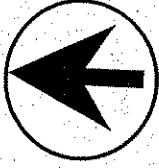


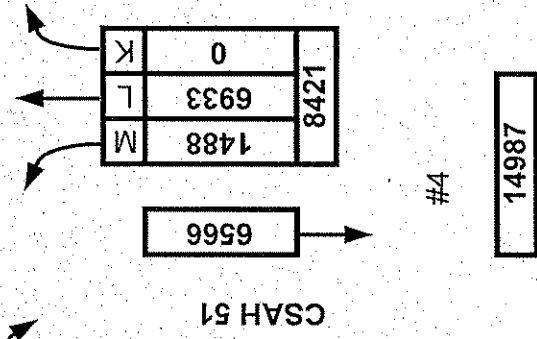
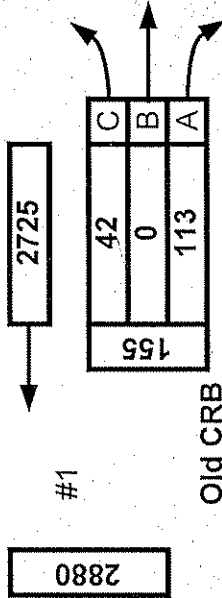
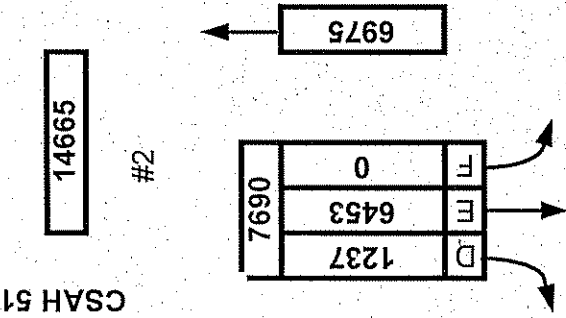
Date: 10/13/05

Count Number: TMC0535

Location: CSAH 51 (University Ave.) @  
Old Coon Rapids Blvd./Pawn America



North



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

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

File Name : TMC0535  
 Site Code : 05350101  
 Start Date : 10/19/2005  
 Page No : 1

