

Date : 09/15/10

Count Number : TMC1037

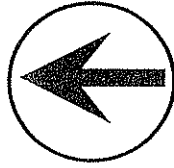
Location : CR J (Ramsey County)

@ CSAH 54/I-35E Entrance Ramp

Collection Period : 6-8 AM, 4-6 PM

839

CSAH 54



North

#2

T	40
E	107
D	238
385	

454

CR J

#3

G	306
H	1917
J	696
2919	

733

3652

4134

#1

1979	C	148
	B	693
	A	1138
		2155

CR J

I-35E Entrance Ramp

#4

M	0
L	0
K	0
0	

1941

1941

EXISTING LANES OF APPROACH				TOTAL
RIGHT TURN LANE	LEFT TURN LANE	THRU LANES		
0	0	1		1
0	0	1		1
0	0	1		1
0	0	0		0

Anoka County Highway Department

Traffic Volume and Turning

Movement Study

Date: 09/15/10

Count Number: TMC1037

Location: CR J (Ramsey County)

@ CSAH 54/I-35E Entrance Ramp

Collection Period: AM PEAK

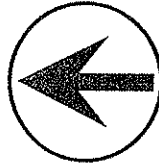
Hour: 7:00-8:00 AM

CSAH 54

#2

208			
144	D		
44	M		
20	T		

56



North

CR J

#1

1125

720			
405	A		
311	B		
85	C		
9			

CR J

#3

47	G		
576	H		
244	J		
867			

105

972

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

I-35E Entrance Ramp

0	K		
0	L		
0	M		
0			

599

#4

599

Anoka County Highway Department

Traffic Volume and Turning

Movement Study

Date : 09/15/10

Count Number : TMC1037

Location : CR J (Ramsey County)

@ CSAH 54/I-35E Entrance Ramp

Collection Period : PM PEAK

Hour : 4:45-5:45 PM

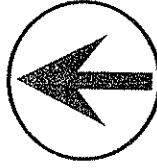
CSAH 54

211

#2

D	17
E	14
F	7
38	

173



North

CR J

1083

#3

G	104
H	554
J	115
773	

310

1244

#1

673	
C	69
B	303
A	301

CR J

571

I-35E Entrance Ramp

M	0
L	0
K	0
0	

430

#4

430

EXISTING LANES OF APPROACH				TOTAL
RIGHT TURN LANE	LEFT TURN LANE	THRU LANES		
0	0	1		1
0	0	1		1
0	0	1		1
0	0	0		0

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 : TMC1037
 Site Code : 10370202
 Start Date : 09/14/2010
 Page No : 1

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

Groups Printed- Unshifted

Start Time	CSAH 54 Southbound					CR J Westbound					I-35E Entrance Ramp Northbound					CR J Eastbound					Excl. Total	Incl. Total	Int. Total
	Left	Thru	Right	Heavys	App. Total	Left	Thru	Right	Heavys	App. Total	Left	Thru	Right	Heavys	App. Total	Left	Thru	Right	Heavys	App. Total			
06:00	0	4	6	0	10	30	38	3	2	71	0	0	0	0	0	1	13	67	0	81	2	162	164
06:15	1	7	3	0	11	59	49	14	12	122	0	0	0	0	0	1	13	77	1	91	13	224	237
06:30	0	7	24	2	31	66	105	7	7	178	0	0	0	0	0	2	20	84	0	106	9	315	324
06:45	5	5	25	2	35	48	123	13	2	184	0	0	0	0	0	1	16	65	3	82	7	301	308
Total	6	23	58	4	87	203	315	37	23	555	0	0	0	0	0	5	62	293	4	360	31	1002	1033
07:00	11	5	43	0	59	42	148	7	3	197	0	0	0	0	0	0	17	67	3	84	6	340	346
07:15	3	11	43	1	57	41	166	15	4	222	0	0	0	0	0	6	25	77	2	108	7	387	394
07:30	4	14	36	2	54	76	151	12	5	239	0	0	0	0	0	2	15	87	6	104	13	397	410
07:45	2	14	22	0	38	85	111	13	5	209	0	0	0	0	0	1	28	80	5	109	10	356	366
Total	20	44	144	3	208	244	576	47	17	867	0	0	0	0	0	9	85	311	16	405	36	1480	1516
*** BREAK ***																							
16:00	0	6	3	0	9	32	115	35	7	182	0	0	0	0	0	16	53	53	3	122	10	313	323
16:15	3	5	6	1	14	38	112	30	5	180	0	0	0	0	0	27	62	76	5	165	11	359	370
16:30	2	5	4	0	11	30	131	38	5	199	0	0	0	0	0	14	59	60	0	133	5	343	348
16:45	1	5	7	1	13	20	132	27	0	179	0	0	0	0	0	19	80	77	1	176	2	368	370
Total	6	21	20	2	47	120	490	130	17	740	0	0	0	0	0	76	254	266	9	596	28	1383	1411
17:00	1	3	6	0	10	36	159	27	2	222	0	0	0	0	0	21	70	76	2	167	4	399	403
17:15	1	0	2	0	3	28	117	26	5	171	0	0	0	0	0	14	79	78	4	171	9	345	354
17:30	4	6	2	0	12	31	146	24	4	201	0	0	0	0	0	15	74	70	5	159	9	372	381
17:45	2	10	6	1	18	34	114	15	3	163	0	0	0	0	0	8	69	44	0	121	4	302	306
Total	8	19	16	1	43	129	536	92	14	757	0	0	0	0	0	58	292	268	11	618	26	1418	1444
Grand Total	40	107	238	10	385	696	1917	306	71	2919	0	0	0	0	0	148	693	1138	40	1979	121	5283	5404
Apprch %	10.4	27.8	61.8			23.8	65.7	10.5			0	0	0			7.5	35	57.5					
Total %	0.8	2	4.5		7.3	13.2	36.3	5.8		55.3	0	0	0			2.8	13.1	21.5		37.5	2.2	97.8	

