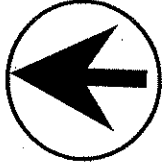


Date : 2/12/07

Count Number : TMC0701

Location : CSAH 31 (4th Ave.)

@ CSAH 30 (Pierce St./Pleasant St.)



North

CSAH 31

3165

#2

1296	75	T
656		F
565		D

1869

CSAH 30 (Pierce St.)

3996

#1

1938	C
708	B
396	A
2058	

CSAH 30 (Pleasant St.)

137	G
419	H
428	J
984	

#3

1717

733

CSAH 31

2038

#4

4278

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

262	K
1024	L
954	M
2240	

Anoka County Highway Department
Traffic Volume and Turning
Movement Study

Anoka County Highway Department Traffic Engineering

Traffic Volume and Turning Movement Stud

File Name : TMC0701
Site Code : 07010202
Start Date : 02/12/2007
Page No : 1

Weather: Clear and Cold
Counter: DB-400
Counted by: Josie/Terri

Groups Printed- Unshifted

Start Time	CSAH 31 Southbound					CSAH 30 Westbound					CSAH 31 Northbound					CSAH 30 Eastbound					Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Righ t	Hea vy	App. Total	Left	Thru	Righ t	Hea vy	App. Total	Left	Thru	Righ t	Hea vy	App. Total	Left	Thru	Righ t	Hea vy	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				
07:00	0	21	19	1	40	24	3	0	1	27	9	16	2	1	27	19	10	34	2	63	5	157	162
07:15	2	28	24	0	54	28	15	6	3	49	7	13	7	0	27	20	15	57	1	92	4	222	226
07:30	1	22	25	0	48	35	10	7	3	52	29	20	4	1	53	19	16	67	3	102	7	255	262
07:45	0	76	28	3	104	32	6	4	4	42	16	17	3	3	36	10	13	81	1	104	11	286	297
Total	3	147	96	4	246	119	34	17	11	170	61	66	16	5	143	68	54	239	7	361	27	920	947
08:00	1	28	11	0	40	35	7	2	0	44	24	19	2	5	45	13	7	56	1	76	6	205	211
08:15	1	13	15	1	29	29	6	2	1	37	9	10	6	2	25	15	5	31	3	51	7	142	149
08:30	1	8	13	0	22	12	7	1	0	20	8	12	2	2	22	9	6	20	0	35	2	99	101
08:45	1	24	17	1	42	18	4	6	0	28	10	8	7	2	25	6	12	28	4	46	7	141	148
Total	4	73	56	2	133	94	24	11	1	129	51	49	17	11	117	43	30	135	8	208	22	587	609
09:00	0	12	6	0	18	8	6	5	1	19	12	6	2	1	20	10	8	30	0	48	2	105	107
09:15	1	5	13	1	19	8	5	2	4	15	19	12	14	6	45	3	7	14	0	24	11	103	114
09:30	2	7	9	1	18	5	8	3	1	16	11	10	4	2	25	8	10	25	12	43	16	102	118
09:45	3	13	6	2	22	9	5	1	1	15	12	15	9	1	36	11	7	9	2	27	6	100	106
Total	6	37	34	4	77	30	24	11	7	65	54	43	29	10	126	32	32	78	14	142	35	410	445
10:00	2	12	6	2	20	3	2	4	0	9	12	9	5	1	26	3	5	11	0	19	3	74	77
10:15	0	12	5	1	17	8	6	0	1	14	11	10	6	2	27	7	8	4	2	19	6	77	83
10:30	1	7	5	0	13	3	5	3	0	11	15	9	4	1	28	11	11	12	2	34	3	86	89
10:45	1	13	11	2	25	2	6	2	1	10	13	7	2	0	22	9	7	12	1	28	4	85	89
Total	4	44	27	5	75	16	19	9	2	44	51	35	17	4	103	30	31	39	5	100	16	322	338
11:00	1	19	6	1	26	2	6	9	0	17	13	13	7	3	33	11	4	10	2	25	6	101	107
11:15	2	8	7	0	17	9	6	2	1	17	13	21	2	1	36	9	6	8	0	23	2	93	95
