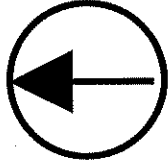


Date : 8/26/98AM 8/27/98PM

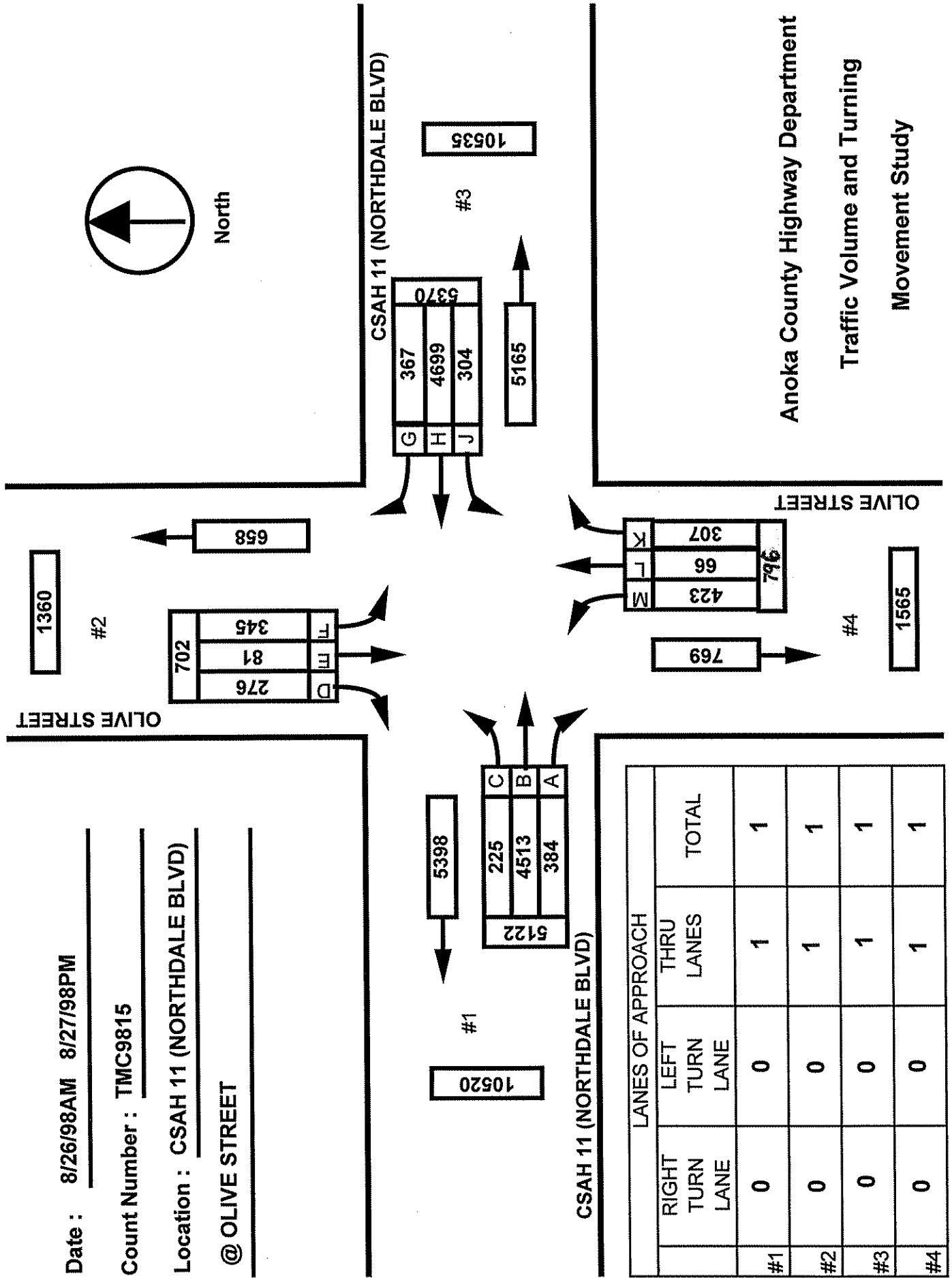
Count Number : TMC9815

Location : CSAH 11 (NORTHDALE BLVD)

@ OLIVE STREET



North



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

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 Horsham, PA.

