

Date : 6/05/03

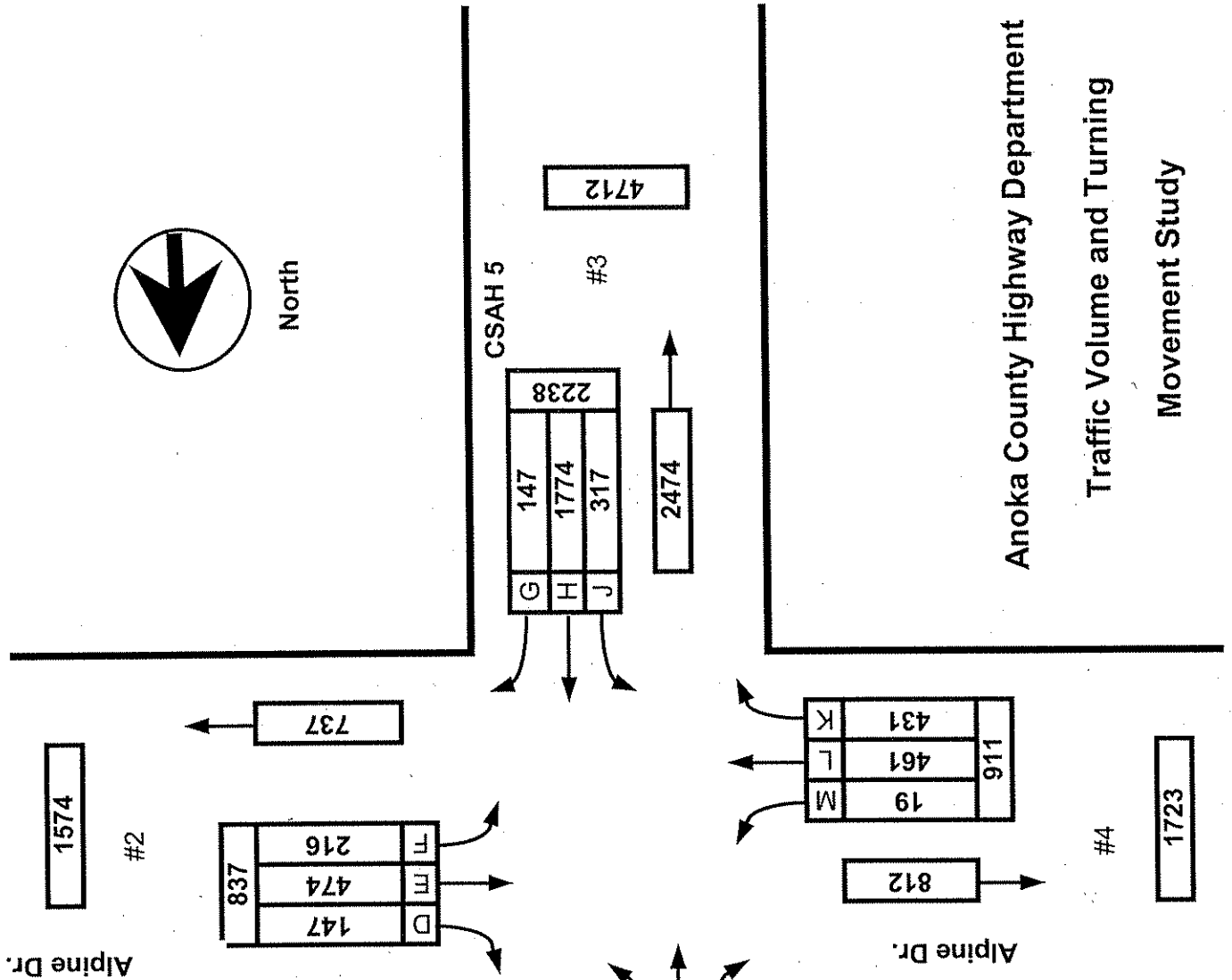
Count Number : TMC0327

Location : CSAH 5 (Nowthen Blvd.) @

Alpine Dr.



