

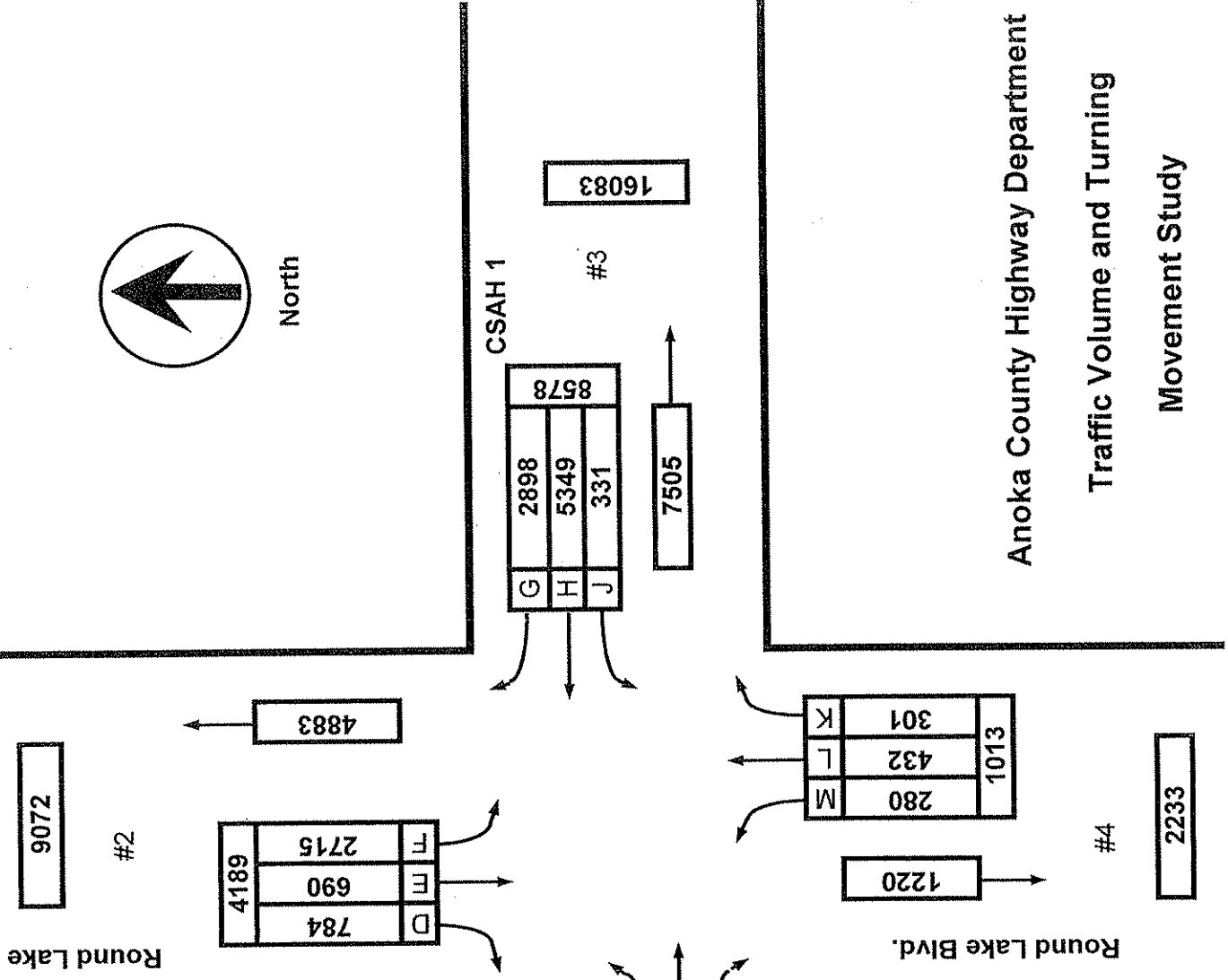
Date : 07/14/10

Count Number : TMC1023

Location : CSAH 1 (Coon Rapids Blvd.)

@ Round Lake Blvd.

Collection Period : 6:00AM - 10:00PM



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

Anoka County Highway Department
 Traffic Volume and Turning
 Movement Study

Date : 07/15/10

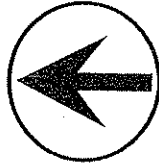
Count Number : TMC1023

Location : CSAH 1 (Coon Rapids Blvd.)