Study Name: TMC9815
 Site Code : 98150102
 Start Date: 08/26/98
 Page : 1

Vehicle group 1

Start Time	OLIVE STREET				CSAH 11 (NORTHDALE BLV				OLIVE STREET				CSAH 11 (NORTHDALE BLV				Intvl	Exclu	Inclu
	Southbound				Westbound				Northbound				Eastbound						
	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	Total	Total	Total
08/26/98																			
06:00	11	0	2	0	4	22	0	1	7	2	7	0	1	46	1	4	108	5	103
06:15	11	2	3	0	0	64	1	3	3	0	3	0	0	71	2	1	164	4	160
06:30	9	0	2	0	0	60	1	5	11	1	8	0	2	87	1	3	190	8	182
06:45	8	0	7	0	1	70	1	4	2	0	5	1	0	69	3	3	174	8	166
Hour	39	2	14	0	5	216	3	13	23	3	23	1	3	273	7	11	636	25	611
07:00	8	0	5	0	2	47	1	1	5	1	7	0	2	77	3	2	161	3	158
07:15	10	1	4	0	2	66	3	2	12	1	8	0	1	98	2	4	214	6	208
07:30	10	0	6	2	0	72	1	5	8	3	4	0	3	77	4	9	204	16	188
07:45	7	0	4	0	2	70	1	4	13	2	6	1	0	97	3	9	219	14	205
Hour	35	1	19	2	6	255	6	12	38	7	25	1	6	349	12	24	798	39	759
08:00	4	1	3	0	3	52	3	1	5	3	4	0	0	104	3	11	197	12	185
08:15	3	0	6	0	4	37	2	1	5	0	1	0	1	84	7	7	158	8	150
08:30	9	1	5	0	2	53	2	6	2	2	3	1	3	72	5	5	171	12	159
08:45	4	1	10	0	0	70	1	3	3	0	3	0	2	54	0	7	158	10	148
Hour	20	3	24	0	9	212	8	11	15	5	11	1	6	314	15	30	684	42	642
09:00	3	2	7	0	3	43	1	6	5	0	5	0	7	63	5	7	157	13	144
09:15	3	1	4	2	3	42	0	2	4	0	3	1	5	53	1	4	128	9	119
09:30	4	3	4	0	1	48	1	3	5	0	4	0	4	42	2	6	127	9	118
09:45	3	3	4	1	7	52	0	2	8	1	4	0	1	56	6	4	152	7	145
Hour	13	9	19	3	14	185	2	13	22	1	16	1	17	214	14	21	564	38	526
10:00	7	2	3	0	3	46	3	5	3	0	1	0	1	41	4	5	124	10	114
10:15	4	1	0	0	4	53	5	3	5	1	3	0	1	50	1	3	134	6	128
10:30	3	1	4	0	2	42	2	2	8	0	8	1	0	53	7	11	144	14	130
10:45	6	1	6	0	4	46	5	6	6	1	3	0	1	60	4	4	153	10	143
Hour	20	5	13	0	13	187	15	16	22	2	15	1	3	204	16	23	555	40	515
11:00	6	0	2	0	0	45	4	5	6	2	3	2	4	66	3	8	156	15	141
11:15	3	1	1	0	9	71	6	6	2	1	8	3	2	62	5	6	186	15	171
11:30	1	0	3	0	3	72	2	4	6	0	3	0	4	71	5	7	181	11	170
11:45	5	1	5	0	2	72	2	2	4	0	2	0	2	91	3	5	196	7	189
Hour	15	2	11	0	14	260	14	17	18	3	16	5	12	290	16	26	719	48	671
12:00	5	0	5	0	5	68	4	2	8	0	3	0	1	71	6	6	184	8	176
12:15	6	0	10	0	4	67	2	2	8	1	3	1	5	59	1	4	173	7	166
12:30	9	0	3	0	2	86	10	3	3	2	3	0	2	62	7	6	198	9	189
12:45	4	1	3	0	4	73	6	2	7	3	6	0	3	64	5	6	187	8	179
Hour	24	1	21	0	15	294	22	9	26	6	15	1	11	256	19	22	742	32	710

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

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 Horsham, PA.