Start Time	CSAH 54 Southbound				CR J Westbound				I-35E Entrance Ramp Northbound				CR J 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 07:00																	
07:00	11	5	43	59	42	148	7	197	0	0	0	0	0	17	67	84	340
07:15	3	11	43	57	41	166	15	222	0	0	0	0	6	25	77	108	387
07:30	4	14	36	54	76	151	12	239	0	0	0	0	2	15	87	104	397
07:45	2	14	22	38	85	111	13	209	0	0	0	0	1	28	80	109	356
Total Volume	20	44	144	208	244	576	47	867	0	0	0	0	9	85	311	405	1480
% App. Total	9.6	21.2	69.2		28.1	66.4	5.4		0	0	0		2.2	21	76.8		
PHF	.455	.786	.837	.881	.718	.867	.783	.907	.000	.000	.000	.000	.375	.759	.894	.929	.932

Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:45																	
16:45	1	5	7	13	20	132	27	179	0	0	0	0	19	80	77	176	368
17:00	1	3	6	10	36	159	27	222	0	0	0	0	21	70	76	167	399
17:15	1	0	2	3	28	117	26	171	0	0	0	0	14	79	78	171	345
17:30	4	6	2	12	31	146	24	201	0	0	0	0	15	74	70	159	372
Total Volume	7	14	17	38	115	554	104	773	0	0	0	0	69	303	301	673	1484
% App. Total	18.4	36.8	44.7		14.9	71.7	13.5		0	0	0		10.3	45	44.7		
PHF	.438	.583	.607	.731	.799	.871	.963	.870	.000	.000	.000	.000	.821	.947	.965	.956	.930

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

Study Name : TMC1037
Study Date : 09/21/10
Page No. : 1

Signal Warrants - Summary

Major Street Approaches

Eastbound: CR J

Number of Lanes: 1
Approach Speed: 45
Total Approach Volume: 1,979

Westbound: CR J

Number of Lanes: 1
Approach Speed: 45
Total Approach Volume: 2,919

Minor Street Approaches

Northbound: I-35E Entrance Ramp

Number of Lanes: 1

Total Approach Volume: 0

Southbound: CSAH 54

Number of Lanes: 1

Total Approach Volume: 385

Warrant Summary (Rural values apply.)

- Warrant 1 - Eight Hour Vehicular Volumes Not Satisfied
 - Warrant 1A - Minimum Vehicular Volume Not Satisfied
Required volumes reached for 1 hours, 8 are needed
 - Warrant 1B - Interruption of Continuous Traffic Not Satisfied
Required volumes reached for 2 hours, 8 are needed
 - Warrant 1 A&B - Combination of Warrants Not Satisfied
Required volumes reached for 2 hours, 8 are needed

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

- Warrant 3 - Peak Hour Satisfied
 - Warrant 3A - Peak Hour Delay Satisfied
Number of hours (5) 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

