

Date : 6/11/03

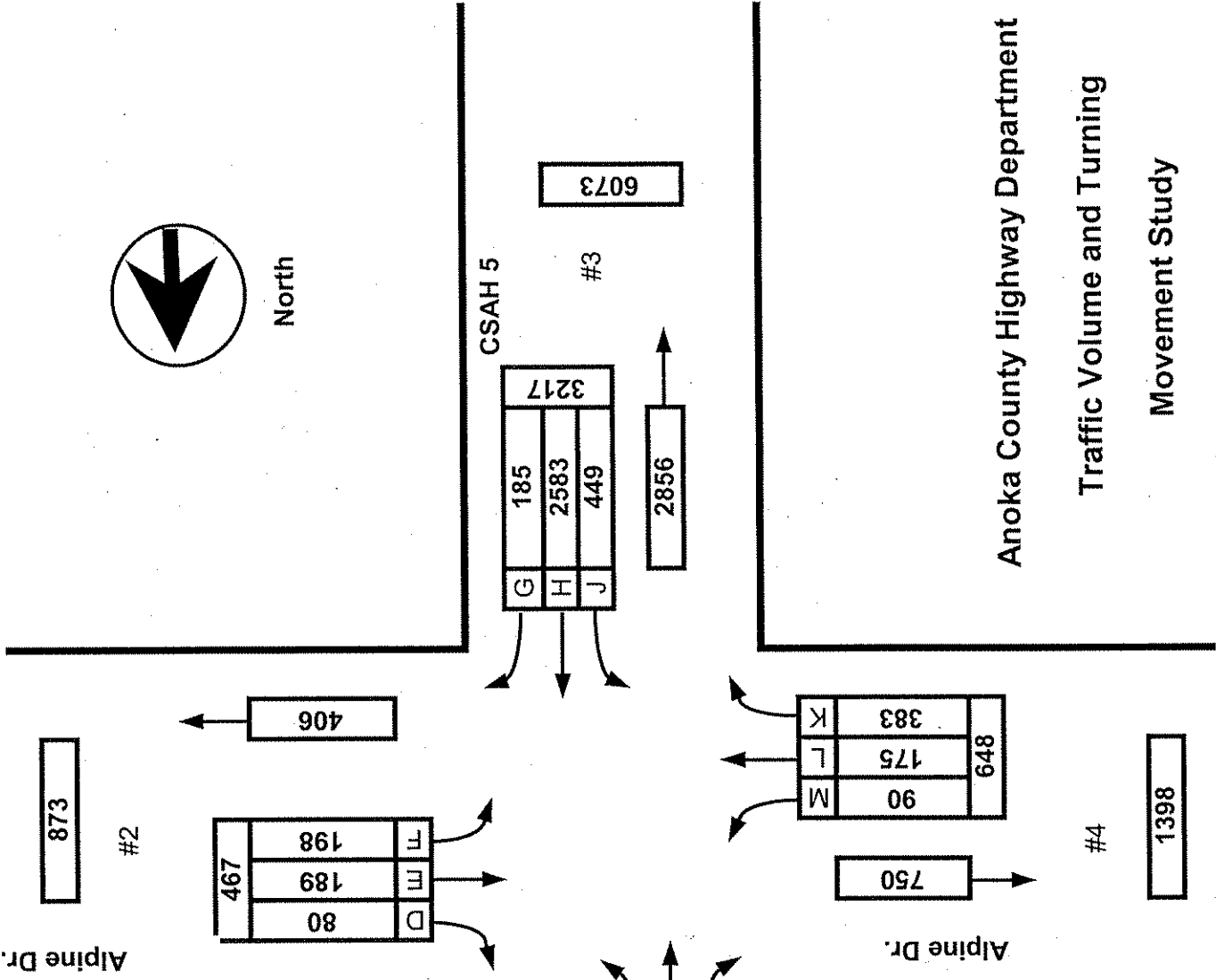
Count Number : TMC0328

Location : CSAH 5 (Nowthen Blvd.) @

Sunwood Dr.



