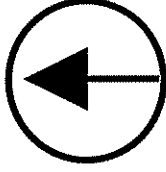


Date : 1/397AM 1/297PM

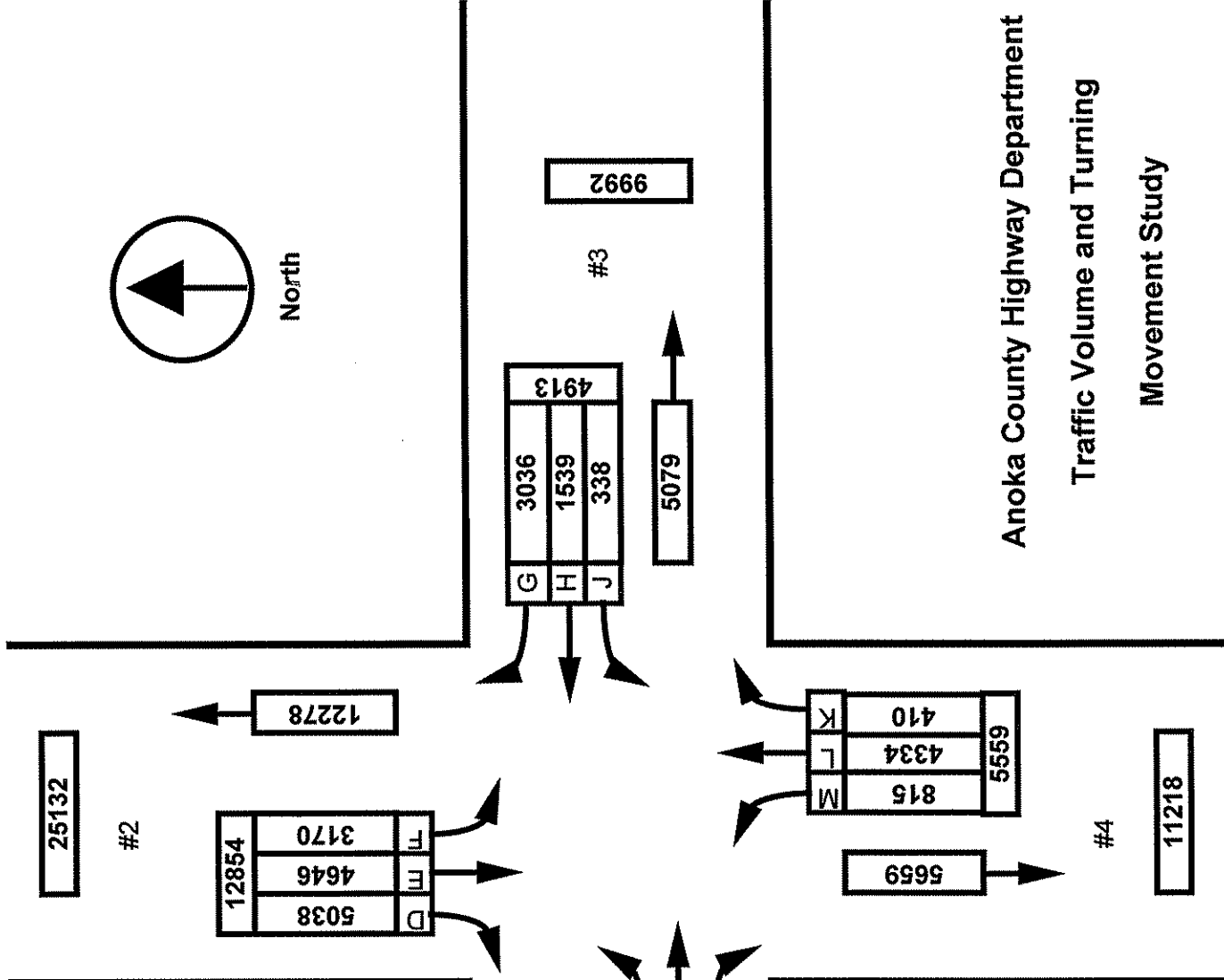
Count Number : TMC9707

Location : CSAH 78 (HANSON BLVD) @

CSAH 11 (NORTHDALE/ROBINSON DR)



North



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

Anoka County Highway Department
 Traffic Volume and Turning
 Movement Study

Weather :
 Counted by: Ann and Chuck
 Board # :
 Other :

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 Horsham, PA.