North



1574

#2

837			
147	D	474	E
216	T		

737

CSAH 5

147	G	2238	
1774	H		
317	J		

4712

#3

2474

911			
19	M	461	L
431	K		

812

#4

1723

1940

#1

3917

1977			
21	A	1827	B
129	C		

CSAH 5

Alpine Dr.

# Anoka County Highway Department

## Traffic Engineering

### Traffic Volume and Turning Movement Stud

Weather: Cloudy & Wet  
 Counter TDC-8  
 Counted by: Krystal/Shari

File Name : TMC0327  
 Site Code : 03270101  
 Start Date : 06/05/2003  
 Page No : 1

Groups Printed- 1 - 1 - Unshifted

Start Time	CSAH 5 Southbound					Alpine Dr. Westbound					CSAH 5 Northbound					Alpine Dr. Eastbound					Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	Heavy	App. Total	Left	Thru	Right	Heavy	App. Total	Left	Thru	Right	Heavy	App. Total	Left	Thru	Right	Heavy	App. Total			
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0				
06:00	1	36	0	2	37	5	5	1	1	11	1	4	0	0	5	0	4	3	0	7	3	60	63
06:15	0	56	0	0	56	1	5	1	0	7	1	7	0	0	8	0	3	5	0	8	0	79	81
06:30	1	79	0	3	80	1	6	0	0	7	0	4	1	0	5	0	1	2	0	3	3	95	98
06:45	1	60	0	1	61	4	13	0	0	17	1	10	1	1	12	0	2	6	0	8	2	98	100
Total	3	231	0	6	234	11	29	2	1	42	3	25	2	1	30	0	10	16	0	26	8	332	340
07:00	0	31	0	2	31	3	7	2	1	12	0	6	0	0	6	1	3	7	3	11	6	60	66
07:15	1	35	0	0	36	3	5	1	1	9	1	14	1	3	16	0	8	6	2	14	6	75	81
07:30	4	46	1	6	51	3	8	1	1	12	2	9	2	1	13	0	10	13	1	23	9	99	108
07:45	6	69	1	5	76	9	6	0	0	15	1	19	3	4	23	0	6	4	0	10	9	124	133
Total	11	181	2	13	194	18	26	4	3	48	4	48	6	8	58	1	27	30	6	58	30	358	388
08:00	3	33	0	4	36	6	11	2	2	19	4	22	0	0	26	1	5	4	1	10	7	91	98
08:15	5	52	0	3	57	0	3	1	0	4	0	14	0	2	14	0	6	8	2	14	7	89	96
08:30	0	33	1	2	34	3	8	5	4	16	1	15	2	4	18	1	1	5	1	7	11	75	86
08:45	1	42	0	3	43	5	4	0	1	9	1	17	1	4	19	0	6	6	2	12	10	83	93
Total	9	160	1	12	170	14	26	8	7	48	6	68	3	10	77	2	18	23	6	43	35	338	373
09:00	3	28	0	4	31	2	6	1	0	9	2	8	0	1	10	0	4	5	0	9	5	59	64
09:15	4	45	0	7	49	6	9	5	5	20	2	15	0	5	17	1	6	11	1	18	18	104	122
09:30	4	49	0	4	53	6	6	1	3	13	5	22	2	3	29	0	4	22	1	26	11	121	132
09:45	6	25	0	2	31	3	10	3	0	16	4	19	1	2	24	0	3	6	0	9	4	80	84
Total	17	147	0	17	164	17	31	10	8	58	13	64	3	11	80	1	17	44	2	62	38	364	402
10:00	2	22	0	2	24	4	3	2	1	9	6	14	1	1	21	0	3	6	1	9	5	63	68
10:15	1	16	0	1	17	3	7	0	0	10	9	21	0	3	30	1	1	3	0	5	4	62	66
10:30	2	20	2	2	24	4	5	2	1	11	4	15	2	2	21	0	5	2	0	7	5	63	68
10:45	3	20	1	2	24	3	5	2	0	10	1	11	4	1	16	0	1	5	0	6	3	56	59
