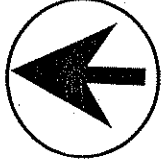


Date: 10/09/06

Count Number: TMC0634

Location: CSAH 83 (Armstrong Blvd.)

@ Alpine Dr.



North

CSAH 83

4600

#2

2249	98	T
2067	84	D
		M
		F

2351

Alpine Dr.

1484

#1

726		C
	71	
	211	B
	476	A
	758	

#1

Alpine Dr.

98	458
228	
132	
G	
H	
J	

#3

455

913

CSAH 83

2675

#4

146	2742
2182	
414	
K	
L	
M	

5417

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

Anoka County Highway Department

Traffic Volume and Turning

Movement Study

Anoka County Highway Department Traffic Engineering

Traffic Volume and Turning Movement Study

File Name : TMC0634
Site Code : 06340101
Start Date : 10/09/2006
Page No : 1

Weather: Cool and Cloudy
Counter: DB-400
Counted by: Josie/Terri

Groups Printed- Unshifted

Start Time	CSAH 83 Southbound					Alpine Dr. Westbound					CSAH 83 Northbound					Alpine Dr. 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			
06:00	0	75	2	2	77	2	7	1	0	10	0	6	2	0	8	0	0	16	3	16	5	111	116
06:15	2	66	2	0	70	4	3	1	0	8	1	11	1	1	13	1	1	21	1	23	2	114	116
06:30	3	80	1	4	84	3	5	0	0	8	1	6	3	1	10	1	3	21	0	25	5	127	132
06:45	3	94	2	0	99	2	11	4	1	17	2	5	0	0	7	0	4	23	1	27	2	150	152
Total	8	315	7	6	330	11	26	6	1	43	4	28	6	2	38	2	8	81	5	91	14	502	516
07:00	2	74	2	1	78	4	4	0	0	8	0	12	2	1	14	0	9	18	0	27	2	127	129
07:15	0	92	1	2	93	3	8	3	0	14	1	14	0	2	15	0	7	20	0	27	4	149	153
07:30	8	78	0	4	86	2	5	3	0	10	3	15	0	3	18	0	2	18	1	20	8	134	142
07:45	3	59	5	2	67	3	6	3	0	12	0	10	0	2	10	0	5	12	1	17	5	106	111
Total	13	303	8	9	324	12	23	9	0	44	4	51	2	8	57	0	23	68	2	91	19	516	535
08:00	4	53	0	3	57	3	3	0	0	6	3	13	0	1	16	0	6	7	1	13	5	92	97
08:15	0	61	1	3	62	4	4	2	0	10	7	20	2	5	29	2	5	19	2	26	10	127	137
08:30	3	48	1	1	52	3	8	2	1	13	3	12	0	3	15	1	3	18	3	22	8	102	110
08:45	0	47	2	9	49	0	2	2	1	4	6	21	1	2	28	1	8	8	1	17	13	98	111
Total	7	209	4	16	220	10	17	6	2	33	19	66	3	11	88	4	22	52	7	78	36	419	455
09:00	2	39	2	5	43	2	6	1	0	9	5	17	1	3	23	0	3	10	1	13	9	88	97
09:15	2	39	1	7	42	2	6	1	0	9	5	17	1	4	23	2	2	9	0	13	11	87	98
09:30	2	28	0	3	30	0	0	2	0	2	5	21	0	6	26	0	2	7	0	9	9	67	76
09:45	1	27	2	3	30	1	5	0	0	6	6	20	2	5	28	1	2	4	1	7	9	71	80
Total	7	133	5	18	145	5	17	4	0	26	21	75	4	18	100	3	9	30	2	42	38	313	351
10:00	1	28	0	1	29	1	2	1	0	4	6	21	5	5	32	1	4	1	0	6	6	71	77
10:15	0	44	1	7	45	6	2	1	0	9	1	22	1	6	24	0	2	1	0	3	13	81	94
10:30	1	28	1	6	30	3	0	0	0	3	5	29	2	4	36	0	0	4	1	4	11	73	84
