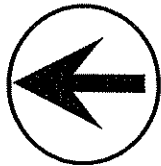


Date : 06/04/08

Count Number : TMC0811

Location : CSAH 57 (Sunfish blvd.)

@ Alpine Drive



North

CSAH 57 (Sunfish blvd.)
#2
2359

991	45	T
894		F
52		D

Alpine Drive

1869	#3
1005	
90	G
542	H
373	J
864	

1537	#1
807	
730	
50	C
474	B
206	A

Alpine Drive

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

CSAH 57 (Sunfish blvd.)
#4
3259

1786	
213	M
1228	L
345	K

1473

Anoka County Highway Department

Traffic Volume and Turning

Movement Study

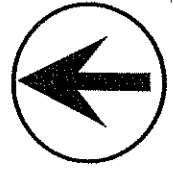
Date : 06/04/08

Count Number : TMC0811

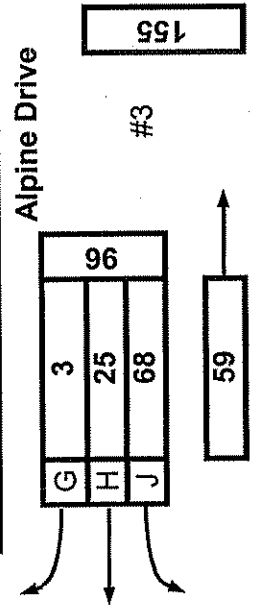
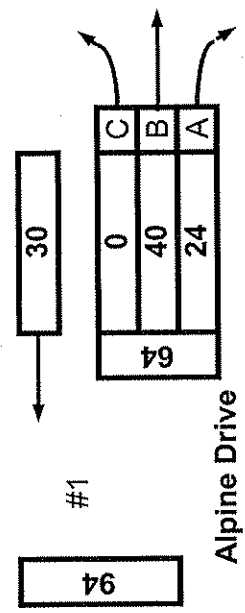
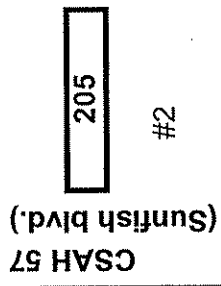
Location : CSAH 57 (Sunfish blvd.)

@ Alpine Drive

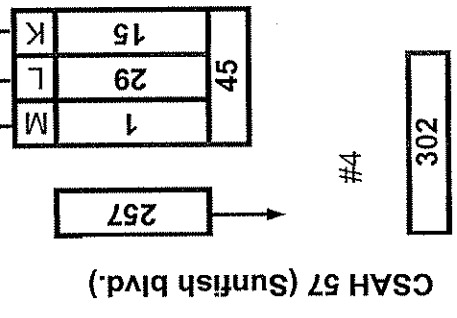
Hour: 06:30 - 07:30 AM



North



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



Anoka County Highway Department
 Traffic Volume and Turning
 Movement Study

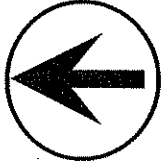
Date : 06/04/08

Count Number : TMC0811

Location : CSAH 57 (Sunfish blvd.)

@ Alpine Drive

Hour: 5:00 - 6:00 PM



North

CSAH 57 (Sunfish blvd.)
#2

248

58	D	7
	E	45
	F	6

190

Alpine Drive

23	G
76	H
11	J

#3

192

82

190	#1
137	
53	A
30	B
4	C

Alpine Drive

CSAH 57 (Sunfish blvd.)
#4

75

263	M	54
	L	163
	K	46

338

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

Anoka County Highway Department

Traffic Volume and Turning

Movement Study

Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC0811
 Site Code : 08110202
 Start Date : 06/04/2008
 Page No : 2

