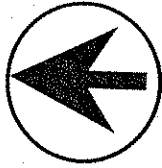


Date : 06/29/05

Count Number : TMC0517

Location : CR18 (Crosstown Blvd.)

@ Andover Blvd.



North

CR 18

8871

#2

4384			
159	D	3973	E
252	F		T

4487

Andover Blvd.

#1

1183

571			
236	A	200	B
135	C		

612

Andover Blvd.

#3

1762			
1258	J	232	H
272	G		

1734

3496

CR 18

5467

#4

11050

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

1282	K		
4080	L	221	M
5583			

Anoka County Highway Department  
Traffic Volume and Turning  
Movement Study

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

File Name : TMC0517  
Site Code : 05170102  
Start Date : 06/29/2005  
Page No : 1

Weather: Cloudy and Warm  
Counter: TDC-8  
Counted by: Danielle/Samantha

Groups Printed- 1 - Unshifted

Start Time	CR 18 Southbound					Andover Blvd. Westbound					CR 18 Northbound					Andover 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			
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	48	0	0	48	8	0	0	0	8	0	30	3	0	33	0	0	0	0	0	0	89	89
06:15	0	60	0	2	60	12	0	0	0	12	0	13	5	0	18	0	1	0	0	1	1	91	93
06:30	1	74	0	0	75	16	3	0	1	19	2	19	9	2	30	0	0	0	0	0	0	124	127
06:45	5	98	0	0	103	28	3	1	0	32	1	19	8	0	28	1	1	1	0	3	3	166	166
Total	6	280	0	2	286	64	6	1	1	71	3	81	25	2	109	1	2	1	0	4	4	470	475
07:00	8	73	1	1	82	16	2	3	0	21	2	34	11	1	47	1	1	0	0	2	2	152	154
07:15	7	99	1	0	107	24	6	2	1	32	7	29	11	0	47	1	1	2	0	4	4	190	191
07:30	2	93	0	2	95	21	5	1	0	27	11	32	15	3	58	0	2	0	0	2	5	182	187
07:45	9	100	2	5	111	26	10	7	7	43	18	46	9	15	73	0	1	0	0	1	27	228	255
Total	26	365	4	8	395	87	23	13	8	123	38	141	46	19	225	2	5	2	0	9	35	752	787
08:00	13	101	12	19	126	26	23	5	7	54	17	44	12	5	73	2	9	8	0	19	31	272	303
08:15	3	72	1	4	76	24	3	3	0	30	1	36	8	4	45	2	3	1	0	6	8	157	165
08:30	6	76	1	4	83	25	0	0	0	25	1	39	6	3	46	0	1	0	0	1	7	155	162
08:45	6	67	2	0	75	24	6	4	0	34	1	48	11	5	60	2	1	0	0	3	5	172	177
Total	28	316	16	27	360	99	32	12	7	143	20	167	37	17	224	6	14	9	0	29	51	756	807
09:00	7	80	1	2	88	20	2	1	0	23	2	49	15	1	66	1	2	1	0	4	3	181	184
09:15	3	45	2	0	50	19	0	3	1	22	1	31	11	1	43	1	5	3	0	9	2	124	126
09:30	1	44	1	2	46	14	4	2	0	20	3	31	4	2	38	5	5	2	0	12	4	116	120
09:45	1	70	2	0	73	21	3	4	1	28	2	42	13	0	57	0	2	2	0	4	1	162	163
Total	12	239	6	4	257	74	9	10	2	93	8	153	43	4	204	7	14	8	0	29	10	583	593
10:00	0	70	4	1	74	16	10	2	0	28	5	60	13	1	78	3	3	3	0	9	2	189	191
10:15	4	56	8	2	68	27	10	3	1	40	8	56	6	2	70	13	15	11	0	39	5	217	222
10:30	9	53	10	2	72	13	11	6	0	30	7	36	13	3	56	9	11	7	0	27	5	185	190
