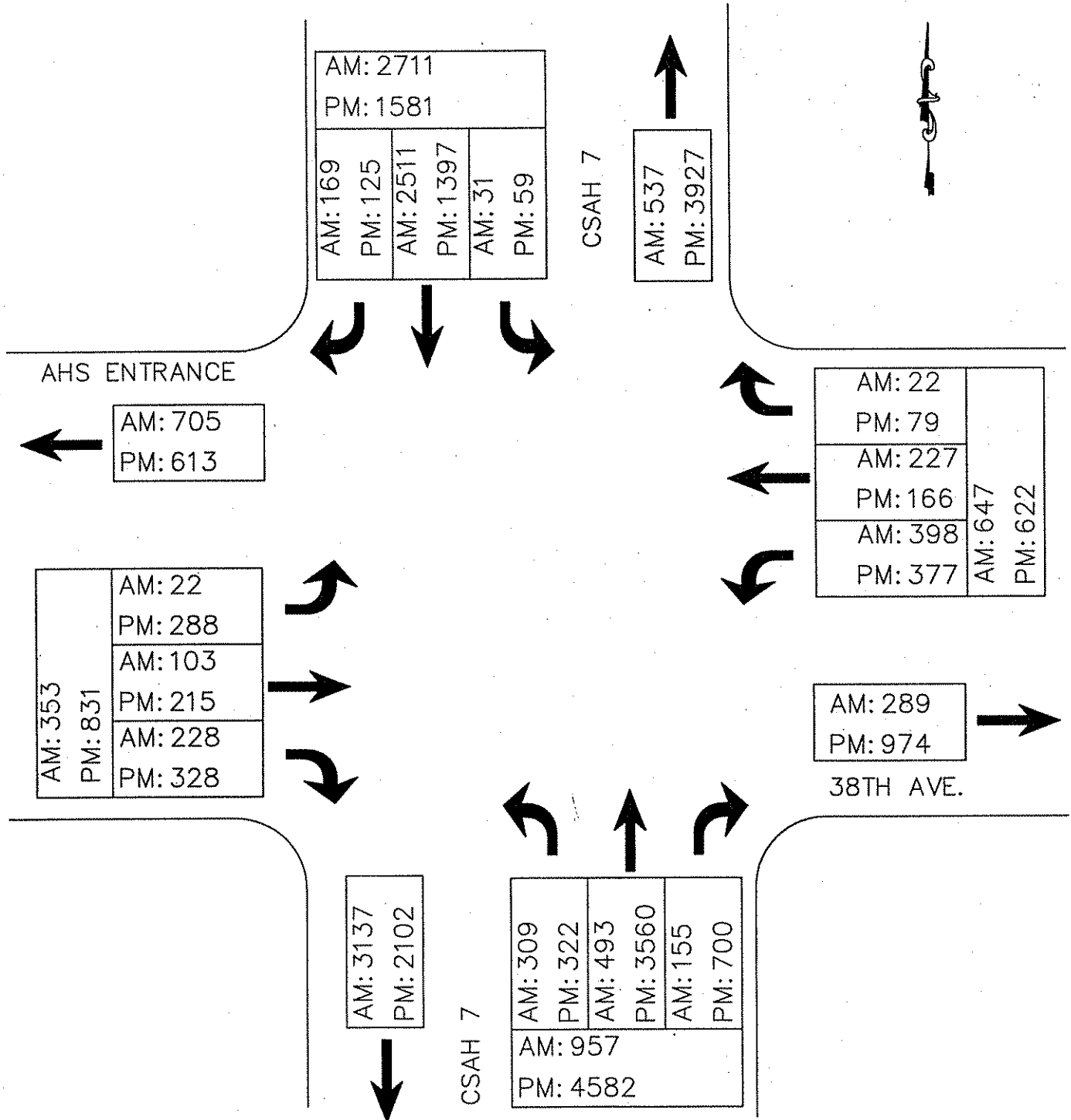


# ANOKA COUNTY HIGHWAY DEPARTMENT

## PEAK AM/PM TURNING MOVEMENT DIAGRAM

Location: C. S. A. H. 7 (7TH AVE.) @ 38TH AVE. /AHS ENTRANCE



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

File Name : TMC0433  
 Site Code : 04330101  
 Start Date : 10/12/2004  
 Page No : 1

