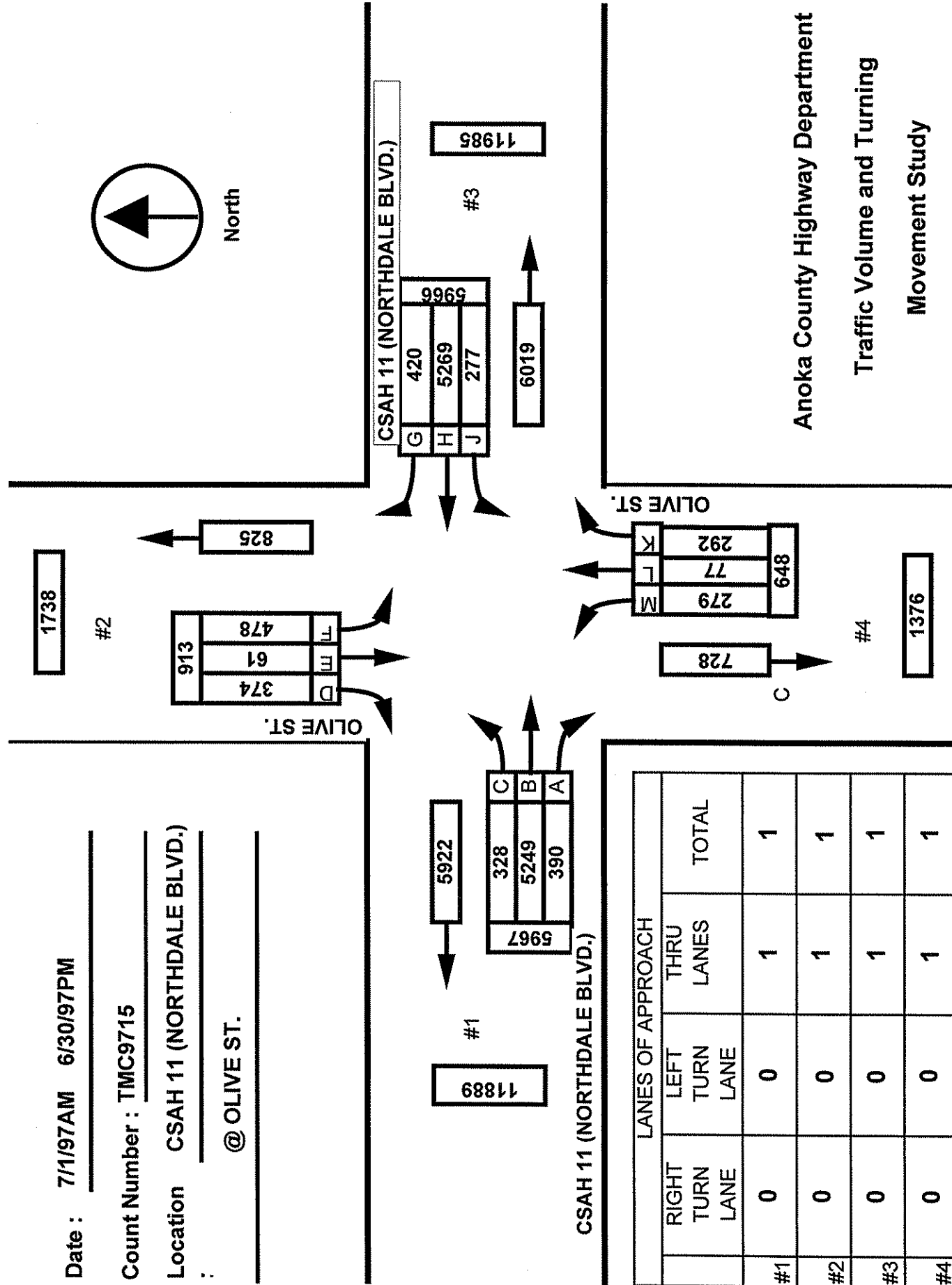


Date : 7/1/97AM 6/30/97PM

Count Number : TMC9715

Location CSAH 11 (NORTHDALE BLVD.)

@ OLIVE ST.



	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

Weather :partly cloudy 75
 Counted by:Sarah and Janelle
 Board # :
 Number :

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 Horsham, PA.