Weather: Sunny
 Counter: DB-400
 Counted by: Jake/Mike

Groups Printed- Unshifted - Bank 1

Start Time	CSAH 57 (Sunfish Blvd.) Southbound					Alpine Drive Westbound					CSAH 57 (Sunfish Blvd.) Northbound					Alpine Drive 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			
19:00	0	7	0	0	7	6	12	0	1	18	4	15	4	0	23	1	7	2	0	10	1	58	59
19:15	3	5	2	0	10	5	23	5	0	33	6	21	8	0	35	1	14	10	0	25	0	103	103
19:30	0	11	2	0	13	5	5	1	0	11	2	18	7	0	27	2	19	3	0	24	0	75	75
19:45	1	6	0	1	7	0	8	0	0	8	2	24	7	0	33	0	16	0	0	16	1	64	65
Total	4	29	4	1	37	16	48	6	1	70	14	78	26	0	118	4	56	15	0	75	2	300	302
20:00	0	8	0	0	8	5	37	1	0	43	4	20	2	0	26	4	7	7	0	18	0	95	95
20:15	1	7	3	0	11	6	10	2	0	18	2	20	5	0	27	0	22	22	0	44	0	100	100
20:30	1	4	0	0	5	0	5	3	0	8	0	22	3	0	25	6	32	18	0	56	0	94	94
20:45	0	3	0	0	3	1	6	3	0	10	6	27	7	0	40	1	9	6	0	16	0	69	69
Total	2	22	3	0	27	12	58	9	0	79	12	89	17	0	118	11	70	53	0	134	0	358	358
21:00	0	6	1	0	7	5	5	2	0	12	2	26	5	0	33	0	8	1	0	9	0	61	61
21:15	2	2	1	0	5	5	5	1	0	11	1	13	0	0	14	1	6	1	0	8	0	38	38
21:30	1	4	2	1	7	1	7	2	0	10	0	15	5	0	20	0	3	1	0	4	1	41	42
21:45	1	3	0	0	4	4	1	1	0	6	3	5	2	0	10	0	9	0	0	9	0	29	29
Total	4	15	4	1	23	15	18	6	0	39	6	59	12	0	77	1	26	3	0	30	1	169	170
Grand Total	45	894	52	50	991	373	542	90	56	1005	213	1228	345	108	1786	50	474	206	25	730	239	4512	4751
Apprch %	4.5	90.2	5.2			37.1	53.9	9			11.9	68.8	19.3			6.8	64.9	28.2			5	95	
Total %	1	19.8	1.2		22	8.3	12	2		22.3	4.7	27.2	7.6		39.6	1.1	10.5	4.6		16.2			
Unshifted	45	894	52		1041	373	542	90		1061	213	1228	345		1894	50	474	206		755	0	0	4751
% Unshifted	100	100	100		100	100	100	100		100	100	100	100		100	100	100	100		100	0	0	100
Bank 1	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
% Bank 1	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0

Start Time	CSAH 57 (Sunfish Blvd.) Southbound				Alpine Drive Westbound				CSAH 57 (Sunfish Blvd.) Northbound				Alpine Drive Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 to 11:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 06:30																	
06:30	2	47	1	50	17	5	1	23	0	5	4	9	0	7	5	12	94
06:45	1	39	0	40	14	8	1	23	1	8	7	16	0	6	5	11	90
07:00	0	40	2	42	20	5	0	25	0	9	0	9	0	10	8	18	94
07:15	1	39	1	41	17	7	1	25	0	7	4	11	0	17	6	23	100
Total Volume	4	165	4	173	68	25	3	96	1	29	15	45	0	40	24	64	378
% App. Total	2.3	95.4	2.3		70.8	26	3.1		2.2	64.4	33.3		0	62.5	37.5		
PHF	.500	.878	.500	.865	.850	.781	.750	.960	.250	.806	.536	.703	.000	.588	.750	.696	.945

Start Time	CSAH 57 (Sunfish Blvd.) Southbound				Alpine Drive Westbound				CSAH 57 (Sunfish Blvd.) Northbound				Alpine Drive Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 12:00 to 21:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	3	10	2	16	6	15	2	23	17	44	16	77	1	3	2	6	121
17:15	1	16	0	17	2	22	3	27	14	36	10	60	1	7	5	13	117
17:30	1	5	3	9	5	21	3	29	13	45	12	70	0	8	5	13	121
17:45	1	14	2	17	10	18	3	31	10	38	8	56	2	12	7	21	125
Total Volume	6	45	7	58	23	76	11	110	54	163	46	263	4	30	19	53	484
% App. Total	10.3	77.6	12.1		20.9	69.1	10		20.5	62	17.5		7.5	56.6	35.8		
PHF	.500	.703	.583	.853	.575	.864	.917	.887	.794	.906	.719	.854	.500	.625	.679	.631	.968

