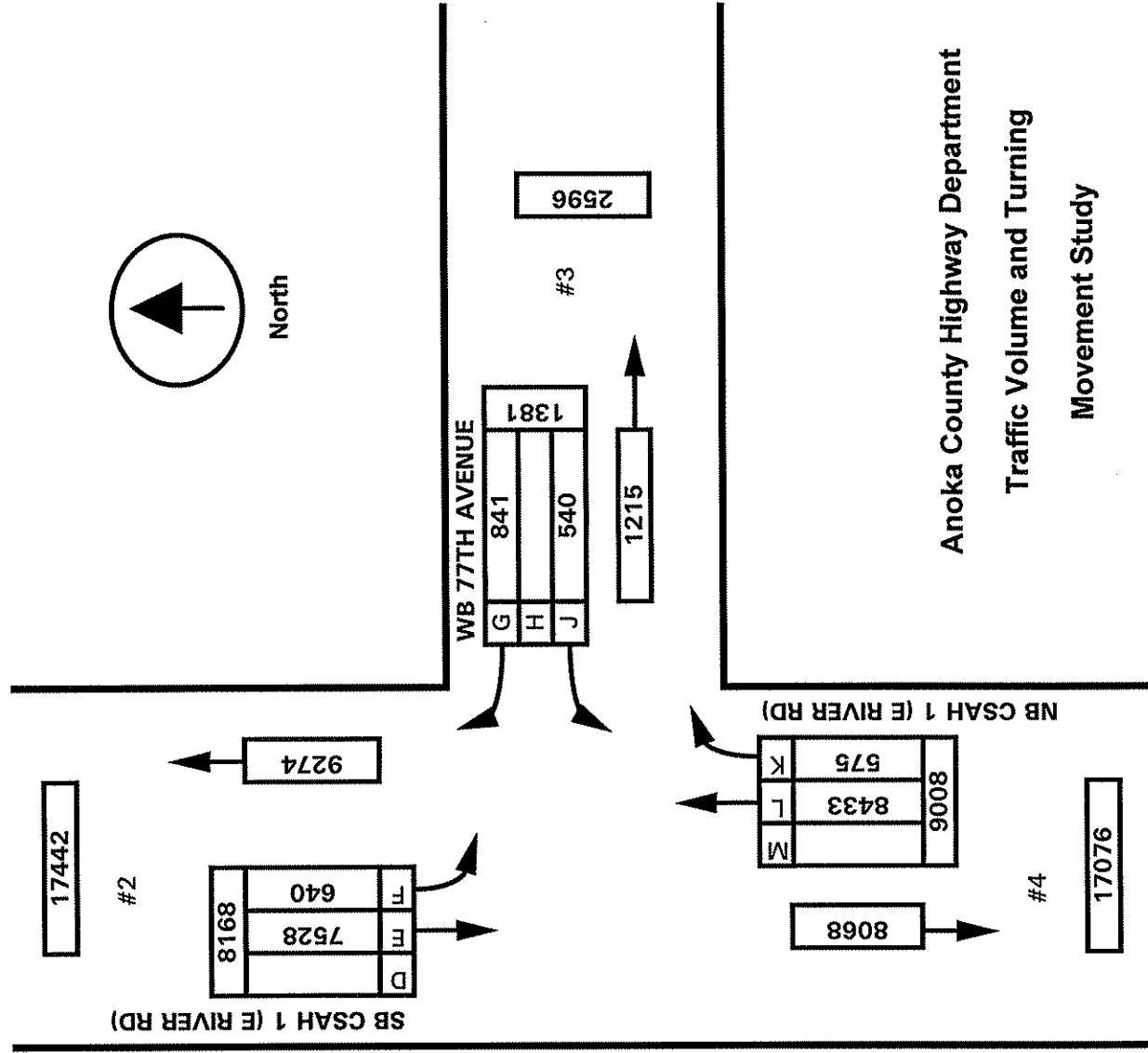


Date : 8/1/96AM 7/30/96PM

Count Number : TMC 9616

Location : CSAH 1 (EAST RIVER RD.) @

77TH AVENUE



Anoka County Highway Department  
Traffic Volume and Turning  
Movement Study

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

ANOKA COUNTY HIGHWAY DEPARTMENT

Weather : Clear/Rain in later PM

TRAFFIC ENGINEERING SECTION

Study Name: TMC9616

Counted by: Ann and Gabe

TRAFFIC STUDY

Site Code : 96160202

Card # :

Start Date: 07/30/96

Other :