Weather: Clear and Mild  
 Counter: TDC-8  
 Counted by: Josie/Terri

Groups Printed- 1 - Unshifted

Start Time	CSAH 51 Southbound					None Westbound					CSAH 51 Northbound					Old CRB 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	0	88	10	4	98	0	0	0	0	0	7	10	0	3	17	0	0	0	0	0	0	7	115	122
06:15	0	129	16	2	145	0	0	0	0	0	6	19	0	2	25	0	0	0	0	0	0	4	170	174
06:30	0	143	28	6	171	0	0	0	0	0	9	25	0	2	34	0	0	0	0	0	0	8	205	213
06:45	0	179	40	8	219	0	0	0	0	0	5	23	0	2	28	0	0	0	0	0	0	10	247	257
Total	0	539	94	20	633	0	0	0	0	0	27	77	0	9	104	0	0	0	0	0	0	29	737	766
07:00	0	196	39	4	235	0	0	0	0	0	10	30	0	5	40	0	0	0	0	0	0	9	275	284
07:15	0	204	41	3	245	0	0	0	0	0	17	25	0	1	42	0	0	1	0	0	1	4	288	292
07:30	0	195	39	4	234	0	0	0	0	0	8	36	0	7	44	0	0	0	0	0	0	11	278	289
07:45	0	157	48	2	205	0	0	0	0	0	13	22	0	4	35	0	0	5	0	0	5	6	245	251
Total	0	752	167	13	919	0	0	0	0	0	48	113	0	17	161	0	0	6	0	0	6	30	1086	1116
08:00	0	102	31	2	133	0	0	0	0	0	10	26	0	5	36	0	0	2	0	0	2	7	171	178
08:15	0	103	26	2	129	0	0	0	0	0	13	32	0	1	45	0	0	1	0	0	1	3	175	178
08:30	0	98	25	1	123	0	0	0	0	0	22	37	0	2	59	1	0	1	1	0	2	4	184	188
08:45	0	103	29	7	132	0	0	0	0	0	13	31	0	4	44	0	0	1	0	0	1	11	177	188
Total	0	406	111	12	517	0	0	0	0	0	58	126	0	12	184	1	0	5	1	0	6	25	707	732
09:00	0	66	17	3	83	0	0	0	0	0	16	53	0	7	69	0	0	1	0	0	1	10	153	163
09:15	0	98	21	5	119	0	0	0	0	0	19	48	0	3	67	0	0	2	0	0	2	8	188	196
09:30	0	91	20	1	111	0	0	0	0	0	19	60	0	3	79	0	0	3	0	0	3	4	193	197
09:45	0	112	31	3	143	0	0	0	0	0	23	51	0	2	74	0	0	5	0	0	5	5	222	227
Total	0	367	89	12	456	0	0	0	0	0	77	212	0	15	289	0	0	11	0	0	11	27	756	783
10:00	0	91	16	4	107	0	0	0	0	0	25	66	0	1	91	1	0	2	0	0	3	5	201	206
10:15	0	98	14	5	112	0	0	0	0	0	22	81	0	4	103	0	0	1	0	0	1	9	216	225
10:30	0	120	17	2	137	0	0	0	0	0	19	74	0	4	93	2	0	5	0	0	7	6	237	243
10:45	0	100	17	2	117	0	0	0	0	0	30	75	0	5	105	1	0	3	0	0	4	7	226	233
Total	0	409	64	13	473	0	0	0	0	0	96	296	0	14	392	4	0	11	0	0	15	27	880	907
11:00	0	92	27	3	119	0	0	0	0	0	19	100	0	4	119	2	0	5	0	0	7	7	245	252
11:15	0	108	19	6	127	0	0	0	0	0	23	96	0	6	119	0	0	3	0	0	3	12	249	261
11:30	0	110	15	4	125	0	0	0	0	0	39	112	0	6	151	0	0	2	0	0	2	10	278	288
11:45	0	115	24	3	139	0	0	0	0	0	30	120	0	2	150	3	0	2	0	0	5	5	294	299
Total	0	425	85	16	510	0	0	0	0	0	111	428	0	18	539	5	0	12	0	0	17	34	1066	1100
12:00	0	112	15	2	127	0	0	0	0	0	28	132	0	8	160	1	0	1	0	0	2	10	289	299
12:15	0	110	19	5	129	0	0	0	0	0	38	130	0	3	168	1	0	1	1	0	2	9	299	308
12:30	0	108	22	1	130	0	0	0	0	0	34	124	0	1	158	0	0	1	0	0	1	2	289	291
12:45	0	112	19	3	131	0	0	0	0	0	39	106	0	2	145	2	0	1	0	0	3	5	279	284
Total	0	442	75	11	517	0	0	0	0	0	139	492	0	14	631	4	0	4	1	0	8	26	1156	1182
13:00	0	106	22	3	128	0	0	0	0	0	17	103	0	2	120	3	0	0	1	0	3	6	251	257
13:15	0	108	31	7	139	0	0	0	0	0	39	106	0	0	145	0	0	1	0	0	1	7	285	292
13:30	0	122	25	2	147	0	0	0	0	0	49	99	0	5	148	0	0	2	0	0	2	7	297	304
13:45	0	105	19	1	124	0	0	0	0	0	44	129	0	0	173	0	0	2	0	0	2	1	299	300
Total	0	441	97	13	538	0	0	0	0	0	149	437	0	7	586	3	0	5	1	0	8	21	1132	1153
14:00	0	111	18	6	129	0	0	0	0	0	26	134	0	8	160	2	0	2	1	0	4	15	293	308
14:15	0	92	21	1	113	0	0	0	0	0	31	129	0	3	160	0	0	1	0	0	1	4	274	278
14:30	0	87	17	2	104	0	0	0	0	0	35	158	0	3	193	0	0	1	1	0	1	6	298	304
14:45	0	97	20	6	117	0	0	0	0	0	32	148	0	1	180	0	0	3	0	0	3	7	300	307
Total	0	387	76	15	463	0	0	0	0	0	124	569	0	15	693	2	0	7	2	0	9	32	1165	1197
15:00	0	89	19	1	108	0	0	0	0	0	38	203	0	3	241	1	0	2	0	0	3	4	352	356
15:15	0	112	20	2	132	0	0	0	0	0	33	187	0	6	220	1	0	0	0	0	1	8	353	361
15:30	0	96	22	2	118	0	0	0	0	0	35	209	0	0	244	2	0	4	1	0	6	3	368	371
15:45	0	127	23	4	150	0	0	0	0	0	35	225	0	2	260	2	0	0	0	0	2	6	412	418
Total	0	424	84	9	508	0	0	0	0	0	141	824	0	11	965	6	0	6	1	0	12	21	1485	1506
16:00	0	101	15	2	116	0	0	0	0	0	33	253	0	5	286	1	0	1	0	0	2	7	404	411
16:15	0	105	14	2	119	0	0	0	0	0	40	246	0	1	286	2	0	6	0	0	8	3	413	416
16:30	0	113	20	2	133	0	0	0	0	0	46	269	0	0	315	4	0	3	0	0	7	2	455	457
16:45	0	146	15	1	161	0	0	0	0	0	38	294	0	5	332	1	0	4	0	0	5	6	498	504
Total	0	465	64	7	529	0	0	0	0	0	157	1062	0	11	1219	8	0	14	0	0	22	18	1770	1788
17:00	0	119	25	0	144	0	0	0	0	0	37	301	0	4	338	0	0	1	0	0	1	4	483	487
17:15	0	122	21	0	143	0	0	0	0	0	29	245	0	3	274	0	0	2	0	0	2	3	419	422
17:30	0	107	16	5	123	0	0	0	0	0	42	270	0	5	312	1	0	3	0	0	4	10	439	449
17:45	0	148	29	2	177	0	0	0	0	0	29	210	0	3	239	1	0	3	0	0	4	5	420	425
Total	0	496	91	7	587	0	0	0	0	0	137	1026	0	15	1163	2	0	9	0	0	11	22	1761	1783