Study Name: TMC9715
 Site Code : 97150202
 Start Date: 07/01/97
 Page : 1

Vehicle group 1

Start Time	OLIVE ST. Southbound				CSAH 11 (NORTHDALE BLV Westbound				OLIVE ST. 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			
07/01/97																			
06:00	4	0	4	0	0	42	1	3	5	0	0	0	0	33	0	0	92	3	89
06:15	6	0	10	0	2	86	1	4	7	0	1	1	2	52	2	3	177	8	169
06:30	12	0	5	0	0	87	1	3	9	1	8	0	0	91	3	1	221	4	217
06:45	4	1	8	0	1	71	4	1	5	0	5	0	6	55	0	3	164	4	160
Hour	26	1	27	0	3	286	7	11	26	1	14	1	8	231	5	7	654	19	635
07:00	4	0	6	0	1	103	3	3	9	0	4	0	2	48	0	2	185	5	180
07:15	12	1	10	1	0	97	4	3	5	1	6	0	4	45	2	0	191	4	187
07:30	9	0	4	0	5	84	5	7	6	1	6	0	0	56	2	3	188	10	178
07:45	2	1	6	0	2	58	1	5	4	1	4	0	2	70	5	2	163	7	156
Hour	27	2	26	1	8	342	13	18	24	3	20	0	8	219	9	7	727	26	701
08:00	7	0	8	2	1	70	4	6	7	0	1	0	2	59	4	3	174	11	163
08:15	7	0	4	0	3	57	4	6	2	0	4	0	0	40	1	4	132	10	122
08:30	11	2	6	0	3	68	3	4	6	0	5	0	3	66	5	2	184	6	178
08:45	4	1	2	0	2	61	4	6	10	1	2	0	2	34	1	4	134	10	124
Hour	29	3	20	2	9	256	15	22	25	1	12	0	7	199	11	13	624	37	587
09:00	7	0	0	1	2	60	10	5	0	0	2	0	1	56	2	5	151	11	140
09:15	3	0	3	0	2	63	11	8	6	0	2	0	3	58	4	3	166	11	155
09:30	9	0	3	0	0	61	2	3	3	0	3	0	3	49	6	3	145	6	139
09:45	5	0	4	1	2	60	6	2	6	0	4	0	8	76	3	5	182	8	174
Hour	24	0	10	2	6	244	29	18	15	0	11	0	15	239	15	16	644	36	608
10:00	6	2	1	0	2	68	7	9	1	1	2	0	1	72	1	3	176	12	164
10:15	5	1	5	0	5	78	3	2	8	1	8	1	1	71	4	4	197	7	190
10:30	6	0	9	0	6	57	2	6	3	1	2	0	5	86	3	3	189	9	180
10:45	7	0	2	0	3	60	4	1	2	0	2	0	1	59	4	1	146	2	144
Hour	24	3	17	0	16	263	16	18	14	3	14	1	8	288	12	11	708	30	678
11:00	6	0	7	0	2	63	6	6	7	0	3	0	1	77	3	4	185	10	175
11:15	2	2	4	0	4	78	4	2	2	1	4	0	0	66	2	2	173	4	169
11:30	4	1	2	0	6	92	8	6	0	1	3	0	3	68	0	3	197	9	188
11:45	2	2	6	0	2	93	1	3	1	3	4	0	8	76	4	1	206	4	202
Hour	14	5	19	0	14	326	19	17	10	5	14	0	12	287	9	10	761	27	734
12:00	4	1	7	0	1	78	8	4	4	0	4	0	6	82	6	5	210	9	201
12:15	4	0	5	0	9	74	5	1	3	0	2	0	6	89	3	6	207	7	200
12:30	5	1	6	0	2	66	4	3	3	0	3	0	5	73	2	4	177	7	170
12:45	8	1	5	0	7	66	6	6	1	0	6	0	7	53	7	4	177	10	167
Hour	21	3	23	0	19	284	23	14	11	0	15	0	24	297	18	19	771	33	738

Weather :partly cloudy 75
 Counted by:Sarah and Janelle
 Board # :
 Ther :

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Study Name: TMC9715
 Site Code : 97150202
 Start Date: 07/01/97
 Page : 2

