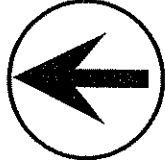


Date : 06/26/08

Count Number : TMC0816

Location : TH 47 (University Ave.)

@ CR 132 (85th ave.)



North

TH 47 (University Ave.)
#2
26863

11422	841	T
8461		F
2120		D

15441

@ CR 132 (85th ave.)

753	G
1806	H
863	J

6236

#3

2814

#1
9783

3869	C
2348	B
1332	A

5914

@ CR 132 (85th ave.)

	LANES OF APPROACH			TOTAL
	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	
#1	1	1	2	4
#2	1	1	2	4
#3	1	1	2	4
#4	1	1	3	5

1988	M
12340	L
641	K

9513

#4

24482

TH 47 (University Ave.)

Anoka County Highway Department
Traffic Volume and Turning
Movement Study

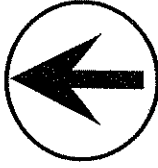
Date : 06/26/08

Count Number : TMC0816

Location : TH 47 (University Ave.)

@ CR 132 (85th ave.)

Hour: 6:45 - 7:45 AM



North

TH 47 (University Ave.)
#2
1785

1374	24	T
1255	95	E
		D

411

@ CR 132 (85th ave.)

13	71	G
31		H
27		J

#3

93

164

106	49	C
	46	B
	11	A

#1

324

218

@ CR 132 (85th ave.)

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

23	349	92	464
K	L	M	

#4

1293

TH 47 (University Ave.)

1757

Anoka County Highway Department

Traffic Volume and Turning

Movement Study

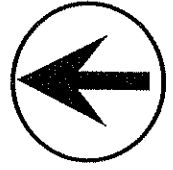
Date : 06/26/08

Count Number : TMC0816

Location : TH 47 (University Ave.)

@ CR 132 (85th ave.)

Hour: 3:30 - 4:30 PM



North

TH 47 (University Ave.)
#2
3273

794			
	D	E	F
173		545	76

2479

@ CR 132 (85th ave.)

138	G
173	H
123	J
434	

786

#3

352

628

#1

1134

506			
	A	B	C
48		143	315

@ CR 132 (85th ave.)

	LANES OF APPROACH			TOTAL
	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	
#1	1	1	2	4
#2	1	1	2	4
#3	1	1	2	4
#4	1	1	3	5

282	M
2026	L
133	K
2441	

716

#4

3157

TH 47 (University Ave.)

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 : TMC0816
Site Code : 08160102
Start Date : 06/26/2000
Page No : 2