Study Name: TMC9707
 Site Code : 97070202
 Start Date: 01/03/97
 Page : 1

Vehicle group 1

Start Time	CSAH 78/11 (Hanson Blv Southbound)				Robinson Drive Westbound				CSAH 78 (Hanson Blvd) Northbound				CSAH 11 (Northdale Blv Eastbound)				Intvl	Exclu	Inclu
	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other			
01/03/97																			
06:00	5	61	22	0	0	2	25	0	1	29	0	0	44	13	4	1	207	1	206
06:15	16	85	27	1	3	5	30	1	2	36	5	1	38	11	6	2	269	5	264
06:30	21	102	25	3	2	11	32	1	3	59	3	1	50	12	12	2	339	7	332
06:45	24	97	42	2	1	8	42	0	1	57	1	0	40	14	7	1	337	3	334
Hour	66	345	116	6	6	26	129	2	7	181	9	2	172	50	29	6	1152	16	1136
07:00	37	92	39	3	0	8	30	0	3	53	4	2	43	18	9	1	342	6	336
07:15	34	104	41	4	2	10	37	1	8	52	4	2	42	13	8	0	362	7	355
07:30	40	87	68	6	3	17	39	1	13	53	2	4	50	18	8	0	409	11	398
07:45	71	93	75	5	2	18	49	0	14	56	6	2	67	13	13	1	485	8	477
Hour	182	376	223	18	7	53	155	2	38	214	16	10	202	62	38	2	1598	32	1566
08:00	31	81	62	5	7	17	28	2	7	47	3	9	55	21	14	1	390	17	373
08:15	40	62	55	6	3	10	48	3	2	53	3	2	36	17	6	1	347	12	335
08:30	37	71	81	7	3	18	47	2	11	50	3	4	63	16	8	4	425	17	408
08:45	56	56	72	5	2	8	35	1	14	62	6	5	62	19	3	2	408	13	395
Hour	164	270	270	23	15	53	158	8	34	212	15	20	216	73	31	8	1570	59	1511
09:00	42	63	59	4	2	17	45	1	8	60	4	2	41	19	7	0	374	7	367
09:15	37	53	69	6	8	16	37	1	7	59	7	4	52	18	5	1	380	12	368
09:30	46	62	75	5	5	15	50	0	14	63	7	5	60	17	8	5	437	15	422
09:45	57	49	69	8	8	27	48	3	19	64	4	0	55	28	12	1	452	12	440
Hour	182	227	272	23	23	75	180	5	48	246	22	11	208	82	32	7	1643	46	1597
10:00	53	56	66	5	11	26	47	1	10	48	9	2	66	8	13	3	424	11	413
10:15	47	60	67	5	8	23	41	1	7	45	9	3	75	25	15	3	434	12	422
10:30	59	67	74	9	14	28	62	1	8	48	10	5	73	18	7	1	484	16	468
10:45	63	59	67	7	12	33	51	1	8	56	8	3	82	24	10	1	485	12	473
Hour	222	242	274	26	45	110	201	4	33	197	36	13	296	75	45	8	1827	51	1776
11:00	63	60	67	4	5	18	54	2	13	67	10	2	72	21	12	3	473	11	462
11:15	64	63	71	7	3	26	57	1	14	70	9	3	71	22	8	3	492	14	478
11:30	58	52	71	9	5	23	59	4	18	68	5	3	76	24	8	1	484	17	467
11:45	56	63	83	7	8	30	52	1	20	57	6	0	96	31	9	2	521	10	511
Hour	241	238	292	27	21	97	222	8	65	262	30	8	315	98	37	9	1970	52	1918
12:00	63	88	105	2	10	48	69	0	27	87	8	4	110	30	19	2	672	8	664
12:15	68	80	82	4	7	28	53	1	18	78	0	1	98	32	12	4	566	10	556
12:30	64	64	103	11	5	26	77	2	15	76	13	5	70	30	7	3	571	21	550
12:45	70	76	85	7	6	38	57	1	11	78	5	8	82	28	15	4	571	20	551
Hour	265	308	375	24	28	140	256	4	71	319	26	18	360	120	53	13	2380	59	2321