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

Groups Printed- Unshifted

Start Time	CSAH 7 Southbound					38TH AVE Westbound					CSAH 7 Northbound					SCHOOL ENTRANCE 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	4	236	2	4	242	32	1	1	2	34	4	21	4	5	29	0	0	1	0	1	11	306	317
06:15	4	276	6	4	286	26	1	1	1	28	3	32	9	7	44	0	1	1	1	2	13	360	373
06:30	4	261	4	1	269	46	1	1	3	48	9	39	13	5	61	0	1	5	0	6	9	384	393
06:45	3	258	13	5	274	50	22	1	2	73	19	44	13	7	76	1	5	7	1	13	15	436	451
Total	15	1031	25	14	1071	154	25	4	8	183	35	136	39	24	210	1	7	14	2	22	48	1486	1534
07:00	3	204	40	3	247	32	37	1	0	70	48	48	11	10	107	0	13	45	0	58	13	482	495
07:15	2	187	51	4	240	27	93	0	7	120	93	42	9	15	144	3	35	60	15	98	41	602	643
07:30	2	227	39	4	268	37	60	2	5	99	85	58	18	5	161	9	38	85	13	132	27	660	687
07:45	1	272	6	15	279	46	4	3	2	53	27	36	18	3	81	3	5	9	2	17	22	430	452
Total	8	890	136	26	1034	142	194	6	14	342	253	184	56	33	493	15	91	199	30	305	103	2174	2277
08:00	3	166	2	2	171	29	0	4	3	33	8	40	9	9	57	2	1	5	0	8	14	269	283
08:15	2	162	1	6	165	24	5	3	3	32	7	31	17	7	55	0	0	4	1	4	17	256	273
08:30	3	128	1	2	132	27	1	3	0	31	3	53	12	4	68	1	2	3	1	6	7	237	244
08:45	0	134	4	5	138	22	2	2	0	26	3	49	22	4	74	3	2	3	1	8	10	246	256
Total	8	590	8	15	606	102	8	12	6	122	21	173	60	24	254	6	5	15	3	26	48	1008	1056
*** BREAK ***																							
14:00	5	83	3	3	91	20	7	3	3	30	27	93	26	17	146	3	7	11	1	21	24	288	312
14:15	2	98	12	5	112	15	33	3	9	51	37	126	37	10	200	14	13	25	3	52	27	415	442
14:30	4	107	9	2	120	18	14	3	0	35	24	121	28	7	173	67	51	82	27	200	36	528	564
14:45	2	98	4	1	104	25	6	3	3	34	21	139	32	5	192	26	22	42	3	90	12	420	432
Total	13	386	28	11	427	78	60	12	15	150	109	479	123	39	711	110	93	160	34	363	99	1651	1750
5:00	3	70	4	2	77	20	7	2	0	29	12	192	57	8	261	7	10	14	1	31	11	398	409
5:15	2	68	7	4	77	27	9	7	1	43	19	219	47	15	285	6	8	13	1	27	21	432	453
5:30	2	95	7	4	104	21	3	4	0	28	7	259	50	7	316	6	4	12	0	22	11	470	481
5:45	3	64	4	3	71	27	4	5	2	36	11	240	61	12	312	7	7	13	0	27	17	446	463
Total	10	297	22	13	329	95	23	18	3	136	49	910	215	42	1174	26	29	52	2	107	60	1746	1806
16:00	3	80	2	2	85	17	4	8	0	29	13	296	41	9	350	14	9	18	1	41	12	505	517
16:15	3	93	6	5	102	24	12	12	0	48	11	232	44	3	287	19	15	15	0	49	8	486	494
16:30	6	87	16	6	109	27	20	12	2	59	30	323	55	2	408	11	4	7	0	22	10	598	608
16:45	2	90	14	8	106	22	9	5	4	36	23	257	38	4	318	10	5	5	0	20	16	480	496
Total	14	350	38	21	402	90	45	37	6	172	77	1108	178	18	1363	54	33	45	1	132	46	2069	2115
17:00	4	99	11	7	114	26	9	2	1	37	29	318	52	8	399	22	14	19	0	55	16	605	621
17:15	6	90	13	2	109	25	10	4	0	39	28	259	39	8	326	35	18	15	5	68	15	542	557
17:30	8	80	8	0	96	36	10	3	1	49	12	270	53	8	335	19	15	21	0	55	9	535	544
17:45	4	95	5	3	104	27	9	3	0	39	18	216	40	0	274	22	13	16	1	51	4	468	472
Total	22	364	37	12	423	114	38	12	2	164	87	1063	184	24	1334	98	60	71	6	229	44	2150	2194
Grand Total	90	3908	294	112	4292	775	393	101	54	1269	631	4053	855	204	5539	310	318	556	78	1184	448	12284	12732
Apprch %	2.1	91.1	6.8			61.1	31.0	8.0			11.4	73.2	15.4			26.2	26.9	47.0					
Total %	0.7	31.8	2.4		34.9	6.3	3.2	0.8		10.3	5.1	33.0	7.0		45.1	2.5	2.6	4.5		9.6	3.5	96.5	