10:45	7	59	2	0	68	8	1	6	0	15	2	42	7	2	51	2	4	3	0	9	2	143	145
Total	20	238	24	5	282	64	32	17	1	113	22	194	39	8	255	27	33	24	0	84	14	734	748
11:00	4	67	3	8	74	18	6	9	2	33	6	69	12	23	87	0	7	7	0	14	33	208	241
11:15	14	83	0	19	97	13	6	2	1	21	5	44	11	4	60	3	8	28	0	39	24	217	241
11:30	4	76	4	1	84	18	4	4	1	26	4	56	13	3	73	3	6	15	0	24	5	207	212
11:45	5	62	6	1	73	25	7	7	0	39	5	48	25	3	78	6	0	13	0	19	4	209	213
Total	27	288	13	29	328	74	23	22	4	119	20	217	61	33	298	12	21	63	0	96	66	841	907
12:00	3	54	4	0	61	14	4	5	0	23	7	60	17	4	84	2	4	3	0	9	4	177	181
12:15	4	111	0	2	115	20	1	5	2	26	1	58	19	2	78	1	2	5	0	8	6	227	233
12:30	1	70	1	2	72	16	1	4	0	21	2	49	19	1	70	1	2	2	1	5	4	168	172
12:45	5	71	1	1	77	26	1	2	1	29	2	52	23	2	77	1	0	0	0	1	4	184	188
Total	13	306	6	5	325	76	7	16	3	99	12	219	78	9	309	5	8	10	1	23	18	756	774
13:00	7	50	1	0	58	20	3	4	0	27	1	54	16	0	71	0	0	1	0	1	0	157	157
13:15	3	59	0	1	62	19	0	2	0	21	5	53	17	1	75	0	2	0	1	2	3	160	163
13:30	4	44	0	3	48	22	0	3	0	25	1	68	17	0	86	0	0	1	0	1	3	160	163
13:45	3	48	2	5	53	17	0	4	1	21	0	66	15	1	81	2	0	0	0	2	7	157	164
Total	17	201	3	9	221	78	3	13	1	94	7	241	65	2	313	2	2	2	1	6	13	634	647
14:00	0	35	4	0	39	8	7	0	2	15	0	21	0	0	21	0	0	1	0	1	2	76	78
14:15	0	53	0	2	53	13	4	1	0	18	1	58	17	2	76	0	2	2	0	4	4	151	155
14:30	0	59	0	0	59	11	0	1	0	12	0	62	19	2	81	0	1	1	0	2	2	154	156
14:45	1	50	0	0	51	17	0	2	2	19	1	56	29	1	86	0	0	0	0	0	0	156	159
Total	1	197	4	2	202	49	11	4	4	64	2	197	65	5	264	0	3	4	0	7	11	537	548
15:00	3	36	0	1	39	12	2	0	1	14	2	61	13	1	76	2	0	4	0	6	3	135	138
15:15	4	60	0	0	64	12	1	4	0	17	0	87	36	0	123	0	0	2	0	2	0	206	206
15:30	5	46	1	2	52	14	2	5	0	21	0	80	16	0	96	1	0	3	0	4	2	173	175
15:45	2	58	2	0	62	15	0	4	0	19	0	82	28	1	110	1	0	2	0	3	1	194	195
Total	14	200	3	3	217	53	5	13	1	71	2	310	93	2	405	4	0	11	0	15	6	708	714
16:00	1	62	0	0	63	12	1	3	0	16	2	89	27	0	118	0	0	0	0	0	0	197	197
16:15	2	58	0	2	60	15	0	8	2	23	0	92	29	0	121	0	0	0	0	0	4	204	208
16:30	4	60	0	0	64	24	0	6	0	30	2	92	30	1	124	0	0	0	0	0	1	218	219
16:45	5	87	1	0	93	26	0	5	0	31	3	122	55	0	180	1	0	2	0	3	0	307	307
Total	12	267	1	2	280	77	1	22	2	100	7	395	141	1	543	1	0	2	0	3	5	926	931
17:00	4	74	1	0	79	25	2	9	0	36	3	125	46	0	174	0	0	1	0	1	0	290	290
17:15	4	66	4	0	74	39	3	10	0	52	0	136	50	3	186	0	0	6	0	6	3	318	321
17:30	7	79	10	0	96	25	20	11	0	56	12	123	33	2	168	3	1	1	0	5	2	325	327
17:45	5	82	18	2	105	38	9	15	0	62	8	129	29	0	166	6	8	3	0	17	2	350	352
Total	20	301	33	2	354	127	34	45	0	206	23	513	158	5	694	9	9	11	0	29	7	1283	1290