Weather: Warm and Sunny
Counter: DB-400
Counted by: Jake/Mike

Groups Printed- Unshifted - Bank 1

Start Time	TH 47 (University Ave.) Southbound					CR 132 (85th ave.) Westbound					TH 47 (University Ave.) Northbound					CR 132 (85th ave.) Eastbound					Exclu. Total	Indu. 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			
19:00	24	89	42	1	155	11	45	21	1	77	30	148	4	1	182	53	32	0	1	85	4	499	503
19:15	14	101	39	2	154	23	55	16	1	94	15	248	15	2	278	64	54	0	0	118	5	644	649
19:30	18	86	22	2	126	6	21	18	0	45	23	164	9	5	196	43	23	3	1	69	8	436	444
19:45	16	99	45	2	160	11	50	20	3	81	31	125	7	1	163	43	32	1	0	76	6	480	486
Total	72	375	148	7	595	51	171	75	5	297	99	685	35	9	819	203	141	4	2	348	23	2059	2082
20:00	12	98	34	1	144	13	11	14	1	38	27	142	15	6	184	47	30	0	1	77	9	443	452
20:15	5	97	32	2	134	10	8	12	1	30	4	94	1	2	99	40	33	4	1	77	6	340	346
20:30	14	70	31	2	115	4	3	9	1	16	28	89	7	4	124	27	18	13	1	58	8	313	321
20:45	11	89	45	1	145	3	6	4	1	13	16	132	7	3	155	46	28	5	1	79	6	392	398
Total	42	354	142	6	538	30	28	39	4	97	75	457	30	15	562	160	109	22	4	291	29	1488	1517
21:00	20	81	35	0	136	1	6	19	0	26	8	115	1	1	124	31	20	1	0	52	1	338	339
21:15	12	73	32	1	117	7	18	7	1	32	32	71	11	3	114	31	10	0	0	41	5	304	309
21:30	10	39	29	0	78	8	15	14	0	37	11	79	2	0	92	21	14	0	0	35	0	242	242
21:45	17	62	40	4	119	0	0	0	0	0	0	0	0	0	0	21	10	1	1	32	5	151	156
Total	59	255	136	5	450	16	39	40	1	95	51	265	14	4	330	104	54	2	1	160	11	1035	1046
Grand Total	841	8461	2120	367	11422	863	1806	753	110	3422	1988	12340	641	373	14969	2348	1332	189	124	3869	974	33682	34656
Approch %	7.4	74.1	18.6			25.2	52.8	22			13.3	82.4	4.3			60.7	34.4	4.9					
Total %	2.5	25.1	6.3		33.9	2.6	5.4	2.2		10.2	5.9	36.6	1.9		44.4	7	4	0.6		11.5	2.8	97.2	
Unshifted	841	8461	2120		11789	863	1806	753		3532	1988	12340	641		15342	2348	1332	189		3993	0	0	34656
% Unshifted	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	0	0	100
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	TH 47 (University Ave.) Southbound				CR 132 (85th ave.) Westbound				TH 47 (University Ave.) Northbound				CR 132 (85th ave.) 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 06:45																	
06:45	7	284	19	310	5	8	1	14	19	82	9	110	11	16	1	28	462
07:00	9	274	25	308	6	12	2	20	17	72	6	95	14	15	6	35	458
07:15	5	373	28	406	10	8	6	24	21	65	4	90	16	10	3	29	549
07:30	3	324	23	350	6	3	4	13	35	130	4	169	8	5	1	14	546
Total Volume	24	1255	95	1374	27	31	13	71	92	349	23	464	49	46	11	106	2015
% App. Total	1.7	91.3	6.9		38	43.7	18.3		19.8	75.2	5		46.2	43.4	10.4		
PHF	.667	.841	.848	.846	.675	.646	.542	.740	.657	.671	.639	.686	.766	.719	.458	.757	.918
Peak Hour Analysis From 12:00 to 21:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 15:30																	
15:30	19	96	36	151	46	37	34	117	91	592	34	717	48	20	3	71	1056
15:45	22	148	52	222	22	46	37	105	75	518	26	619	96	50	19	165	1111
16:00	20	125	44	189	35	38	37	110	47	415	34	496	103	38	12	153	948
16:15	15	176	41	232	20	52	30	102	69	501	39	609	68	35	14	117	1060
Total Volume	76	545	173	794	123	173	138	434	282	2026	133	2441	315	143	48	506	4175
% App. Total	9.6	68.6	21.8		28.3	39.9	31.8		11.6	83	5.4		62.3	28.3	9.5		
PHF	.864	.774	.832	.856	.668	.832	.932	.927	.775	.856	.853	.851	.766	.715	.632	.767	.939

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

Study Name :
Study Date : 06/26/08
Page No. : 1

Signal Warrants - Summary

Major Street Approaches

Northbound: TH 47 (University ave.)

Number of Lanes: 2
Approach Speed: 50
Total Approach Volume: 15,053

Southbound: TH 47 (University ave.)

Number of Lanes: 2
Approach Speed: 50
Total Approach Volume: 11,434

Minor Street Approaches

Eastbound: CR 132 (85th ave.)

Number of Lanes: 2

Total Approach Volume: 3,869

Westbound: CR 132 (85th ave.)