North



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

Anoka County Highway Department
 Traffic Volume and Turning
 Movement Study

Anoka County Highway Department
Traffic Engineering

Traffic Volume and Turning Movement Study

Weather: Sunny & Hot
Counter TDC-8

Printed by: Krystal/Shari

File Name : TMC0328
Site Code : 03280101
Start Date : 06/11/2003
Page No : 1

Groups Printed- 1 - 1 - Unshifted

Start Time	CSAH 5 Southbound					Sunwood Dr. Westbound					CSAH 5 Northbound					Sunwood 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			
	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	0	51	0	3	51	3	1	0	1	4	0	3	0	0	3	0	0	4	0	4	4	62	66
06:15	0	57	0	3	57	6	4	0	0	10	0	10	1	0	11	1	1	8	0	10	3	88	91
06:30	0	89	0	10	89	6	3	0	0	9	1	14	0	0	15	0	1	12	0	13	10	126	136
06:45	0	85	0	5	85	7	4	1	0	12	0	23	1	1	24	1	2	13	0	16	6	137	143
Total	0	282	0	21	282	22	12	1	1	35	1	50	2	1	53	2	4	37	0	43	23	413	436
07:00	0	57	2	3	59	3	1	2	1	6	1	21	1	4	23	0	0	13	1	13	9	101	110
07:15	1	75	2	2	78	6	1	3	0	10	2	16	0	1	18	4	2	8	0	14	3	120	123
07:30	1	71	2	8	74	5	3	0	0	8	2	13	0	3	15	1	0	14	0	15	11	112	123
07:45	1	63	0	2	64	4	4	1	0	9	3	31	4	5	38	1	0	11	0	12	7	123	130
Total	3	266	6	15	275	18	9	6	1	33	8	81	5	13	94	6	2	46	1	54	30	456	486
08:00	0	56	0	2	56	7	6	0	1	13	3	24	1	4	28	3	4	8	1	15	8	112	120
08:15	0	57	0	5	57	1	6	0	0	7	1	23	0	5	24	2	1	6	0	9	10	97	107
08:30	0	36	1	4	37	5	0	0	0	5	1	17	2	5	20	0	4	3	0	7	9	69	78
08:45	0	40	0	4	40	4	1	0	0	5	5	24	0	4	29	1	3	6	0	10	8	84	92
Total	0	189	1	15	190	17	13	0	1	30	10	88	3	18	101	6	12	23	1	41	35	362	397
09:00	1	33	0	5	34	3	1	1	0	5	4	14	0	2	18	0	2	9	0	11	7	68	75
09:15	0	34	1	2	35	1	2	1	0	4	5	19	0	0	24	2	2	5	0	9	2	72	74
09:30	0	23	1	3	24	1	0	0	0	1	10	17	4	3	31	1	1	5	0	7	6	63	69
09:45	0	41	0	5	41	1	0	2	1	3	3	24	1	2	28	1	0	3	0	4	8	76	84
Total	1	131	2	15	134	6	3	4	1	13	22	74	5	7	101	4	5	22	0	31	23	279	302
10:00	2	29	1	4	32	2	5	1	1	8	3	26	1	2	30	1	2	4	0	7	7	77	84
10:15	0	36	4	2	40	2	0	0	0	2	2	37	2	2	41	0	0	1	0	1	4	84	88
10:30	0	35	2	2	37	2	2	2	0	6	6	23	2	5	31	4	2	5	1	11	8	85	93
10:45	1	32	1	2	34	6	3	0	1	9	1	23	0	1	24	0	2	8	0	10	4	77	81
Total	3	132	8	10	143	12	10	3	2	25	12	109	5	10	126	5	6	18	1	29	23	323	346