Weather :
 Counted by: Ann and Chuck
 Board # :
 Other :

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Study Name: TMC9707
 Site Code : 97070202
 Start Date: 01/03/97
 Page : 2

Vehicle group 1

Start Time	CSAH 78/11 (Hanson Blv Southbound)				Robinson Drive Westbound				CSAH 78 (Hanson Blvd) Northbound				CSAH 11 (Northdale Blv Eastbound)				Intvl	Exclu	Inclu
	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other			
13:00	61	86	94	8	5	33	66	1	17	77	14	6	87	33	13	5	606	20	586
13:15	64	63	69	4	10	26	71	1	16	78	10	4	90	29	15	3	553	12	541
13:30	64	63	70	4	5	36	47	3	17	75	9	4	80	33	14	2	526	13	513
13:45	77	88	69	4	10	39	53	0	10	78	13	4	103	23	17	1	589	9	580
Hour	266	300	302	20	30	134	237	5	60	308	46	18	360	118	59	11	2274	54	2220
14:00	54	77	64	3	7	26	42	1	15	66	9	0	87	26	15	1	493	5	488
14:15	74	76	76	4	9	31	60	2	18	73	9	1	80	31	14	3	561	10	551
14:30	67	68	72	9	6	27	80	2	21	72	6	1	97	31	11	3	573	15	558
14:45	78	96	82	5	7	21	56	7	15	94	7	2	76	24	10	1	581	15	566
Hour	273	317	294	21	29	105	238	12	69	305	31	4	340	112	50	8	2208	45	2163
15:00	75	76	89	6	8	33	70	2	10	65	7	3	76	28	15	3	566	14	552
15:15	61	94	77	4	13	24	79	5	10	85	4	6	81	26	14	2	585	17	568
15:30	80	79	70	2	4	45	73	1	17	79	10	2	85	31	8	1	587	6	581
15:45	86	101	106	9	5	38	75	0	17	69	11	1	68	24	12	2	624	12	612
Hour	302	350	342	21	30	140	297	8	54	298	32	12	310	109	49	8	2362	49	2313
16:00	74	91	124	4	11	34	73	2	14	112	13	1	91	34	7	1	686	8	678
16:15	67	82	113	1	9	31	76	2	14	112	7	3	82	25	6	1	631	7	624
16:30	84	105	142	4	7	41	90	1	21	107	3	1	93	25	7	0	731	6	725
16:45	71	99	120	2	9	50	81	1	18	101	16	0	92	44	9	0	713	3	710
Hour	296	377	499	11	36	156	320	6	67	432	39	5	358	128	29	2	2761	24	2737
17:00	57	74	137	3	8	46	69	0	24	103	10	1	116	42	14	0	704	4	700
17:15	63	95	147	2	6	44	67	2	34	115	10	0	100	28	12	2	727	6	721
17:30	40	96	133	5	4	39	53	2	16	96	27	4	96	29	8	1	649	12	637
17:45	63	77	136	2	3	38	61	2	25	110	3	2	99	35	11	0	667	6	661
Hour	223	342	553	12	21	167	250	6	99	424	50	7	411	134	45	3	2747	28	2719
18:00	50	87	113	1	4	40	35	2	17	84	5	1	106	40	16	1	602	5	597
18:15	46	79	123	5	5	27	52	2	16	72	6	2	121	21	14	1	592	10	582
18:30	40	85	113	3	6	32	41	1	19	75	2	0	92	24	15	2	550	6	544
18:45	43	88	114	1	8	22	31	0	15	71	8	0	109	23	16	1	550	2	548
Hour	179	339	463	10	23	121	159	5	67	302	21	3	428	108	61	5	2294	23	2271
19:00	38	74	112	1	2	16	35	0	8	66	2	1	108	21	18	0	502	2	500
19:15	36	55	105	2	4	22	20	0	21	51	1	0	112	28	7	1	465	3	462
19:30	24	66	73	1	3	20	24	0	9	61	7	1	71	22	14	1	397	3	394
19:45	25	54	58	2	2	11	21	0	5	63	3	0	91	25	11	0	371	2	369
Hour	123	249	348	6	11	69	100	0	43	241	13	2	382	96	50	2	1735	10	1725

