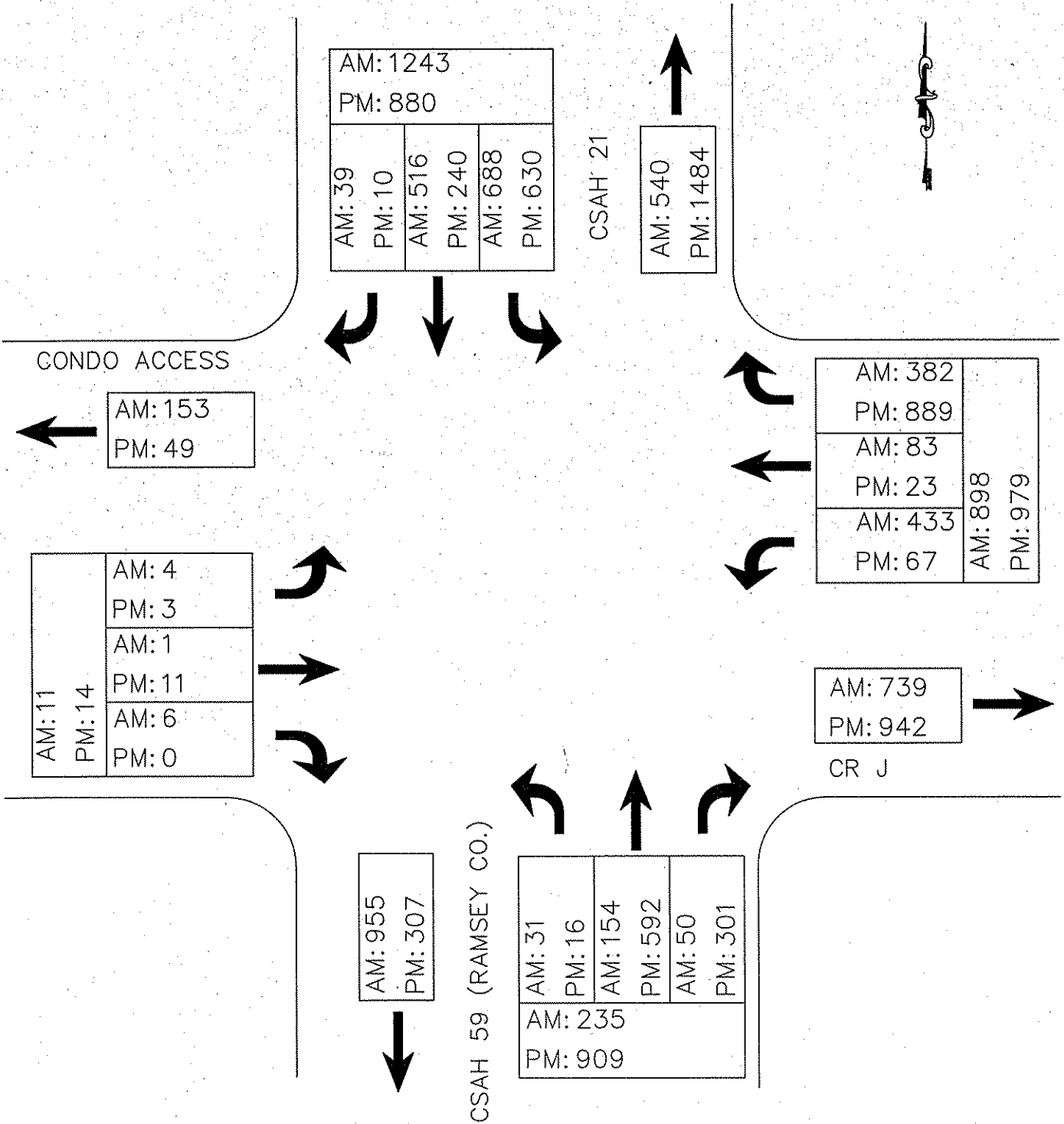


ANOKA COUNTY HIGHWAY DEPARTMENT

PEAK AM/PM TURNING MOVEMENT DIAGRAM

Location: C. S. A. H. 21 (CENTERVILLE RD.) @ C. R. J (RAMSEY COUNTY)