Vehicle group 1

Start Time	OLIVE ST. Southbound				CSAH 11 (NORTHDAL BLV Westbound				OLIVE ST. Northbound				CSAH 11 (NORTHDAL BLV Eastbound				Intvl	Exclu	Inclu
	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other			
13:00	4	0	10	0	4	64	5	6	2	1	2	0	4	69	2	3	176	9	167
13:15	5	0	8	0	5	69	4	2	2	0	9	2	6	63	3	0	178	4	174
13:30	11	0	5	0	4	57	6	2	0	1	5	0	2	71	8	4	176	6	170
13:45	8	1	5	2	3	77	8	3	3	6	5	0	5	85	5	8	224	13	211
Hour	28	1	28	2	16	267	23	13	7	8	21	2	17	288	18	15	754	32	722
14:00	10	3	1	2	2	65	7	4	2	0	2	0	8	72	6	3	187	9	178
14:15	5	0	7	0	2	86	9	3	6	2	0	0	5	79	12	1	217	4	213
14:30	12	0	5	5	5	73	6	3	2	1	4	2	5	74	10	7	214	17	197
14:45	15	1	7	0	3	59	6	5	3	1	0	0	5	85	10	2	202	7	195
Hour	42	4	20	7	12	283	28	15	13	4	6	2	23	310	38	13	820	37	783
15:00	9	1	8	0	3	93	9	2	2	1	6	0	6	92	7	1	240	3	237
15:15	8	0	8	1	5	89	8	2	1	1	3	0	6	77	3	3	215	6	209
15:30	11	0	6	1	4	100	11	2	3	2	1	0	9	86	3	4	243	7	236
15:45	5	0	8	0	2	119	9	2	5	1	8	1	9	123	8	1	301	4	297
Hour	33	1	30	2	14	401	37	8	11	5	18	1	30	378	21	9	999	20	979
16:00	5	0	10	1	4	109	11	2	2	2	6	0	11	94	10	7	274	10	264
16:15	11	1	6	1	3	97	7	2	2	1	5	0	7	99	14	3	259	6	253
16:30	10	2	8	0	7	156	8	4	2	0	4	0	7	121	8	3	340	7	333
16:45	12	1	7	0	2	106	17	0	2	2	8	0	10	113	12	2	294	2	292
Hour	38	4	31	2	16	468	43	8	8	5	23	0	35	427	44	15	1167	25	1142
17:00	13	1	11	0	10	96	13	1	6	3	9	0	6	132	11	5	317	6	311
17:15	8	1	0	0	9	133	6	7	4	4	5	0	7	155	15	3	357	10	347
17:30	12	0	5	0	9	103	11	4	2	0	12	0	5	164	9	2	338	6	332
17:45	5	1	6	0	7	105	7	1	5	4	11	0	4	149	15	1	321	2	319
Hour	38	3	22	0	35	437	37	13	17	11	37	0	22	600	50	11	1333	24	1309
18:00	13	2	8	1	6	66	5	0	8	5	8	0	15	160	16	3	316	4	312
18:15	13	1	8	0	8	78	14	0	13	4	13	0	6	121	11	0	290	0	290
18:30	9	4	12	0	8	107	9	0	12	1	5	0	2	122	10	0	301	0	301
18:45	9	1	5	0	8	101	9	1	15	1	11	0	12	127	10	0	310	1	309
Hour	44	8	33	1	30	352	37	1	48	11	37	0	35	530	47	3	1217	5	1212
19:00	12	3	6	0	3	91	13	3	6	7	11	0	5	117	9	0	286	3	283
19:15	12	2	8	0	21	105	16	2	5	1	7	0	8	127	10	2	326	4	322
19:30	9	2	4	0	3	107	8	0	7	3	5	0	13	51	8	0	220	0	220
19:45	5	2	6	0	4	85	6	1	10	0	3	0	10	80	9	3	224	4	220
Hour	38	9	24	0	31	388	43	6	28	11	26	0	36	375	36	5	1056	11	1045

Weather :partly cloudy 75
 Counted by:Sarah and Janelle
 Board # :
 Ther :

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Study Name: TMC9715
 Site Code : 97150202
 Start Date: 07/01/97
 Page : 3

Vehicle group 1

Start Time	OLIVE ST. Southbound				CSAH 11 (NORTHDAL BLV Westbound				OLIVE ST. Northbound				CSAH 11 (NORTHDAL BLV Eastbound				Intvl	Exclu	Inclu
	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other			
20:00	1	0	5	1	4	90	6	0	1	1	3	0	10	74	13	0	209	1	208
20:15	13	4	7	0	7	117	9	1	4	0	3	0	9	95	7	1	277	2	275
20:30	7	3	10	0	11	104	5	1	5	4	3	0	2	65	4	0	224	1	223
20:45	3	3	6	0	7	91	5	0	4	0	5	0	5	68	6	0	203	0	203
Hour	24	10	28	1	29	402	25	2	14	5	14	0	26	302	30	1	913	4	909
21:00	12	1	6	0	5	73	5	0	5	4	5	0	7	79	6	0	208	0	208
21:15	7	0	6	0	9	65	8	0	0	0	1	0	6	73	9	0	184	0	184
21:30	6	2	2	0	2	64	5	0	1	0	3	0	5	72	6	0	168	0	168
21:45	3	1	2	0	3	68	7	0	2	0	1	0	4	55	6	0	152	0	152
Hour	28	4	16	0	19	270	25	0	8	4	10	0	22	279	27	0	712	0	712
Total	478	61	374	20	277	5269	420	184	279	77	292	7	328	5249	390	155	13860	366	13494
% Apr.	51.2	6.5	40.0	2.1	4.5	85.6	6.8	2.9	42.5	11.7	44.5	1.0	5.3	85.7	6.3	2.5	-	-	-
% Int.	3.4	0.4	2.6	0.1	1.9	38.0	3.0	1.3	2.0	0.5	2.1	-	2.3	37.8	2.8	1.1	-	-	-