PETRA Software

Weather :
 Counted by: Ann and Chuck
 Board # :
 Other :

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Study Name: TMC9707
 Site Code : 97070202
 Start Date: 01/03/97
 Page : 3

Vehicle group 1

Start Time	CSAH 78/11 (Hanson Blv Southbound)				Robinson Drive Westbound				CSAH 78 (Hanson Blvd) Northbound				CSAH 11 (Northdale Blv Eastbound)				Intvl	Exclu	Inclu
	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other			
20:00	16	50	51	1	1	16	19	2	11	70	4	1	80	27	10	0	359	4	355
20:15	18	57	64	3	4	8	15	0	10	47	3	1	68	19	8	0	325	4	321
20:30	25	44	49	0	2	13	10	0	4	66	2	0	74	17	7	1	314	1	313
20:45	23	53	37	1	1	12	17	0	7	50	2	1	82	12	11	2	311	4	307
Hour	82	204	201	5	8	49	61	2	32	233	11	3	304	75	36	3	1309	13	1296
21:00	28	47	59	1	2	16	13	0	8	50	2	0	66	14	11	0	317	1	316
21:15	29	39	53	1	0	10	19	0	9	43	4	0	91	18	6	1	323	2	321
21:30	22	39	52	0	2	9	20	0	6	47	4	1	44	16	7	0	269	1	268
21:45	25	37	50	2	1	9	21	0	5	20	3	0	45	11	7	2	238	4	234
Hour	104	162	214	4	5	44	73	0	28	160	13	1	246	59	31	3	1147	8	1139
Total	3170	4646	5038	257	338	1539	3036	77	815	4334	410	137	4908	1499	675	98	30977	569	30408
% Apr.	24.1	35.4	38.4	1.9	6.7	30.8	60.8	1.5	14.3	76.0	7.1	2.4	68.3	20.8	9.4	1.3	-	-	-
% Int.	10.2	14.9	16.2	0.8	1.0	4.9	9.8	0.2	2.6	13.9	1.3	0.4	15.8	4.8	2.1	0.3	-	-	-

for Street Approaches:

Northbound:

CSAH 78 (Hanson Blvd)
 Data File: C:\APPS\PETRA2\DATAFILE\TMC9707.PDF
 Count Type: IMC. Channel: 0. Count Date: 1/ 3/97
 Number of Lanes: 2
 Approach Speed: 40
 Total Approach Traffic: 5559

Southbound:

CSAH 78/11 (Hanson Blvd)
 Data File: C:\APPS\PETRA2\DATAFILE\TMC9707.PDF
 Count Type: IMC. Channel: 0. Count Date: 1/ 3/97
 Number of Lanes: 2
 Approach Speed: 40
 Total Approach Traffic: 12854

Minor Street Approaches:

Eastbound:

CSAH 11 (Northdale Blvd)
 Data File: C:\APPS\PETRA2\DATAFILE\TMC9707.PDF
 Count Type: IMC. Channel: 0. Count Date: 1/ 3/97
 Number of Lanes: 2
 Approach Speed: 35
 Total Approach Traffic: 7082

Westbound:

Robinson Drive
 Data File: C:\APPS\PETRA2\DATAFILE\TMC9707.PDF
 Count Type: IMC. Channel: 0. Count Date: 1/ 3/97
 Number of Lanes: 2
 Approach Speed: 0
 Total Approach Traffic: 4913

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		200		100		160
1	0	0	W	18		200		100		160
2	0	0	W	19		200		100		160
3	0	0	W	20		200		100		160
4	0	0	W	21		200		100		160
5	0	0	W	22		200		100		160
6	724	251	E	16	--BOTH--	200	SIDE	100	--BOTH--	160
7	1049	302	E	15	--BOTH--	200	--BOTH--	100	--BOTH--	160
8	965	320	E	14	--BOTH--	200	--BOTH--	100	--BOTH--	160
9	997	322	E	13	--BOTH--	200	--BOTH--	100	--BOTH--	160
10	1004	416	E	10	--BOTH--	200	--BOTH--	100	--BOTH--	160
11	1128	450	E	9	--BOTH--	200	--BOTH--	100	--BOTH--	160
12	1364	533	E	4	--BOTH--	200	--BOTH--	100	--BOTH--	160
13	1282	537	E	3	--BOTH--	200	--BOTH--	100	--BOTH--	160
14	1289	502	E	7	--BOTH--	200	--BOTH--	100	--BOTH--	160
15	1378	468	E	8	--BOTH--	200	--BOTH--	100	--BOTH--	160
16	1710	515	E	6	--BOTH--	200	--BOTH--	100	--BOTH--	160
17	1691	590	E	2	--BOTH--	200	--BOTH--	100	--BOTH--	160
18	1371	597	E	1	--BOTH--	200	--BOTH--	100	--BOTH--	160
19	1017	528	E	5	--BOTH--	200	--BOTH--	100	--BOTH--	160
20	763	415	E	11	--BOTH--	200	SIDE	100	--BOTH--	160
21	681	336	E	12	--BOTH--	200	SIDE	100	SIDE	160
22	0	0	W	23		200		100		160
23	0	0	W	24		200		100		160

Warrant Summary:

Urban values apply.

Warrant 1 - Minimum Vehicular Volumes

SATISFIED for 16 hours. Criteria--Main St.: 600; Side St.: See Volume Summary.

Warrant 2 - Interruption of Continuous Traffic

SATISFIED for 13 hours. Criteria--Main St.: 900; 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: 2737.

- 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 15 hours. Criteria--Main: 720; Side: See Volume Summary.

Warrant 9 - Four Hour Volumes

SATISFIED for 15 hours.