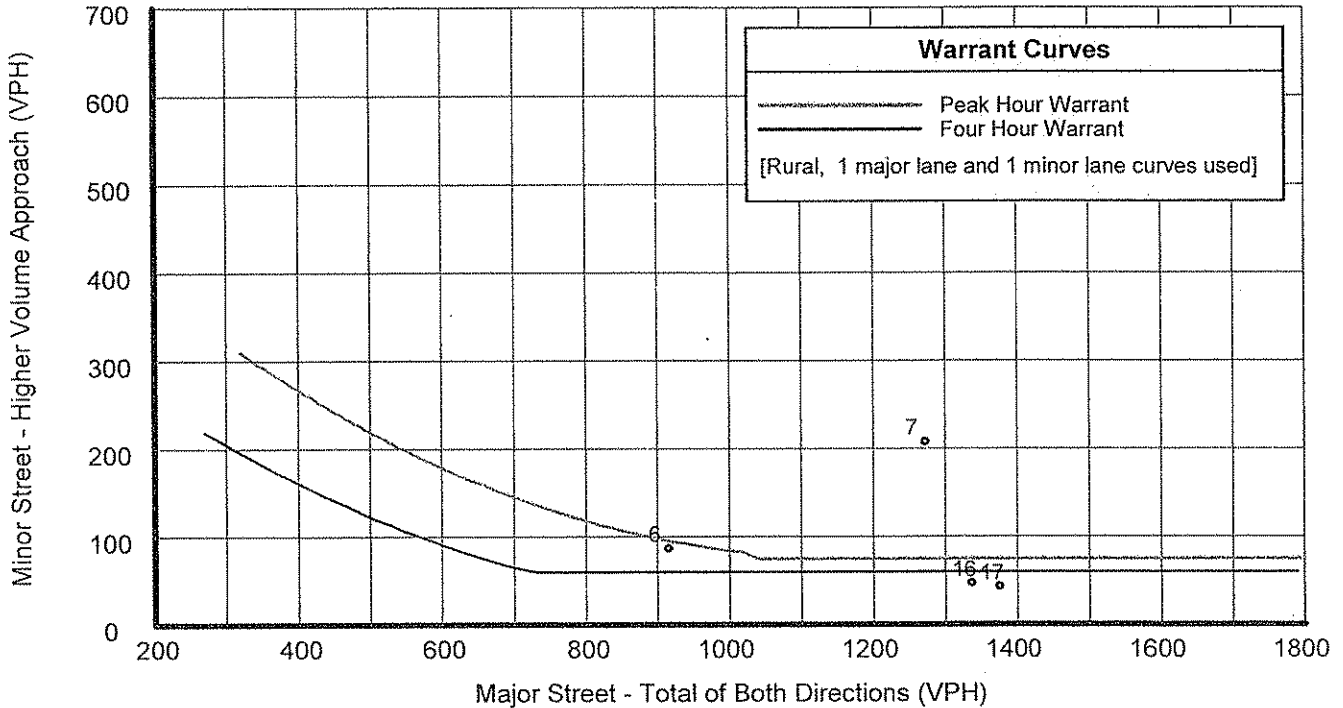
- Warrant 7 - Crash Experience Not Evaluated

- Warrant 8 - Roadway Network Not Evaluated

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

Study Name : TMC1037
Study Date : 09/21/10
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	350-No	105-No	---	525-No	53-No	---	420-No	84-No	---
01:00	0	0	NB	350-No	105-No	---	525-No	53-No	---	420-No	84-No	---
02:00	0	0	NB	350-No	105-No	---	525-No	53-No	---	420-No	84-No	---
03:00	0	0	NB	350-No	105-No	---	525-No	53-No	---	420-No	84-No	---
04:00	0	0	NB	350-No	105-No	---	525-No	53-No	---	420-No	84-No	---
05:00	0	0	NB	350-No	105-No	---	525-No	53-No	---	420-No	84-No	---
06:00	915	87	SB	350-Yes	105-No	Major	525-Yes	53-Yes	Both	420-Yes	84-Yes	Both
07:00	1,272	208	SB	350-Yes	105-Yes	Both	525-Yes	53-Yes	Both	420-Yes	84-Yes	Both
08:00	0	0	NB	350-No	105-No	---	525-No	53-No	---	420-No	84-No	---
09:00	0	0	NB	350-No	105-No	---	525-No	53-No	---	420-No	84-No	---
10:00	0	0	NB	350-No	105-No	---	525-No	53-No	---	420-No	84-No	---
11:00	0	0	NB	350-No	105-No	---	525-No	53-No	---	420-No	84-No	---
12:00	0	0	NB	350-No	105-No	---	525-No	53-No	---	420-No	84-No	---
13:00	0	0	NB	350-No	105-No	---	525-No	53-No	---	420-No	84-No	---
14:00	0	0	NB	350-No	105-No	---	525-No	53-No	---	420-No	84-No	---
15:00	0	0	NB	350-No	105-No	---	525-No	53-No	---	420-No	84-No	---
16:00	1,336	47	SB	350-Yes	105-No	Major	525-Yes	53-No	Major	420-Yes	84-No	Major
17:00	1,375	43	SB	350-Yes	105-No	Major	525-Yes	53-No	Major	420-Yes	84-No	Major
18:00	0	0	NB	350-No	105-No	---	525-No	53-No	---	420-No	84-No	---
19:00	0	0	NB	350-No	105-No	---	525-No	53-No	---	420-No	84-No	---
20:00	0	0	NB	350-No	105-No	---	525-No	53-No	---	420-No	84-No	---
21:00	0	0	NB	350-No	105-No	---	525-No	53-No	---	420-No	84-No	---
22:00	0	0	NB	350-No	105-No	---	525-No	53-No	---	420-No	84-No	---
23:00	0	0	NB	350-No	105-No	---	525-No	53-No	---	420-No	84-No	---

