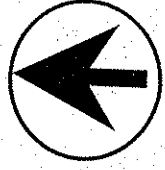


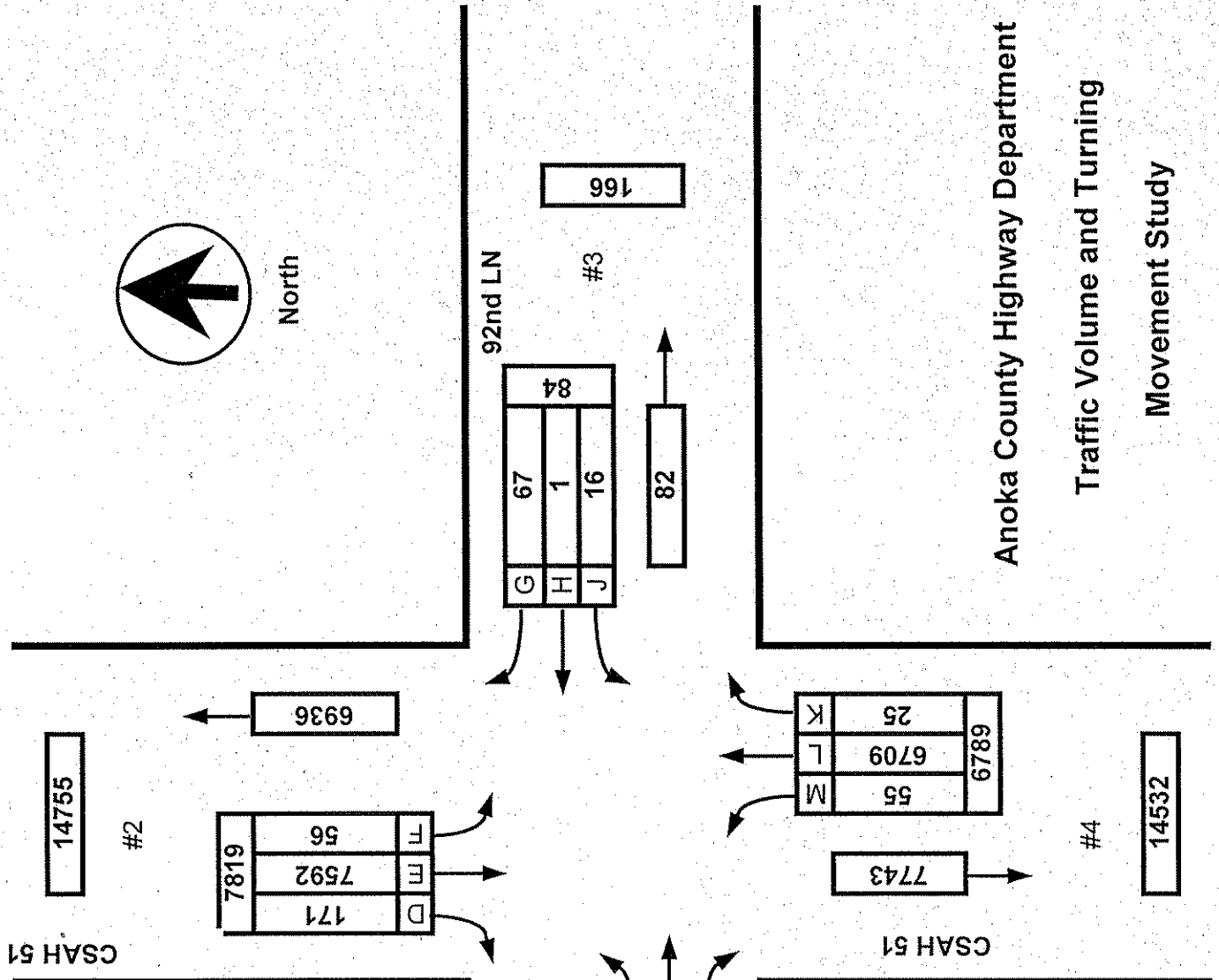
Date : 10/10/05

Count Number : TMC0533

Location : CSAH 51 (University Ave.) @  
92nd LN/North Access Woodland Apts.