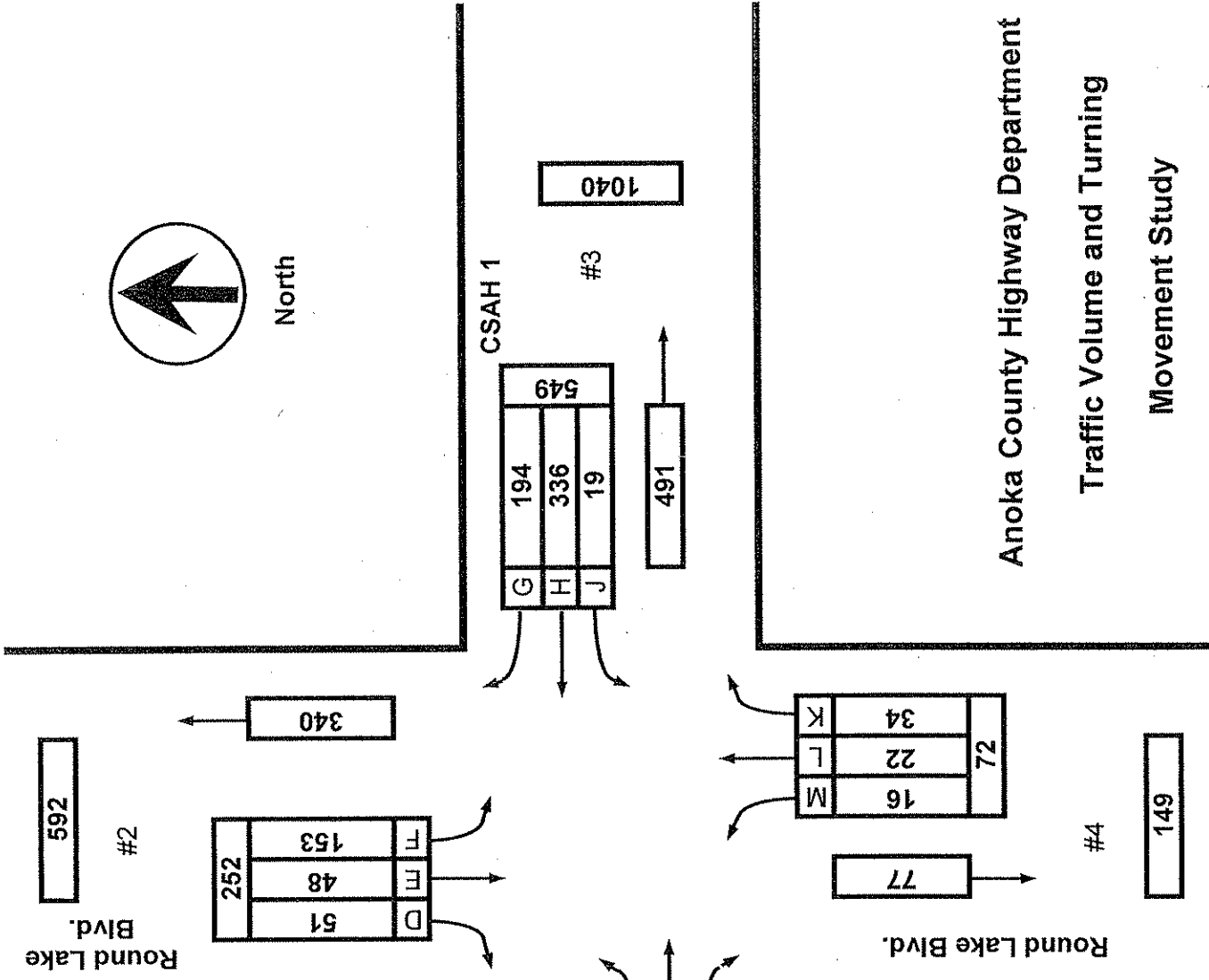
@ Round Lake Blvd.