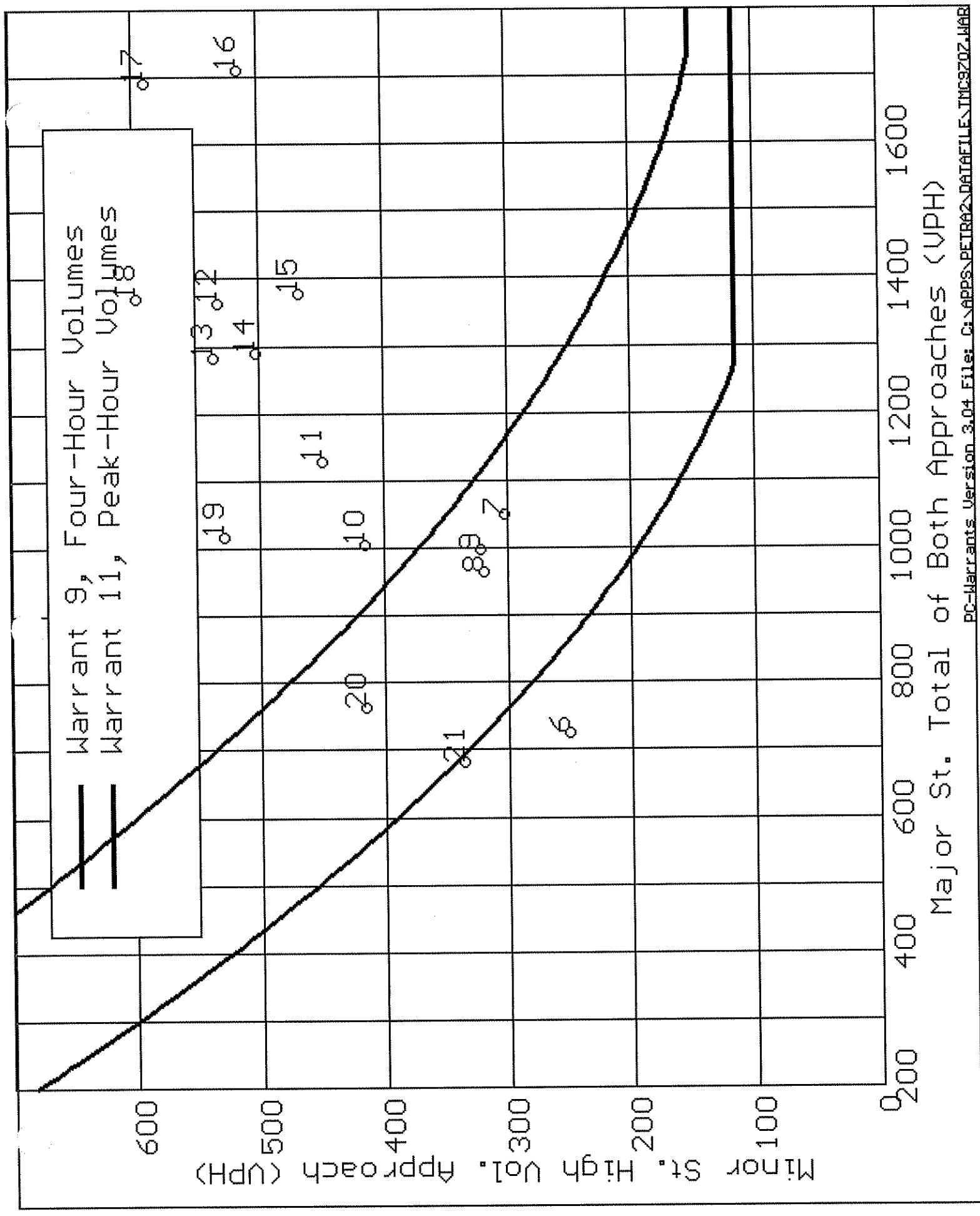
Warrant 10 - Peak Hour Delay

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

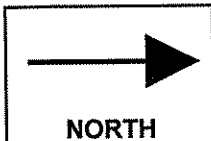
Criteria--Main St.: 800 (4 approaches), 650 (3 approaches); Side St.: 150.

Warrant 11 - Peak Hour Volume

SATISFIED for 10 hours.



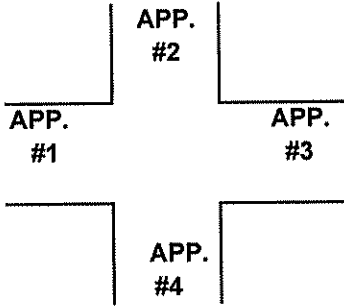
Major St. Total of Both Approaches (UPH)



COUNT LOCATION: CSAH 78 (HANSON BLVD) @
CSAH 11 (NORTHDALE BLVD/ROBINSON DR)


DATE: 1/3/97

APP. #1=NB CSAH 78
(HANSON BLVD)
 APP. #2 =EB CSAH 11
(NORTHDALE BLVD)
 APP. #3=SB CSAH 78
(HANSON BLVD)
 APP. #4=WB ROBINSON
DRIVE