11:30	3	10	9	1	22	7	5	2	1	14	19	17	6	2	42	15	10	13	3	38	7	116	123
11:45	4	14	11	3	29	7	5	3	0	15	14	21	4	0	39	6	6	16	4	28	7	111	118
Total	10	51	33	5	94	25	22	16	2	63	59	72	19	6	150	41	26	47	9	114	22	421	443
12:00	1	10	7	0	18	6	15	0	2	21	21	14	6	2	41	12	9	14	1	35	5	115	120
12:15	1	13	8	1	22	11	4	2	1	17	16	14	5	1	35	14	16	37	7	67	10	141	151
12:30	2	14	19	3	35	6	12	0	0	18	18	13	5	1	36	14	16	18	2	48	6	137	143
12:45	0	16	4	3	20	14	12	2	8	28	15	14	7	0	36	15	14	25	3	54	14	138	152
Total	4	53	38	7	95	37	43	4	11	84	70	55	23	4	148	55	55	94	13	204	35	531	566
13:00	3	9	7	3	19	10	9	5	4	24	14	22	4	3	40	11	9	18	4	38	14	121	135
13:15	3	12	4	1	19	9	10	2	2	21	12	17	4	1	33	7	13	15	3	35	7	108	115
13:30	4	11	4	3	19	7	8	3	1	18	18	13	4	5	35	12	0	7	0	19	9	91	100
13:45	4	9	7	2	20	5	8	5	4	18	25	12	6	5	43	11	4	12	4	27	15	108	123
Total	14	41	22	9	77	31	35	15	11	81	69	64	18	14	151	41	26	52	11	119	45	428	473
14:00	4	6	7	2	17	6	10	4	2	20	11	17	4	1	32	13	15	20	4	48	9	117	126
14:15	2	9	4	3	15	12	9	4	4	25	22	16	7	1	45	14	14	9	1	37	9	122	131
14:30	6	16	14	2	36	4	7	4	2	15	20	23	3	2	46	22	6	27	1	55	7	152	159
14:45	2	20	11	1	33	10	11	1	1	22	22	19	5	1	46	26	9	22	3	57	6	158	164
Total	14	51	36	8	101	32	37	13	9	82	75	75	19	5	169	75	44	78	9	197	31	549	580
15:00	0	12	18	0	30	9	10	2	0	21	41	50	5	7	96	14	12	11	2	37	9	184	193
15:15	2	9	18	0	29	0	11	4	2	15	29	36	5	7	70	17	6	12	0	35	9	149	158
15:30	2	20	20	4	42	7	21	10	3	38	38	54	12	3	104	25	5	22	0	52	10	236	246
15:45	1	25	24	1	50	3	17	2	1	22	38	50	11	2	99	34	10	27	3	71	7	242	249
Total	5	66	80	5	151	19	59	18	6	96	146	190	33	19	369	90	33	72	5	195	35	811	846
16:00	2	14	14	1	30	5	9	6	2	20	46	60	6	3	112	34	12	18	0	64	6	226	232
16:15	2	15	19	0	36	1	11	1	0	13	27	29	8	2	64	38	15	8	4	61	6	174	180
16:30	1	5	20	0	26	9	15	6	4	30	62	79	17	2	158	27	6	10	2	43	8	257	265
16:45	0	14	25	1	39	2	10	2	0	14	38	52	10	1	100	32	9	19	1	60	3	213	216
Total	5	48	78	2	131	17	45	15	6	77	173	220	41	8	434	131	42	55	7	228	23	870	893
17:00	2	10	13	0	25	2	26	4	0	32	47	62	8	1	117	24	8	16	0	48	1	222	223
17:15	4	10	18	0	32	3	17	4	0	24	34	34	7	4	75	27	9	14	0	50	4	181	185
17:30	0	10	16	1	26	2	16	0	0	18	36	38	10	0	84	31	3	19	1	53	2	181	183
17:45	0	15	18	0	33	1	18	0	0	19	28	21	5	0	54	20	3	16	0	39	0	145	145
Total	6	45	65	1	116	8	77	8	0	93	145	155	30	5	330	102	23	65	1	190	7	729	736
Grand Total	75	656	565	52	1296	428	419	137	66	984	954	1024	262	91	2240	708	396	954	89	2058	298	6578	6876
prch %	5.8	50.6	43.6			43.5	42.6	13.9			42.6	45.7	11.7			34.4	19.2	46.4					
Total %	1.1	10.0	8.6		19.7	6.5	6.4	2.1		15.0	14.5	15.6	4.0		34.1	10.8	6.0	14.5		31.3	4.3	95.7	

