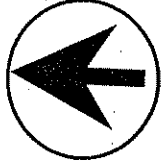


Date : 9/26/06

Count Number : TMC0632

Location : CSAH 83 (Armstrong Blvd.)

@ Sunwood Dr./146th Ave.



North

CSAH 83

CSAH 83

5115

#2

2612			
27	D	2070	M
515	T	515	H

2503

Sunwood Dr.

616	G	1435
12	H	
807	J	

#3

3037

1602

85

#1

209

124			
78	A	78	A
14	B	14	B
32	C	32	C

146th Ave.

1073	K	2974
1855	L	
46	M	

#4

2955

5929

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

Anoka County Highway Department
Traffic Volume and Turning
Movement Study

Anoka County Highway Department
 Traffic Engineering
 Traffic Volume and Turning Movement Stud

Weather: Warm and Cloudy
 Meter: DB-400
 Counted by: Josie/Terri

File Name : TMC0632
 Site Code : 06320101
 Start Date : 09/26/2006
 Page No : 2

Groups Printed- 1 - Unshifted

Start Time	CSAH 83 Southbound					Sunwood Dr. Westbound					CSAH 83 Northbound					146th Ave. Eastbound							
	Left	Thru	Right	Heavy	App. Total	Left	Thru	Right	Heavy	App. Total	Left	Thru	Right	Heavy	App. Total	Left	Thru	Right	Heavy	App. Total	Exclu. Total	Inclu. Total	Int. 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				
18:00	17	69	0	1	86	21	0	30	1	51	0	70	26	4	96	1	0	2	0	3	6	236	242
18:15	10	41	1	1	52	14	0	20	1	34	0	61	31	3	92	0	0	0	0	0	5	178	183
18:30	11	34	1	2	46	13	0	18	0	31	0	56	22	0	78	1	0	0	0	1	2	156	158
18:45	14	27	1	2	42	12	0	19	0	31	1	53	18	1	72	0	0	0	0	0	3	145	148
Total	52	171	3	6	226	60	0	87	2	147	1	240	97	8	338	2	0	2	0	4	16	715	731
Grand Total	515	2070	27	118	2612	807	12	616	74	1435	46	1855	1073	152	2974	32	14	78	14	124	358	7145	7503
Apprch %	19.7	79.2	1.0			56.2	0.8	42.9			1.5	62.4	36.1			25.8	11.3	62.9					
Total %	7.2	29.0	0.4		36.6	11.3	0.2	8.6		20.1	0.6	26.0	15.0		41.6	0.4	0.2	1.1		1.7	4.8	95.2	

ANOKA COUNTY HIGHWAY
PC-WARRANTS
TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name : **TMC0632**
 Study Date : **10/13/06**
 Page No. : **1**

Signal Warrants - Summary

Major Street Approaches

Northbound: CSAH 83
 Number of Lanes: 2
 Approach Speed: 55
 Total Approach Volume: **2,974**

Southbound: CSAH 83
 Number of Lanes: 2
 Approach Speed: 55
 Total Approach Volume: **2,612**

Minor Street Approaches

Eastbound: 146th Ave.
 Number of Lanes: 2
 Total Approach Volume: **124**

Westbound: Sunwood Dr.
 Number of Lanes: 2
 Total Approach Volume: **1,435**

Warrant Summary (Rural values apply.)

- Warrant 1 - Eight Hour Vehicular Volumes** Not Satisfied
 - Warrant 1A - Minimum Vehicular Volume** Not Satisfied
 Required volumes reached for 4 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 3 hours, 8 are needed

- Warrant 2 - Four Hour Volumes** Not Satisfied
 Number of hours (1) volumes exceed minimum < minimum required (4).

- Warrant 3 - Peak Hour** Satisfied
 - Warrant 3A - Peak Hour Volumes** Not Satisfied
 Volumes do not exceed minimums for any hour.
 - Warrant 3B - Peak Hour Delay** Satisfied
 Number of hours (5) volumes exceed minimum >= required (1). Delay data not evaluated.