Collection Period : AM PEAK

Hour : 11:00 AM-12:00 PM



North



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

Anoka County Highway Department
 Traffic Volume and Turning
 Movement Study

Date : 07/14/10

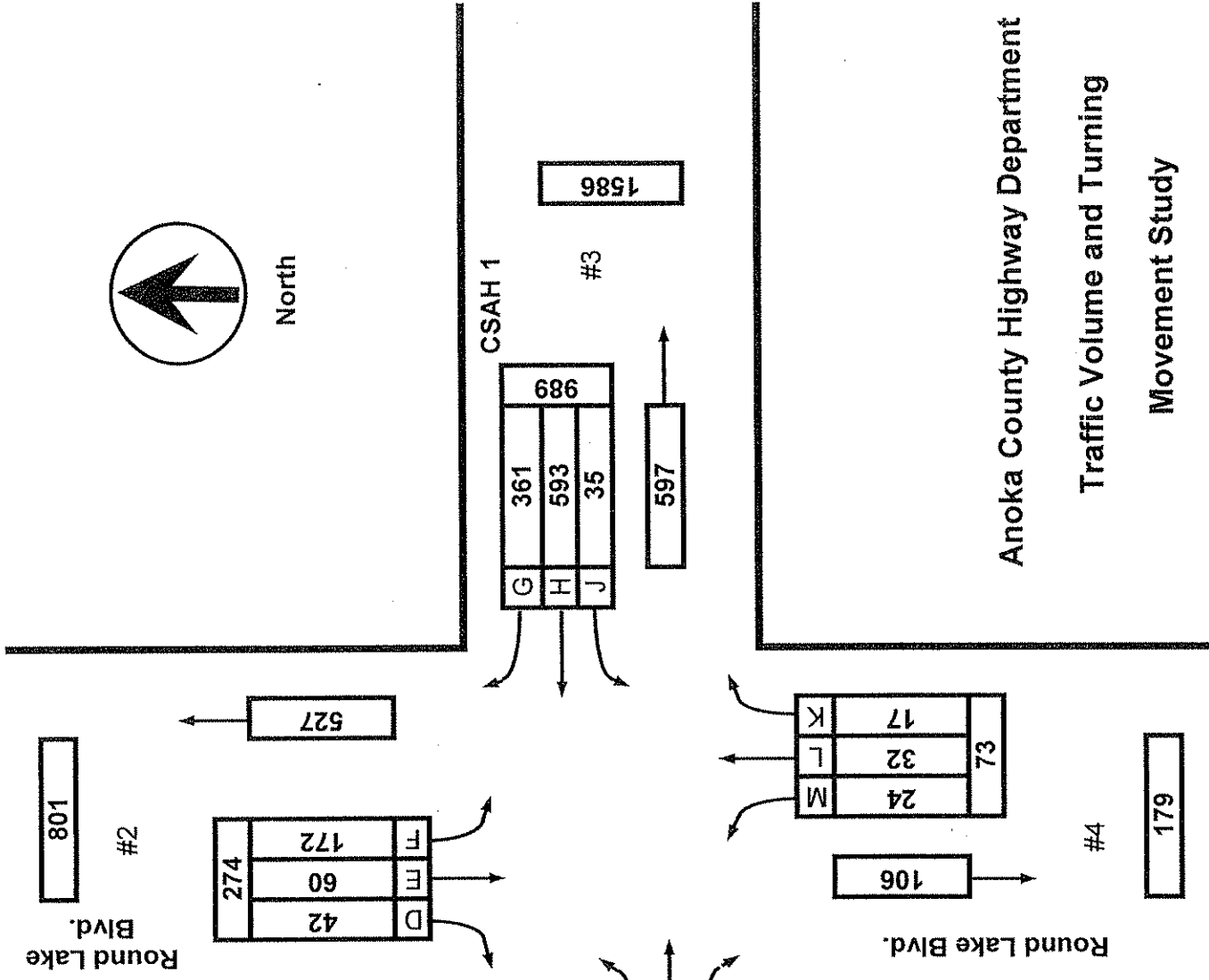
Count Number : TMC1023

Location : CSAH 1 (Coon Rapids Blvd.)

@ Round Lake Blvd.