11:00	0	29	0	1	29	1	3	1	0	5	6	38	3	5	47	0	2	4	0	6	6	87	93
11:15	0	29	1	4	30	2	1	3	1	6	5	33	3	1	41	0	4	3	1	7	7	84	91
11:30	0	28	1	4	29	1	2	1	1	4	12	21	4	6	37	0	2	2	0	4	11	74	85
11:45	1	28	1	3	30	2	2	1	0	5	4	33	3	6	40	1	1	4	1	6	10	81	91
Total	1	114	3	12	118	6	8	6	2	20	27	125	13	18	165	1	9	13	2	23	34	326	360
12:00	1	31	0	2	32	1	4	1	1	6	7	31	1	1	39	0	0	6	0	6	4	83	87
12:15	1	33	2	8	36	3	2	2	0	7	9	33	1	1	43	1	3	1	1	5	10	91	101
12:30	0	41	0	1	41	2	4	0	0	6	5	35	4	3	44	1	5	7	0	13	4	104	108
12:45	2	43	1	1	46	2	4	1	0	7	5	37	0	3	42	4	3	3	2	10	6	105	111
Total	4	148	3	12	155	8	14	4	1	26	26	136	6	8	168	6	11	17	3	34	24	383	407
13:00	1	30	1	3	32	1	3	1	1	5	5	31	4	4	40	2	3	6	0	11	8	88	96
13:15	0	30	4	3	34	7	3	1	0	11	8	48	1	3	57	5	2	4	1	11	7	113	120
13:30	0	31	2	1	33	3	1	1	1	5	9	34	6	4	49	1	1	6	1	8	7	95	102
13:45	0	23	0	3	23	3	3	0	0	6	6	44	2	2	52	0	1	5	0	6	5	87	92
Total	1	114	7	10	122	14	10	3	2	27	28	157	13	13	198	8	7	21	2	36	27	383	410
14:00	0	32	3	3	35	2	3	1	2	6	4	39	2	0	45	3	3	5	2	11	7	97	104
14:15	1	39	1	4	41	0	2	1	0	3	2	27	1	4	30	5	0	4	1	9	9	83	92
14:30	2	31	0	2	33	2	0	2	0	4	9	50	2	4	61	0	1	11	2	12	8	110	118
14:45	1	27	3	1	31	2	5	2	1	9	3	36	3	1	42	2	3	8	1	13	4	95	99
Total	4	129	7	10	140	6	10	6	3	22	18	152	8	9	178	10	7	28	6	45	28	385	413
15:00	1	33	1	2	35	1	1	1	0	3	6	62	5	5	73	2	3	5	1	10	8	121	129
15:15	0	31	0	2	31	2	6	0	1	8	8	77	3	4	88	1	2	4	0	7	7	134	141
15:30	2	37	1	3	40	3	2	2	0	7	15	78	4	3	97	2	3	1	0	6	6	150	156
15:45	0	24	1	2	25	5	5	0	1	10	9	83	6	5	98	0	1	6	1	7	9	140	149
Total	3	125	3	9	131	11	14	3	2	28	38	300	18	17	356	5	9	16	2	30	30	545	575
16:00	2	28	6	4	36	2	5	3	0	10	12	93	8	4	113	5	6	6	1	17	9	176	185
16:15	0	45	1	2	46	2	5	2	0	9	8	68	2	3	78	2	4	6	1	12	6	145	151
16:30	2	28	6	2	36	1	4	2	0	7	18	56	8	2	82	1	6	1	0	8	4	133	137
16:45	2	39	0	2	41	3	5	0	0	8	7	78	5	4	90	2	7	10	1	19	7	158	165
Total	6	140	13	10	159	8	19	7	0	34	45	295	23	13	363	10	23	23	3	56	26	612	638
17:00	1	35	5	1	41	3	0	1	0	4	18	86	4	2	108	2	8	11	0	21	3	174	177
17:15	1	23	5	2	29	5	6	7	2	18	14	82	6	4	102	2	3	9	1	14	9	163	172
17:30	2	34	1	1	37	4	10	1	0	15	9	90	4	3	103	1	2	2	1	5	5	160	165
17:45	0	34	2	1	36	3	4	4	0	11	16	80	10	1	106	1	7	8	0	16	2	169	171
Total	4	126	13	5	143	15	20	13	2	48	57	338	24	10	419	6	20	30	2	56	19	666	685