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

Signal Warrants - Summary

Major Street Approaches

Northbound: CSAH 31

Number of Lanes: 2
Approach Speed: 30
Total Approach Volume: 2,240

Southbound: CSAH 31

Number of Lanes: 2
Approach Speed: 30
Total Approach Volume: 1,296

Minor Street Approaches

Eastbound: CSAH 30

Number of Lanes: 1

Total Approach Volume: 2,058

Westbound: CSAH 30

Number of Lanes: 1

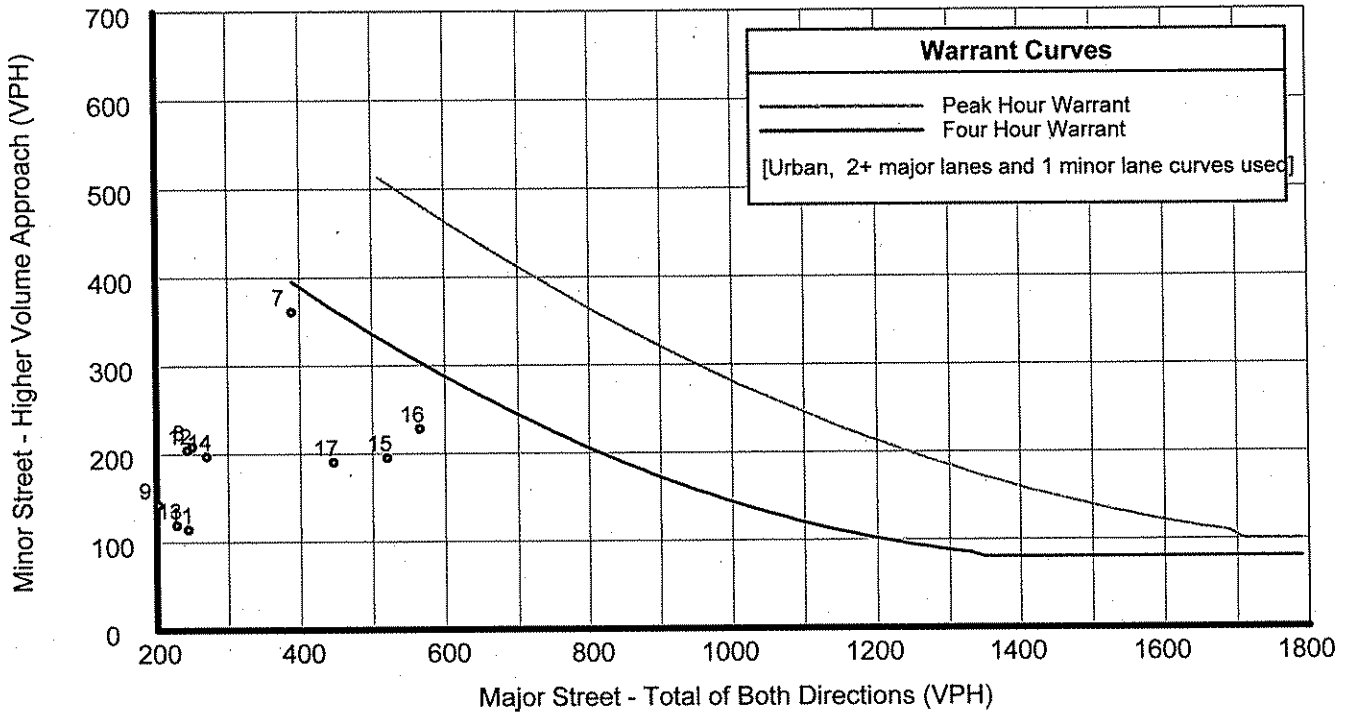
Total Approach Volume: 984

Warrant Summary (Urban 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	Satisfied
Warrant 3A - Peak Hour Delay	Satisfied
Number of hours (4) volumes exceed minimum >= required (1). Delay data not evaluated.	
Warrant 3B - Peak Hour Volumes	Not Satisfied
Volumes do not exceed minimums for any hour.	
Warrant 4 - Pedestrian Volumes	
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