Total	8	78	3	7	89	14	20	6	2	40	20	61	7	7	88	1	10	16	1	27	17	244	261
11:00	3	18	0	1	21	3	3	3	0	9	6	18	1	4	25	0	6	5	2	11	7	66	73
11:15	1	14	2	4	17	2	4	4	2	10	1	25	0	1	26	1	5	6	1	12	8	65	73
11:30	2	13	1	3	16	1	6	3	0	10	7	24	0	4	31	6	1	4	0	11	7	68	75
11:45	4	29	0	2	33	2	3	4	1	9	8	21	0	1	29	0	5	6	2	11	6	82	88
Total	10	74	3	10	87	8	16	14	3	38	22	88	1	10	111	7	17	21	5	45	28	281	309
12:00	1	24	3	3	28	3	10	3	2	16	3	25	2	5	30	0	5	4	0	9	10	83	93
12:15	2	30	0	4	32	0	11	4	2	15	3	29	4	5	36	0	4	1	0	5	11	88	99
12:30	2	40	0	3	42	12	8	1	6	21	1	26	1	1	28	0	3	15	4	18	14	109	123
12:45	2	34	0	3	36	13	7	3	1	23	8	24	3	5	35	0	6	21	3	27	12	121	133
Total	7	128	3	13	138	28	36	11	11	75	15	104	10	16	129	0	18	41	7	59	47	401	448
13:00	1	26	1	2	28	3	9	3	0	15	11	27	6	6	44	0	2	3	0	5	8	92	100
13:15	2	38	0	3	40	2	5	1	1	8	2	29	3	2	34	0	6	10	2	16	8	98	106
13:30	1	26	1	1	28	3	5	0	0	8	6	30	1	3	37	0	7	8	1	15	5	88	93
13:45	1	22	0	3	23	3	4	2	1	9	5	18	5	0	28	0	6	2	0	8	4	68	72
Total	5	112	2	9	119	11	23	6	2	40	24	104	15	11	143	0	21	23	3	44	25	346	371
14:00	1	22	0	0	23	1	6	3	2	10	5	39	2	2	46	1	10	3	2	14	6	93	99
14:15	3	34	0	2	37	3	4	1	1	8	7	25	2	5	34	0	6	1	2	7	10	86	96
14:30	2	28	0	2	30	5	7	1	0	13	6	41	3	3	50	0	4	2	0	6	5	99	104
14:45	1	27	0	1	28	1	6	4	1	11	3	32	6	3	41	0	5	3	0	8	5	88	93
Total	7	111	0	5	118	10	23	9	4	42	21	137	13	13	171	1	25	9	4	35	26	366	392
15:00	1	23	0	1	24	5	8	1	1	14	3	49	1	2	53	0	9	7	2	16	6	107	113
15:15	1	24	0	6	25	5	9	3	0	17	4	56	2	5	62	0	10	4	1	14	12	118	130
15:30	1	26	0	5	27	3	8	5	1	16	4	46	7	10	57	0	10	6	3	16	19	116	135
15:45	1	33	0	3	34	6	15	1	1	22	6	53	6	2	65	0	17	5	1	22	7	143	150
Total	4	106	0	15	110	19	40	10	3	69	17	204	16	19	237	0	46	22	7	68	44	484	528
16:00	3	23	1	3	27	13	11	9	4	33	3	43	6	2	52	0	18	22	4	40	13	152	165
16:15	0	22	0	4	22	2	8	5	1	15	11	59	7	10	77	0	8	16	3	24	18	138	156
16:30	3	20	0	4	23	4	8	9	2	21	13	53	2	6	68	0	18	8	0	26	12	138	150
16:45	3	32	1	2	36	1	11	2	1	14	10	60	3	0	73	1	17	2	1	20	4	143	147
Total	9	97	2	13	108	20	38	25	8	83	37	215	18	18	270	1	61	48	8	110	47	571	618
17:00	3	34	0	2	37	0	9	0	1	9	12	72	4	2	88	0	17	9	1	26	6	160	166
17:15	1	30	0	0	31	0	11	4	3	15	10	59	4	2	73	0	6	1	0	7	5	126	131
17:30	3	22	1	0	26	4	14	1	2	19	17	54	1	3	72	1	21	3	0	25	5	142	147
17:45	4	21	1	1	26	3	18	3	2	24	13	51	2	0	66	0	8	7	0	15	3	131	134
Total	11	107	2	3	120	7	52	8	8	67	52	236	11	7	299	1	52	20	1	73	19	559	578



