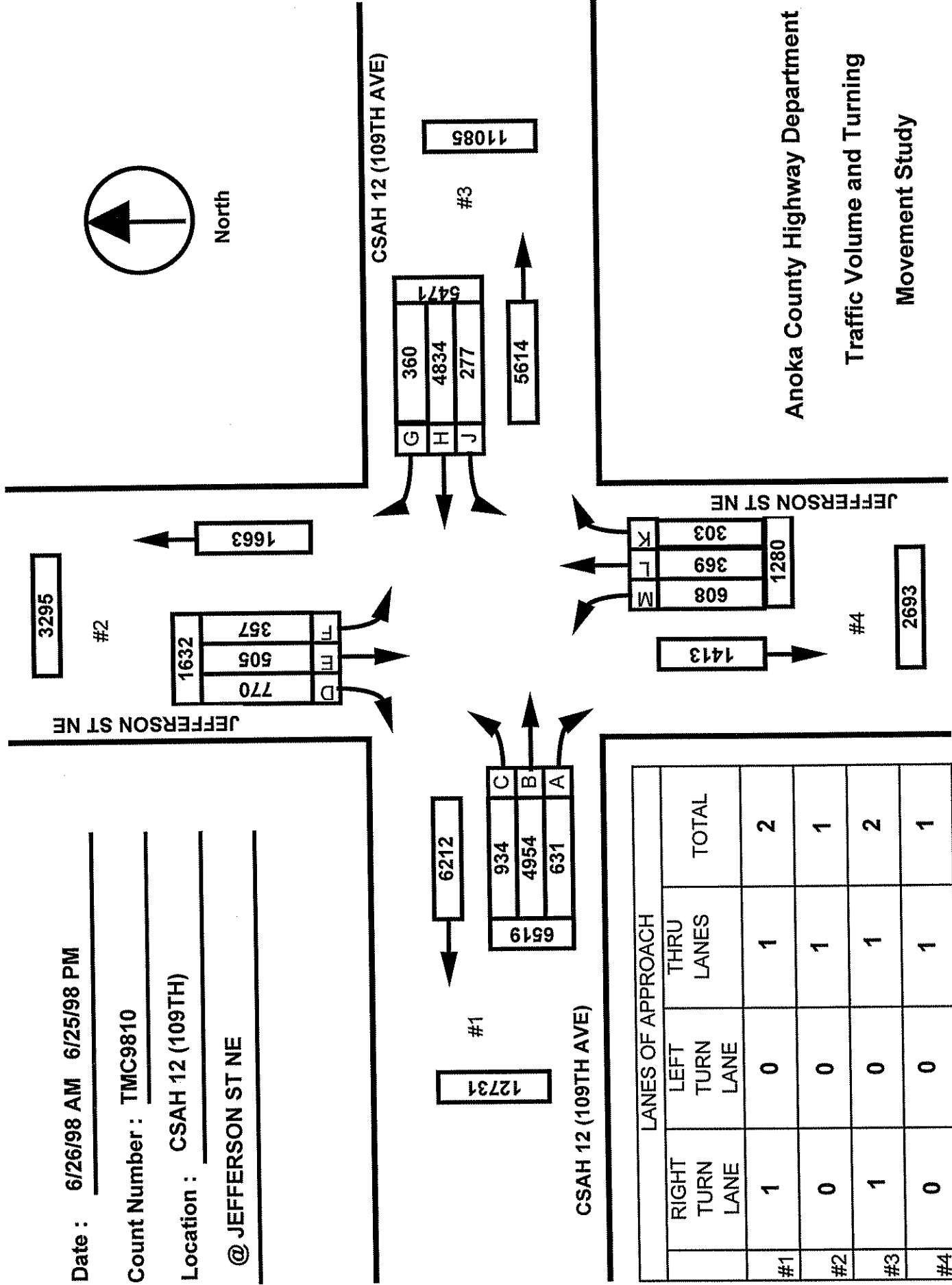
Count Number : TMC9810

Location : CSAH 12 (109TH)

@ JEFFERSON ST NE



North



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

Anoka County Highway Department  
 Traffic Volume and Turning  
 Movement Study

PETRA Software

Weather :  
 Counted by: Sarah and Vallie  
 Board # :  
 cher :

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 Jamar Technologies, Inc.  
 Horsham, PA.