Number of Lanes: 2

Total Approach Volume: 3,445

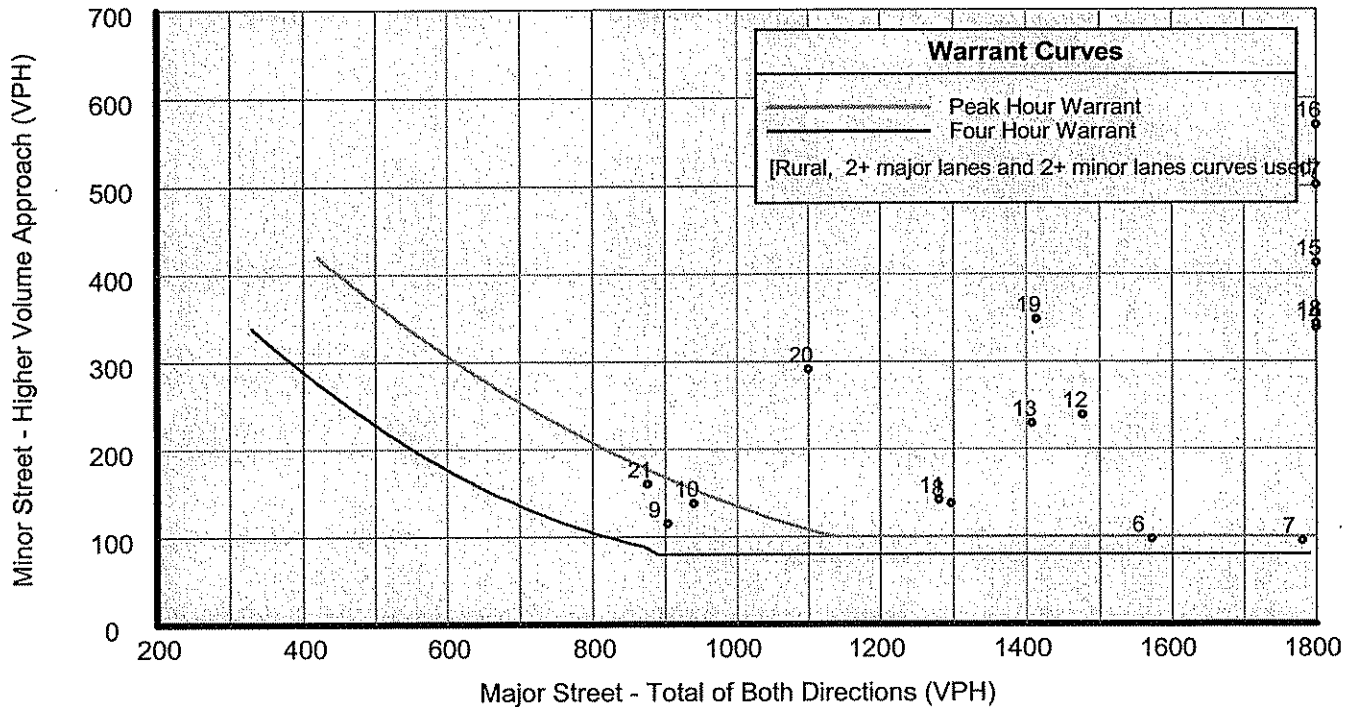
Warrant Summary (Rural values apply.)