Page : 1

Vehicle group 1

Start Time	CSAH 1 (East River Rd.   77th Ave.				CSAH 1 (East River Rd.				Intrvl.	Exclude	Include		
	From North		From East		From South		Thru	HEAVY				Right	Total
	Thru	Left	HEAVY	Right	Left	HEAVY			Right				
07/30/96													
06:00	174	15	4	4	0	0	7	23	1	228	5	223	
06:15	280	20	6	6	2	2	18	29	1	364	9	355	
06:30	409	16	1	3	7	0	13	46	3	498	4	494	
06:45	361	34	4	1	4	0	19	48	1	472	5	467	
Hour	1224	85	15	14	13	2	57	146	6	1562	23	1539	
07:00	355	26	3	3	6	1	14	53	4	465	8	457	
07:15	429	13	4	5	5	2	16	67	6	547	12	535	
07:30	359	6	8	5	4	4	10	59	4	459	16	443	
07:45	267	15	3	5	6	4	13	80	4	397	11	386	
Hour	1410	60	18	18	21	11	53	259	18	1868	47	1821	
08:00	204	17	4	5	4	1	9	62	4	310	9	301	
08:15	145	13	7	4	3	0	7	56	10	245	17	228	
08:30	131	15	3	7	13	3	10	52	10	244	16	228	
08:45	100	10	7	8	8	2	9	45	4	193	13	180	
Hour	580	55	21	24	28	6	35	215	28	992	55	937	
09:00	81	10	5	5	8	3	7	42	5	166	13	153	
09:15	88	10	8	2	4	1	6	59	4	182	13	169	
09:30	70	9	2	6	5	1	4	59	5	161	8	153	
09:45	89	10	8	12	11	6	9	61	5	211	19	192	
Hour	328	39	23	25	28	11	26	221	19	720	53	667	
10:00	92	8	8	12	7	3	5	65	8	208	19	189	
10:15	85	9	5	9	4	5	8	52	12	189	22	167	
10:30	75	2	2	13	4	4	6	57	9	172	15	157	
10:45	76	7	7	8	5	4	3	63	7	180	18	162	
Hour	328	26	22	42	20	16	22	237	36	749	74	675	
11:00	72	9	5	9	15	6	8	70	9	203	20	183	
11:15	86	9	7	6	14	4	10	76	10	222	21	201	
11:30	88	8	7	8	11	4	10	69	9	214	20	194	
11:45	83	9	3	16	11	6	12	93	5	238	14	224	
Hour	329	35	22	39	51	20	40	308	33	877	75	802	
12:00	83	6	8	21	13	5	11	80	4	231	17	214	
12:15	80	13	5	10	15	5	4	120	5	257	15	242	
12:30	75	11	6	15	6	2	6	81	4	206	12	194	
12:45	80	11	6	13	14	3	10	95	10	242	19	223	
Hour	318	41	25	59	48	15	31	376	23	936	63	873	

ANOKA COUNTY HIGHWAY DEPARTMENT

TRAFFIC ENGINEERING SECTION

TRAFFIC STUDY

Weather : Clear/Rain in later PM

Counted by: Ann and Gabe

Board # :

Other :