Organization Title Goes Here

Heading Second Line

Heading Third Line

Study Name : TMC0328

Study Date : 10/29/03

Page No. : 1

Signal Warrants - Summary

Major Street Approaches

Northbound: CSAH 5

Number of Lanes: 1

Approach Speed: 55

Total Approach Volume: 3,217

Southbound: CSAH 5

Number of Lanes: 1

Approach Speed: 55

Total Approach Volume: 2,433

Minor Street Approaches

Eastbound: Sunwood Dr.

Number of Lanes: 2

Total Approach Volume: 648

Westbound: Sunwood Dr.

Number of Lanes: 2

Total Approach Volume: 467

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

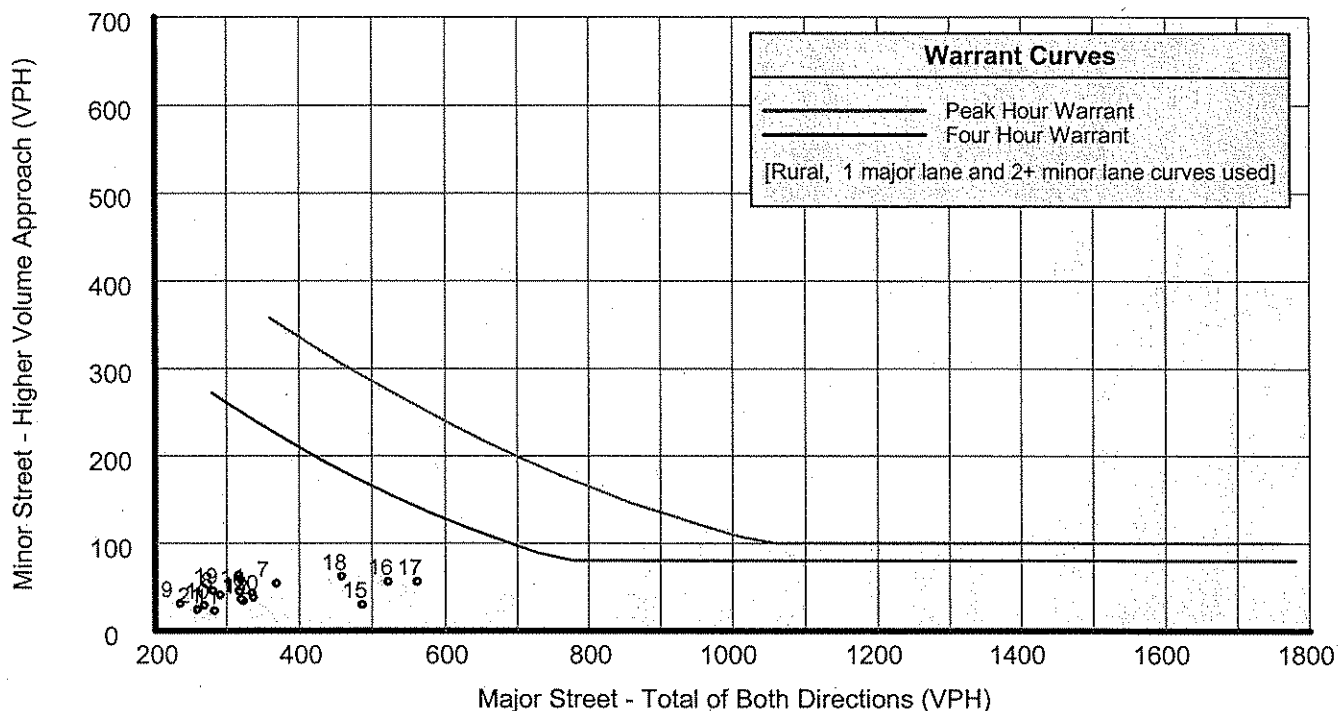
Heading Third Line

Study Name : TMC0328

Study Date : 10/29/03

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	335	43	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
07:00	369	54	EB	350-Yes	140-No	Major	525-No	70-No	---	420-No	112-No	---
08:00	291	41	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
09:00	235	31	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
10:00	269	29	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
11:00	283	23	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
12:00	323	34	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
13:00	320	36	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
14:00	318	45	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
15:00	487	30	EB	350-Yes	140-No	Major	525-No	70-No	---	420-Yes	112-No	Major
16:00	522	56	EB	350-Yes	140-No	Major	525-No	70-No	---	420-Yes	112-No	Major
17:00	562	56	EB	350-Yes	140-No	Major	525-Yes	70-No	Major	420-Yes	112-No	Major
18:00	459	62	EB	350-Yes	140-No	Major	525-No	70-No	---	420-Yes	112-No	Major
19:00	281	46	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
20:00	337	38	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
21:00	259	24	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 : TMC0328
Study Date : 10/29/03

Multi-Way Stop Warrant Report

Major Street Approaches

Northbound: CSAH 5