Organization Title Goes Here

Heading Second Line

Heading Third Line

Study Name : TMC 0327

Study Date : 10/24/03

Page No. : 1

Signal Warrants - Summary

Major Street Approaches

Northbound: CSAH 5

Number of Lanes: 2

Approach Speed: 55

Total Approach Volume: 2,238

Southbound: CSAH 5

Number of Lanes: 1

Approach Speed: 55

Total Approach Volume: 1,977

Minor Street Approaches

Eastbound: Alpine Dr.

Number of Lanes: 2

Total Approach Volume: 911

Westbound: Alpine Dr.

Number of Lanes: 2

Total Approach Volume: 837

Warrant Summary (Rural values apply.)

Warrant 1 - Eight Hour Vehicular Volumes ..... Not Satisfied

Warrant 1A - Minimum Vehicular Volume ..... Not Satisfied

Required volumes reached for 0 hours, 8 are needed

Warrant 1B - Interruption of Continuous Traffic ..... Not Satisfied

Required volumes reached for 0 hours, 8 are needed

Warrant 1 A&B - Combination of Warrants ..... Not Satisfied

Required volumes reached for 0 hours, 8 are needed

Warrant 2 - Four Hour Volumes ..... Not Satisfied

Number of hours (0) volumes exceed minimum < minimum required (4).

Warrant 3 - Peak Hour ..... Not Satisfied

Warrant 3A - Peak Hour Volumes ..... Not Satisfied

Volumes do not exceed minimums for any hour.

Warrant 3B - Peak Hour Delay ..... Not Satisfied

Approach volumes on minor street don't exceed minimums for any hour. Delay data not evaluated.