Study Name: TMC9616

Site Code : 96160202

Start Date: 07/30/96

Page : 2

Vehicle group 1

Start Time	CSAH 1 (East River Rd.   77th Ave.   From North			From East			CSAH 1 (East River Rd.   From South			Intrvl. Total	Exclude Total	Include Total
	Thru	Left	HEAVY	Right	Left	HEAVY	Right	Thru	HEAVY			
13:00	89	10	5	7	7	4	13	86	6	227	15	212
13:15	97	10	7	14	9	1	6	92	4	240	12	228
13:30	84	17	4	15	7	5	2	98	8	240	17	223
13:45	77	6	6	13	10	3	12	100	3	230	12	218
Hour	347	43	22	49	33	13	33	376	21	937	56	881
14:00	74	3	2	5	14	2	11	79	7	197	11	186
14:15	103	13	7	9	7	3	11	121	4	278	14	264
14:30	103	10	3	6	15	1	20	153	9	320	13	307
14:45	107	13	3	11	12	2	16	162	8	334	13	321
Hour	387	39	15	31	48	8	58	515	28	1129	51	1078
15:00	86	10	9	36	36	5	20	186	13	401	27	374
15:15	78	12	2	15	12	4	8	238	6	375	12	363
15:30	101	12	6	19	19	4	7	270	3	441	13	428
15:45	88	5	4	11	13	2	12	363	9	507	15	492
Hour	353	39	21	81	80	15	47	1057	31	1724	67	1657
16:00	92	8	5	17	15	1	12	309	7	466	13	453
16:15	82	12	3	24	6	1	15	324	6	473	10	463
16:30	103	7	6	40	22	2	8	407	8	603	16	587
16:45	103	12	2	33	11	3	8	493	5	670	10	660
Hour	380	39	16	114	54	7	43	1533	26	2212	49	2163
17:00	128	6	3	33	25	0	17	402	6	620	9	611
17:15	108	8	4	23	14	0	17	402	8	584	12	572
17:30	103	7	3	25	16	1	21	363	9	548	13	535
17:45	106	7	6	27	10	0	11	275	4	446	10	436
Hour	445	28	16	108	65	1	66	1442	27	2198	44	2154
18:00	87	7	2	29	6	0	9	214	3	357	5	352
18:15	95	9	0	13	2	0	3	190	3	315	3	312
18:30	88	13	5	19	7	1	7	147	5	292	11	281
18:45	89	12	0	12	7	1	5	143	4	273	5	268
Hour	359	41	7	73	22	2	24	694	15	1237	24	1213
19:00	63	6	2	8	5	0	2	130	1	217	3	214
19:15	62	6	1	12	1	1	4	90	5	182	7	175
19:30	79	6	3	17	4	0	5	81	3	198	6	192
19:45	70	6	0	19	3	1	5	103	3	210	4	206
Hour	274	24	6	56	13	2	16	404	12	807	20	787

ANOKA COUNTY HIGHWAY DEPARTMENT

TRAFFIC ENGINEERING SECTION

TRAFFIC STUDY

Weather : Clear/Rain in later PM

Counted by: Ann and Gabe

Board # :

Other :

Study Name: TMC9616

Site Code : 96160202

Start Date: 07/30/96

Page : 3

Vehicle group 1

Start Time	CSAH 1 (East River Rd. From North			77th Ave. From East			CSAH 1 (East River Rd. From South			Intrvl. Total	Exclude Total	Include Total
	Thru	Left	HEAVY	Right	Left	HEAVY	Right	Thru	HEAVY			
20:00	88	10	2	21	5	0	2	69	1	198	3	195
20:15	56	12	1	15	1	0	4	90	2	181	3	178
20:30	68	5	1	21	4	0	5	92	0	196	1	195
20:45	57	3	1	9	2	0	4	75	1	152	2	150
Hour	269	30	5	66	12	0	15	326	4	727	9	718
21:00	53	8	1	12	0	0	3	90	1	168	2	166
21:15	47	3	0	13	1	0	0	90	0	154	0	154
21:30	48	1	2	9	2	0	1	74	1	138	3	135
21:45	49	4	1	8	1	0	5	70	2	140	3	137
Hour	197	16	4	42	4	0	9	324	4	600	8	592
Total	7528	640	258	841	540	129	575	8433	331	19275	718	18557
% Apr.	89.3	7.5	3.0	55.6	35.7	8.5	6.1	90.2	3.5	-	-	-
% Int.	39.0	3.3	1.3	4.3	2.8	0.6	2.9	43.7	1.7	-	-	-

or Street Approaches:

Northbound:

CSAH 1 (East River Rd.)

Data File: C:\PETRA2\DATAFILE\TMC9616.PDF  
 Count Type: IMC. Channel: 0. Count Date: 7/30/96  
 Number of Lanes: 2  
 Approach Speed: 45  
 Total Approach Traffic: 9008

Southbound:

CSAH 1 (East River Rd.)

Data File: C:\PETRA2\DATAFILE\TMC9616.PDF  
 Count Type: IMC. Channel: 0. Count Date: 7/30/96  
 Number of Lanes: 2  
 Approach Speed: 45  
 Total Approach Traffic: 8168

Minor Street Approaches:

Eastbound:

77th Ave.

Data File: C:\PETRA2\DATAFILE\TMC9616.PDF  
 Count Type: IMC. Channel: 0. Count Date: 7/30/96  
 Number of Lanes: 1  
 Approach Speed: 0  
 Total Approach Traffic: 0

Westbound:

77th Ave.