North



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

Anoka County Highway Department  
Traffic Volume and Turning  
Movement Study

North Access Woodland Apts.

#1

523	227
296	160
	1
	135
	A
	B
	C

#2

14755	6936
7819	56
	7592
	171
	D
	E
	T

#3

166	82
84	67
	1
	16
	G
	H
	J

#4

14532	7743
6789	55
	6709
	25
	K
	L
	M



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

File Name : TMC0533  
 Site Code : 05330101  
 Start Date : 10/11/2005  
 Page No : 2

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

Groups Printed- Unshifted

Start Time	CSAH 51 Southbound					92nd LN Westbound					CSAH 51 Northbound					North Apt. Access 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																					
18:00	0	155	5	1	160	0	0	3	0	3	1	169	1	3	171	3	0	4	0	7	4	341	345																	
18:15	1	150	6	0	157	0	0	1	0	1	2	182	0	1	184	2	0	6	0	8	1	350	351																	
18:30	3	147	5	1	155	0	0	1	0	1	2	166	2	1	170	2	0	3	0	5	2	331	333																	
18:45	1	118	5	1	124	1	0	1	0	2	0	171	0	1	171	1	0	3	0	4	1	301	302																	
Total	5	570	21	3	596	1	0	6	0	7	5	688	3	5	696	8	0	16	0	24	8	1323	1331																	
19:00	0	108	3	0	111	0	0	0	0	0	4	120	0	1	124	3	0	3	0	6	1	241	242																	
19:15	0	112	3	3	115	0	0	0	0	0	0	114	1	0	115	4	0	0	0	4	3	234	237																	
19:30	0	90	1	1	91	1	0	1	0	2	1	130	2	0	133	5	0	2	0	7	1	233	234																	
19:45	2	84	2	0	88	0	0	0	0	0	2	132	0	1	134	3	0	2	0	5	1	227	228																	
Total	2	394	9	4	405	1	0	1	0	2	7	496	3	2	506	15	0	7	0	22	6	935	941																	
Grand Total	56	759	171	229	7819	16	1	67	13	84	55	6709	25	193	6789	160	1	135	5	296	440	14988	15428																	
Apprch %	0.7	97.1	2.2			19.0	1.2	79.8			0.8	98.8	0.4			54.1	0.3	45.6																						
Total %	0.4	50.7	1.1		52.2	0.1	0.0	0.4		0.6	0.4	44.8	0.2		45.3	1.1	0.0	0.9		2.0	2.9	97.1																		