Warrant 4 - Pedestrian Volumes ..... Not Evaluated

Warrant 5 - School Crossing ..... Not Evaluated

Warrant 6 - Coordinated Signal System ..... Not Evaluated

Warrant 7 - Crash Experience ..... Not Evaluated

Warrant 8 - Roadway Network ..... Not Evaluated

# Organization Title Goes Here

Heading Second Line

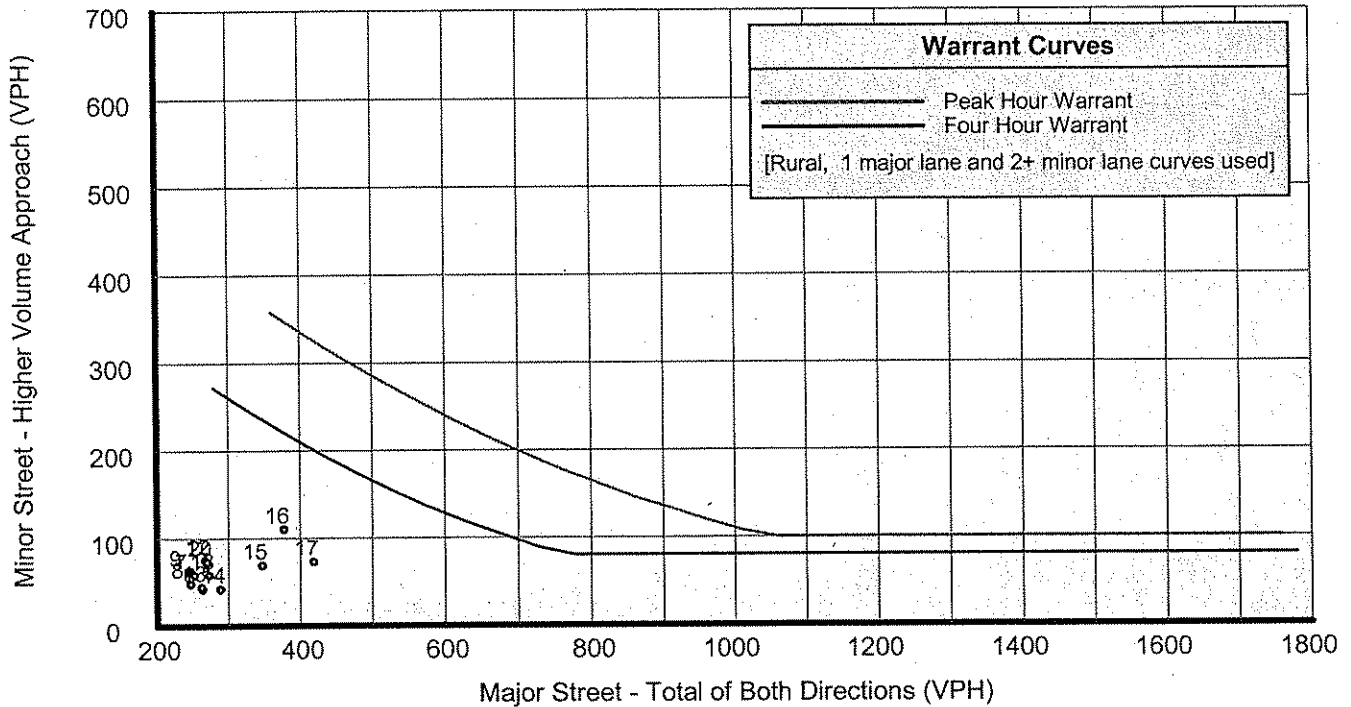
Heading Third Line

Study Name : TMC 0327

Study Date : 10/24/03

Page No. : 2

## Signal Warrants - Summary



### Analysis of 8-Hour Volume Warrants:

Hour Begin	Major Total	Higher Minor		War-1A			War-1B			War-1A&B		
		Vol	Dir	Major Crit	Minor Crit	Meets?	Major Crit	Minor Crit	Meets?	Major Crit	Minor Crit	Meets?
00:00	0	0	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
01:00	0	0	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
02:00	0	0	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
03:00	0	0	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
04:00	0	0	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
05:00	0	0	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
06:00	264	42	WB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
07:00	252	58	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
08:00	247	48	WB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
09:00	244	62	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
10:00	177	40	WB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
11:00	198	45	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
12:00	267	75	WB	350-No	140-No	---	525-No	70-Yes	Minor	420-No	112-No	---
13:00	262	44	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
14:00	289	42	WB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
15:00	347	69	WB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
16:00	378	110	EB	350-Yes	140-No	Major	525-No	70-Yes	Minor	420-No	112-No	---
17:00	419	73	EB	350-Yes	140-No	Major	525-No	70-Yes	Minor	420-No	112-No	---
18:00	273	58	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
19:00	181	100	EB	350-No	140-No	---	525-No	70-Yes	Minor	420-No	112-No	---
20:00	270	73	EB	350-No	140-No	---	525-No	70-Yes	Minor	420-No	112-No	---
21:00	147	30	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
22:00	0	0	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
23:00	0	0	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---

# Organization Title Goes Here

Heading Second Line

Heading Third Line

Study Name : TMC 0327

Study Date : 10/29/03

## Multi-Way Stop Warrant Report

### Major Street Approaches

**Northbound: CSAH 5**

Total Approach Volume: 2,238

Approach Speed: 55

**Southbound: CSAH 5**

Total Approach Volume: 1,977

Approach Speed: 55

### Minor Street Approaches

**Eastbound: Alpine Dr.**

Total Approach Volume: 911

**Westbound: Alpine Dr.**

Total Approach Volume: 837

### Warrant Summary

**Criteria A - Interim Measure** ..... Not Evaluated

If traffic signals are justified, stop signs can be installed as an interim measure.