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

Study Name : TMC0517  
Study Date : 07/05/05  
Page No. : 1

**Signal Warrants - Summary**

**Major Street Approaches**

**Northbound: CR 18**  
Number of Lanes: 2  
Approach Speed: 40  
Total Approach Volume: 5,583

**Southbound: CR 18**  
Number of Lanes: 2  
Approach Speed: 45  
Total Approach Volume: 4,384

**Minor Street Approaches**

**Eastbound: Andover Blvd.**  
Number of Lanes: 2  
  
Total Approach Volume: 571

**Westbound: Andover Blvd.**  
Number of Lanes: 2  
  
Total Approach Volume: 1,762

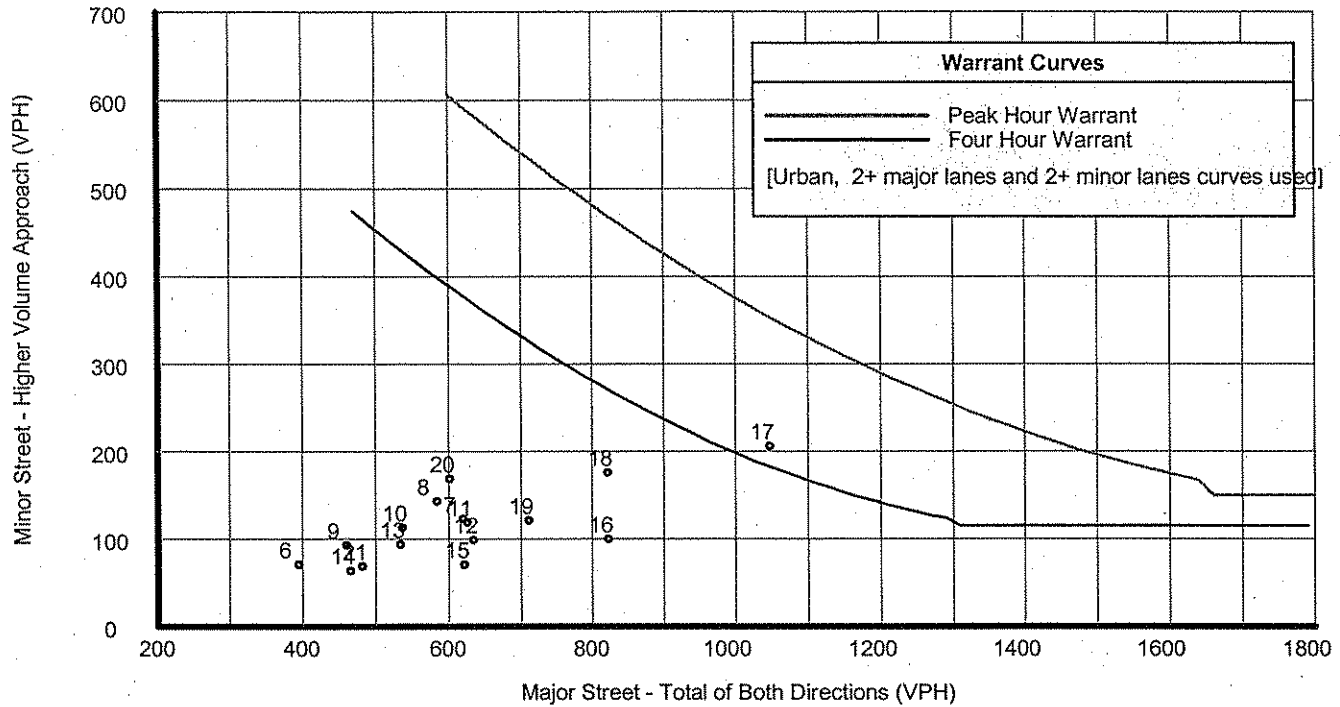
**Warrant Summary (Urban values apply.)**