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

Study Name : TMC1037
Study Date : 09/21/10
Page No. : 1

Multi-Way Stop Warrant Report

Major Street Approaches

Eastbound: CR J
Total Approach Volume: 1,979
Approach Speed: 45

Westbound: CR J
Total Approach Volume: 2,919
Approach Speed: 45

Minor Street Approaches

Northbound: I-35E Entrance Ramp
Total Approach Volume: 0

Southbound: CSAH 54
Total Approach Volume: 385

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 0 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?
06:30 - 07:30	1,161	182	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
05:30 - 06:30	365	21	210-Yes	140-No	Major	240-Yes	160-No	Major
05:45 - 06:45	649	52	210-Yes	140-No	Major	240-Yes	160-No	Major
06:00 - 07:00	915	87	210-Yes	140-No	Major	240-Yes	160-No	Major
06:15 - 07:15	1,044	136	210-Yes	140-No	Major	240-Yes	160-No	Major
07:30 - 08:30	661	92	210-Yes	140-No	Major	240-Yes	160-No	Major
07:45 - 08:45	318	38	210-Yes	140-No	Major	240-Yes	160-No	Major
15:15 - 16:15	304	9	210-Yes	140-No	Major	240-Yes	160-No	Major
15:30 - 16:30	649	23	210-Yes	140-No	Major	240-Yes	160-No	Major
15:45 - 16:45	981	34	210-Yes	140-No	Major	240-Yes	160-No	Major
16:00 - 17:00	1,336	47	210-Yes	140-No	Major	240-Yes	160-No	Major
16:15 - 17:15	1,421	48	210-Yes	140-No	Major	240-Yes	160-No	Major
16:30 - 17:30	1,418	37	210-Yes	140-No	Major	240-Yes	160-No	Major
16:45 - 17:45	1,446	38	210-Yes	140-No	Major	240-Yes	160-No	Major
17:00 - 18:00	1,375	43	210-Yes	140-No	Major	240-Yes	160-No	Major
17:15 - 18:15	986	33	210-Yes	140-No	Major	240-Yes	160-No	Major
17:30 - 18:30	644	30	210-Yes	140-No	Major	240-Yes	160-No	Major
17:45 - 18:45	284	18	210-Yes	140-No	Major	240-Yes	160-No	Major
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



COUNT LOCATION:

CR J

DATE:

09/15/2010

@ CSAH 54/I-35E Entrance Ramp

NORTH

APP. #1 = CSAH 54

APP. #2 = CR J

APP. #3= I-35E Ent. Ramp

APP. #4= CR J

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		
6:15-6:30						12		
6:30-6:45						8		1
6:45-7:00						6		2
HOURLY TOTAL						HOURLY TOTAL		32
7:00-7:15AM						3		3
7:15-7:30						4		3
7:30-7:45						9		4
7:45-8:00						7		3
HOURLY TOTAL						HOURLY TOTAL		36
					TOTAL		TOTAL	68

TIME	PEDESTRIANS					HEAVY VEHICLES		
	APP. #1	APP. #2	APP. #3	APP. #4	15 MIN TOT	TRUCKS	RV	BUS
4:00-4:15PM						8		3
4:15-4:30						9		2
4:30-4:45						4		1
4:45-5:00						2		
HOURLY TOTAL						HOURLY TOTAL		29
5:00-5:15PM						3		1
5:15-5:30						8		1
5:30-5:45						9		
5:45-6:00						4		
HOURLY TOTAL						HOURLY TOTAL		26
					TOTAL		TOTAL	55