Collection Period : PM PEAK

Hour : 4:15-5:15 PM



	EXISTING LANES OF APPROACH			TOTAL
	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	
#1	1	1	2	4
#2	0	1	1	2
#3	1	1	2	4
#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 : TMC1023
Site Code : 10230201
Start Date : 07/15/2010
Page No : 2

Weather: Warm/Rain
Counter: DB-400
Counted by: Andy/Brett

Groups Printed- Unshifted - Bank 1

Start Time	Round Lake Blvd. Southbound					CSAH 1 (Coon Rapids Blvd.) Westbound					Round Lake Blvd. Northbound					CSAH 1 (Coon Rapids Blvd.) 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			
18:00	53	4	5	1	62	3	98	84	2	185	3	5	2	0	10	18	63	2	1	83	4	340	344
18:15	53	8	6	0	67	4	91	50	2	145	3	9	2	0	14	21	60	2	2	83	4	309	313
18:30	39	7	7	0	53	3	87	45	2	135	2	2	4	0	8	16	40	2	0	58	2	254	256
18:45	28	7	12	0	47	3	85	40	0	128	3	7	6	0	16	21	53	2	0	76	0	267	267
Total	173	26	30	1	229	13	361	219	6	593	11	23	14	0	48	76	216	8	3	300	10	1170	1180
19:00	33	22	10	0	65	4	66	44	1	114	0	3	3	0	6	23	56	2	3	81	4	266	270
19:15	33	12	5	1	50	2	43	44	2	89	1	2	3	0	6	15	32	3	0	50	3	195	198
19:30	29	8	2	0	39	1	45	35	1	81	3	5	3	0	11	14	42	1	0	57	1	188	189
19:45	32	8	11	0	51	6	45	43	0	94	2	2	0	0	4	23	58	6	1	87	1	236	237
Total	127	50	28	1	205	13	199	166	4	378	6	12	9	0	27	75	188	12	4	275	9	885	894
20:00	29	8	5	0	42	0	56	42	0	98	1	5	2	0	8	26	47	3	1	76	1	224	225
20:15	17	6	5	0	28	1	39	29	1	69	1	5	1	0	7	13	51	2	0	66	1	170	171
20:30	23	8	5	0	36	3	48	34	2	85	0	3	2	0	5	13	37	2	0	52	2	178	180
20:45	31	9	5	0	45	5	73	36	0	114	1	2	1	0	4	14	45	2	2	61	2	224	226
Total	100	31	20	0	151	9	216	141	3	366	3	15	6	0	24	66	180	9	3	255	6	796	802
21:00	40	1	4	1	45	4	54	48	1	106	2	2	6	0	10	8	37	1	1	46	3	207	210
21:15	31	5	10	0	46	3	44	44	0	91	6	3	5	0	14	9	46	1	0	56	0	207	207
21:30	31	1	5	0	37	3	46	41	0	90	8	2	2	0	12	16	45	0	0	61	0	200	200
Grand Total	2715	690	784	64	4189	331	5349	2898	203	8578	280	432	301	13	1013	1553	4489	199	129	6241	409	20021	20430
Apprch %	64.8	16.5	18.7			3.9	62.4	33.8			27.6	42.6	29.7			24.9	71.9	3.2					
Total %	13.6	3.4	3.9		20.9	1.7	26.7	14.5		42.8	1.4	2.2	1.5		5.1	7.8	22.4	1		31.2	2	98	
Unshifted	2715	690	784		4253	331	5349	2898		8781	280	432	301		1026	1553	4489	199		6370	0	0	20430
% 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	Round Lake Blvd. Southbound				CSAH 1 (Coon Rapids Blvd.) Westbound				Round Lake Blvd. Northbound				CSAH 1 (Coon Rapids Blvd.) Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
11:00	38	10	17	65	3	84	46	133	3	5	9	17	28	66	2	96	311
11:15	34	11	6	51	3	75	50	128	3	1	7	11	21	90	4	115	305
11:30	35	18	18	71	8	92	63	163	7	7	10	24	33	72	2	107	365
11:45	46	9	10	65	5	85	35	125	3	9	8	20	42	76	2	120	330
Total Volume	153	48	51	252	19	336	194	549	16	22	34	72	124	304	10	438	1311
% App. Total	60.7	19	20.2		3.5	61.2	35.3		22.2	30.6	47.2		28.3	69.4	2.3		
PHF	.832	.667	.708	.887	.594	.913	.770	.842	.571	.611	.850	.750	.738	.844	.625	.913	.898