<b>Warrant 1 - Eight Hour Vehicular Volumes</b> .....	<b>Not Satisfied</b>
<b>Warrant 1A - Minimum Vehicular Volume</b> ..... <b>Not Satisfied</b>	
Required volumes reached for 1 hours, 8 are needed	
<b>Warrant 1B - Interruption of Continuous Traffic</b> ..... <b>Not Satisfied</b>	
Required volumes reached for 1 hours, 8 are needed	
<b>Warrant 1 A&amp;B - Combination of Warrants</b> ..... <b>Not Satisfied</b>	
Required volumes reached for 2 hours, 8 are needed	
<b>Warrant 2 - Four Hour Volumes</b> .....	<b>Not Satisfied</b>
Number of hours (1) volumes exceed minimum < minimum required (4).	
<b>Warrant 3 - Peak Hour</b> .....	<b>Satisfied</b>
<b>Warrant 3A - Peak Hour Delay</b> ..... <b>Satisfied</b>	
Number of hours (10) volumes exceed minimum >= required (1). Delay data not evaluated.	
<b>Warrant 3B - Peak Hour Volumes</b> ..... <b>Not Satisfied</b>	
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 : TMC0517  
Study Date : 07/05/05  
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	200-No	---	900-No	100-No	---	720-No	160-No	---
01:00	0	0	EB	600-No	200-No	---	900-No	100-No	---	720-No	160-No	---
02:00	0	0	EB	600-No	200-No	---	900-No	100-No	---	720-No	160-No	---
03:00	0	0	EB	600-No	200-No	---	900-No	100-No	---	720-No	160-No	---
04:00	0	0	EB	600-No	200-No	---	900-No	100-No	---	720-No	160-No	---
05:00	0	0	EB	600-No	200-No	---	900-No	100-No	---	720-No	160-No	---
06:00	395	71	WB	600-No	200-No	---	900-No	100-No	---	720-No	160-No	---
07:00	620	123	WB	600-Yes	200-No	Major	900-No	100-Yes	Minor	720-No	160-No	---
08:00	584	143	WB	600-No	200-No	---	900-No	100-Yes	Minor	720-No	160-No	---
09:00	461	93	WB	600-No	200-No	---	900-No	100-No	---	720-No	160-No	---
10:00	537	113	WB	600-No	200-No	---	900-No	100-Yes	Minor	720-No	160-No	---
11:00	626	119	WB	600-Yes	200-No	Major	900-No	100-Yes	Minor	720-No	160-No	---
12:00	634	99	WB	600-Yes	200-No	Major	900-No	100-No	---	720-No	160-No	---
13:00	534	94	WB	600-No	200-No	---	900-No	100-No	---	720-No	160-No	---
14:00	466	64	WB	600-No	200-No	---	900-No	100-No	---	720-No	160-No	---
15:00	622	71	WB	600-Yes	200-No	Major	900-No	100-No	---	720-No	160-No	---
16:00	823	100	WB	600-Yes	200-No	Major	900-No	100-Yes	Minor	720-Yes	160-No	Major
17:00	1,048	206	WB	600-Yes	200-Yes	Both	900-Yes	100-Yes	Both	720-Yes	160-Yes	Both
18:00	822	176	WB	600-Yes	200-No	Major	900-No	100-Yes	Minor	720-Yes	160-Yes	Both
19:00	711	121	WB	600-Yes	200-No	Major	900-No	100-Yes	Minor	720-No	160-No	---
20:00	602	169	EB	600-Yes	200-No	Major	900-No	100-Yes	Minor	720-No	160-Yes	Minor
21:00	482	69	WB	600-No	200-No	---	900-No	100-No	---	720-No	160-No	---
22:00	0	0	EB	600-No	200-No	---	900-No	100-No	---	720-No	160-No	---
23:00	0	0	EB	600-No	200-No	---	900-No	100-No	---	720-No	160-No	---

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

Study Name : TMC0517  
Study Date : 07/05/05

**Multi-Way Stop Warrant Report**

**Major Street Approaches**

**Northbound: CR 18**  
Total Approach Volume: 5,583  
Approach Speed: 40

**Southbound: CR 18**  
Total Approach Volume: 4,384  
Approach Speed: 45

**Minor Street Approaches**

**Eastbound: Andover Blvd.**  
Total Approach Volume: 571

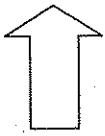
**Westbound: Andover Blvd.**  
Total Approach Volume: 1,762

**Warrant Summary**

<b>Criteria A - Interim Measure</b> .....	Not Evaluated
If traffic signals are justified, stop signs can be installed as an interim measure.	
<b>Criteria B - Crash Experience</b> .....	Not Evaluated
<b>Criteria C - Minimum Volumes and Delays</b> .....	Not Satisfied
Delay data not evaluated Required volumes reached for 7 hours, 8 are needed	
<b>Criteria D - 80% of Volumes, Delays, and Crashes</b> .....	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	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	395	75	210-Yes	140-No	Major	240-Yes	160-No	Major
07:00 - 08:00	620	132	210-Yes	140-No	Major	240-Yes	160-No	Major
08:00 - 09:00	584	172	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
09:00 - 10:00	461	122	210-Yes	140-No	Major	240-Yes	160-No	Major
10:00 - 11:00	537	197	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
11:00 - 12:00	626	215	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
12:00 - 13:00	634	122	210-Yes	140-No	Major	240-Yes	160-No	Major
13:00 - 14:00	534	100	210-Yes	140-No	Major	240-Yes	160-No	Major
14:00 - 15:00	466	71	210-Yes	140-No	Major	240-Yes	160-No	Major
15:00 - 16:00	622	86	210-Yes	140-No	Major	240-Yes	160-No	Major
16:00 - 17:00	823	103	210-Yes	140-No	Major	240-Yes	160-No	Major
17:00 - 18:00	1,048	235	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
18:00 - 19:00	822	214	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
19:00 - 20:00	711	142	210-Yes	140-Yes	Both	240-Yes	160-No	Major
20:00 - 21:00	602	269	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
21:00 - 22:00	482	78	210-Yes	140-No	Major	240-Yes	160-No	Major
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**