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

Study Name : TMC0533  
Study Date : 10/26/05  
Page No. : 1

**Signal Warrants - Summary**

**Major Street Approaches**

**Northbound: CSAH 51**  
Number of Lanes: 2  
Approach Speed: 45  
Total Approach Volume: 6,789

**Southbound: CSAH 51**  
Number of Lanes: 2  
Approach Speed: 45  
Total Approach Volume: 7,819

**Minor Street Approaches**

**Eastbound: North Apt. Access**  
Number of Lanes: 1  
Total Approach Volume: 296

**Westbound: 92nd LN**  
Number of Lanes: 1  
Total Approach Volume: 84

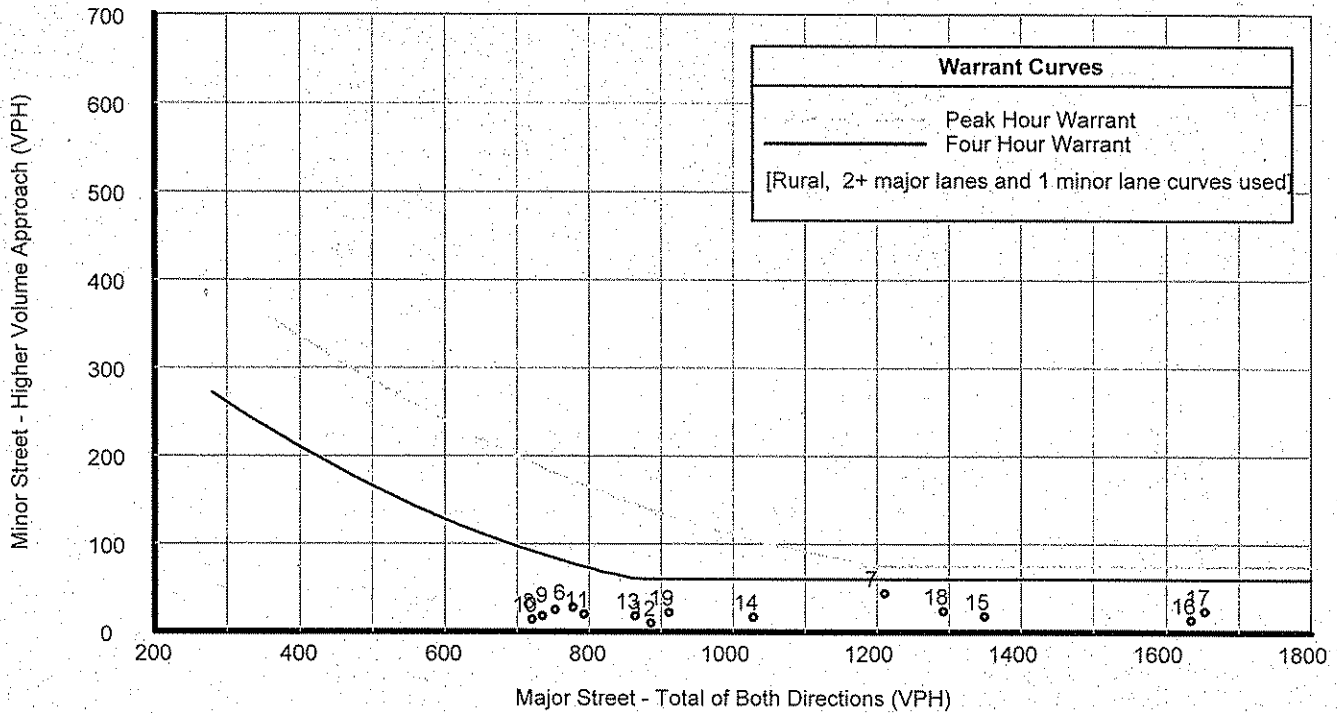
**Warrant Summary (Rural values apply.)**

<b>Warrant 1 - Eight Hour Vehicular Volumes</b> .....	Not Satisfied
<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> .....	Not Satisfied
Number of hours (0) volumes exceed minimum < minimum required (4).	
<b>Warrant 3 - Peak Hour</b> .....	Not Satisfied
<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> .....	Not Evaluated
<b>Warrant 5 - School Crossing</b> .....	Not Evaluated
<b>Warrant 6 - Coordinated Signal System</b> .....	Not Evaluated
<b>Warrant 7 - Crash Experience</b> .....	Not Evaluated
<b>Warrant 8 - Roadway Network</b> .....	Not Evaluated