Start Time	Round Lake Blvd. Southbound				CSAH 1 (Coon Rapids Blvd.) Westbound				Round Lake Blvd. Northbound				CSAH 1 (Coon Rapids Blvd.) Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
16:15	43	38	18	99	11	163	99	273	5	9	2	16	34	107	3	144	532
16:30	43	10	8	61	7	152	73	232	6	7	4	17	28	89	1	118	428
16:45	43	11	6	60	2	131	76	209	9	7	8	24	24	109	5	138	431
17:00	43	1	10	54	15	147	113	275	4	9	3	16	48	103	2	153	498
Total Volume	172	60	42	274	35	593	361	989	24	32	17	73	134	408	11	553	1889
% App. Total	62.8	21.9	15.3		3.5	60	36.5		32.9	43.8	23.3		24.2	73.8	2		
PHF	1.000	.395	.583	.692	.583	.910	.799	.899	.667	.889	.531	.760	.698	.936	.550	.904	.888

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

Study Name : TMC1023
Study Date : 07/15/10
Page No. : 1

Signal Warrants - Summary

Major Street Approaches

Eastbound: CSAH 1 (Coon Rapids Blvd.)

Number of Lanes: 2
Approach Speed: 50
Total Approach Volume: 6,241

Westbound: CSAH 1 (Coon Rapids Blvd.)

Number of Lanes: 2
Approach Speed: 50
Total Approach Volume: 8,578

Minor Street Approaches

Northbound: Round Lake Blvd.

Number of Lanes: 2

Total Approach Volume: 1,013

Southbound: Round Lake Blvd.

Number of Lanes: 2

Total Approach Volume: 4,189

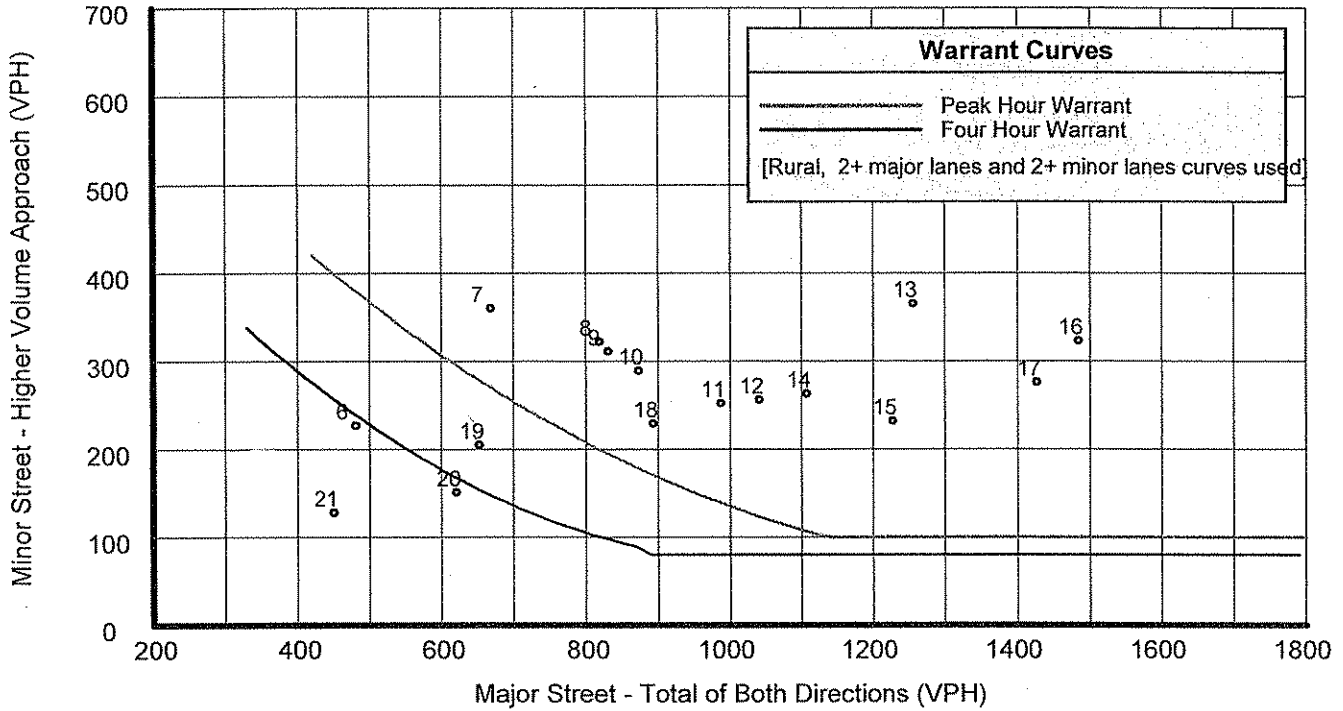
Warrant Summary (Rural values apply.)