**Criteria B - Crash Experience** ..... Not Evaluated

Number of crashes (0) is less than the minimum required (5).

**Criteria C - Minimum Volumes and Delays** ..... Not Satisfied

Delay data not evaluated

Required volumes reached for 2 hours, 8 are needed

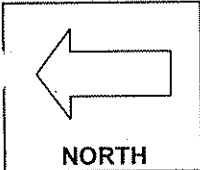
**Criteria D - 80% of Volumes, Delays, and Crashes** ..... Not Evaluated

Delay data not evaluated

Required volumes reached for 0 hours, 8 are needed

### Analysis of 8-Hour Volume Warrants:

Time	Major Crit Total	Minor Total	Crit C			Crit D		
			Major Crit	Minor Crit	Meets?	Major Crit	Minor Crit	Meets?
00:00 - 01:00	0	0	210-No	140-No	No	240-No	160-No	No
01:00 - 02:00	0	0	210-No	140-No	No	240-No	160-No	No
02:00 - 03:00	0	0	210-No	140-No	No	240-No	160-No	No
03:00 - 04:00	0	0	210-No	140-No	No	240-No	160-No	No
04:00 - 05:00	0	0	210-No	140-No	No	240-No	160-No	No
05:00 - 06:00	0	0	210-No	140-No	No	240-No	160-No	No
06:00 - 07:00	264	68	210-Yes	140-No	Major	240-Yes	160-No	Major
07:00 - 08:00	252	106	210-Yes	140-No	Major	240-Yes	160-No	Major
08:00 - 09:00	247	91	210-Yes	140-No	Major	240-Yes	160-No	Major
09:00 - 10:00	244	120	210-Yes	140-No	Major	240-Yes	160-No	Major
10:00 - 11:00	177	67	210-No	140-No	No	240-No	160-No	No
11:00 - 12:00	198	83	210-No	140-No	No	240-No	160-No	No
12:00 - 13:00	267	134	210-Yes	140-No	Major	240-Yes	160-No	Major
13:00 - 14:00	262	84	210-Yes	140-No	Major	240-Yes	160-No	Major
14:00 - 15:00	289	77	210-Yes	140-No	Major	240-Yes	160-No	Major
15:00 - 16:00	347	137	210-Yes	140-No	Major	240-Yes	160-No	Major
16:00 - 17:00	378	193	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
17:00 - 18:00	419	140	210-Yes	140-Yes	Both	240-Yes	160-No	Major
18:00 - 19:00	273	113	210-Yes	140-No	Major	240-Yes	160-No	Major
19:00 - 20:00	181	159	210-No	140-Yes	Minor	240-No	160-No	No
20:00 - 21:00	270	117	210-Yes	140-No	Major	240-Yes	160-No	Major
21:00 - 22:00	147	59	210-No	140-No	No	240-No	160-No	No
22:00 - 23:00	0	0	210-No	140-No	No	240-No	160-No	No
23:00 - 00:00	0	0	210-No	140-No	No	240-No	160-No	No



COUNT LOCATION:

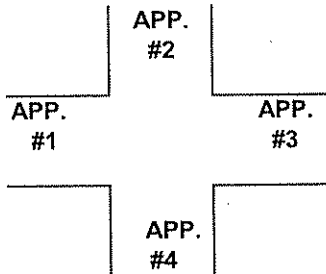
CSAH 5 (Nowthen Blvd.) @

DATE:

06/10/2003

Alpine Dr.