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

Study Name : TMC0535  
Study Date : 10/31/05  
Page No. : 1

**Signal Warrants - Summary**

**Major Street Approaches**

**Northbound: CSAH 51**  
Number of Lanes: 2  
Approach Speed: 35  
Total Approach Volume: 8,421

**Southbound: CSAH 51**  
Number of Lanes: 2  
Approach Speed: 35  
Total Approach Volume: 7,690

**Minor Street Approaches**

**Eastbound: Old CRB**  
Number of Lanes: 1  
  
Total Approach Volume: 155

**Westbound: None**  
Number of Lanes: 1  
  
Total Approach Volume: 0

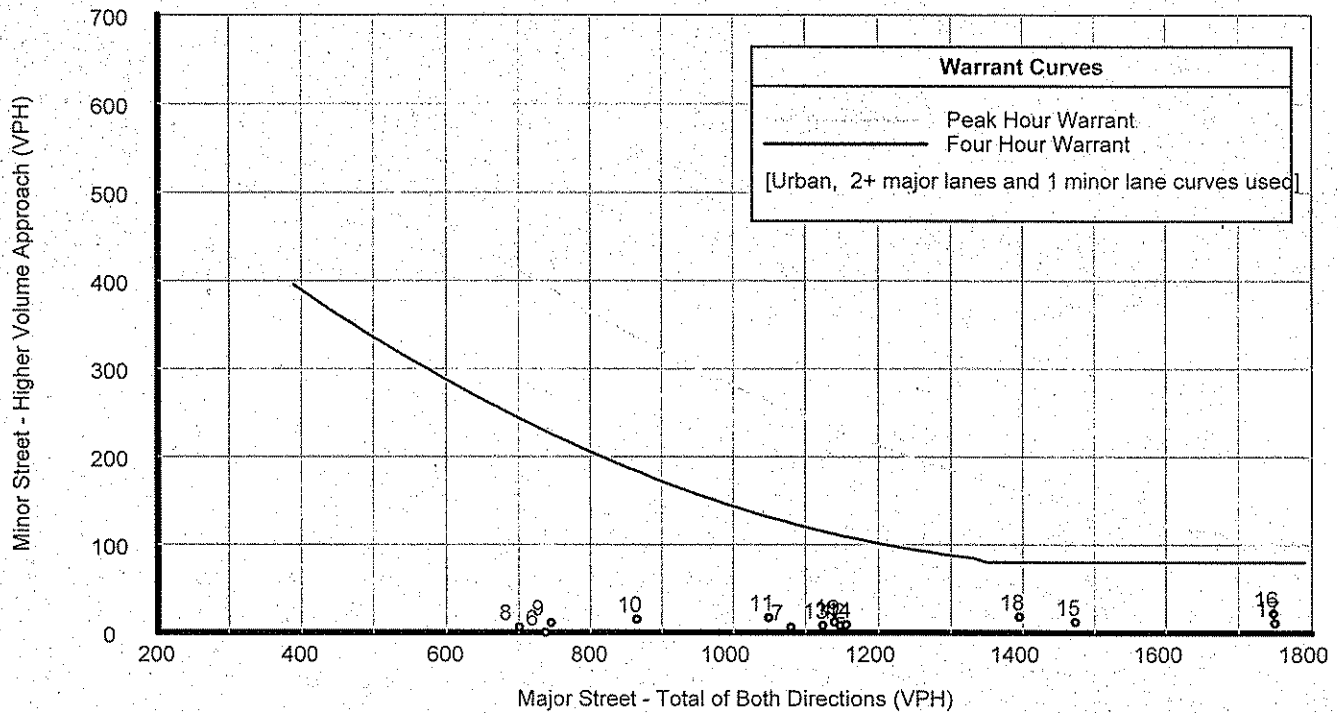
**Warrant Summary (Urban values apply.)**