10:45	0	30	1	0	31	0	2	1	0	3	4	29	2	1	35	0	0	5	1	5	2	74	76
Total	2	130	3	14	135	10	6	3	0	19	16	101	10	16	127	1	6	11	2	18	32	299	331
11:00	0	33	1	1	34	0	4	1	0	5	7	25	3	4	35	2	0	5	0	7	5	81	86
11:15	0	21	2	2	23	0	3	1	1	4	8	25	3	1	36	2	1	5	0	8	4	71	75
11:30	1	24	1	5	26	0	6	0	0	6	11	22	2	1	35	0	0	2	0	2	6	69	75
11:45	0	25	2	1	27	0	2	2	0	4	6	34	2	4	42	0	5	6	2	11	7	84	91
Total	1	103	6	9	110	0	15	4	1	19	32	106	10	10	148	4	6	18	2	28	22	305	327
12:00	0	20	2	1	22	1	3	3	0	7	7	35	1	2	43	5	3	12	0	20	3	92	95
12:15	1	29	1	4	31	1	3	3	1	7	7	32	3	2	42	4	3	11	0	18	7	98	105
12:30	3	27	2	2	32	0	3	1	0	4	9	27	2	0	38	7	5	6	2	18	4	92	96
12:45	2	16	4	0	22	2	5	1	1	8	7	21	1	3	29	1	4	8	1	13	5	72	77
Total	6	92	9	7	107	4	14	8	2	26	30	115	7	7	152	17	15	37	3	69	19	354	373
13:00	2	21	1	0	24	6	5	1	3	12	6	27	2	0	35	2	2	5	1	9	4	80	84
13:15	2	29	0	2	31	2	2	2	0	6	6	26	1	0	33	0	2	5	0	7	2	77	79
13:30	0	29	1	0	30	1	4	4	0	9	9	29	2	2	40	2	3	11	1	16	3	95	98
13:45	2	24	3	3	29	3	5	1	0	9	10	34	0	3	44	2	3	7	2	12	8	94	102
Total	6	103	5	5	114	12	16	8	3	36	31	116	5	5	152	6	10	28	4	44	17	346	363
14:00	1	21	1	0	23	3	5	1	0	9	7	41	3	2	51	0	1	8	0	9	2	92	94
14:15	4	39	2	5	45	6	3	1	0	10	5	50	4	1	59	1	1	4	0	6	6	120	126
14:30	1	26	5	5	32	6	5	3	6	14	8	37	3	2	48	2	1	13	2	16	15	110	125
14:45	3	33	1	7	37	0	5	2	2	7	13	37	2	4	52	0	4	3	2	7	15	103	118
Total	9	119	9	17	137	15	18	7	8	40	33	165	12	9	210	3	7	28	4	38	38	425	463
15:00	0	29	1	4	30	2	1	2	0	5	12	61	4	4	77	3	7	4	4	14	12	126	138
15:15	2	29	0	2	31	1	4	3	1	8	11	67	4	1	82	1	7	10	0	18	4	139	143
15:30	3	27	1	1	31	5	2	3	1	10	18	103	3	4	124	2	9	3	0	14	6	179	185
15:45	6	29	1	5	36	3	1	1	0	5	18	79	3	1	100	2	9	9	1	20	7	161	168
Total	11	114	3	12	128	11	8	9	2	28	59	310	14	10	383	8	32	26	5	66	29	605	634
16:00	0	30	2	3	32	4	8	3	2	15	10	99	4	1	113	2	9	4	0	15	6	175	181
16:15	1	30	0	5	31	3	11	3	3	17	13	75	4	1	92	3	2	7	1	12	10	152	162
16:30	3	46	4	4	53	5	7	5	0	17	17	106	7	4	130	2	7	10	1	19	9	219	228
16:45	4	40	3	2	47	1	6	2	0	9	17	97	11	2	125	5	6	6	0	17	4	198	202
Total	8	146	9	14	163	13	32	13	5	58	57	377	26	8	460	12	24	27	2	63	29	744	773
17:00	3	37	3	0	43	1	6	5	2	12	12	112	9	0	133	2	5	9	1	16	3	204	207
17:15	4	40	0	1	44	3	5	5	0	13	13	106	6	3	125	1	4	7	1	12	5	194	199
17:30	5	45	3	1	53	3	1	4	0	8	17	91	5	6	113	1	10	6	1	17	8	191	199
17:45	2	43	3	2	48	3	6	3	0	12	16	97	3	3	116	0	7	9	0	16	5	192	197
Total	14	165	9	4	188	10	18	17	2	45	58	406	23	12	487	4	26	31	3	61	21	781	802