# ANOKA COUNTY HIGHWAY PC-WARRANTS TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name : TMC0533  
Study Date : 10/26/05  
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	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
01:00	0	0	EB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
02:00	0	0	EB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
03:00	0	0	EB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
04:00	0	0	EB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
05:00	0	0	EB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
06:00	778	28	EB	420-Yes	105-No	Major	630-Yes	53-No	Major	504-Yes	84-No	Major
07:00	1,211	44	EB	420-Yes	105-No	Major	630-Yes	53-No	Major	504-Yes	84-No	Major
08:00	735	18	EB	420-Yes	105-No	Major	630-Yes	53-No	Major	504-Yes	84-No	Major
09:00	753	25	EB	420-Yes	105-No	Major	630-Yes	53-No	Major	504-Yes	84-No	Major
10:00	721	14	EB	420-Yes	105-No	Major	630-Yes	53-No	Major	504-Yes	84-No	Major
11:00	793	20	EB	420-Yes	105-No	Major	630-Yes	53-No	Major	504-Yes	84-No	Major
12:00	886	10	EB	420-Yes	105-No	Major	630-Yes	53-No	Major	504-Yes	84-No	Major
13:00	864	18	EB	420-Yes	105-No	Major	630-Yes	53-No	Major	504-Yes	84-No	Major
14:00	1,028	17	EB	420-Yes	105-No	Major	630-Yes	53-No	Major	504-Yes	84-No	Major
15:00	1,349	18	EB	420-Yes	105-No	Major	630-Yes	53-No	Major	504-Yes	84-No	Major
16:00	1,634	14	EB	420-Yes	105-No	Major	630-Yes	53-No	Major	504-Yes	84-No	Major
17:00	1,653	24	EB	420-Yes	105-No	Major	630-Yes	53-No	Major	504-Yes	84-No	Major
18:00	1,292	24	EB	420-Yes	105-No	Major	630-Yes	53-No	Major	504-Yes	84-No	Major
19:00	911	22	EB	420-Yes	105-No	Major	630-Yes	53-No	Major	504-Yes	84-No	Major
20:00	0	0	EB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
21:00	0	0	EB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
22:00	0	0	EB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
23:00	0	0	EB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---

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

Study Name : TMC0533  
Study Date : 10/26/05

**Multi-Way Stop Warrant Report**

**Major Street Approaches**

**Northbound: CSAH 51**  
Total Approach Volume: 6,789  
Approach Speed: 45

**Southbound: CSAH 51**  
Total Approach Volume: 7,819  
Approach Speed: 45

**Minor Street Approaches**

**Eastbound: North Apt. Access**  
Total Approach Volume: 296

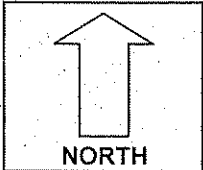
**Westbound: 92nd LN**  
Total Approach Volume: 84

**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	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	778	35	210-Yes	140-No	Major	240-Yes	160-No	Major
07:00 - 08:00	1,211	53	210-Yes	140-No	Major	240-Yes	160-No	Major
08:00 - 09:00	735	23	210-Yes	140-No	Major	240-Yes	160-No	Major
09:00 - 10:00	753	33	210-Yes	140-No	Major	240-Yes	160-No	Major
10:00 - 11:00	721	17	210-Yes	140-No	Major	240-Yes	160-No	Major
11:00 - 12:00	793	21	210-Yes	140-No	Major	240-Yes	160-No	Major
12:00 - 13:00	886	11	210-Yes	140-No	Major	240-Yes	160-No	Major
13:00 - 14:00	864	21	210-Yes	140-No	Major	240-Yes	160-No	Major
14:00 - 15:00	1,028	22	210-Yes	140-No	Major	240-Yes	160-No	Major
15:00 - 16:00	1,349	29	210-Yes	140-No	Major	240-Yes	160-No	Major
16:00 - 17:00	1,634	27	210-Yes	140-No	Major	240-Yes	160-No	Major
17:00 - 18:00	1,653	33	210-Yes	140-No	Major	240-Yes	160-No	Major
18:00 - 19:00	1,292	31	210-Yes	140-No	Major	240-Yes	160-No	Major
19:00 - 20:00	911	24	210-Yes	140-No	Major	240-Yes	160-No	Major
20:00 - 21:00	0	0	210-No	140-No	No	240-No	160-No	No
21:00 - 22:00	0	0	210-No	140-No	No	240-No	160-No	No
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



COUNT LOCATION:

CSAH 51 (University Ave.) @

DATE:

10/11/2005

92nd LN/ North Access Woodland Apts.