# ANOKA COUNTY HIGHWAY

## PC-WARRANTS

### TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name : TMC0433

Study Date : 12/06/04

Page No. : 1

## Signal Warrants - Summary

### Major Street Approaches

#### Northbound: CSAH 7

Number of Lanes: 2

Approach Speed: 40

Total Approach Volume: 5,539

#### Southbound: CSAH 7

Number of Lanes: 2

Approach Speed: 40

Total Approach Volume: 4,292

### Minor Street Approaches

#### Eastbound: SCHOOL ENTRANCE

Number of Lanes: 2

Total Approach Volume: 1,184

#### Westbound: 38TH AVE

Number of Lanes: 2

Total Approach Volume: 1,269

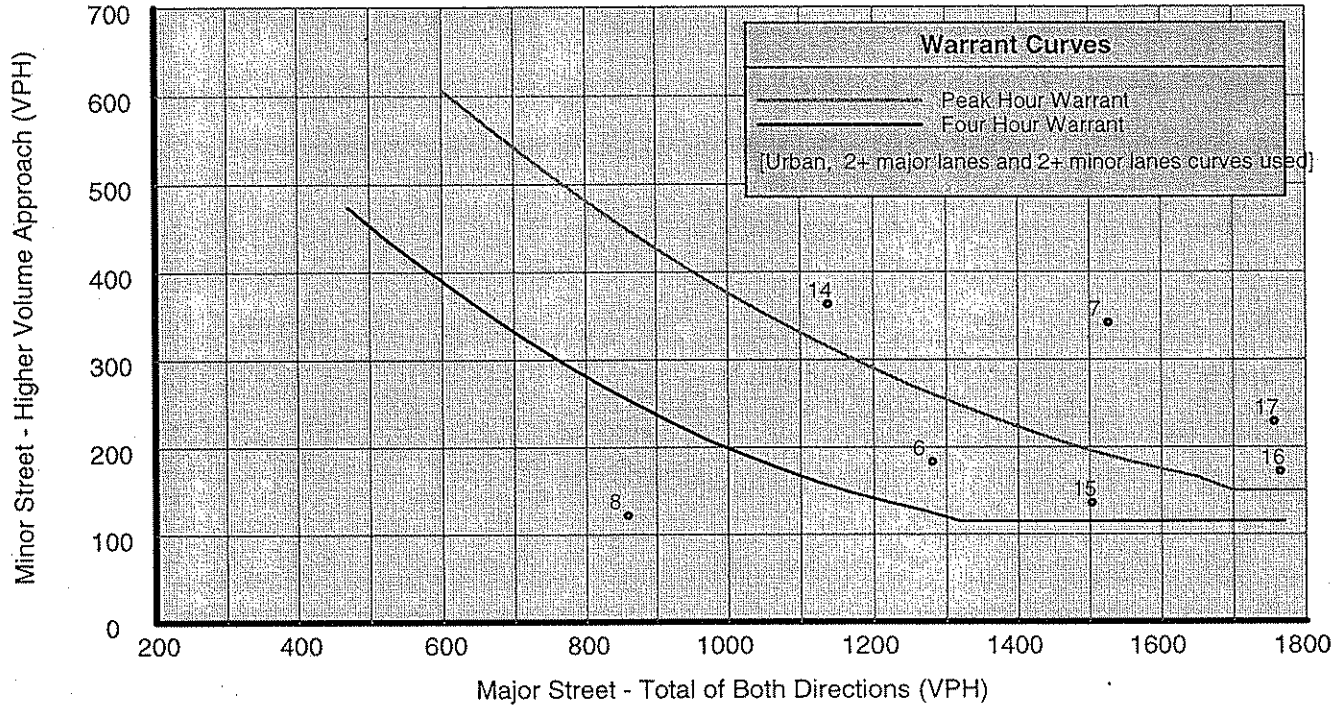
## Warrant Summary (Urban values apply.)