Major Street Approaches:

Eastbound:

CSAH 11 (NORTHDAL BLVD.)

Data File: C:\APPS\PETRA2\DATAFILE\TMC9715.PDF
 Count Type: IMC. Channel: 0. Count Date: 7/ 1/97
 Number of Lanes: 1
 Approach Speed: 35
 Total Approach Traffic: 5967

Westbound:

CSAH 11 (NORTHDAL BLVD.)

Data File: C:\APPS\PETRA2\DATAFILE\TMC9715.PDF
 Count Type: IMC. Channel: 0. Count Date: 7/ 1/97
 Number of Lanes: 1
 Approach Speed: 35
 Total Approach Traffic: 5966

Minor Street Approaches:

Northbound:

OLIVE ST.

Data File: C:\APPS\PETRA2\DATAFILE\TMC9715.PDF
 Count Type: IMC. Channel: 0. Count Date: 7/ 1/97
 Number of Lanes: 1
 Approach Speed: 30
 Total Approach Traffic: 648

Southbound:

OLIVE ST.

Data File: C:\APPS\PETRA2\DATAFILE\TMC9715.PDF
 Count Type: IMC. Channel: 0. Count Date: 7/ 1/97
 Number of Lanes: 1
 Approach Speed: 30
 Total Approach Traffic: 913

Analysis of 8-Hour Volume Warrants (Criteria refers to high volume side street for that hour):

Hour	Main (Total)	Side Vol.	Side Dir.	Side Rank	Warrant 1 Meets?	Warrant 1 Criteria	Warrant 2 Meets?	Warrant 2 Criteria	Warrant 8 Meets?	Warrant 8 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	540	54	S	10	MAIN	150		75		120
7	599	55	S	9	MAIN	150		75		120
8	497	52	S	11		150		75		120
9	548	34	S	16	MAIN	150		75		120
10	603	44	S	14	MAIN	150		75	MAIN	120
11	667	38	S	15	MAIN	150		75	MAIN	120
12	665	47	S	13	MAIN	150		75	MAIN	120
13	629	57	S	8	MAIN	150		75	MAIN	120
14	694	66	S	4	MAIN	150		75	MAIN	120
15	881	64	S	6	MAIN	150	MAIN	75	MAIN	120
16	1033	73	S	2	MAIN	150	MAIN	75	MAIN	120
17	1181	65	N	5	MAIN	150	MAIN	75	MAIN	120
18	1031	96	N	1	MAIN	150	--BOTH--	75	MAIN	120
19	909	71	S	3	MAIN	150	MAIN	75	MAIN	120
20	814	62	S	7	MAIN	150	MAIN	75	MAIN	120
21	642	48	S	12	MAIN	150		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 0 hours. Criteria--Main St.: 500; Side St.: See Volume Summary.

Warrant 2 - Interruption of Continuous Traffic

NOT SATISFIED. Required values reached for 1 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: 1309.

- 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 0 hours. Criteria--Main: 600; Side: See Volume Summary.

Warrant 9 - Four Hour Volumes

NOT SATISFIED. Required values reached for 1 hours.

Warrant 10 - Peak Hour Delay

NOT SATISFIED. Peak hour (1700 hours) volume not adequate.

Criteria--Main St.: 800 (4 approaches), 650 (3 approaches); Side St.: 100.

Warrant 11 - Peak Hour Volume

NOT SATISFIED.

Minor St. High Vol. Approach (VPH)

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

200 400 600 800 1000 1200 1400 1600

Major St. Total of Both Approaches (VPH)

3.6
7.9
14
20
29
49
89
149
186
207

NORTH

APP. #1=WB CSAH 11
(NORTHDAL BLVD.)