Study Name: TMC9810  
 Site Code : 98100202  
 Start Date: 06/26/98  
 Page : 1

Vehicle group 1

Start Time	JEFFERSON ST. NE Southbound				CSAH 12 (109TH AVE) Westbound				JEFFERSON ST. NE Northbound				CSAH 12 (109TH AVE) Eastbound				Intvl	Exclu	Inclu
	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other			
06/26/98																			
06:00	10	22	10	0	2	30	0	0	5	1	1	0	1	46	6	1	135	1	134
06:15	12	35	18	1	2	44	0	4	6	1	2	1	2	61	14	2	205	8	197
06:30	6	39	15	1	3	60	0	2	2	1	4	0	8	74	12	3	230	6	224
06:45	7	36	16	0	5	62	1	3	7	1	1	0	4	53	12	5	213	8	205
Hour	35	132	59	2	12	196	1	9	20	4	8	1	15	234	44	11	783	23	760
07:00	8	27	13	1	2	43	0	2	6	1	7	1	2	66	11	5	195	9	186
07:15	10	23	11	1	4	47	5	3	8	3	4	1	6	61	11	0	198	5	193
07:30	9	29	24	2	2	57	0	2	6	1	3	1	6	77	10	2	231	7	224
07:45	6	12	11	0	3	55	0	5	12	2	7	1	5	67	17	5	208	11	197
Hour	33	91	59	4	11	202	5	12	32	7	21	4	19	271	49	12	832	32	800
08:00	9	5	10	2	4	43	1	3	10	1	4	0	3	65	5	4	169	9	160
08:15	6	5	9	0	0	23	2	1	5	2	5	3	6	52	6	4	129	8	121
08:30	5	1	4	2	2	38	3	7	3	1	4	0	5	65	7	6	153	15	138
08:45	2	4	12	2	8	41	1	3	3	2	3	0	6	60	15	4	166	9	157
Hour	22	15	35	6	14	145	7	14	21	6	16	3	20	242	33	18	617	41	576
09:00	4	1	6	0	2	50	3	0	9	1	5	1	8	50	5	3	148	4	144
09:15	1	6	8	0	3	58	4	3	6	7	6	2	8	59	9	6	186	11	175
09:30	2	6	8	3	1	56	1	6	9	1	3	1	11	50	6	4	168	14	154
09:45	3	8	11	0	1	51	3	4	8	3	1	0	9	56	5	3	166	7	159
Hour	10	21	33	3	7	215	11	13	32	12	15	4	36	215	25	16	668	36	632
10:00	11	5	10	0	4	52	8	9	6	4	7	1	3	50	5	6	181	16	165
10:15	4	4	9	0	2	54	6	4	12	2	4	1	9	62	9	5	187	10	177
10:30	1	3	5	1	5	46	4	4	0	9	1	2	9	55	6	4	155	11	144
10:45	5	3	7	0	3	67	4	4	7	6	7	2	8	60	6	3	192	9	183
Hour	21	15	31	1	14	219	22	21	25	21	19	6	29	227	26	18	715	46	669
11:00	3	4	8	1	4	57	7	3	8	3	4	0	12	76	8	3	201	7	194
11:15	8	4	7	1	5	66	2	5	15	3	2	1	10	74	9	8	220	15	205
11:30	6	2	13	0	1	64	2	3	7	1	3	1	9	64	5	3	184	7	177
11:45	2	3	10	0	2	66	5	6	7	7	5	0	8	62	8	8	199	14	185
Hour	19	13	38	2	12	253	16	17	37	14	14	2	39	276	30	22	804	43	761
12:00	3	1	15	0	4	65	5	4	8	4	1	0	12	73	10	3	208	7	201
12:15	5	8	4	0	2	77	6	3	8	1	1	2	11	104	11	8	251	13	238
12:30	5	2	14	3	3	69	1	7	5	7	5	0	19	69	8	6	223	16	207
12:45	4	2	12	0	6	79	4	4	11	10	4	0	15	76	17	6	250	10	240
Hour	17	13	45	3	15	290	16	18	32	22	11	2	57	322	46	23	932	46	886