<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 3 hours, 8 are needed	
<b>Warrant 1B - Interruption of Continuous Traffic</b> .....	<b>Not Satisfied</b>
Required volumes reached for 6 hours, 8 are needed	
<b>Warrant 1 A&amp;B - Combination of Warrants</b> .....	<b>Not Satisfied</b>
Required volumes reached for 5 hours, 8 are needed	
<b>Warrant 2 - Four Hour Volumes</b> .....	<b>Satisfied</b>
Number of hours (6) volumes exceed minimum >= minimum required (4).	
<b>Warrant 3 - Peak Hour</b> .....	<b>Satisfied</b>
<b>Warrant 3A - Peak Hour Volumes</b> .....	<b>Satisfied</b>
Volumes exceed minimums for at least one hour.	
<b>Warrant 3B - Peak Hour Delay</b> .....	<b>Satisfied</b>
Number of hours (14) volumes exceed minimum >= required (1). Delay data not evaluated.	
<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 : TMC0433  
Study Date : 12/06/04  
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	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	1,281	183	WB	600-Yes	200-No	Major	900-Yes	100-Yes	Both	720-Yes	160-Yes	Both
07:00	1,527	342	WB	600-Yes	200-Yes	Both	900-Yes	100-Yes	Both	720-Yes	160-Yes	Both
08:00	860	122	WB	600-Yes	200-No	Major	900-No	100-Yes	Minor	720-Yes	160-No	Major
09:00	0	0	EB	600-No	200-No	---	900-No	100-No	---	720-No	160-No	---
10:00	0	0	EB	600-No	200-No	---	900-No	100-No	---	720-No	160-No	---
11:00	0	0	EB	600-No	200-No	---	900-No	100-No	---	720-No	160-No	---
12:00	0	0	EB	600-No	200-No	---	900-No	100-No	---	720-No	160-No	---
13:00	0	0	EB	600-No	200-No	---	900-No	100-No	---	720-No	160-No	---
14:00	1,138	363	EB	600-Yes	200-Yes	Both	900-Yes	100-Yes	Both	720-Yes	160-Yes	Both
15:00	1,503	136	WB	600-Yes	200-No	Major	900-Yes	100-Yes	Both	720-Yes	160-No	Major
16:00	1,765	172	WB	600-Yes	200-No	Major	900-Yes	100-Yes	Both	720-Yes	160-Yes	Both
17:00	1,757	229	EB	600-Yes	200-Yes	Both	900-Yes	100-Yes	Both	720-Yes	160-Yes	Both
18:00	0	0	EB	600-No	200-No	---	900-No	100-No	---	720-No	160-No	---
19:00	0	0	EB	600-No	200-No	---	900-No	100-No	---	720-No	160-No	---
20:00	0	0	EB	600-No	200-No	---	900-No	100-No	---	720-No	160-No	---
21:00	0	0	EB	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 : TMC0433  
Study Date : 12/06/04

**Multi-Way Stop Warrant Report**

**Major Street Approaches**

**Northbound: CSAH 7**  
Total Approach Volume: 5,539  
Approach Speed: 40

**Southbound: CSAH 7**  
Total Approach Volume: 4,292  
Approach Speed: 40

**Minor Street Approaches**

**Eastbound: SCHOOL ENTRANCE**  
Total Approach Volume: 1,184

**Westbound: 38TH AVE**  
Total Approach Volume: 1,269

**Warrant Summary**

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

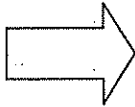
**Criteria B - Crash Experience** ..... Not Evaluated  
Number of crashes (0) is less than the minimum required (5).