<b>Warrant 1 - Eight Hour Vehicular Volumes</b> .....	<b>Not Satisfied</b>
<b>Warrant 1A - Minimum Vehicular Volume</b> ..... Not Satisfied	
Required volumes reached for 0 hours, 8 are needed	
<b>Warrant 1B - Interruption of Continuous Traffic</b> ..... Not Satisfied	
Required volumes reached for 0 hours, 8 are needed	
<b>Warrant 1 A&amp;B - Combination of Warrants</b> ..... Not Satisfied	
Required volumes reached for 0 hours, 8 are needed	
<b>Warrant 2 - Four Hour Volumes</b> .....	<b>Not Satisfied</b>
Number of hours (0) volumes exceed minimum < minimum required (4).	
<b>Warrant 3 - Peak Hour</b> .....	<b>Not Satisfied</b>
<b>Warrant 3A - Peak Hour Delay</b> ..... Not Satisfied	
Approach volumes on minor street don't exceed minimums for any hour. Delay data not evaluated.	
<b>Warrant 3B - Peak Hour Volumes</b> ..... Not Satisfied	
Volumes do not exceed minimums for any hour.	
<b>Warrant 4 - Pedestrian Volumes</b> .....	<b>Not Evaluated</b>
<b>Warrant 5 - School Crossing</b> .....	<b>Not Evaluated</b>
<b>Warrant 6 - Coordinated Signal System</b> .....	<b>Not Evaluated</b>
<b>Warrant 7 - Crash Experience</b> .....	<b>Not Evaluated</b>
<b>Warrant 8 - Roadway Network</b> .....	<b>Not Evaluated</b>

# ANOKA COUNTY HIGHWAY PC-WARRANTS TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name : TMC0535  
Study Date : 10/31/05  
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	600-No	150-No	---	900-No	75-No	---	720-No	120-No	---
01:00	0	0	EB	600-No	150-No	---	900-No	75-No	---	720-No	120-No	---
02:00	0	0	EB	600-No	150-No	---	900-No	75-No	---	720-No	120-No	---
03:00	0	0	EB	600-No	150-No	---	900-No	75-No	---	720-No	120-No	---
04:00	0	0	EB	600-No	150-No	---	900-No	75-No	---	720-No	120-No	---
05:00	0	0	EB	600-No	150-No	---	900-No	75-No	---	720-No	120-No	---
06:00	737	0	EB	600-Yes	150-No	Major	900-No	75-No	---	720-Yes	120-No	Major
07:00	1,080	6	EB	600-Yes	150-No	Major	900-Yes	75-No	Major	720-Yes	120-No	Major
08:00	701	6	EB	600-Yes	150-No	Major	900-No	75-No	---	720-No	120-No	---
09:00	745	11	EB	600-Yes	150-No	Major	900-No	75-No	---	720-Yes	120-No	Major
10:00	865	15	EB	600-Yes	150-No	Major	900-No	75-No	---	720-Yes	120-No	Major
11:00	1,049	17	EB	600-Yes	150-No	Major	900-Yes	75-No	Major	720-Yes	120-No	Major
12:00	1,148	8	EB	600-Yes	150-No	Major	900-Yes	75-No	Major	720-Yes	120-No	Major
13:00	1,124	8	EB	600-Yes	150-No	Major	900-Yes	75-No	Major	720-Yes	120-No	Major
14:00	1,156	9	EB	600-Yes	150-No	Major	900-Yes	75-No	Major	720-Yes	120-No	Major
15:00	1,473	12	EB	600-Yes	150-No	Major	900-Yes	75-No	Major	720-Yes	120-No	Major
16:00	1,748	22	EB	600-Yes	150-No	Major	900-Yes	75-No	Major	720-Yes	120-No	Major
17:00	1,750	11	EB	600-Yes	150-No	Major	900-Yes	75-No	Major	720-Yes	120-No	Major
18:00	1,395	18	EB	600-Yes	150-No	Major	900-Yes	75-No	Major	720-Yes	120-No	Major
19:00	1,140	12	EB	600-Yes	150-No	Major	900-Yes	75-No	Major	720-Yes	120-No	Major
20:00	0	0	EB	600-No	150-No	---	900-No	75-No	---	720-No	120-No	---
21:00	0	0	EB	600-No	150-No	---	900-No	75-No	---	720-No	120-No	---
22:00	0	0	EB	600-No	150-No	---	900-No	75-No	---	720-No	120-No	---
23:00	0	0	EB	600-No	150-No	---	900-No	75-No	---	720-No	120-No	---