Warrant 1 - Eight Hour Vehicular Volumes	Satisfied
Warrant 1A - Minimum Vehicular Volume	Satisfied
Required volumes reached for 15 hours, 8 are needed	
Warrant 1B - Interruption of Continuous Traffic	Satisfied
Required volumes reached for 13 hours, 8 are needed	
Warrant 1 A&B - Combination of Warrants	Satisfied
Required volumes reached for 14 hours, 8 are needed	
Warrant 2 - Four Hour Volumes	Satisfied
Number of hours (13) volumes exceed minimum >= minimum required (4).	
Warrant 3 - Peak Hour	Satisfied
Warrant 3A - Peak Hour Delay	Satisfied
Number of hours (57) 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 : TMC1023
Study Date : 07/15/10
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	NB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
01:00	0	0	NB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
02:00	0	0	NB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
03:00	0	0	NB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
04:00	0	0	NB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
05:00	0	0	NB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
06:00	481	227	SB	420-Yes	140-Yes	Both	630-No	70-Yes	Minor	504-No	112-Yes	Minor
07:00	669	360	SB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
08:00	819	322	SB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
09:00	831	311	SB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
10:00	873	289	SB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
11:00	987	252	SB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
12:00	1,041	256	SB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
13:00	1,256	365	SB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
14:00	1,107	263	SB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
15:00	1,227	232	SB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
16:00	1,484	323	SB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
17:00	1,427	276	SB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
18:00	893	229	SB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
19:00	653	205	SB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
20:00	621	151	SB	420-Yes	140-Yes	Both	630-No	70-Yes	Minor	504-Yes	112-Yes	Both
21:00	450	128	SB	420-Yes	140-No	Major	630-No	70-Yes	Minor	504-No	112-Yes	Minor
22:00	0	0	NB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
23:00	0	0	NB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---

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

Study Name : TMC1023
Study Date : 07/15/10
Page No. : 1

Multi-Way Stop Warrant Report

Major Street Approaches

Eastbound: CSAH 1 (Coon Rapids Blvd.)
Total Approach Volume: 6,241
Approach Speed: 50

Westbound: CSAH 1 (Coon Rapids Blvd.)
Total Approach Volume: 8,578
Approach Speed: 50

Minor Street Approaches

Northbound: Round Lake Blvd.
Total Approach Volume: 1,013

Southbound: Round Lake Blvd.
Total Approach Volume: 4,189

Warrant Summary

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

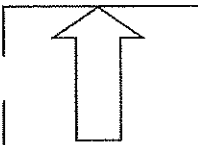
Criteria B - Crash Experience Not Evaluated

Criteria C - Minimum Volumes and Delays Satisfied
Delay data not evaluated
Required volumes reached for 16 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 15 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?
05:45 - 06:45	335	163	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
06:45 - 07:45	630	391	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
07:45 - 08:45	807	401	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
08:45 - 09:45	779	372	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
09:45 - 10:45	902	393	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
10:45 - 11:45	962	347	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
11:45 - 12:45	1,033	310	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
12:45 - 13:45	1,006	439	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
13:45 - 14:45	1,321	420	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
14:45 - 15:45	1,190	286	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
15:45 - 16:45	1,463	415	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
16:45 - 17:45	1,475	326	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
17:45 - 18:45	988	305	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
18:45 - 19:45	676	240	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
19:45 - 20:45	627	181	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
20:45 - 21:45	625	213	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
00:00 - 01:00	0	0	210-No	140-No	No	240-No	160-No	No
00:15 - 01:15	0	0	210-No	140-No	No	240-No	160-No	No
00:30 - 01:30	0	0	210-No	140-No	No	240-No	160-No	No
00:45 - 01:45	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
01:15 - 02:15	0	0	210-No	140-No	No	240-No	160-No	No
01:30 - 02:30	0	0	210-No	140-No	No	240-No	160-No	No
01:45 - 02:45	0	0	210-No	140-No	No	240-No	160-No	No