Warrant 1 - Eight Hour Vehicular Volumes	Satisfied
Warrant 1A - Minimum Vehicular Volume	Satisfied
Required volumes reached for 11 hours, 8 are needed	
Warrant 1B - Interruption of Continuous Traffic	Satisfied
Required volumes reached for 16 hours, 8 are needed	
Warrant 1 A&B - Combination of Warrants	Satisfied
Required volumes reached for 14 hours, 8 are needed	
Warrant 2 - Four Hour Volumes	Satisfied
Number of hours (16) volumes exceed minimum >= minimum required (4).	
Warrant 3 - Peak Hour	Satisfied
Warrant 3A - Peak Hour Delay	Satisfied
Number of hours (34) 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 :
Study Date : 06/26/08
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	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
01:00	0	0	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
02:00	0	0	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
03:00	0	0	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
04:00	0	0	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
05:00	0	0	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
06:00	1,572	97	EB	420-Yes	140-No	Major	630-Yes	70-Yes	Both	504-Yes	112-No	Major
07:00	1,781	95	EB	420-Yes	140-No	Major	630-Yes	70-Yes	Both	504-Yes	112-No	Major
08:00	1,297	138	EB	420-Yes	140-No	Major	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
09:00	904	115	EB	420-Yes	140-No	Major	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
10:00	940	138	EB	420-Yes	140-No	Major	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
11:00	1,280	142	EB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
12:00	1,477	239	EB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
13:00	1,408	229	WB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
14:00	1,975	338	WB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
15:00	2,794	412	WB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
16:00	3,009	569	EB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
17:00	2,708	501	WB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
18:00	1,952	343	WB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
19:00	1,414	348	EB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
20:00	1,100	291	EB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
21:00	876	160	EB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
22:00	0	0	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
23:00	0	0	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---

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

Study Name :
Study Date : 06/26/08
Page No. : 1

Multi-Way Stop Warrant Report

Major Street Approaches

Northbound: TH 47 (University ave.)

Total Approach Volume: 15,053
Approach Speed: 50

Southbound: TH 47 (University ave.)

Total Approach Volume: 11,434
Approach Speed: 50

Minor Street Approaches

Eastbound: CR 132 (85th ave.)

Total Approach Volume: 3,869

Westbound: CR 132 (85th ave.)

Total Approach Volume: 3,445

Warrant Summary

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

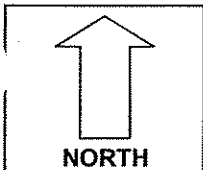
Criteria B - Crash Experience Not Evaluated

Criteria C - Minimum Volumes and Delays Satisfied
Delay data not evaluated
Required volumes reached for 16 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 15 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	1,572	156	210-Yes	140-Yes	Both	240-Yes	160-No	Major
07:00 - 08:00	1,781	163	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
08:00 - 09:00	1,297	216	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
09:00 - 10:00	904	177	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
10:00 - 11:00	940	214	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
11:00 - 12:00	1,280	275	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
12:00 - 13:00	1,477	424	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
13:00 - 14:00	1,408	419	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
14:00 - 15:00	1,975	570	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
15:00 - 16:00	2,794	728	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
16:00 - 17:00	3,009	1,018	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
17:00 - 18:00	2,708	996	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
18:00 - 19:00	1,952	647	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
19:00 - 20:00	1,414	645	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
20:00 - 21:00	1,100	388	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
21:00 - 22:00	876	278	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
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:

TH 47 (University Ave.) @

DATE:

06/26/2008

@ CR 132 (85th ave.)

APP.#1= CR 132 (85th ave)

APP.
#2

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.

APP.#2= TH 47 (University Ave.)

APP.
#1

APP.
#3

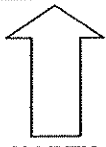
APP.#3= CR 132 (85th ave.)

APP.#4= CSAH 17 TH 47 (University Ave.)