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

Study Name : TMC0535  
Study Date : 10/31/05

**Multi-Way Stop Warrant Report**

**Major Street Approaches**

**Northbound: CSAH 51**

Total Approach Volume: 8,421

Approach Speed: 35

**Southbound: CSAH 51**

Total Approach Volume: 7,690

Approach Speed: 35

**Minor Street Approaches**

**Eastbound: Old CRB**

Total Approach Volume: 155

**Westbound: None**

Total Approach Volume: 0

**Warrant Summary**

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

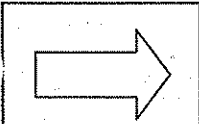
**Criteria B - Crash Experience** ..... Not Evaluated

**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  
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	300-No	200-No	No	240-No	160-No	No
01:00 - 02:00	0	0	300-No	200-No	No	240-No	160-No	No
02:00 - 03:00	0	0	300-No	200-No	No	240-No	160-No	No
03:00 - 04:00	0	0	300-No	200-No	No	240-No	160-No	No
04:00 - 05:00	0	0	300-No	200-No	No	240-No	160-No	No
05:00 - 06:00	0	0	300-No	200-No	No	240-No	160-No	No
06:00 - 07:00	737	0	300-Yes	200-No	Major	240-Yes	160-No	Major
07:00 - 08:00	1,080	6	300-Yes	200-No	Major	240-Yes	160-No	Major
08:00 - 09:00	701	6	300-Yes	200-No	Major	240-Yes	160-No	Major
09:00 - 10:00	745	11	300-Yes	200-No	Major	240-Yes	160-No	Major
10:00 - 11:00	865	15	300-Yes	200-No	Major	240-Yes	160-No	Major
11:00 - 12:00	1,049	17	300-Yes	200-No	Major	240-Yes	160-No	Major
12:00 - 13:00	1,148	8	300-Yes	200-No	Major	240-Yes	160-No	Major
13:00 - 14:00	1,124	8	300-Yes	200-No	Major	240-Yes	160-No	Major
14:00 - 15:00	1,156	9	300-Yes	200-No	Major	240-Yes	160-No	Major
15:00 - 16:00	1,473	12	300-Yes	200-No	Major	240-Yes	160-No	Major
16:00 - 17:00	1,748	22	300-Yes	200-No	Major	240-Yes	160-No	Major
17:00 - 18:00	1,750	11	300-Yes	200-No	Major	240-Yes	160-No	Major
18:00 - 19:00	1,395	18	300-Yes	200-No	Major	240-Yes	160-No	Major
19:00 - 20:00	1,140	12	300-Yes	200-No	Major	240-Yes	160-No	Major
20:00 - 21:00	0	0	300-No	200-No	No	240-No	160-No	No
21:00 - 22:00	0	0	300-No	200-No	No	240-No	160-No	No
22:00 - 23:00	0	0	300-No	200-No	No	240-No	160-No	No
23:00 - 00:00	0	0	300-No	200-No	No	240-No	160-No	No



COUNT LOCATION:

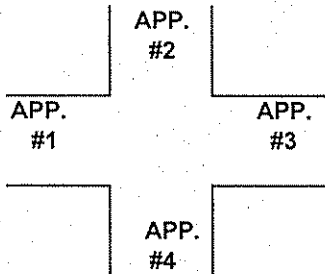
CSAH 51 (University Ave.) @

DATE:

10/20/2005

Old Coon Rapids Blvd /Pawn America/IHOP

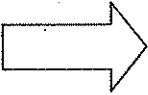
<b>NORTH</b>
APP.#1= CSAH 51
APP.#2= Old CRB
APP.#3= CSAH 51
APP.#4= None



- 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		2	3		4
6:15-6:30						4		
6:30-6:45						6		2
6:45-7:00						6		3
<b>HOURLY TOTAL</b>					<b>2</b>	<b>HOURLY TOTAL</b>		<b>28</b>
7:00-7:15						7		2
7:15-7:30			1		1	4		
7:30-7:45						9		2
7:45-8:00						4		2
<b>HOURLY TOTAL</b>					<b>1</b>	<b>HOURLY TOTAL</b>		<b>30</b>
8:00-8:15						6		1
8:15-8:30						3		
8:30-8:45						4		
8:45-9:00						9		3
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>26</b>
9:00-9:15						6		4
9:15-9:30						7		1
9:30-9:45						3		1
9:45-10:00						3		2
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>27</b>
10:00-10:15						4		1
10:15-10:30						7		2
10:30-10:45			1		1	5		1
10:45-11:00						5		2
<b>HOURLY TOTAL</b>					<b>1</b>	<b>HOURLY TOTAL</b>		<b>27</b>
11:00-11:15						6		1
11:15-11:30	1				1	12		1
11:30-11:45						9		
11:45-12:00						4		1
<b>HOURLY TOTAL</b>					<b>1</b>	<b>HOURLY TOTAL</b>		<b>34</b>
12:00-12:15						9		2
12:15-12:30		2			2	8		
12:30-12:45						2		
12:45-1:00	3			1	4	2		4
<b>HOURLY TOTAL</b>					<b>6</b>	<b>HOURLY TOTAL</b>		<b>27</b>
1:00-1:15			2		2	4		1
1:15-1:30						7		
1:30-1:45		1	3		4	7		
1:45-2:00	1				1			1
<b>HOURLY TOTAL</b>					<b>7</b>	<b>HOURLY TOTAL</b>		<b>20</b>
<b>TOTAL</b>					<b>18</b>	<b>TOTAL</b>		<b>219</b>

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**NORTH**

APP.#1= CSAH 51

APP.#2= Old CRB

APP.#3= CSAH 51

APP.#4= None

COUNT LOCATION: CSAH 51 (University Ave.) @ DATE: 10/19/2005

Old Coon Rapids Blvd /Pawn America/IHOP

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
2:00-2:15PM		2			2	12		2
2:15-2:30						4		
2:30-2:45		2			2	5		1
2:45-3:00						5		1
<b>HOURLY TOTAL</b>					<b>4</b>	<b>HOURLY TOTAL</b>		<b>30</b>
3:00-3:15		3			3	3		2
3:15-3:30						6		2
3:30-3:45		4			4	3		
3:45-4:00		1			1	5		1
<b>HOURLY TOTAL</b>					<b>8</b>	<b>HOURLY TOTAL</b>		<b>22</b>
4:00-4:15	1	1			2	6		1
4:15-4:30						3		
4:30-4:45						2		
4:45-5:00		3			3	4		2
<b>HOURLY TOTAL</b>					<b>5</b>	<b>HOURLY TOTAL</b>		<b>18</b>
5:00-5:15		1			1	5		4
5:15-5:30						2		1
5:30-5:45				1	1	4		1
5:45-6:00						1		4
<b>HOURLY TOTAL</b>					<b>2</b>	<b>HOURLY TOTAL</b>		<b>22</b>
6:00-6:15		1			1			3
6:15-6:30						2		
6:30-6:45						1		1
6:45-7:00						1		2
<b>HOURLY TOTAL</b>					<b>1</b>	<b>HOURLY TOTAL</b>		<b>10</b>
7:00-7:15				1	1			2
7:15-7:30								
7:30-7:45						3		
7:45-8:00						2	1	
<b>HOURLY TOTAL</b>					<b>1</b>	<b>HOURLY TOTAL</b>		<b>8</b>
					<b>TOTAL</b>	<b>39</b>		<b>TOTAL</b>
								<b>329</b>

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