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

File Name : TMC0540
Site Code : 05400101
Start Date : 11/03/2005
Page No : 1

Weather: Cloudy and Mild
Counter: DB-400
Counted by: Josie/Terri

Groups Printed- Unshifted

Start Time	CSAH 21 Southbound					CR J (Ramsey Co.) Westbound					CSAH 59 (Ramsey Co.) Northbound					Condo (Tria) Access 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	71	32	1	1	104	14	5	18	1	37	2	11	8	0	21	0	0	0	0	0	0	2	162	164	
06:15	94	60	4	3	158	34	12	23	0	69	4	7	3	1	14	0	0	0	0	0	0	4	241	245	
06:30	67	73	17	5	157	72	21	28	1	121	5	14	4	1	23	0	1	0	0	0	1	7	302	309	
06:45	76	61	9	6	146	69	34	54	2	157	11	24	6	1	41	1	0	0	0	0	1	9	345	354	
Total	308	226	31	15	565	189	72	123	4	384	22	56	21	3	99	1	1	0	0	0	2	22	1050	1072	
07:00	94	68	6	7	168	69	4	53	2	126	2	19	8	0	29	0	0	6	0	6	9	329	338		
07:15	101	66	0	4	167	72	1	74	4	147	4	27	11	2	42	0	0	0	0	0	0	10	356	366	
07:30	93	80	0	3	173	61	3	73	7	137	1	30	2	1	33	0	0	0	0	0	0	11	343	354	
07:45	92	76	2	8	170	42	3	59	7	104	2	22	8	3	32	3	0	0	1	3	3	19	309	328	
Total	380	290	8	22	678	244	11	259	20	514	9	98	29	6	136	3	0	6	1	9	49	1337	1386		
*** break ***																									
16:00	62	21	1	4	84	7	2	121	6	130	1	80	35	3	116	0	1	0	0	1	13	331	344		
16:15	82	24	1	3	107	8	2	100	5	110	5	69	50	3	124	1	1	0	0	2	11	343	354		
16:30	80	38	1	2	119	5	0	121	3	126	1	73	50	2	124	1	0	0	1	1	8	370	378		
16:45	82	37	0	1	119	10	0	126	3	136	0	91	35	1	126	0	2	0	1	2	6	383	389		
Total	306	120	3	10	429	30	4	468	17	502	7	313	170	9	490	2	4	0	2	6	38	1427	1465		
17:00	97	31	0	3	128	7	2	111	1	120	3	71	36	3	110	0	2	0	0	2	7	360	367		
17:15	79	29	0	3	108	16	6	102	4	124	1	67	36	2	104	0	0	0	0	0	9	336	345		
17:30	76	29	1	0	106	9	5	118	4	132	1	71	31	3	103	1	2	0	0	3	7	344	351		
17:45	72	31	6	0	109	5	6	90	3	101	4	70	28	2	102	0	3	0	0	3	5	315	320		
Total	324	120	7	6	451	37	19	421	12	477	9	279	131	10	419	1	7	0	0	8	28	1355	1383		
Grand Total	131	756	49	53	2123	500	106	127	53	1877	47	746	351	28	1144	7	12	6	3	25	137	5169	5306		
Apprch %	62.1	35.6	2.3			26.6	5.6	67.7			4.1	65.2	30.7			28.0	48.0	24.0							
Total %	25.5	14.6	0.9		41.1	9.7	2.1	24.6		36.3	0.9	14.4	6.8		22.1	0.1	0.2	0.1		0.5	2.6	97.4			

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

Study Name : TMC0540
Study Date : 11/18/05
Page No. : 1

Signal Warrants - Summary

Major Street Approaches

Northbound: CSAH 59 (Ramsey Co.)