**ANOKA COUNTY HIGHWAY
PC-WARRANTS
TRAFFIC SIGNAL WARRANT ANALYSIS**

Study Name :
Study Date : 06/01/08
Page No. : 1

Signal Warrants - Summary

Major Street Approaches

Northbound: CSAH 57 (Sunfish blvd.)
Number of Lanes: 1
Approach Speed: 55
Total Approach Volume: 1,786

Southbound: CSAH 57 (Sunfish blvd.)
Number of Lanes: 1
Approach Speed: 55
Total Approach Volume: 991

Minor Street Approaches

Eastbound: Alpine Drive
Number of Lanes: 2

Total Approach Volume: 730

Westbound: Alpine Drive
Number of Lanes: 2

Total Approach Volume: 1,005

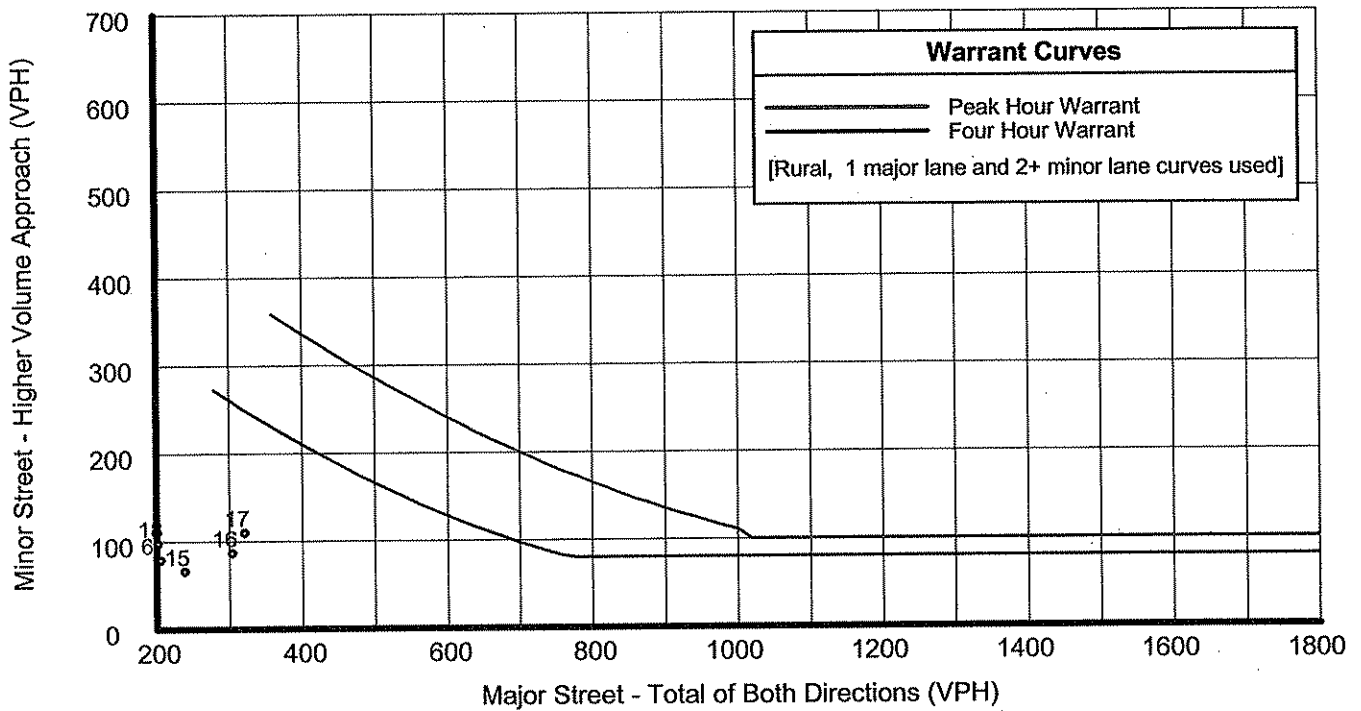
Warrant Summary (Rural values apply.)