Total Approach Volume: 3,217
Approach Speed: 55

Southbound: CSAH 5

Total Approach Volume: 2,433
Approach Speed: 55

Minor Street Approaches

Eastbound: Sunwood Dr.

Total Approach Volume: 648

Westbound: Sunwood Dr.

Total Approach Volume: 467

Warrant Summary

Criteria A - Interim Measure Not Evaluated
If traffic signals are justified, stop signs can be installed as an interim measure.

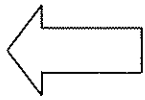
Criteria B - Crash Experience Not Evaluated
Number of crashes (0) is less than the minimum required (5).

Criteria C - Minimum Volumes and Delays Not Satisfied
Delay data not evaluated
Required volumes reached for 0 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		Crit C			Crit D		
	Total	Minor Total	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	335	78	210-Yes	140-No	Major	240-Yes	160-No	Major
07:00 - 08:00	369	87	210-Yes	140-No	Major	240-Yes	160-No	Major
08:00 - 09:00	291	71	210-Yes	140-No	Major	240-Yes	160-No	Major
09:00 - 10:00	235	44	210-Yes	140-No	Major	240-No	160-No	No
10:00 - 11:00	269	54	210-Yes	140-No	Major	240-Yes	160-No	Major
11:00 - 12:00	283	43	210-Yes	140-No	Major	240-Yes	160-No	Major
12:00 - 13:00	323	60	210-Yes	140-No	Major	240-Yes	160-No	Major
13:00 - 14:00	320	63	210-Yes	140-No	Major	240-Yes	160-No	Major
14:00 - 15:00	318	67	210-Yes	140-No	Major	240-Yes	160-No	Major
15:00 - 16:00	487	58	210-Yes	140-No	Major	240-Yes	160-No	Major
16:00 - 17:00	522	90	210-Yes	140-No	Major	240-Yes	160-No	Major
17:00 - 18:00	562	104	210-Yes	140-No	Major	240-Yes	160-No	Major
18:00 - 19:00	459	118	210-Yes	140-No	Major	240-Yes	160-No	Major
19:00 - 20:00	281	65	210-Yes	140-No	Major	240-Yes	160-No	Major
20:00 - 21:00	337	66	210-Yes	140-No	Major	240-Yes	160-No	Major
21:00 - 22:00	259	47	210-Yes	140-No	Major	240-Yes	160-No	Major
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:

06/11/2003

Sunwood Dr.

NORTH

APP. #1 = CSAH 5
APP. #2 = Sunwood Dr.
APP. #3 = CSAH 5
APP. #4 = Sunwood Dr.