Number of Lanes: 1
Approach Speed: 50
Total Approach Volume: 1,144

Southbound: CSAH 21

Number of Lanes: 1
Approach Speed: 50
Total Approach Volume: 2,123

Minor Street Approaches

Eastbound: Condo (Tria) Access

Number of Lanes: 1

Total Approach Volume: 25

Westbound: CR J (Ramsey Co.)

Number of Lanes: 2

Total Approach Volume: 1,877

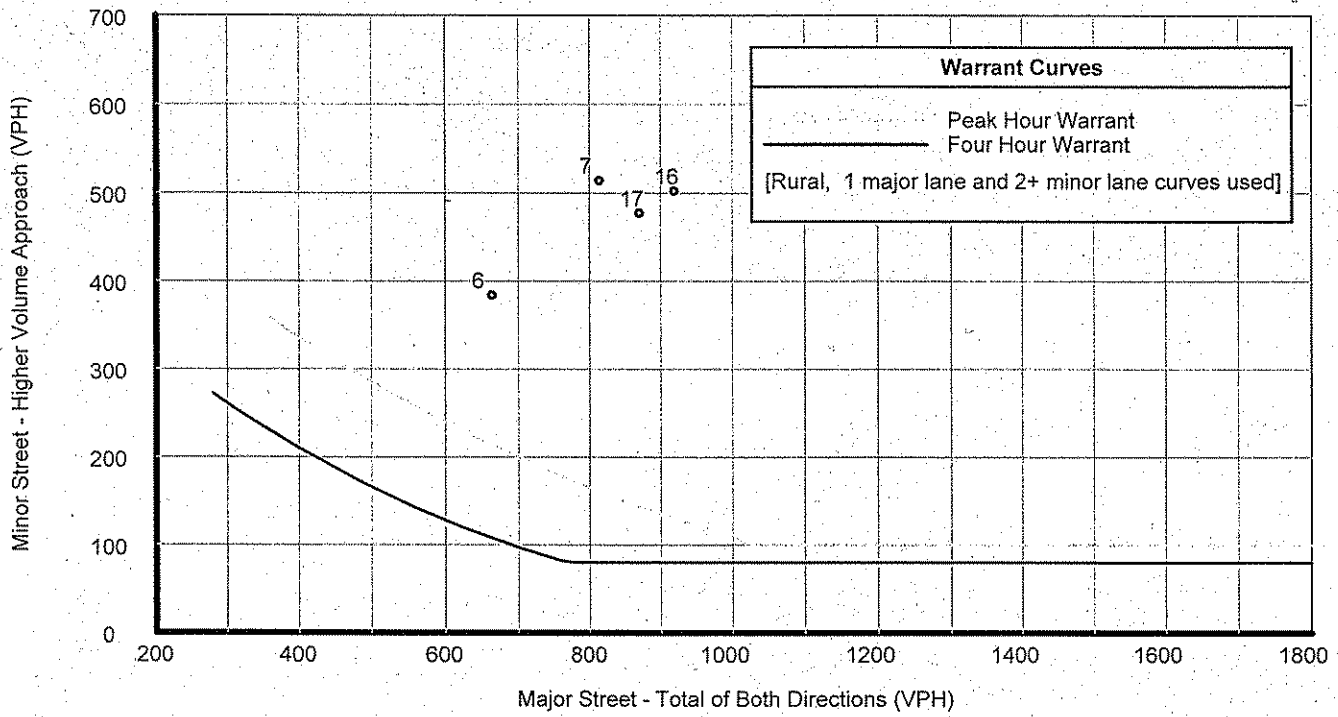
Warrant Summary (Rural values apply.)