Study Name: TMC9815
 Site Code : 98150102
 Start Date: 08/26/98
 Page : 2

Vehicle group 1

Start Time	OLIVE STREET Southbound				CSAH 11 (NORTHDAL BLV Westbound				OLIVE STREET 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	5	0	2	0	3	52	6	1	7	1	1	1	2	81	1	3	166	5	161
13:15	4	2	6	1	2	64	5	6	4	0	2	0	3	61	6	6	172	13	159
13:30	2	0	1	0	2	59	5	2	3	1	4	0	3	58	11	3	154	5	149
13:45	1	1	6	0	6	70	2	3	4	2	6	0	4	58	2	5	170	8	162
Hour	12	3	15	1	13	245	18	12	18	4	13	1	12	258	20	17	662	31	631
14:00	2	3	7	1	1	55	10	7	5	1	4	0	5	75	3	5	184	13	171
14:15	6	0	5	0	3	81	4	5	5	0	7	1	5	60	3	2	187	8	179
14:30	3	4	5	0	8	73	4	5	7	0	3	0	1	61	8	5	187	10	177
14:45	2	1	3	0	4	89	6	0	7	1	5	0	7	59	10	6	200	6	194
Hour	13	8	20	1	16	298	24	17	24	2	19	1	18	255	24	18	758	37	721
15:00	8	0	4	0	7	86	3	5	2	0	2	0	10	68	7	0	202	5	197
15:15	6	1	1	0	11	76	8	2	4	1	5	0	4	64	8	2	193	4	189
15:30	4	0	5	0	9	63	4	3	12	0	3	0	2	99	9	2	215	5	210
15:45	6	2	2	1	6	102	9	1	10	0	4	1	9	89	8	2	252	5	247
Hour	24	3	12	1	33	327	24	11	28	1	14	1	25	320	32	6	862	19	843
16:00	3	1	3	0	9	92	13	0	7	1	3	0	8	105	12	1	258	1	257
16:15	3	4	6	1	7	116	9	3	12	1	5	0	6	89	11	2	275	6	269
16:30	4	2	3	0	10	104	15	0	12	1	9	1	10	131	4	2	308	3	305
16:45	13	3	7	0	10	128	10	5	8	1	8	0	4	101	12	2	312	7	305
Hour	23	10	19	1	36	440	47	8	39	4	25	1	28	426	39	7	1153	17	1136
17:00	3	1	3	1	12	138	7	2	4	2	7	0	9	97	10	2	298	5	293
17:15	5	4	12	0	9	132	11	1	11	1	6	0	3	91	14	1	301	2	299
17:30	4	2	9	0	7	128	10	0	6	2	10	1	5	120	13	2	319	3	316
17:45	12	1	8	0	3	146	17	2	13	2	5	0	3	100	13	0	325	2	323
Hour	24	8	32	1	31	544	45	5	34	7	28	1	20	408	50	5	1243	12	1231
18:00	9	3	6	0	3	136	15	1	12	3	6	0	2	78	18	1	293	2	291
18:15	8	1	5	0	9	102	19	1	15	1	6	0	3	71	14	2	257	3	254
18:30	7	2	8	0	9	104	10	1	6	2	6	0	3	67	6	1	232	2	230
18:45	5	2	1	0	3	107	12	1	9	0	9	0	1	67	8	0	225	1	224
Hour	29	8	20	0	24	449	56	4	42	6	27	0	9	283	46	4	1007	8	999
19:00	6	4	4	0	8	82	9	0	8	1	3	0	11	60	10	0	206	0	206
19:15	7	0	3	0	7	84	4	2	9	4	9	1	3	52	7	1	193	4	189
19:30	2	1	8	0	7	89	5	1	6	1	9	0	4	60	9	0	202	1	201
19:45	8	2	5	0	5	68	5	1	6	0	6	1	7	62	3	0	179	2	177
Hour	23	7	20	0	27	323	23	4	29	6	27	2	25	234	29	1	780	7	773

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

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Study Name: TMC9815
 Site Code : 98150102
 Start Date: 08/26/98
 Page : 3