- Warrant 4 - Pedestrian Volumes** Not Evaluated

- Warrant 5 - School Crossing** Not Evaluated

- Warrant 6 - Coordinated Signal System** Not Evaluated

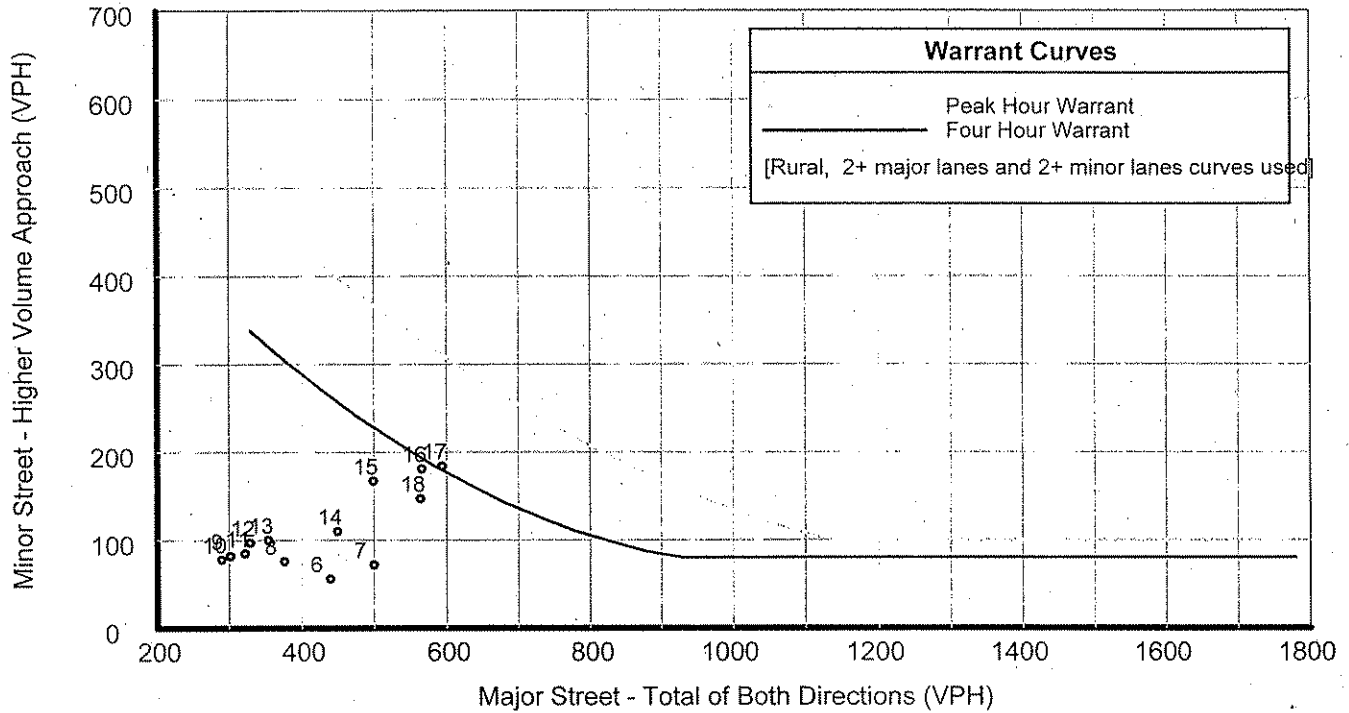
- Warrant 7 - Crash Experience** Not Evaluated

- Warrant 8 - Roadway Network** Not Evaluated

ANOKA COUNTY HIGHWAY PC-WARRANTS TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name : TMC0632
Study Date : 10/13/06
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	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
01:00	0	0	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
02:00	0	0	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
03:00	0	0	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
04:00	0	0	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
05:00	0	0	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
06:00	440	56	WB	420-Yes	140-No	Major	630-No	70-No	---	504-No	112-No	---
07:00	500	72	WB	420-Yes	140-No	Major	630-No	70-Yes	Minor	504-No	112-No	---
08:00	376	76	WB	420-No	140-No	---	630-No	70-Yes	Minor	504-No	112-No	---
09:00	302	82	WB	420-No	140-No	---	630-No	70-Yes	Minor	504-No	112-No	---
10:00	290	78	WB	420-No	140-No	---	630-No	70-Yes	Minor	504-No	112-No	---
11:00	322	85	WB	420-No	140-No	---	630-No	70-Yes	Minor	504-No	112-No	---
12:00	329	97	WB	420-No	140-No	---	630-No	70-Yes	Minor	504-No	112-No	---
13:00	354	100	WB	420-No	140-No	---	630-No	70-Yes	Minor	504-No	112-No	---
14:00	450	110	WB	420-Yes	140-No	Major	630-No	70-Yes	Minor	504-No	112-No	---
15:00	499	167	WB	420-Yes	140-Yes	Both	630-No	70-Yes	Minor	504-No	112-Yes	Minor
16:00	566	181	WB	420-Yes	140-Yes	Both	630-No	70-Yes	Minor	504-Yes	112-Yes	Both
17:00	594	184	WB	420-Yes	140-Yes	Both	630-No	70-Yes	Minor	504-Yes	112-Yes	Both
18:00	564	147	WB	420-Yes	140-Yes	Both	630-No	70-Yes	Minor	504-Yes	112-Yes	Both
19:00	0	0	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
20:00	0	0	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
21:00	0	0	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
22:00	0	0	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
23:00	0	0	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---

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

Study Name : TMC0632
Study Date : 10/13/06

Multi-Way Stop Warrant Report

Major Street Approaches

Northbound: CSAH 83
Total Approach Volume: 2,974
Approach Speed: 55

Southbound: CSAH 83
Total Approach Volume: 2,612
Approach Speed: 55

Minor Street Approaches

Eastbound: 146th Ave.
Total Approach Volume: 124

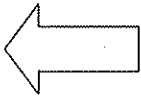
Westbound: Sunwood Dr.
Total Approach Volume: 1,435

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 4 hours, 8 are needed
- Criteria D - 80% of Volumes, Delays, and Crashes** Not Evaluated
Delay data not evaluated
Required volumes reached for 3 hours, 8 are needed

Analysis of 8-Hour Volume Warrants:

Time	Major Crit	Minor	Crit C			Crit D		
	Total	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	440	60	210-Yes	140-No	Major	240-Yes	160-No	Major
07:00 - 08:00	500	77	210-Yes	140-No	Major	240-Yes	160-No	Major
08:00 - 09:00	376	80	210-Yes	140-No	Major	240-Yes	160-No	Major
09:00 - 10:00	302	86	210-Yes	140-No	Major	240-Yes	160-No	Major
10:00 - 11:00	290	83	210-Yes	140-No	Major	240-Yes	160-No	Major
11:00 - 12:00	322	95	210-Yes	140-No	Major	240-Yes	160-No	Major
12:00 - 13:00	329	106	210-Yes	140-No	Major	240-Yes	160-No	Major
13:00 - 14:00	354	109	210-Yes	140-No	Major	240-Yes	160-No	Major
14:00 - 15:00	450	122	210-Yes	140-No	Major	240-Yes	160-No	Major
15:00 - 16:00	499	171	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
16:00 - 17:00	566	208	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
17:00 - 18:00	594	211	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
18:00 - 19:00	564	151	210-Yes	140-Yes	Both	240-Yes	160-No	Major
19:00 - 20:00	0	0	210-No	140-No	No	240-No	160-No	No
20:00 - 21:00	0	0	210-No	140-No	No	240-No	160-No	No
21:00 - 22:00	0	0	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 83 (Armstrong Blvd.) @

DATE:

09/26/2006

Sunwood Dr./146th Ave.

NORTH

APP. #1 = CSAH 83
APP. #2 = Sunwood Dr.
APP. #3 = CSAH 83
APP. #4 = 146th Ave.

APP. #2

APP. #1

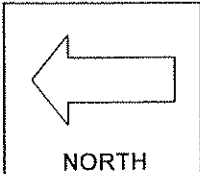
APP. #3

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.

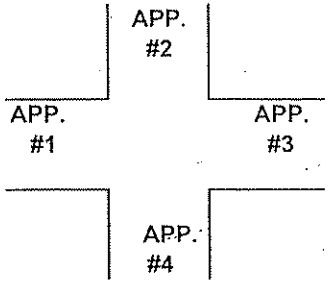
TIME	PEDESTRIANS					HEAVY VEHICLES		
	APP. #1	APP. #2	APP. #3	APP. #4	15 MIN TOT	TRUCKS	RV	BUS
6:00-6:15AM		1			1	5		1
6:15-6:30						5		
6:30-6:45						5		1
6:45-7:00						9		
HOURLY TOTAL					1	HOURLY TOTAL		26
7:00-7:15						5		1
7:15-7:30						6		
7:30-7:45						4		1
7:45-8:00						3		
HOURLY TOTAL						HOURLY TOTAL		20
8:00-8:15						7		
8:15-8:30						3		4
8:30-8:45						10		2
8:45-9:00						7		2
HOURLY TOTAL						HOURLY TOTAL		35
9:00-9:15						11		
9:15-9:30						8		
9:30-9:45						10	1	
9:45-10:00						11		
HOURLY TOTAL						HOURLY TOTAL		41
10:00-10:15						10	1	
10:15-10:30						4	1	
10:30-10:45						15		
10:45-11:00						9		
HOURLY TOTAL						HOURLY TOTAL		40
11:00-11:15						10		
11:15-11:30						11		
11:30-11:45						4		2
11:45-12:00						8		
HOURLY TOTAL						HOURLY TOTAL		35
12:00-12:15						9		
12:15-12:30						4		
12:30-12:45						10		
12:45-1:00						4		
HOURLY TOTAL						HOURLY TOTAL		27
1:00-1:15						3		
1:15-1:30						6		
1:30-1:45						3		1
1:45-2:00						11		
HOURLY TOTAL						HOURLY TOTAL		24
					TOTAL	1		
							TOTAL	248

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COUNT LOCATION: CSAH 83 (Armstrong Blvd.) @ Sunwood Dr./146th Ave. , DATE: 09/28/2006

NORTH
APP. #1 = CSAH 83
APP. #2 = Sunwood Dr.
APP. #3 = CSAH 83
APP. #4 = 146th Ave.



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						7		
2:15-2:30						3		1
2:30-2:45						6		2
2:45-3:00						8		1
HOURLY TOTAL						HOURLY TOTAL		28
3:00-3:15						3		1
3:15-3:30						9		1
3:30-3:45						4		2
3:45-4:00						8		
HOURLY TOTAL						HOURLY TOTAL		28
4:00-4:15						8		
4:15-4:30						5		1
4:30-4:45						5		2
4:45-5:00						3		1
HOURLY TOTAL						HOURLY TOTAL		25
5:00-5:15				1	1		1	
5:15-5:30						4	1	
5:30-5:45						1		
5:45-6:00						5		
HOURLY TOTAL				1		HOURLY TOTAL		12
6:00-6:15						5		1
6:15-6:30						4		1
6:30-6:45						2		
6:45-7:00						2		1
HOURLY TOTAL						HOURLY TOTAL		16
				TOTAL	2		TOTAL	357

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