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	150-No	---	900-No	75-No	---	720-No	120-No	---
01:00	0	0	EB	600-No	150-No	---	900-No	75-No	---	720-No	120-No	---
02:00	0	0	EB	600-No	150-No	---	900-No	75-No	---	720-No	120-No	---
03:00	0	0	EB	600-No	150-No	---	900-No	75-No	---	720-No	120-No	---
04:00	0	0	EB	600-No	150-No	---	900-No	75-No	---	720-No	120-No	---
05:00	0	0	EB	600-No	150-No	---	900-No	75-No	---	720-No	120-No	---
06:00	0	0	EB	600-No	150-No	---	900-No	75-No	---	720-No	120-No	---
07:00	389	361	EB	600-No	150-Yes	Minor	900-No	75-Yes	Minor	720-No	120-Yes	Minor
08:00	250	208	EB	600-No	150-Yes	Minor	900-No	75-Yes	Minor	720-No	120-Yes	Minor
09:00	203	142	EB	600-No	150-No	---	900-No	75-Yes	Minor	720-No	120-Yes	Minor
10:00	178	100	EB	600-No	150-No	---	900-No	75-Yes	Minor	720-No	120-No	---
11:00	244	114	EB	600-No	150-No	---	900-No	75-Yes	Minor	720-No	120-No	---
12:00	243	204	EB	600-No	150-Yes	Minor	900-No	75-Yes	Minor	720-No	120-Yes	Minor
13:00	228	119	EB	600-No	150-No	---	900-No	75-Yes	Minor	720-No	120-No	---
14:00	270	197	EB	600-No	150-Yes	Minor	900-No	75-Yes	Minor	720-No	120-Yes	Minor
15:00	520	195	EB	600-No	150-Yes	Minor	900-No	75-Yes	Minor	720-No	120-Yes	Minor
16:00	565	228	EB	600-No	150-Yes	Minor	900-No	75-Yes	Minor	720-No	120-Yes	Minor
17:00	446	190	EB	600-No	150-Yes	Minor	900-No	75-Yes	Minor	720-No	120-Yes	Minor
18:00	0	0	EB	600-No	150-No	---	900-No	75-No	---	720-No	120-No	---
19:00	0	0	EB	600-No	150-No	---	900-No	75-No	---	720-No	120-No	---
20:00	0	0	EB	600-No	150-No	---	900-No	75-No	---	720-No	120-No	---
21:00	0	0	EB	600-No	150-No	---	900-No	75-No	---	720-No	120-No	---
22:00	0	0	EB	600-No	150-No	---	900-No	75-No	---	720-No	120-No	---
23:00	0	0	EB	600-No	150-No	---	900-No	75-No	---	720-No	120-No	---

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

Multi-Way Stop Warrant Report

Major Street Approaches

Northbound: CSAH 31

Total Approach Volume: 2,240
Approach Speed: 30

Southbound: CSAH 31

Total Approach Volume: 1,296
Approach Speed: 30

Minor Street Approaches

Eastbound: CSAH 30

Total Approach Volume: 2,058

Westbound: CSAH 30

Total Approach Volume: 984

Warrant Summary

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

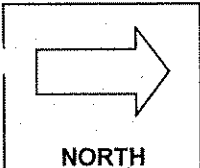
Criteria B - Crash Experience Not Evaluated

Criteria C - Minimum Volumes and Delays Not Satisfied
Delay data not evaluated
Required volumes reached for 4 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 0 hours, 8 are needed

Analysis of 8-Hour Volume Warrants:

Time	Major	Minor	Crit C			Crit D		
	Total	Total	Major	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	0	0	300-No	200-No	No	240-No	160-No	No
07:00 - 08:00	389	531	300-Yes	200-Yes	Both	240-Yes	160-Yes	Both
08:00 - 09:00	250	337	300-No	200-Yes	Minor	240-Yes	160-Yes	Both
09:00 - 10:00	203	207	300-No	200-Yes	Minor	240-No	160-Yes	Minor
10:00 - 11:00	178	144	300-No	200-No	No	240-No	160-No	No
11:00 - 12:00	244	177	300-No	200-No	No	240-Yes	160-Yes	Both
12:00 - 13:00	243	288	300-No	200-Yes	Minor	240-Yes	160-Yes	Both
13:00 - 14:00	228	200	300-No	200-Yes	Minor	240-No	160-Yes	Minor
14:00 - 15:00	270	279	300-No	200-Yes	Minor	240-Yes	160-Yes	Both
15:00 - 16:00	520	291	300-Yes	200-Yes	Both	240-Yes	160-Yes	Both
16:00 - 17:00	565	305	300-Yes	200-Yes	Both	240-Yes	160-Yes	Both
17:00 - 18:00	446	283	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



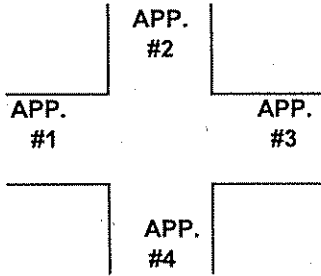
COUNT LOCATION:

CSAH 31 (4th Ave.) @
CSAH 30 (Pierce St./Pleasant St.)

DATE:

02/13/2007

NORTH
APP. #1 = CSAH 31
APP. #2 = CSAH 30 Pleasant St.
APP. #3 = CSAH 31
APP. #4 = CSAH 30 Pierce St.



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
7:00-7:15	1			3	4	2		3
7:15-7:30			1		1	2		2
7:30-7:45	2	1			3	1		5
7:45-8:00						3		8
HOURLY TOTAL					8	HOURLY TOTAL		26
8:00-8:15	1				1	3		3
8:15-8:30						3		3
8:30-8:45	1				1			2
8:45-9:00						4		2
HOURLY TOTAL					2	HOURLY TOTAL		20
9:00-9:15						1		2
9:15-9:30	1				1	5		6
9:30-9:45						2		14
9:45-10:00						4		2
HOURLY TOTAL					1	HOURLY TOTAL		36
10:00-10:15	3			1	4	2		1
10:15-10:30	1			1	2	5		1
10:30-10:45						4		
10:45-11:00						2		1
HOURLY TOTAL					6	HOURLY TOTAL		16
11:00-11:15						4		2
11:15-11:30	1				1	3		
11:30-11:45						6		1
11:45-12:00	2				2	3		4
HOURLY TOTAL					3	HOURLY TOTAL		23
12:00-12:15		2			2			8
12:15-12:30						3		3
12:30-12:45						4		2
12:45-1:00				1	1	10		4
HOURLY TOTAL					3	HOURLY TOTAL		34
1:00-1:15	1				1	8		5
1:15-1:30				1	1	5		3
1:30-1:45				1	1	5		3
1:45-2:00				2	2	6		10
HOURLY TOTAL					5	HOURLY TOTAL		45
				TOTAL	28		TOTAL	200

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NORTH

APP. #1 = CSAH 31
APP. #2 = CSAH 30 Pleasant St.
APP. #3 = CSAH 31
APP. #4 = CSAH 30 Pierce St.

COUNT LOCATION:

CSAH 31 (4th Ave.) @
CSAH 30 (Pierce St./Pleasant St.)

DATE:

02/12/2007

APP. #2	APP. #3
APP. #1	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				1	1	6		3
2:15-2:30		2	1	1	4	7		2
2:30-2:45			2	2	4	7		
2:45-3:00				1	1	4		2
HOURLY TOTAL					10	HOURLY TOTAL		31
3:00-3:15		1		2	3	4		5
3:15-3:30				2	2	3		6
3:30-3:45				2	2	2		8
3:45-4:00				2	2	2		5
HOURLY TOTAL					9	HOURLY TOTAL		35
4:00-4:15				3	3			6
4:15-4:30				1	1	1		5
4:30-4:45				1	1	5		3
4:45-5:00								2
HOURLY TOTAL					5	HOURLY TOTAL		22
5:00-5:15								1
5:15-5:30						1		3
5:30-5:45						2		1
5:45-6:00								
HOURLY TOTAL						HOURLY TOTAL		8
				TOTAL	52		TOTAL	296

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