Vehicle group 1

Start Time	OLIVE STREET Southbound				CSAH 11 (NORTHDAL BLV) Westbound				OLIVE STREET 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	7	1	2	0	7	98	20	1	6	3	6	0	3	85	3	1	243	2	241
20:15	5	2	3	0	7	80	11	0	9	4	9	0	4	66	9	0	209	0	209
20:30	7	1	2	0	10	81	13	1	7	0	4	0	5	50	5	1	187	2	185
20:45	3	1	3	0	5	43	3	0	8	0	4	0	5	47	7	1	130	1	129
Hour	22	5	10	0	29	302	47	2	30	7	23	0	17	248	24	3	769	5	764
21:00	3	1	1	0	4	52	4	2	2	2	4	0	4	45	6	0	130	2	128
21:15	3	2	4	0	5	36	1	0	10	0	3	0	5	33	6	0	108	0	108
21:30	0	2	1	0	7	44	5	0	1	0	2	0	2	43	6	0	113	0	113
21:45	3	1	1	0	3	30	3	1	2	0	1	0	2	60	3	1	111	2	109
Hour	9	6	7	0	19	162	13	3	15	2	10	0	13	181	21	1	462	4	458
Total	345	81	276	10	304	4699	367	157	423	66	307	18	225	4513	384	219	12394	404	11990
% Apr.	48.4	11.3	38.7	1.4	5.5	85.0	6.6	2.8	51.9	8.1	37.7	2.2	4.2	84.4	7.1	4.1	-	-	-
% Int.	2.7	0.6	2.2	-	2.4	37.9	2.9	1.2	3.4	0.5	2.4	0.1	1.8	36.4	3.0	1.7	-	-	-

or Street Approaches:

Eastbound:

CSAH 11 (NORTHDAL BLVD)

Data File: C:\APPS\PETRA2\DATAFILE\TMC9815.PDF
 Count Type: IMC. Channel: 0. Count Date: 8/26/98
 Number of Lanes: 1
 Approach Speed: 35
 Total Approach Traffic: 5122

Westbound:

CSAH 11 (NORTHDAL BLVD)

Data File: C:\APPS\PETRA2\DATAFILE\TMC9815.PDF
 Count Type: IMC. Channel: 0. Count Date: 8/26/98
 Number of Lanes: 1
 Approach Speed: 35
 Total Approach Traffic: 5370

Minor Street Approaches:

Northbound:

OLIVE STREET

Data File: C:\APPS\PETRA2\DATAFILE\TMC9815.PDF
 Count Type: IMC. Channel: 0. Count Date: 8/26/98
 Number of Lanes: 1
 Approach Speed: 0
 Total Approach Traffic: 796

Southbound:

OLIVE STREET

Data File: C:\APPS\PETRA2\DATAFILE\TMC9815.PDF
 Count Type: IMC. Channel: 0. Count Date: 8/26/98
 Number of Lanes: 1
 Approach Speed: 0
 Total Approach Traffic: 702

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	507	55	S	7	MAIN	150		75		120
7	634	70	N	2	MAIN	150		75	MAIN	120
8	564	47	S	8	MAIN	150		75		120
9	446	41	S	12		150		75		120
10	438	39	N	13		150		75		120
11	606	37	N	14	MAIN	150		75	MAIN	120
12	617	47	N	9	MAIN	150		75	MAIN	120
13	566	35	N	15	MAIN	150		75		120
14	635	45	N	10	MAIN	150		75	MAIN	120
15	761	43	N	11	MAIN	150	MAIN	75	MAIN	120
16	1016	68	N	4	MAIN	150	MAIN	75	MAIN	120
17	1098	69	N	3	MAIN	150	MAIN	75	MAIN	120
18	867	75	N	1	MAIN	150	--BOTH--	75	MAIN	120
19	661	62	N	5	MAIN	150		75	MAIN	120
20	667	60	N	6	MAIN	150		75	MAIN	120
21	409	27	N	16		150		75		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: 1231.

- 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 0 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.