Data File: C:\PETRA2\DATAFILE\TMC9616.PDF  
 Count Type: IMC. Channel: 0. Count Date: 7/30/96  
 Number of Lanes: 1  
 Approach Speed: 30  
 Total Approach Traffic: 1381

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	1512	27 W 16	MAIN 105	MAIN 52	MAIN 84
7	1782	39 W 15	MAIN 105	MAIN 52	MAIN 84
8	885	52 W 13	MAIN 105	--BOTH-- 52	MAIN 84
9	614	53 W 12	MAIN 105	SIDE 52	MAIN 84
10	613	62 W 11	MAIN 105	SIDE 52	MAIN 84
11	712	90 W 6	MAIN 105	--BOTH-- 52	--BOTH-- 84
12	766	107 W 4	--BOTH-- 105	--BOTH-- 52	--BOTH-- 84
13	799	82 W 7	MAIN 105	--BOTH-- 52	MAIN 84
14	999	79 W 8	MAIN 105	--BOTH-- 52	MAIN 84
15	1496	161 W 3	--BOTH-- 105	--BOTH-- 52	--BOTH-- 84
16	1995	168 W 2	--BOTH-- 105	--BOTH-- 52	--BOTH-- 84
17	1981	173 W 1	--BOTH-- 105	--BOTH-- 52	--BOTH-- 84
18	1118	95 W 5	MAIN 105	--BOTH-- 52	--BOTH-- 84
19	718	69 W 10	MAIN 105	--BOTH-- 52	MAIN 84
20	640	78 W 9	MAIN 105	--BOTH-- 52	MAIN 84
21	546	46 W 14	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 4 hours. Criteria--Main St.: 420; Side St.: See Volume Summary.

## Warrant 2 - Interruption of Continuous Traffic

SATISFIED for 11 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: 2163.

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

## Warrant 9 - Four Hour Volumes

SATISFIED for 7 hours.