PETRA Software

Weather :  
 Counted by: Sarah and Vallie  
 Board # :  
 Character :

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 Jamar Technologies, Inc.  
 Horsham, PA.

Study Name: TMC9810  
 Site Code : 98100202  
 Start Date: 06/26/98  
 Page : 2

Vehicle group 1

Start Time	JEFFERSON ST. NE Southbound				CSAH 12 (109TH AVE) Westbound				JEFFERSON ST. NE Northbound				CSAH 12 (109TH AVE) Eastbound				Intvl	Exclu	Inclu
	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other			
13:00	4	7	11	1	5	83	4	6	18	4	6	2	28	61	9	3	252	12	240
13:15	8	3	6	0	5	66	4	5	5	6	1	2	9	62	12	0	194	7	187
13:30	3	3	12	1	2	67	10	4	7	3	2	2	20	64	8	2	210	9	201
13:45	6	3	14	2	3	82	10	5	10	6	1	2	16	70	4	2	236	11	225
Hour	21	16	43	4	15	298	28	20	40	19	10	8	73	257	33	7	892	39	853
14:00	3	4	9	0	2	78	6	5	9	3	5	0	14	74	2	6	220	11	209
14:15	3	1	16	1	8	69	3	6	7	3	5	2	14	62	11	5	216	14	202
14:30	5	1	14	0	5	81	8	5	7	4	3	0	13	73	7	3	229	8	221
14:45	8	3	6	1	7	75	11	4	6	3	2	0	11	66	7	3	213	8	205
Hour	19	9	45	2	22	303	28	20	29	13	15	2	52	275	27	17	878	41	837
15:00	5	8	15	1	4	85	11	8	4	5	3	0	14	77	8	4	252	13	239
15:15	6	4	11	1	3	95	8	9	8	8	4	3	22	83	10	6	281	19	262
15:30	7	3	8	0	4	90	9	3	6	8	9	3	24	99	8	6	287	12	275
15:45	5	4	11	0	5	96	7	3	17	11	7	1	24	92	14	3	300	7	293
Hour	23	19	45	2	16	366	35	23	35	32	23	7	84	351	40	19	1120	51	1069
16:00	5	10	17	1	7	116	5	7	12	12	8	2	20	80	12	4	318	14	304
16:15	4	10	13	0	8	101	11	2	12	17	4	2	23	102	13	8	330	12	318
16:30	5	7	19	0	11	113	12	4	18	24	11	1	22	109	15	4	375	9	366
16:45	8	3	21	0	4	121	11	3	20	16	12	1	25	95	15	1	356	5	351
Hour	22	30	70	1	30	451	39	16	62	69	35	6	90	386	55	17	1379	40	1339
17:00	8	4	9	0	6	138	9	1	29	21	12	3	30	107	12	3	392	7	385
17:15	5	10	20	0	7	102	7	3	30	10	7	1	30	107	20	3	362	7	355
17:30	11	6	15	0	6	130	7	3	21	10	9	3	30	116	10	2	379	8	371
17:45	5	8	19	0	6	88	8	4	18	15	8	2	25	138	22	4	370	10	360
Hour	29	28	63	0	25	458	31	11	98	56	36	9	115	468	64	12	1503	32	1471
18:00	10	7	20	0	10	98	17	1	14	15	9	2	26	130	5	2	366	5	361
18:15	11	10	19	2	6	98	8	2	11	13	5	1	24	101	16	3	330	8	322
18:30	11	5	13	0	3	129	8	4	15	5	2	1	13	122	12	1	344	6	338
18:45	4	7	13	0	2	88	13	2	11	2	9	0	22	104	12	1	290	3	287
Hour	36	29	65	2	21	413	46	9	51	35	25	4	85	457	45	7	1330	22	1308
19:00	5	7	14	1	4	78	7	2	9	6	6	1	22	78	9	3	252	7	245
19:15	3	8	15	1	10	102	8	1	10	6	2	0	17	94	12	3	292	5	287
19:30	1	7	11	2	4	79	7	4	11	4	5	0	21	99	7	3	265	9	256
19:45	4	3	10	0	5	74	7	2	8	3	2	0	20	85	11	4	238	6	232
Hour	13	25	50	4	23	333	29	9	38	19	15	1	80	356	39	13	1047	27	1020