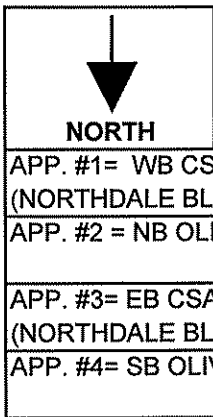
Minor St. High Vol. Approach (VPH)

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)

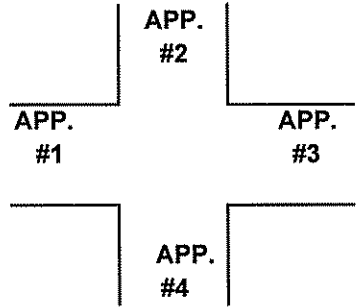
15
16
17
18



COUNT LOCATION: CSAH 11 (NORTHDALE BLVD)
@ OLIVE STREET

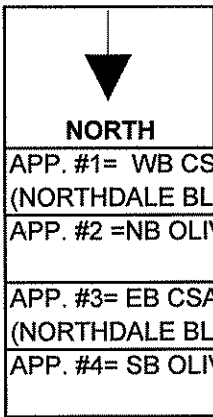
DATE: 8/26/98

APP. #1= WB CSAH 11
(NORTHDALE BLVD)
 APP. #2 = NB OLIVE ST
 APP. #3= EB CSAH 11
(NORTHDALE BLVD)
 APP. #4= SB OLIVE ST



- 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	2		3
6:15-6:30	1				1	2		2
6:30-6:45						3	1	4
6:45-7:00		2	2		4	7		2
HOURLY TOTAL					6	HOURLY TOTAL		26
7:00-7:15						1		
7:15-7:30						6		
7:30-7:45		1			1	16		1
7:45-8:00						13		1
HOURLY TOTAL					1	HOURLY TOTAL		38
8:00-8:15						9		3
8:15-8:30						6		2
8:30-8:45			1		1	15		
8:45-9:00						9		
HOURLY TOTAL					1	HOURLY TOTAL		44
9:00-9:15				10	10	11		2
9:15-9:30						5		2
9:30-9:45			1		1	7		
9:45-10:00				2	2	7		1
HOURLY TOTAL					13	HOURLY TOTAL		35
10:00-10:15				10	10	9		1
10:15-10:30				2	2	6		
10:30-10:45				1	1	14		
10:45-11:00						9		
HOURLY TOTAL					13	HOURLY TOTAL		39
11:00-11:15				4	4	15		
11:15-11:30	2				2	15		
11:30-11:45						10		1
11:45-12:00		3			3	7		
HOURLY TOTAL					9	HOURLY TOTAL		48
12:00-12:15				7	7	8		
12:15-12:30	2			6	8	7		
12:30-12:45		2		3	5	8	1	
12:45-1:00						7	1	
HOURLY TOTAL					20	HOURLY TOTAL		32
1:00-1:15						4	1	
1:15-1:30						12		1
1:30-1:45			3	10	13	5		
1:45-2:00				1	1	7		1
HOURLY TOTAL					14	HOURLY TOTAL		31



COUNT LOCATION:

CSAH 11 (NORTHDAL BLVD)

DATE:

8/27/98

@ OLIVE STREET

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	11		2
2:15-2:30						6		2
2:30-2:45						5		6
2:45-3:00	2			3	5	5		1
HOURLY TOTAL					6	HOURLY TOTAL		38
3:00-3:15						5		
3:15-3:30	2	1			3	4		
3:30-3:45		2		3	5	4		1
3:45-4:00	1			4	5	3		2
HOURLY TOTAL					13	HOURLY TOTAL		19
4:00-4:15		1		3	4	1		
4:15-4:30		2	3	1	6	5		1
4:30-4:45						4		
4:45-5:00			4	4	8	3		4
HOURLY TOTAL					18	HOURLY TOTAL		18
5:00-5:15	1		1		2	2		3
5:15-5:30		1		1	2	2		
5:30-5:45		1		2	3	2		1
5:45-6:00						2		
HOURLY TOTAL					7	HOURLY TOTAL		12
6:00-6:15		1		3	4	2		
6:15-6:30	2				2	1		2
6:30-6:45		1		1	2			1
6:45-7:00						1		
HOURLY TOTAL					8	HOURLY TOTAL		7
7:00-7:15								
7:15-7:30				1	1	3		1
7:30-7:45		1		2	3	1		
7:45-8:00				2	2	2		
HOURLY TOTAL					6	HOURLY TOTAL		7
8:00-8:15						2		
8:15-8:30		1			1			
8:30-8:45	1				1	2		
8:45-9:00						1		
HOURLY TOTAL					2	HOURLY TOTAL		5
9:00-9:15						3		
9:15-9:30								
9:30-9:45								
9:45-10:00				2	2	2		
HOURLY TOTAL					2	HOURLY TOTAL		5