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

Study Name : TMC0634
Study Date : 10/13/06
Page No. : 1

Signal Warrants - Summary

Major Street Approaches

Northbound: CSAH 83
Number of Lanes: 2
Approach Speed: 55
Total Approach Volume: 2,742

Southbound: CSAH 83
Number of Lanes: 2
Approach Speed: 55
Total Approach Volume: 2,249

Minor Street Approaches

Eastbound: Alpine Dr.
Number of Lanes: 2

Total Approach Volume: 758

Westbound: Alpine Dr.
Number of Lanes: 2

Total Approach Volume: 458

Warrant Summary (Rural values apply.)

- Warrant 1 - Eight Hour Vehicular Volumes** Not Satisfied
 - Warrant 1A - Minimum Vehicular Volume** Not Satisfied
Required volumes reached for 0 hours, 8 are needed
 - Warrant 1B - Interruption of Continuous Traffic** Not Satisfied
Required volumes reached for 0 hours, 8 are needed
 - Warrant 1 A&B - Combination of Warrants** Not Satisfied
Required volumes reached for 0 hours, 8 are needed

- Warrant 2 - Four Hour Volumes** Not Satisfied
Number of hours (0) volumes exceed minimum < minimum required (4).

- Warrant 3 - Peak Hour** Not Satisfied
 - Warrant 3A - Peak Hour Volumes** Not Satisfied
Volumes do not exceed minimums for any hour.
 - Warrant 3B - Peak Hour Delay** Not Satisfied
Approach volumes on minor street don't exceed minimums for any hour. Delay data not evaluated.

- Warrant 4 - Pedestrian Volumes** Not Evaluated

- Warrant 5 - School Crossing** Not Evaluated

- Warrant 6 - Coordinated Signal System** Not Evaluated

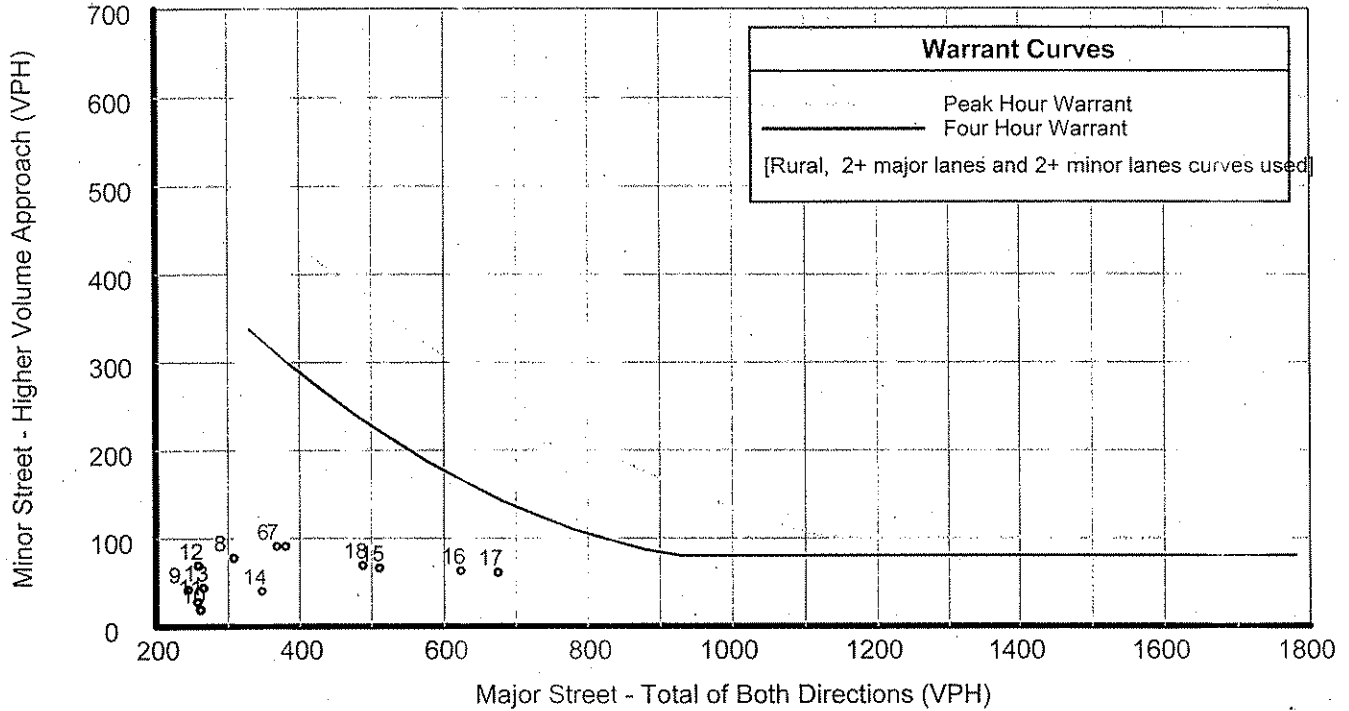
- Warrant 7 - Crash Experience** Not Evaluated