APP.#1 = Andover Blvd.
APP.#2= CR 18
APP.#3= Andover Blvd.
APP.#4= CR 18

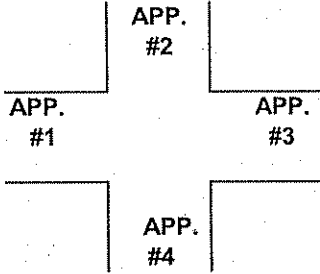
**COUNT LOCATION:**

CR 18 (Crosstown Blvd.)

**DATE:**

06/30/2005

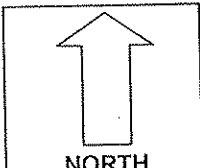
@ Andover Blvd.



- 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								
6:15-6:30						2		
6:30-6:45	2				2	3		
6:45-7:00								
<b>HOURLY TOTAL</b>					<b>2</b>	<b>HOURLY TOTAL</b>		<b>5</b>
7:00-7:15						2		
7:15-7:30						1		
7:30-7:45						4		
7:45-8:00						5		25
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>37</b>
8:00-8:15						5		23
8:15-8:30						5		3
8:30-8:45						6		
8:45-9:00						3		
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>45</b>
9:00-9:15						3		
9:15-9:30						2		
9:30-9:45						4		
9:45-10:00						1		
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>10</b>
10:00-10:15						2		
10:15-10:30						6		
10:30-10:45						5		
10:45-11:00	3				3	1		
<b>HOURLY TOTAL</b>					<b>3</b>	<b>HOURLY TOTAL</b>		<b>14</b>
11:00-11:15			2	4	6	4		29
11:15-11:30						1		23
11:30-11:45						3		2
11:45-12:00						2		2
<b>HOURLY TOTAL</b>					<b>6</b>	<b>HOURLY TOTAL</b>		<b>66</b>
12:00-12:15						2		5
12:15-12:30						1		5
12:30-12:45						4		
12:45-1:00						3		1
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>21</b>
1:00-1:15								
1:15-1:30						1		2
1:30-1:45						2		1
1:45-2:00						5		1
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>12</b>
<b>TOTAL</b>					<b>11</b>	<b>TOTAL</b>		<b>210</b>

1  
2  
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NORTH

APP.#1 = Andover Blvd.
APP.#2= CR 18
APP.#3= Andover Blvd.
APP.#4= CR 18

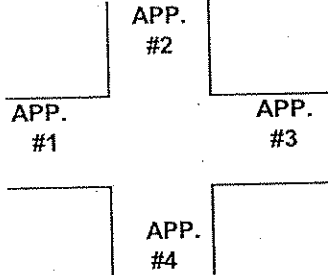
COUNT LOCATION:

CR 18 (Crosstown Blvd.)

DATE:

06/29/2005

@ Andover Blvd.



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		
2:15-2:30						4		
2:30-2:45						2		
2:45-3:00						3		
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>11</b>
3:00-3:15						3		
3:15-3:30								
3:30-3:45						2		
3:45-4:00						1		
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>6</b>
4:00-4:15				1	1			
4:15-4:30				1	1	4		
4:30-4:45	1	1		1	3	1		
4:45-5:00	2		1	1	4			
<b>HOURLY TOTAL</b>					<b>9</b>	<b>HOURLY TOTAL</b>		<b>5</b>
5:00-5:15								
5:15-5:30						3		
5:30-5:45						2		
5:45-6:00						2		
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>7</b>
6:00-6:15						2		
6:15-6:30						3		
6:30-6:45								
6:45-7:00						2		
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>7</b>
7:00-7:15						2		
7:15-7:30						1		
7:30-7:45						1		
7:45-8:00								
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>4</b>
8:00-8:15								
8:15-8:30								
8:30-8:45						2		
8:45-9:00								
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>2</b>
9:00-9:15								
9:15-9:30								
9:30-9:45								
9:45-10:00								
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		
<b>TOTAL</b>					<b>20</b>	<b>TOTAL</b>		<b>252</b>

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