Weather :  
 Counted by: Sarah and Vallie  
 Board # :  
 Lher :

PETRA Software  
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 Horsham, PA.

Study Name: TMC9810  
 Site Code : 98100202  
 Start Date: 06/26/98  
 Page : 3

Vehicle group 1

Start Time	JEFFERSON ST. NE Southbound				CSAH 12 (109TH AVE) Westbound				JEFFERSON ST. NE Northbound				CSAH 12 (109TH AVE) Eastbound				Intvl	Exclu	Inclu
	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other			
20:00	7	14	17	0	1	70	5	0	5	4	8	0	14	84	10	0	239	0	239
20:15	3	2	15	0	8	86	5	1	9	5	3	0	10	78	6	2	233	3	230
20:30	4	2	17	0	4	89	7	1	8	8	7	0	20	88	8	2	265	3	262
20:45	1	5	12	0	6	118	14	1	10	5	3	0	23	82	7	0	287	1	286
Hour	15	23	61	0	19	363	31	3	32	22	21	0	67	332	31	4	1024	7	1017
21:00	4	10	6	0	4	101	7	0	8	5	8	0	19	74	13	3	262	3	259
21:15	6	6	5	1	11	79	4	3	5	7	4	0	22	90	13	2	258	6	252
21:30	5	6	11	0	2	81	2	1	4	2	3	0	19	58	13	1	208	2	206
21:45	7	4	6	0	4	68	2	0	7	4	4	0	13	63	5	0	187	0	187
Hour	22	26	28	1	21	329	15	4	24	18	19	0	73	285	44	6	915	11	904
Total	357	505	770	37	277	4834	360	219	608	369	303	59	934	4954	631	222	15439	537	14902
% Apr.	21.3	30.2	46.1	2.2	4.8	84.9	6.3	3.8	45.4	27.5	22.6	4.4	13.8	73.4	9.3	3.2	-	-	-
% Int.	2.3	3.2	4.9	0.2	1.7	31.3	2.3	1.4	3.9	2.3	1.9	0.3	6.0	32.0	4.0	1.4	-	-	-

or Street Approaches:

Lastbound:

CSAH 12 (109TH AVE)

Data File: C:\APPS\PETRA2\DATAFILE\TMC9810.PDF  
 Count Type: IMC. Channel: 0. Count Date: 6/26/98  
 Number of Lanes: 1  
 Approach Speed: 35  
 Total Approach Traffic: 6519

Westbound:

CSAH 12 (109TH AVE)

Data File: C:\APPS\PETRA2\DATAFILE\TMC9810.PDF  
 Count Type: IMC. Channel: 0. Count Date: 6/26/98  
 Number of Lanes: 1  
 Approach Speed: 35  
 Total Approach Traffic: 5471

Minor Street Approaches:

Northbound:

JEFFERSON ST. NE

Data File: C:\APPS\PETRA2\DATAFILE\TMC9810.PDF  
 Count Type: IMC. Channel: 0. Count Date: 6/26/98  
 Number of Lanes: 1  
 Approach Speed: 0  
 Total Approach Traffic: 1280

Southbound:

JEFFERSON ST. NE

Data File: C:\APPS\PETRA2\DATAFILE\TMC9810.PDF  
 Count Type: IMC. Channel: 0. Count Date: 6/26/98  
 Number of Lanes: 1  
 Approach Speed: 0  
 Total Approach Traffic: 1632

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	150	75	120
1	0	0 S	18	150	75	120
2	0	0 S	19	150	75	120
3	0	0 S	20	150	75	120
4	0	0 S	21	150	75	120
5	0	0 S	22	150	75	120
6	502	226 S	1	--BOTH-- 150	SIDE 75	SIDE 120
7	557	183 S	3	--BOTH-- 150	SIDE 75	SIDE 120
8	461	72 S	13	150	75	120
9	509	64 S	16	MAIN 150	75	120
10	537	67 S	15	MAIN 150	75	120
11	626	70 S	14	MAIN 150	75	MAIN 120
12	746	75 S	11	MAIN 150	SIDE 75	MAIN 120
13	704	80 S	9	MAIN 150	SIDE 75	MAIN 120
14	707	73 S	12	MAIN 150	75	MAIN 120
15	892	90 N	7	MAIN 150	--BOTH-- 75	MAIN 120
16	1051	166 N	4	--BOTH-- 150	--BOTH-- 75	--BOTH-- 120
17	1161	190 N	2	--BOTH-- 150	--BOTH-- 75	--BOTH-- 120
18	1067	130 S	5	MAIN 150	--BOTH-- 75	--BOTH-- 120
19	860	88 S	8	MAIN 150	--BOTH-- 75	MAIN 120
20	843	99 S	6	MAIN 150	--BOTH-- 75	MAIN 120
21	767	76 S	10	MAIN 150	--BOTH-- 75	MAIN 120
22	0	0 S	23	150	75	120
23	0	0 S	24	150	75	120

## Warrant Summary:

Urban values apply.

## Warrant 1 - Minimum Vehicular Volumes

NOT SATISFIED. Required values reached for 4 hours. Criteria--Main St.: 500; Side St.: See Volume Summary.

## Warrant 2 - Interruption of Continuous Traffic

NOT SATISFIED. Required values reached for 7 hours. Criteria--Main St.: 750; 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: 1471.

- 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 3 hours. Criteria--Main: 600; 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.: 100.