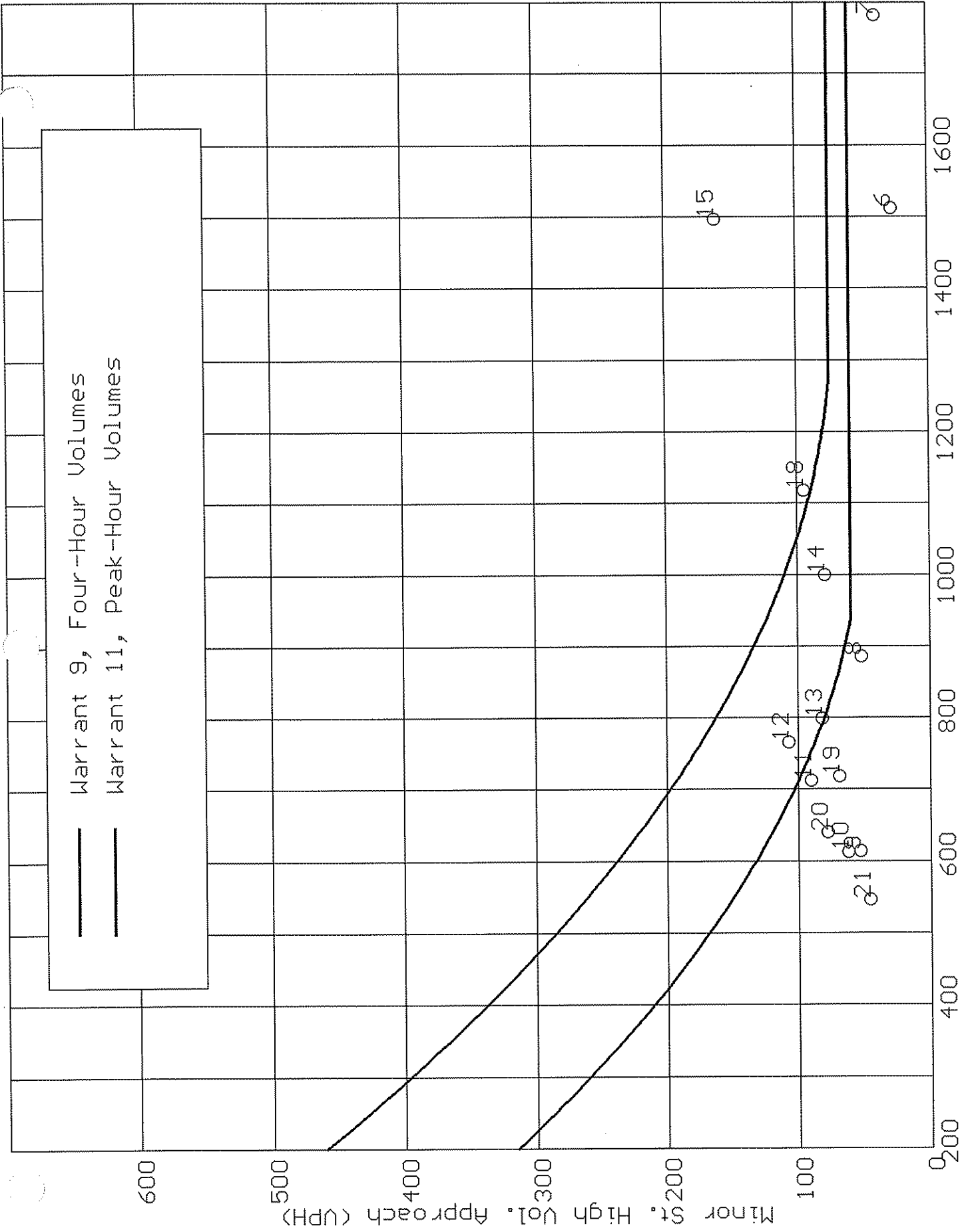
## Warrant 10 - Peak Hour Delay

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.



Major St. Total of Both Approaches (UPH)



**NORTH**

APP. #1= NB CSAH 1

APP. #2 =

APP. #3= SB CSAH 1

APP. #4= WB 77TH AVE.

**COUNT LOCATION:** CSAH 1 (East River Rd.) @ 77th Ave.     **DATE:** 8/1/96

<b>APP. #1</b>	<b>APP. #3</b>
45 MPH	45 MPH
30 MPH	30 MPH
<b>APP. #4</b>	<b>APP. #4</b>

- 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						2		3
6:15-6:30						8		1
6:30-6:45						3		1
6:45-7:00						3		2
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>23</b>
7:00-7:15						7		1
7:15-7:30						11		1
7:30-7:45						10		1
7:45-8:00						10		1
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>42</b>
8:00-8:15						8		1
8:15-8:30						15		2
8:30-8:45						14		1
8:45-9:00						13		
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>54</b>
9:00-9:15						12		1
9:15-9:30						11		2
9:30-9:45						8		
9:45-10:00						17		2
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>53</b>
10:00-10:15						17	1	1
10:15-10:30						19	1	2
10:30-10:45						15		
10:45-11:00						16		2
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>74</b>
11:00-11:15						20		1
11:15-11:30						21		
11:30-11:45						19	1	
11:45-12:00						14		
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>76</b>
12:00-12:15						17		
12:15-12:30						14		1
12:30-12:45						12		
12:45-1:00						18		1
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>63</b>
1:00-1:15						14		1
1:15-1:30						12		
1:30-1:45						17		
1:45-2:00						10		2
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>56</b>





**NORTH**

**COUNT LOCATION:** CSAH 1 (East River Rd.) @ 77th Ave.

**DATE:**

7/30/96

APP. #1= NB CSAH 1

APP. #2 =

APP. #3= SB CSAH 1

APP. #4=WB 77TH AVE.

APP. #1  
45 MPH

30 MPH  
APP. #4

APP. #3  
45 MPH

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						11		
2:15-2:30						13		1
2:30-2:45						13		
2:45-3:00						12		2
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>52</b>
3:00-3:15						26		1
3:15-3:30				1	1	11		1
3:30-3:45						10		3
3:45-4:00						14		1
<b>HOURLY TOTAL</b>					<b>1</b>	<b>HOURLY TOTAL</b>		<b>67</b>
4:00-4:15						12		1
4:15-4:30						8		2
4:30-4:45						16		
4:45-5:00	1				1	9		1
<b>HOURLY TOTAL</b>					<b>1</b>	<b>HOURLY TOTAL</b>		<b>49</b>
5:00-5:15						7		2
5:15-5:30						12		
5:30-5:45						10	1	2
5:45-6:00						9		1
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>44</b>
6:00-6:15						2		3
6:15-6:30						3		
6:30-6:45						11		
6:45-7:00						3		1
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>23</b>
7:00-7:15						2		1
7:15-7:30						7		
7:30-7:45						6		
7:45-8:00				3	3	4		
<b>HOURLY TOTAL</b>					<b>3</b>	<b>HOURLY TOTAL</b>		<b>20</b>
8:00-8:15						2		1
8:15-8:30				3	3	2		1
8:30-8:45						1		
8:45-9:00				1	1	2		
<b>HOURLY TOTAL</b>					<b>4</b>	<b>HOURLY TOTAL</b>		<b>9</b>
9:00-9:15						1		1
9:15-9:30								
9:30-9:45						3		
9:45-10:00						3		
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>8</b>