APP. #2

APP. #1

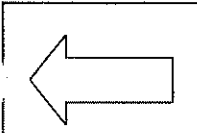
APP. #3

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						3	1	
6:15-6:30	1				1	3		
6:30-6:45	1				1	8	1	
6:45-7:00	1				1	6		1
HOURLY TOTAL					3	HOURLY TOTAL		23
7:00-7:15	1				1	8		1
7:15-7:30						3		
7:30-7:45						10		
7:45-8:00						7		
HOURLY TOTAL					1	HOURLY TOTAL		29
8:00-8:15						8		
8:15-8:30						9		
8:30-8:45						8		
8:45-9:00				1	1	7		
HOURLY TOTAL					1	HOURLY TOTAL		32
9:00-9:15						5	1	
9:15-9:30		1			1	2	1	
9:30-9:45						6		
9:45-10:00		1			1	9		
HOURLY TOTAL					2	HOURLY TOTAL		24
10:00-10:15						7		
10:15-10:30						4		
10:30-10:45				2	2	8		
10:45-11:00						4		
HOURLY TOTAL					2	HOURLY TOTAL		23
11:00-11:15						6		
11:15-11:30						7		
11:30-11:45						11		
11:45-12:00				1	1	9		
HOURLY TOTAL					1	HOURLY TOTAL		33
12:00-12:15						4		
12:15-12:30	4				4	10		
12:30-12:45	1				1	4		
12:45-1:00	4	3			7	6		
HOURLY TOTAL					12	HOURLY TOTAL		24
1:00-1:15						9		
1:15-1:30						4		2
1:30-1:45						7	1	
1:45-2:00						5		
HOURLY TOTAL						HOURLY TOTAL		28
				TOTAL			TOTAL	

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COUNT LOCATION:

CSAH 5 (Nowthen Blvd.) @

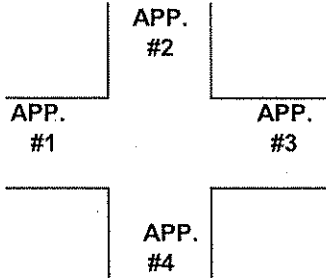
DATE:

06/11/2003

Sunwood Dr.

NORTH

APP. #1 = CSAH 5
APP. #2 = Sunwood Dr.
APP. #3 = CSAH 5
APP. #4 = Sunwood 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
2:00-2:15PM	5				5	5		
2:15-2:30	2				2	9		
2:30-2:45						7		
2:45-3:00				2	2	4		
HOURLY TOTAL					9	HOURLY TOTAL		25
3:00-3:15						7	1	
3:15-3:30		4		2	6	7		
3:30-3:45						6		
3:45-4:00	7	9	2		18	8		1
HOURLY TOTAL					24	HOURLY TOTAL		30
4:00-4:15	4	1	3	1	9	8	1	
4:15-4:30	2				2	6		
4:30-4:45	6	6		1	13	4		
4:45-5:00	12				12	7		
HOURLY TOTAL					36	HOURLY TOTAL		26
5:00-5:15	7				7	2	1	
5:15-5:30	4				4	8	1	
5:30-5:45	2				2	5		
5:45-6:00						2		
HOURLY TOTAL					13	HOURLY TOTAL		19
6:00-6:15						1		
6:15-6:30						2		
6:30-6:45						1		
6:45-7:00	1			1	2	6		
HOURLY TOTAL					2	HOURLY TOTAL		10
7:00-7:15								
7:15-7:30	2				2	2		
7:30-7:45						2		
7:45-8:00						2	1	
HOURLY TOTAL					2	HOURLY TOTAL		7
8:00-8:15		1	2		3	2		
8:15-8:30	1				1	2	1	
8:30-8:45								
8:45-9:00						1		
HOURLY TOTAL					4	HOURLY TOTAL		6
9:00-9:15	4				4			
9:15-9:30		3			3			
9:30-9:45							1	
9:45-10:00						2	1	
HOURLY TOTAL					7	HOURLY TOTAL		4
				TOTAL			TOTAL	

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