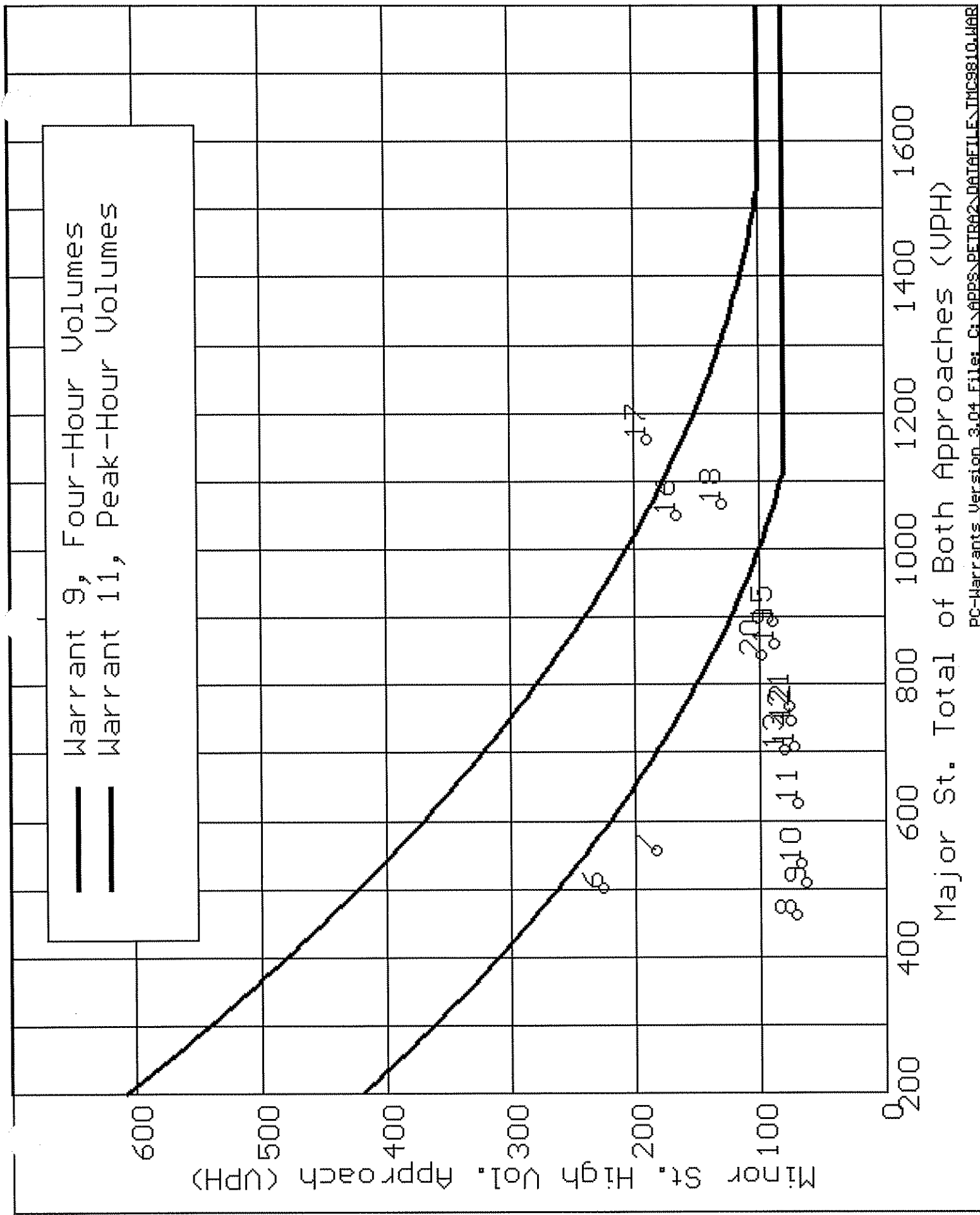
## Warrant 11 - Peak Hour Volume

SATISFIED for 1 hours.

Minor St. High Vol. Approach (VPH)

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

Major St. Total of Both Approaches (VPH)





**NORTH**

**COUNT LOCATION:**

CSAH 12 (109TH) @  
JEFFERSON ST NE

**DATE:**

6/26/98

APP. #1= WB CSAH 12 (109TH)
APP. #2 = NB JEFFERSON ST NE
APP. #3= EB CSAH 12 (109TH)
APP. #4= SB JEFFERSON ST NE

APP. #2	APP. #3
APP. #1	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						1		
6:15-6:30						1	1	6
6:30-6:45	1		1		2	5		3
6:45-7:00			1		1	2	3	1
<b>HOURLY TOTAL</b>					<b>3</b>	<b>HOURLY TOTAL</b>		<b>23</b>
7:00-7:15			2		2	5	2	1
7:15-7:30						3		2
7:30-7:45			1		1	4	1	2
7:45-8:00	1	1	1		3	12	1	3
<b>HOURLY TOTAL</b>					<b>6</b>	<b>HOURLY TOTAL</b>		<b>36</b>
8:00-8:15	1		1		2	3	2	
8:15-8:30		2			2	6		3
8:30-8:45		1	1		2	6	1	4
8:45-9:00			1		1	7		2
<b>HOURLY TOTAL</b>					<b>7</b>	<b>HOURLY TOTAL</b>		<b>34</b>
9:00-9:15						2	2	
9:15-9:30			2		2	9		2
9:30-9:45			2		2	11	2	1
9:45-10:00			2		2	7		
<b>HOURLY TOTAL</b>					<b>6</b>	<b>HOURLY TOTAL</b>		<b>36</b>
10:00-10:15			5		5	15		1
10:15-10:30	1				1	9		1
10:30-10:45	3		4	1	8	8	2	2
10:45-11:00			1		1	7	2	
<b>HOURLY TOTAL</b>					<b>15</b>	<b>HOURLY TOTAL</b>		<b>47</b>
11:00-11:15		2			2	6	2	
11:15-11:30			2		2	11	2	2
11:30-11:45						4	3	1
11:45-12:00		2	1		3	8		2
<b>HOURLY TOTAL</b>					<b>7</b>	<b>HOURLY TOTAL</b>		<b>41</b>
12:00-12:15		3			3	8	1	
12:15-12:30	4	2	2		8	11	1	1
12:30-12:45	1		1		2	12	2	2
12:45-1:00	1		1	2	4	4	3	
<b>HOURLY TOTAL</b>					<b>17</b>	<b>HOURLY TOTAL</b>		<b>45</b>
1:00-1:15		2			2	9	3	
1:15-1:30	5		2		7	2	3	2
1:30-1:45	2		5		7	7	1	1
1:45-2:00		4	2		6	7	4	
<b>HOURLY TOTAL</b>					<b>22</b>	<b>HOURLY TOTAL</b>		<b>39</b>