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 Delay	Not Satisfied
Approach volumes on minor street don't exceed minimums for any hour. Delay data not evaluated.	
Warrant 3B - Peak Hour Volumes	Not Satisfied
Volumes do not exceed minimums for any hour.	
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

ANOKA COUNTY HIGHWAY PC-WARRANTS TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name :
Study Date : 06/04/08
Page No. : 2

Signal Warrants - Summary



Analysis of 8-Hour Volume Warrants:

Hour Begin	Major Total	Higher Minor Vol	Dir	War-1A			War-1B			War-1A&B		
				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	206	79	WB	350-No	140-No	---	525-No	70-Yes	Minor	420-No	112-No	---
07:00	182	98	WB	350-No	140-No	---	525-No	70-Yes	Minor	420-No	112-No	---
08:00	129	41	WB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
09:00	143	41	WB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
10:00	81	44	WB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
11:00	121	65	WB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
12:00	162	53	WB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
13:00	108	35	WB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
14:00	179	0	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
15:00	239	66	WB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
16:00	304	87	WB	350-No	140-No	---	525-No	70-Yes	Minor	420-No	112-No	---
17:00	321	110	WB	350-No	140-No	---	525-No	70-Yes	Minor	420-No	112-No	---
18:00	202	98	WB	350-No	140-No	---	525-No	70-Yes	Minor	420-No	112-No	---
19:00	155	75	EB	350-No	140-No	---	525-No	70-Yes	Minor	420-No	112-No	---
20:00	145	134	EB	350-No	140-No	---	525-No	70-Yes	Minor	420-No	112-Yes	Minor
21:00	100	39	WB	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	---

**ANOKA COUNTY HIGHWAY
PC-WARRANTS
TRAFFIC SIGNAL WARRANT ANALYSIS**

Study Name : TMC0811
Study Date : 06/16/08
Page No. : 1

Multi-Way Stop Warrant Report

Major Street Approaches

Northbound: CSAH 57 (Sunfish blvd.)

Total Approach Volume: 1,786
Approach Speed: 55

Southbound: CSAH 57 (Sunfish blvd.)

Total Approach Volume: 991
Approach Speed: 55

Minor Street Approaches

Eastbound: Alpine Drive

Total Approach Volume: 730

Westbound: Alpine Drive

Total Approach Volume: 1,005

Warrant Summary

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

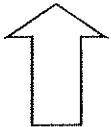
Criteria B - Crash Experience Not Evaluated

Criteria C - Minimum Volumes and Delays Not Satisfied
Delay data not evaluated
Required volumes reached for 1 hours, 8 are needed

Criteria D - 80% of Volumes, Delays, and Crashes Not Evaluated
Delay data not evaluated
Number of crashes (-1) is less than the minimum required (4).
Required volumes reached for 0 hours, 8 are needed

Analysis of 8 Hour Volume Warrants:

Time	Major Total	Minor Total	Crit C			Crit D		
			Major	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	206	117	210-No	140-No	No	240-No	160-No	No
07:00 - 08:00	182	172	210-No	140-Yes	Minor	240-No	160-Yes	Minor
08:00 - 09:00	129	81	210-No	140-No	No	240-No	160-No	No
09:00 - 10:00	143	75	210-No	140-No	No	240-No	160-No	No
10:00 - 11:00	81	70	210-No	140-No	No	240-No	160-No	No
11:00 - 12:00	121	94	210-No	140-No	No	240-No	160-No	No
12:00 - 13:00	162	95	210-No	140-No	No	240-No	160-No	No
13:00 - 14:00	108	65	210-No	140-No	No	240-No	160-No	No
14:00 - 15:00	179	0	210-No	140-No	No	240-No	160-No	No
15:00 - 16:00	239	111	210-Yes	140-No	Major	240-No	160-No	No
16:00 - 17:00	304	131	210-Yes	140-No	Major	240-Yes	160-No	Major
17:00 - 18:00	321	163	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
18:00 - 19:00	202	134	210-No	140-No	No	240-No	160-No	No
19:00 - 20:00	155	145	210-No	140-Yes	Minor	240-No	160-No	No
20:00 - 21:00	145	213	210-No	140-Yes	Minor	240-No	160-Yes	Minor
21:00 - 22:00	100	69	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



NORTH

COUNT LOCATION:

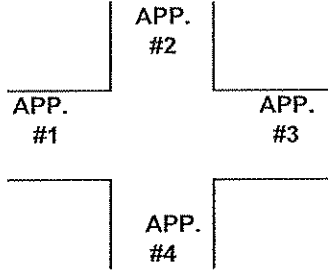
CSAH 57 (Sunfish blvd.)