APP. #2 =SB OLIVE ST.

APP. #3=EB CSAH 11
(NORTHDAL BLVD.)

APP. #4=NB OLIVE ST.


COUNT LOCATION: TMC 9715 CSAH 11 (NORTHDAL
BLVD.) @ OLIVE ST.

DATE: 7/1/97

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				1	1		2
6:15-6:30		2			2	6	1	
6:30-6:45						4		2
6:45-7:00						4		
HOURLY TOTAL					3	HOURLY TOTAL		20
7:00-7:15				1	1	5		
7:15-7:30						1		1
7:30-7:45			1	2	3	7		3
7:45-8:00	1				1	6		1
HOURLY TOTAL					5	HOURLY TOTAL		24
8:00-8:15						11		2
8:15-8:30						7		1
8:30-8:45						6		
8:45-9:00						10		
HOURLY TOTAL						HOURLY TOTAL		37
9:00-9:15						6		3
9:15-9:30						10		3
9:30-9:45	1	2	1	1	5	6		1
9:45-10:00				2	2	7		1
HOURLY TOTAL					7	HOURLY TOTAL		37
10:00-10:15	1	1		2	4	11		
10:15-10:30						7		
10:30-10:45		2		2	4	10		
10:45-11:00						1		
HOURLY TOTAL					8	HOURLY TOTAL		29
11:00-11:15		3		1	4	10		
11:15-11:30				1	1	4		
11:30-11:45						6	1	2
11:45-12:00		2			2	3		1
HOURLY TOTAL					7	HOURLY TOTAL		27
12:00-12:15	2				2	7		1
12:15-12:30		1	3		4	6		1
12:30-12:45	1				1	7		
12:45-1:00						9		
HOURLY TOTAL					7	HOURLY TOTAL		31
1:00-1:15			4		4	7		
1:15-1:30			1		1	3		1
1:30-1:45						7		
1:45-2:00		1	2		3	12		
HOURLY TOTAL					8	HOURLY TOTAL		30


NORTH

APP. #1=WB CSAH 11
(NORTHDAL BLVD.)

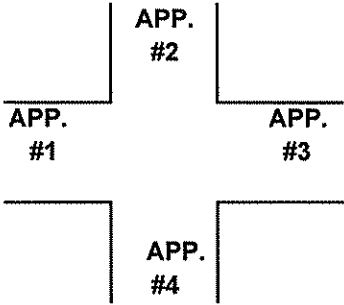
APP. #2 =SB OLIVE ST.

APP. #3=EB CSAH 11
(NORTHDAL BLVD.)

APP. #4=NB OLIVE ST.

COUNT LOCATION: TMC 9715 CSAH 11 (NORTHDAL BLVD.) @ OLIVE ST.

DATE: 6/30/97



- 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						9		1
2:15-2:30		1	1	4	6	4		
2:30-2:45		1		1	2	15		2
2:45-3:00		1		1	2	3		2
HOURLY TOTAL					10	HOURLY TOTAL		36
3:00-3:15						3		
3:15-3:30	1	1	1	1	4	6		
3:30-3:45		3		3	6	6		1
3:45-4:00		2			2	5		
HOURLY TOTAL					12	HOURLY TOTAL		21
4:00-4:15	3			1	4	9		1
4:15-4:30		3	1	7	11	4		2
4:30-4:45				2	2	6		
4:45-5:00		3	3	7	13			1
HOURLY TOTAL					30	HOURLY TOTAL		23
5:00-5:15				1	1	5		1
5:15-5:30	2	1	1	8	12	10		2
5:30-5:45		3			3	4		
5:45-6:00			2		2	2		1
HOURLY TOTAL					18	HOURLY TOTAL		25
6:00-6:15						3		1
6:15-6:30	2				2			
6:30-6:45		1	1	2	4			
6:45-7:00						1		
HOURLY TOTAL					6	HOURLY TOTAL		5
7:00-7:15		6	2	1	9	2		1
7:15-7:30	1				1	3		
7:30-7:45	2			1	3			
7:45-8:00	4	1			5	3	1	
HOURLY TOTAL					18	HOURLY TOTAL		10
8:00-8:15		1		2	3	1		
8:15-8:30		1			1	2	1	
8:30-8:45	2	3			5			
8:45-9:00		7		3	10			
HOURLY TOTAL					19	HOURLY TOTAL		4
9:00-9:15	3				3			
9:15-9:30				2	2			
9:30-9:45	2	1			3			
9:45-10:00		2			2			
HOURLY TOTAL					10	HOURLY TOTAL		