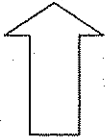
APP.#1= Apt. Access
APP.#2= CSAH 51
APP.#3= 92nd LN
APP.#4= CSAH 51

APP. #1	APP. #2	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						5		3
6:15-6:30						2		
6:30-6:45						1		3
6:45-7:00			1		1	6		5
<b>HOURLY TOTAL</b>					<b>1</b>	<b>HOURLY TOTAL</b>		<b>25</b>
7:00-7:15	1				1	2		6
7:15-7:30						11		
7:30-7:45						8		2
7:45-8:00		1	3		4	6		5
<b>HOURLY TOTAL</b>					<b>5</b>	<b>HOURLY TOTAL</b>		<b>40</b>
8:00-8:15						11		4
8:15-8:30						10		2
8:30-8:45			1		1	5		3
8:45-9:00						10		4
<b>HOURLY TOTAL</b>					<b>1</b>	<b>HOURLY TOTAL</b>		<b>49</b>
9:00-9:15						9		5
9:15-9:30						6		
9:30-9:45						12		
9:45-10:00						11		1
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>44</b>
10:00-10:15						11		1
10:15-10:30						9		
10:30-10:45			1		1	8		
10:45-11:00						11		
<b>HOURLY TOTAL</b>					<b>1</b>	<b>HOURLY TOTAL</b>		<b>40</b>
11:00-11:15						9		1
11:15-11:30						7		1
11:30-11:45						11		
11:45-12:00						6		2
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>37</b>
12:00-12:15						5		2
12:15-12:30		1			1	8		1
12:30-12:45						4		4
12:45-1:00						8		1
<b>HOURLY TOTAL</b>					<b>1</b>	<b>HOURLY TOTAL</b>		<b>33</b>
1:00-1:15						4		2
1:15-1:30						10		
1:30-1:45						10		1
1:45-2:00						14		1
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>42</b>
<b>TOTAL</b>					<b>9</b>	<b>TOTAL</b>		<b>310</b>

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NORTH

COUNT LOCATION:

CSAH 51 (University Ave.) @ DATE:

10/12/2005

92nd LN/ North Access Woodland Apts.

APP.#1= Apt. Access
APP.#2= CSAH 51
APP.#3= 92nd LN
APP.#4= CSAH 51

APP.#2	APP.#3
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						10		1
2:15-2:30						7		
2:30-2:45						7		2
2:45-3:00						6		6
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>39</b>
3:00-3:15						8		3
3:15-3:30				1	1	4		1
3:30-3:45				1	1	7		1
3:45-4:00						5		3
<b>HOURLY TOTAL</b>					<b>2</b>	<b>HOURLY TOTAL</b>		<b>32</b>
4:00-4:15				1	1	3		8
4:15-4:30				2	2	2		2
4:30-4:45	1				1	2		
4:45-5:00				1	1	2		2
<b>HOURLY TOTAL</b>					<b>5</b>	<b>HOURLY TOTAL</b>		<b>21</b>
5:00-5:15		1			1	5		2
5:15-5:30			2		2	7		1
5:30-5:45			1		1	2		1
5:45-6:00						2		4
<b>HOURLY TOTAL</b>					<b>4</b>	<b>HOURLY TOTAL</b>		<b>24</b>
6:00-6:15						3		1
6:15-6:30			2	1	3			1
6:30-6:45			1		1	1		1
6:45-7:00								1
<b>HOURLY TOTAL</b>					<b>4</b>	<b>HOURLY TOTAL</b>		<b>8</b>
7:00-7:15								1
7:15-7:30						3		
7:30-7:45	1				1	1		
7:45-8:00						1		
<b>HOURLY TOTAL</b>					<b>1</b>	<b>HOURLY TOTAL</b>		<b>6</b>
					<b>TOTAL</b>		<b>TOTAL</b>	<b>440</b>
					25			

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