NORTH

APP. #1 = CSAH 1
 APP. #2 = Round Lake Blvd.
 APP. #3 = CSAH 1
 APP. #4 = Round Lake Blvd.

COUNT LOCATION:

CSAH 1 (Coon Rapids Blvd.)

DATE:

07/15/2010

@ Round Lake Blvd.

APP. #2

APP. #1

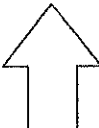
APP. #3

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		1
6:15-6:30						1		
6:30-6:45						2		4
6:45-7:00						3		2
HOURLY TOTAL						HOURLY TOTAL		15
7:00-7:15						5		3
7:15-7:30						5		3
7:30-7:45						4		2
7:45-8:00						6		
HOURLY TOTAL						HOURLY TOTAL		28
8:00-8:15						7		3
8:15-8:30						10		5
8:30-8:45						4		3
8:45-9:00						7		5
HOURLY TOTAL						HOURLY TOTAL		44
9:00-9:15						8		5
9:15-9:30						9		1
9:30-9:45						12		
9:45-10:00						9		1
HOURLY TOTAL						HOURLY TOTAL		45
10:00-10:15						5		
10:15-10:30						7		
10:30-10:45						5		3
10:45-11:00						4		1
HOURLY TOTAL						HOURLY TOTAL		25
11:00-11:15						8		3
11:15-11:30						5		5
11:30-11:45						11		3
11:45-12:00						6	1	1
HOURLY TOTAL						HOURLY TOTAL		43
12:00-12:15						3		2
12:15-12:30						5		5
12:30-12:45						7		6
12:45-1:00						9		1
HOURLY TOTAL						HOURLY TOTAL		38
1:00-1:15						8		1
1:15-1:30						9		1
1:30-1:45						9		1
1:45-2:00						11		1
HOURLY TOTAL						HOURLY TOTAL		41
					TOTAL		TOTAL	279

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NORTH

APP. #1 = CSAH 1

APP. #2 = Round Lake Blvd.

APP. #3 = CSAH 1

APP. #4 = Round Lake Blvd.

COUNT LOCATION:

CSAH 1 (Coon Rapids Blvd.)

DATE:

07/14/2010

@ Round Lake Blvd.

APP. #2

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

APP. #1

APP. #3

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

APP. #4

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		1
2:15-2:30						8		
2:30-2:45						4		1
2:45-3:00						9		
HOURLY TOTAL						HOURLY TOTAL		28
3:00-3:15						9		
3:15-3:30						7		
3:30-3:45						6		3
3:45-4:00						2		
HOURLY TOTAL						HOURLY TOTAL		27
4:00-4:15						5		
4:15-4:30						5		2
4:30-4:45						3		3
4:45-5:00						5		
HOURLY TOTAL						HOURLY TOTAL		23
5:00-5:15						4		1
5:15-5:30						3		1
5:30-5:45						3		1
5:45-6:00								1
HOURLY TOTAL						HOURLY TOTAL		14
6:00-6:15						1		1
6:15-6:30						3		1
6:30-6:45						3		1
6:45-7:00						2		
HOURLY TOTAL						HOURLY TOTAL		12
7:00-7:15								
7:15-7:30						3		1
7:30-7:45						2		1
7:45-8:00						1		
HOURLY TOTAL						HOURLY TOTAL		8
8:00-8:15							1	
8:15-8:30								1
8:30-8:45						1		
8:45-9:00						2		
HOURLY TOTAL						HOURLY TOTAL		5
9:00-9:15						2		
9:15-9:30						3		
9:30-9:45								
9:45-10:00								
HOURLY TOTAL						HOURLY TOTAL		5
					TOTAL		TOTAL	401

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