DATE:

06/04/2008

Alpine Drive

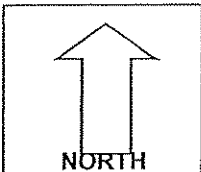
APP. #1 = Alpine Drive
APP. #2 = CSAH 57
APP. #3 = Alpine Drive
APP. #4 = CSAH 57



- 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				15 MIN TOT	HEAVY VEHICLES		
	APP. #1	APP. #2	APP. #3	APP. #4		TRUCKS	RV	BUS
6:00-6:15AM						1		
6:15-6:30						1		1
6:30-6:45						5		
6:45-7:00						4		1
HOURLY TOTAL						HOURLY TOTAL		13
7:00-7:15						1		3
7:15-7:30						3		4
7:30-7:45						1		4
7:45-8:00						2		
HOURLY TOTAL						HOURLY TOTAL		18
8:00-8:15						3		
8:15-8:30						3		2
8:30-8:45	1				1	4		3
8:45-9:00						2		2
HOURLY TOTAL					1	HOURLY TOTAL		19
9:00-9:15						6	1	4
9:15-9:30						2		1
9:30-9:45						3		
9:45-10:00						4		
HOURLY TOTAL						HOURLY TOTAL		21
10:00-10:15						1		
10:15-10:30						5		
10:30-10:45						5		
10:45-11:00						6		
HOURLY TOTAL						HOURLY TOTAL		17
11:00-11:15						11		
11:15-11:30						7		
11:30-11:45						3		
11:45-12:00			1		1	5		
HOURLY TOTAL					1	HOURLY TOTAL		26
12:00-12:15						5		
12:15-12:30				2		9		1
12:30-12:45				1	1	5		3
12:45-1:00						5		
HOURLY TOTAL					1	HOURLY TOTAL		28
1:00-1:15						4		
1:15-1:30						5		
1:30-1:45						2		
1:45-2:00			2		2	1		
HOURLY TOTAL					2	HOURLY TOTAL		12
TOTAL					5	TOTAL		154

1
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COUNT LOCATION:

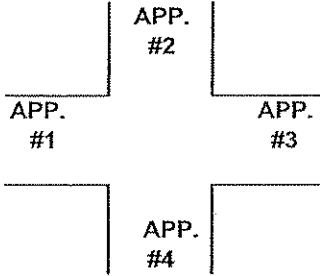
CSAH 57 (Sunfish blvd.)

DATE:

06/09/2008

Alpine Drive

APP. #1 = Alpine Drive
APP. #2 = CSAH 57
APP. #3 = Alpine Drive
APP. #4 = CSAH 57



- 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						4		
2:15-2:30						2		
2:30-2:45						1		
2:45-3:00						2		2
HOURLY TOTAL						HOURLY TOTAL		11
3:00-3:15						5		
3:15-3:30						3		1
3:30-3:45						3	1	1
3:45-4:00						2		9
HOURLY TOTAL						HOURLY TOTAL		25
4:00-4:15						3		5
4:15-4:30						4		3
4:30-4:45						1		
4:45-5:00						3		1
HOURLY TOTAL						HOURLY TOTAL		20
5:00-5:15						2		
5:15-5:30								
5:30-5:45						2		
5:45-6:00						3		
HOURLY TOTAL						HOURLY TOTAL		7
6:00-6:15								
6:15-6:30								
6:30-6:45						5		
6:45-7:00						3		
HOURLY TOTAL						HOURLY TOTAL		8
7:00-7:15						1		
7:15-7:30								
7:30-7:45								
7:45-8:00						1		
HOURLY TOTAL						HOURLY TOTAL		2
8:00-8:15								
8:15-8:30								
8:30-8:45								
8:45-9:00								
HOURLY TOTAL						HOURLY TOTAL		
9:00-9:15								
9:15-9:30								
9:30-9:45						1		
9:45-10:00								
HOURLY TOTAL						HOURLY TOTAL		1
				TOTAL			TOTAL	74

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