**NORTH**

**COUNT LOCATION:**

CSAH 12 (109TH) @  
JEFFERSON ST NE

**DATE:**

6/25/98

APP. #1= WB CSAH 12 (109TH)  
APP. #2 = NB JEFFERSON ST NE  
APP. #3= EB CSAH 12 (109TH)  
APP. #4= SB JEFFERSON ST NE

APP. #1      APP. #2  
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			1		1	10		1
2:15-2:30						8		2
2:30-2:45			6		6	9	1	1
2:45-3:00			4		4	6		1
<b>HOURLY TOTAL</b>					<b>11</b>	<b>HOURLY TOTAL</b>		<b>39</b>
3:00-3:15		1			1	10	2	1
3:15-3:30	2				2	10	4	4
3:30-3:45		1	3		4	5	2	2
3:45-4:00		1		5	6	6	2	
<b>HOURLY TOTAL</b>					<b>13</b>	<b>HOURLY TOTAL</b>		<b>48</b>
4:00-4:15						6	2	1
4:15-4:30		1			1	8	2	2
4:30-4:45	3	1			4	4	1	2
4:45-5:00	2		2		4	2	1	2
<b>HOURLY TOTAL</b>					<b>9</b>	<b>HOURLY TOTAL</b>		<b>33</b>
5:00-5:15			2		2	1	2	3
5:15-5:30			3		3	2	2	2
5:30-5:45	1		3		4	1	1	5
5:45-6:00			5		5	5	2	2
<b>HOURLY TOTAL</b>					<b>14</b>	<b>HOURLY TOTAL</b>		<b>28</b>
6:00-6:15			2		2	1		
6:15-6:30	1		2		3	5	3	3
6:30-6:45		1	8		9	5	1	1
6:45-7:00						2	1	
<b>HOURLY TOTAL</b>					<b>14</b>	<b>HOURLY TOTAL</b>		<b>22</b>
7:00-7:15		2	2		4	5		1
7:15-7:30	3	2	5	7	17	2	3	
7:30-7:45	10		1	5	16	5	4	
7:45-8:00	9		1	10	20	3	3	
<b>HOURLY TOTAL</b>					<b>57</b>	<b>HOURLY TOTAL</b>		<b>26</b>
8:00-8:15	8			12	20			
8:15-8:30			1	2	3	1	2	
8:30-8:45	1	2	4		7	2	1	
8:45-9:00	1		2		3	1		
<b>HOURLY TOTAL</b>					<b>33</b>	<b>HOURLY TOTAL</b>		<b>7</b>
9:00-9:15			4		4	4		
9:15-9:30			4		4	2	2	1
9:30-9:45						2		
9:45-10:00	2		2		4			
<b>HOURLY TOTAL</b>					<b>12</b>	<b>HOURLY TOTAL</b>		<b>11</b>