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						2		3
6:30-6:45						3		4
6:45-7:00						2		1
HOURLY TOTAL						HOURLY TOTAL		16
7:00-7:15	1				1	4		1
7:15-7:30				1	1	6		1
7:30-7:45						9		2
7:45-8:00						9		1
HOURLY TOTAL					2	HOURLY TOTAL		33
8:00-8:15						12		5
8:15-8:30						9		3
8:30-8:45			1	1	2	14		4
8:45-9:00						11		2
HOURLY TOTAL					2	HOURLY TOTAL		60
9:00-9:15						6		1
9:15-9:30						10		2
9:30-9:45						14		1
9:45-10:00						16		1
HOURLY TOTAL						HOURLY TOTAL		51
10:00-10:15						8		3
10:15-10:30			1		1	8		4
10:30-10:45		3			3	12		4
10:45-11:00						11		1
HOURLY TOTAL					4	HOURLY TOTAL		51
11:00-11:15						11		1
11:15-11:30						12		2
11:30-11:45						17		1
11:45-12:00						14		2
HOURLY TOTAL						HOURLY TOTAL		60
12:00-12:15						8		
12:15-12:30						8		1
12:30-12:45	1			1	2	20		1
12:45-1:00		6			6	15		4
HOURLY TOTAL					8	HOURLY TOTAL		57
1:00-1:15						19		1
1:15-1:30			1		1	10		2
1:30-1:45			1		1	13		
1:45-2:00						9		
HOURLY TOTAL					2	HOURLY TOTAL		54



NORTH

APP. #1=NB CSAH 78
(HANSON BLVD)

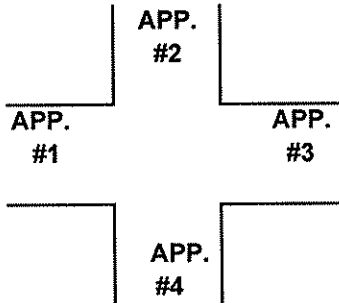
APP. #2 =EB CSAH 11
(NORTHDAL E BLVD)

APP. #3=SB CSAH 78
(HANSON BLVD)

APP. #4=WB ROBINSON
DRIVE

COUNT LOCATION: CSAH 78 (HANSON BLVD) @ CSAH 11 (NORTHDAL E BLVD/ROBINSON DR)

DATE: 1/2/97



- 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						5		
2:15-2:30						10		
2:30-2:45	1	1			2	10		5
2:45-3:00			2		2	10		
HOURLY TOTAL					4	HOURLY TOTAL		40
3:00-3:15						13		2
3:15-3:30						14		3
3:30-3:45						6		
3:45-4:00						7		5
HOURLY TOTAL						HOURLY TOTAL		50
4:00-4:15						7		1
4:15-4:30						5		2
4:30-4:45						3		2
4:45-5:00						2		1
HOURLY TOTAL						HOURLY TOTAL		23
5:00-5:15						3		1
5:15-5:30						4		1
5:30-5:45						6		5
5:45-6:00						3		1
HOURLY TOTAL						HOURLY TOTAL		24
6:00-6:15						4		2
6:15-6:30						7		2
6:30-6:45						6		
6:45-7:00						2		
HOURLY TOTAL						HOURLY TOTAL		23
7:00-7:15						2		
7:15-7:30	1				1	3		
7:30-7:45						3		
7:45-8:00						2		
HOURLY TOTAL					1	HOURLY TOTAL		10
8:00-8:15						4		
8:15-8:30						4		
8:30-8:45								1
8:45-9:00						4		
HOURLY TOTAL						HOURLY TOTAL		13
9:00-9:15						1		
9:15-9:30						2		
9:30-9:45						1		
9:45-10:00						3		1
HOURLY TOTAL						HOURLY TOTAL		8