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 4 hours, 8 are needed	
Warrant 1 A&B - Combination of Warrants Not Satisfied	
Required volumes reached for 4 hours, 8 are needed	
Warrant 2 - Four Hour Volumes	Satisfied
Number of hours (4) volumes exceed minimum >= minimum required (4).	
Warrant 3 - Peak Hour	Satisfied
Warrant 3A - Peak Hour Delay Satisfied	
Number of hours (13) volumes exceed minimum >= required (1). Delay data not evaluated.	
Warrant 3B - Peak Hour Volumes Satisfied	
Volumes exceed minimums for at least one 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 : TMC0540
Study Date : 11/18/05
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	664	384	WB	350-Yes	140-Yes	Both	525-Yes	70-Yes	Both	420-Yes	112-Yes	Both
07:00	814	514	WB	350-Yes	140-Yes	Both	525-Yes	70-Yes	Both	420-Yes	112-Yes	Both
08:00	0	0	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
09:00	0	0	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
10:00	0	0	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
11:00	0	0	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
12:00	0	0	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
13:00	0	0	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
14:00	0	0	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
15:00	0	0	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
16:00	919	502	WB	350-Yes	140-Yes	Both	525-Yes	70-Yes	Both	420-Yes	112-Yes	Both
17:00	870	477	WB	350-Yes	140-Yes	Both	525-Yes	70-Yes	Both	420-Yes	112-Yes	Both
18:00	0	0	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
19:00	0	0	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
20:00	0	0	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
21:00	0	0	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	---

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

Study Name : TMC0540
Study Date : 11/18/05

Multi-Way Stop Warrant Report

Major Street Approaches

Northbound: CSAH 59 (Ramsey Co.)

Total Approach Volume: 1,144
Approach Speed: 50

Southbound: CSAH 21

Total Approach Volume: 2,123
Approach Speed: 50

Minor Street Approaches

Eastbound: Condo (Tria) Access

Total Approach Volume: 25

Westbound: CR J (Ramsey Co.)

Total Approach Volume: 1,877

Warrant Summary

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

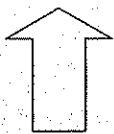
Criteria B - Crash Experience Not Evaluated

Criteria C - Minimum Volumes and Delays Not Satisfied
Delay data not evaluated
Required volumes reached for 4 hours, 8 are needed

Criteria D - 80% of Volumes, Delays, and Crashes Not Evaluated
Delay data not evaluated
Required volumes reached for 4 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	664	386	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
07:00 - 08:00	814	523	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
08:00 - 09:00	0	0	210-No	140-No	No	240-No	160-No	No
09:00 - 10:00	0	0	210-No	140-No	No	240-No	160-No	No
10:00 - 11:00	0	0	210-No	140-No	No	240-No	160-No	No
11:00 - 12:00	0	0	210-No	140-No	No	240-No	160-No	No
12:00 - 13:00	0	0	210-No	140-No	No	240-No	160-No	No
13:00 - 14:00	0	0	210-No	140-No	No	240-No	160-No	No
14:00 - 15:00	0	0	210-No	140-No	No	240-No	160-No	No
15:00 - 16:00	0	0	210-No	140-No	No	240-No	160-No	No
16:00 - 17:00	919	508	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
17:00 - 18:00	870	485	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
18:00 - 19:00	0	0	210-No	140-No	No	240-No	160-No	No
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



NORTH

COUNT LOCATION:

CSAH 21 (Centerville Rd.) @

DATE:

11/03/2005

CR J (Ramsey County)

APP. #1 = Condo Access

APP.#2 = CSAH 21

APP. #3= CR J (Ramsey)

APP.#4 = CSAH 59 (Ram)

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						2		
6:15-6:30						1		3
6:30-6:45						5		2
6:45-7:00						5		4
HOURLY TOTAL						HOURLY TOTAL		22
7:00-7:15						7		2
7:15-7:30						8		1
7:30-7:45						7		4
7:45-8:00						15		4
HOURLY TOTAL						HOURLY TOTAL		48
					TOTAL		TOTAL	70

4:00-4:15						10		3
4:15-4:30	2				2	6		5
4:30-4:45						6		3
4:45-5:00						5		
HOURLY TOTAL					2	HOURLY TOTAL		38
5:00-5:15						5		2
5:15-5:30						9		
5:30-5:45						6		
5:45-6:00			1		1	5		
HOURLY TOTAL					1	HOURLY TOTAL		27
					TOTAL	3	TOTAL	65