<b>NORTH</b>
APP. #1 = CSAH 5
APP. #2 = Alpine Dr.
APP. #3 = CSAH 5
APP. #4 = Alpine Dr.



HEAVY VEHICLE- ANY VEHICLE HAVING MORE THAN FOUR TIRES TOUCHING THE PAVEMENT

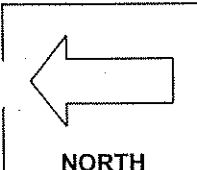
A. TRUCKS- A HEAVY VEHICLE INVOLVED PRIMARILY IN THE TRANSPORT OF GOODS OR IN THE DELIVERY OF A SERVICE.

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		
6:15-6:30						1		
6:30-6:45						3		
6:45-7:00						1		
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>7</b>
7:00-7:15						3	1	2
7:15-7:30						4		2
7:30-7:45						4		4
7:45-8:00						7		2
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>29</b>
8:00-8:15						5		3
8:15-8:30						6	1	
8:30-8:45						10	1	
8:45-9:00						9		1
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>36</b>
9:00-9:15						3		2
9:15-9:30						13		5
9:30-9:45						8		4
9:45-10:00						4		
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>39</b>
10:00-10:15						4		1
10:15-10:30						5		
10:30-10:45						5		
10:45-11:00						3		
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>18</b>
11:00-11:15						5		
11:15-11:30						6		2
11:30-11:45						5		1
11:45-12:00						2		4
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>25</b>
12:00-12:15						5		5
12:15-12:30						7		4
12:30-12:45						4		9
12:45-1:00						6		6
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>46</b>
1:00-1:15						5		4
1:15-1:30						8		
1:30-1:45				3	3	5		
1:45-2:00						4		
<b>HOURLY TOTAL</b>					<b>3</b>	<b>HOURLY TOTAL</b>		<b>26</b>
				<b>TOTAL</b>			<b>TOTAL</b>	

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COUNT LOCATION:

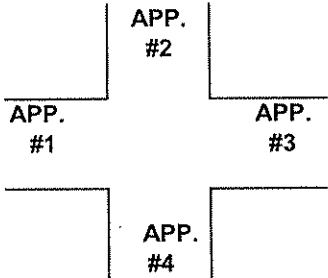
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HEAVY VEHICLE- ANY VEHICLE HAVING MORE THAN FOUR TIRES TOUCHING THE PAVEMENT

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						6		
2:15-2:30						10		
2:30-2:45						5		
2:45-3:00						3	1	3
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>28</b>
3:00-3:15						9	2	2
3:15-3:30						3		3
3:30-3:45						11	1	5
3:45-4:00						5		2
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>43</b>
4:00-4:15						6		8
4:15-4:30						5		13
4:30-4:45						8		3
4:45-5:00						4		
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>47</b>
5:00-5:15						6		
5:15-5:30						5		
5:30-5:45				3	3	5		
5:45-6:00		1			1	2	1	
<b>HOURLY TOTAL</b>					<b>4</b>	<b>HOURLY TOTAL</b>		<b>19</b>
6:00-6:15						5	1	
6:15-6:30		1			1	3		
6:30-6:45		1		1	2	2		
6:45-7:00		2	3		5	4		
<b>HOURLY TOTAL</b>					<b>8</b>	<b>HOURLY TOTAL</b>		<b>15</b>
7:00-7:15						4		
7:15-7:30						7		
7:30-7:45						3		
7:45-8:00						3		
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>17</b>
8:00-8:15			3	3	6	1	1	
8:15-8:30						2		
8:30-8:45			5		5	1		
8:45-9:00		1			1	1		
<b>HOURLY TOTAL</b>					<b>12</b>	<b>HOURLY TOTAL</b>		<b>6</b>
9:00-9:15						1		
9:15-9:30								
9:30-9:45						1		
9:45-10:00						1		
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>3</b>
					<b>TOTAL</b>		<b>TOTAL</b>	

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