- Warrant 8 - Roadway Network** Not Evaluated

ANOKA COUNTY HIGHWAY PC-WARRANTS TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name : TMC0634
Study Date : 10/13/06
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	368	91	EB	420-No	140-No	---	630-No	70-Yes	Minor	504-No	112-No	---
07:00	381	91	EB	420-No	140-No	---	630-No	70-Yes	Minor	504-No	112-No	---
08:00	308	78	EB	420-No	140-No	---	630-No	70-Yes	Minor	504-No	112-No	---
09:00	245	42	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
10:00	262	19	WB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
11:00	258	28	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
12:00	259	69	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
13:00	266	44	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
14:00	347	40	WB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
15:00	511	66	EB	420-Yes	140-No	Major	630-No	70-No	---	504-Yes	112-No	Major
16:00	623	63	EB	420-Yes	140-No	Major	630-No	70-No	---	504-Yes	112-No	Major
17:00	675	61	EB	420-Yes	140-No	Major	630-Yes	70-No	Major	504-Yes	112-No	Major
18:00	488	69	EB	420-Yes	140-No	Major	630-No	70-No	---	504-No	112-No	---
19:00	0	0	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
20:00	0	0	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
21:00	0	0	EB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
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 : TMC0634
Study Date : 10/13/06

Multi-Way Stop Warrant Report

Major Street Approaches

Northbound: CSAH 83
Total Approach Volume: 2,742
Approach Speed: 55

Southbound: CSAH 83
Total Approach Volume: 2,249
Approach Speed: 55

Minor Street Approaches

Eastbound: Alpine Dr.
Total Approach Volume: 758

Westbound: Alpine Dr.
Total Approach Volume: 458

Warrant Summary

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

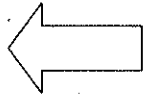
Criteria B - Crash Experience Not Evaluated
Number of crashes (0) is less than the minimum required (5).

Criteria C - Minimum Volumes and Delays Not Satisfied
Delay data not evaluated
Required volumes reached for 0 hours, 8 are needed

Criteria D - 80% of Volumes, Delays, and Crashes Not Evaluated
Delay data not evaluated
Required volumes reached for 3 hours, 8 are needed

Analysis of 8-Hour Volume Warrants:

Time	Major Crit	Minor	Crit C			Crit D		
	Total	Total	Major Crit	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	368	134	210-Yes	140-No	Major	240-Yes	160-No	Major
07:00 - 08:00	381	135	210-Yes	140-No	Major	240-Yes	160-No	Major
08:00 - 09:00	308	111	210-Yes	140-No	Major	240-Yes	160-No	Major
09:00 - 10:00	245	68	210-Yes	140-No	Major	240-Yes	160-No	Major
10:00 - 11:00	262	37	210-Yes	140-No	Major	240-Yes	160-No	Major
11:00 - 12:00	258	47	210-Yes	140-No	Major	240-Yes	160-No	Major
12:00 - 13:00	259	95	210-Yes	140-No	Major	240-Yes	160-No	Major
13:00 - 14:00	266	80	210-Yes	140-No	Major	240-Yes	160-No	Major
14:00 - 15:00	347	78	210-Yes	140-No	Major	240-Yes	160-No	Major
15:00 - 16:00	511	94	210-Yes	140-No	Major	240-Yes	160-No	Major
16:00 - 17:00	623	121	210-Yes	140-No	Major	240-Yes	160-No	Major
17:00 - 18:00	675	106	210-Yes	140-No	Major	240-Yes	160-No	Major
18:00 - 19:00	488	110	210-Yes	140-No	Major	240-Yes	160-No	Major
19:00 - 20:00	0	0	210-No	140-No	No	240-No	160-No	No
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 83 (Armstrong Blvd.) @

DATE:

10/09/2006

Alpine Dr.

NORTH

APP. #1 = CSAH 83

APP. #2 = Alpine Dr.

APP. #3 = CSAH 83

APP. #4 = Alpine Dr.

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						4		
6:15-6:30						2		1
6:30-6:45						3		1
6:45-7:00								2
HOURLY TOTAL						HOURLY TOTAL		13
7:00-7:15								2
7:15-7:30						2		2
7:30-7:45						5		3
7:45-8:00						5		
HOURLY TOTAL						HOURLY TOTAL		19
8:00-8:15						4		1
8:15-8:30						9		2
8:30-8:45						3		5
8:45-9:00						11		3
HOURLY TOTAL						HOURLY TOTAL		38
9:00-9:15						7		2
9:15-9:30						11		
9:30-9:45						9		
9:45-10:00						9		
HOURLY TOTAL						HOURLY TOTAL		38
10:00-10:15						6		
10:15-10:30						13		
10:30-10:45						10		
10:45-11:00						2		
HOURLY TOTAL						HOURLY TOTAL		31
11:00-11:15						5		
11:15-11:30						4		
11:30-11:45						6		
11:45-12:00						5		2
HOURLY TOTAL						HOURLY TOTAL		22
12:00-12:15						3		
12:15-12:30						6		1
12:30-12:45						3		1
12:45-1:00						3		1
HOURLY TOTAL						HOURLY TOTAL		18
1:00-1:15						4		
1:15-1:30						2		
1:30-1:45						3		
1:45-2:00		1			1	8		
HOURLY TOTAL					1	HOURLY TOTAL		17
					TOTAL		TOTAL	196

1
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32



COUNT LOCATION:

CSAH 83 (Armstrong Blvd.) @

DATE:

10/10/2006

Alpine Dr.

NORTH

APP. #1 = CSAH 83

APP. #2 = Alpine Dr.

APP. #3 = CSAH 83

APP. #4 = Alpine Dr.

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		
2:15-2:30						6		
2:30-2:45						14		1
2:45-3:00						7		7
HOURLY TOTAL						HOURLY TOTAL		37
3:00-3:15						10		2
3:15-3:30						3		
3:30-3:45						3		3
3:45-4:00						4		3
HOURLY TOTAL						HOURLY TOTAL		28
4:00-4:15						4		2
4:15-4:30						6		4
4:30-4:45						5		4
4:45-5:00						4		
HOURLY TOTAL						HOURLY TOTAL		29
5:00-5:15						3		1
5:15-5:30						3		2
5:30-5:45						7		
5:45-6:00						3	1	2
HOURLY TOTAL						HOURLY TOTAL		22
6:00-6:15						1		2
6:15-6:30						1		1
6:30-6:45								
6:45-7:00						3		
HOURLY TOTAL						HOURLY TOTAL		8
					TOTAL		TOTAL	320

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