**Criteria C - Minimum Volumes and Delays** ..... Not Satisfied  
Delay data not evaluated  
Required volumes reached for 6 hours, 8 are needed

**Criteria D - 80% of Volumes, Delays, and Crashes** ..... Not Evaluated  
Delay data not evaluated  
Required volumes reached for 6 hours, 8 are needed

**Analysis of 8-Hour Volume Warrants:**

Time	Major Crit Total	Minor Total	Crit C			Crit D		
			Major Crit	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	1,281	205	300-Yes	200-Yes	Both	240-Yes	160-Yes	Both
07:00 - 08:00	1,527	647	300-Yes	200-Yes	Both	240-Yes	160-Yes	Both
08:00 - 09:00	860	148	300-Yes	200-No	Major	240-Yes	160-No	Major
09:00 - 10:00	0	0	300-No	200-No	No	240-No	160-No	No
10:00 - 11:00	0	0	300-No	200-No	No	240-No	160-No	No
11:00 - 12:00	0	0	300-No	200-No	No	240-No	160-No	No
12:00 - 13:00	0	0	300-No	200-No	No	240-No	160-No	No
13:00 - 14:00	0	0	300-No	200-No	No	240-No	160-No	No
14:00 - 15:00	1,138	513	300-Yes	200-Yes	Both	240-Yes	160-Yes	Both
15:00 - 16:00	1,503	243	300-Yes	200-Yes	Both	240-Yes	160-Yes	Both
16:00 - 17:00	1,765	304	300-Yes	200-Yes	Both	240-Yes	160-Yes	Both
17:00 - 18:00	1,757	393	300-Yes	200-Yes	Both	240-Yes	160-Yes	Both
18:00 - 19:00	0	0	300-No	200-No	No	240-No	160-No	No
19:00 - 20:00	0	0	300-No	200-No	No	240-No	160-No	No
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 7 (7th Ave.) @

DATE:

10/12/2004

38th Ave./Anoka High School Entrance

NORTH

APP. #1 = CSAH 7

APP. #2 = AHS Ent.

APP. #3 = CSAH 7

APP. #4 = 38th Ave.

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						6		5
6:15-6:30						6		7
6:30-6:45				1	1	2		7
6:45-7:00						7		8
<b>HOURLY TOTAL</b>					<b>1</b>	<b>HOURLY TOTAL</b>		<b>48</b>
7:00-7:15		1	1	1	3	5		8
7:15-7:30				7	7	6		35
7:30-7:45				1	1	4		23
7:45-8:00						3		19
<b>HOURLY TOTAL</b>					<b>11</b>	<b>HOURLY TOTAL</b>		<b>103</b>
8:00-8:15						9		5
8:15-8:30				1	1	11		6
8:30-8:45						5		1
8:45-9:00						7		3
<b>HOURLY TOTAL</b>					<b>1</b>	<b>HOURLY TOTAL</b>		<b>47</b>
					<b>TOTAL 13</b>		<b>TOTAL</b>	<b>198</b>

2:00-2:15						7		16
2:15-2:30						4		23
2:30-2:45				14	14	4		32
2:45-3:00				2	2	4		8
<b>HOURLY TOTAL</b>					<b>16</b>	<b>HOURLY TOTAL</b>		<b>98</b>
3:00-3:15						3		7
3:15-3:30			3	1	4	4		16
3:30-3:45						5		6
3:45-4:00			3		3	10		8
<b>HOURLY TOTAL</b>					<b>7</b>	<b>HOURLY TOTAL</b>		<b>59</b>
4:00-4:15	1	1	4	4	10	5		7
4:15-4:30			1		1	3		5
4:30-4:45	4	1	1		6	2		8
4:45-5:00				1	1	4	1	11
<b>HOURLY TOTAL</b>					<b>18</b>	<b>HOURLY TOTAL</b>		<b>46</b>
5:00-5:15						8		8
5:15-5:30	6				6	4		11
5:30-5:45	4		4		8	4		5
5:45-6:00						1		3
<b>HOURLY TOTAL</b>					<b>14</b>	<b>HOURLY TOTAL</b>		<b>44</b>
					<b>TOTAL 55</b>		<b>TOTAL</b>	<b>247</b>