APP.
#4

TIME	PEDESTRIANS					HEAVY VEHICLES		
	APP. #1	APP. #2	APP. #3	APP. #4	15 MIN TOT	TRUCKS	RV	BUS
6:00-6:15AM						4		2
6:15-6:30						2		2
6:30-6:45						4		1
6:45-7:00						6		10
HOURLY TOTAL						HOURLY TOTAL		31
7:00-7:15						12		5
7:15-7:30						17		7
7:30-7:45						11		10
7:45-8:00						13		4
HOURLY TOTAL						HOURLY TOTAL		79
8:00-8:15						19		7
8:15-8:30						16		5
8:30-8:45						20		5
8:45-9:00						18		2
HOURLY TOTAL						HOURLY TOTAL		92
9:00-9:15						24		4
9:15-9:30						14		4
9:30-9:45						15		4
9:45-10:00						17		
HOURLY TOTAL						HOURLY TOTAL		82
10:00-10:15				2		10		3
10:15-10:30				3		13		3
10:30-10:45	1					16		4
10:45-11:00						24		2
HOURLY TOTAL						HOURLY TOTAL		75
11:00-11:15						17		4
11:15-11:30				4		15		3
11:30-11:45						18		4
11:45-12:00				2	2	13		2
HOURLY TOTAL					2	HOURLY TOTAL		76
12:00-12:15						21		8
12:15-12:30						24		1
12:30-12:45						12		2
12:45-1:00	1			1	2	17		3
HOURLY TOTAL						HOURLY TOTAL		88
1:00-1:15						13		2
1:15-1:30				2		23		1
1:30-1:45						16		4
1:45-2:00	1				1	10		2
HOURLY TOTAL					1	HOURLY TOTAL		71
TOTAL						TOTAL		594

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32



NORTH

COUNT LOCATION:

TH 47 (University Ave.) @

DATE:

07/08/2008

@CR 132 (85th ave.)

APP.#1= CR 132 (85th ave)

APP. #2

HEAVY VEHICLE- ANY VEHICLE HAVING MORE THAN FOUR TIRES TOUCHING THE PAVEMENT

APP.#2= TH 47 (University Ave.)

APP. #1

APP. #3

A. TRUCKS- A HEAVY VEHICLE INVOLVED PRIMARILY IN THE TRANSPORT OF GOODS OR IN THE DELIVERY OF A SERVICE.

APP.#3= CR 132 (85th ave.)

B. RV- A HEAVY VEHICLE OPERATED BY A PRIVATE MOTORIST AND INVOLVED IN THE TRANSPORT OF RECREATIONAL EQUIPMENT OR FACILITIES.

APP.#4= CSAH 17 TH 47 (University Ave.)

APP. #4

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						21		2
2:15-2:30						14		3
2:30-2:45						11	1	2
2:45-3:00						15		1
HOURLY TOTAL						HOURLY TOTAL		70
3:00-3:15						19		5
3:15-3:30						13		3
3:30-3:45				2		16		2
3:45-4:00				5		19		4
HOURLY TOTAL						HOURLY TOTAL		81
4:00-4:15				2	2	11		6
4:15-4:30	4			6	10	12	1	4
4:30-4:45	2	1		2	5	8		6
4:45-5:00	1			3		11		5
HOURLY TOTAL					17	HOURLY TOTAL		64
5:00-5:15	1			3	4	15		6
5:15-5:30				2	2	11		5
5:30-5:45				1		10		3
5:45-6:00	2			2	4	8		3
HOURLY TOTAL						HOURLY TOTAL		61
6:00-6:15						7		7
6:15-6:30						5	1	5
6:30-6:45						3		3
6:45-7:00	1				1	5		3
HOURLY TOTAL						HOURLY TOTAL		39
7:00-7:15						3		1
7:15-7:30						4		1
7:30-7:45				1	1	4		3
7:45-8:00						3		2
HOURLY TOTAL					1	HOURLY TOTAL		21
8:00-8:15				3	3	4		2
8:15-8:30				1	1	4	1	1
8:30-8:45						5		2
8:45-9:00				2	2	3	1	2
HOURLY TOTAL						HOURLY TOTAL		25
9:00-9:15						1		
9:15-9:30				1	1	3		1
9:30-9:45								
9:45-10:00						3		2
HOURLY TOTAL					1	HOURLY TOTAL		10
				TOTAL			TOTAL	968

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