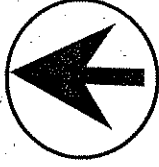


Date : 4/18/05

Count Number : TMC0504

Location : CSAH 78 (Hanson Blvd.)

@ 127th Ave.



North

CSAH 78

21603

#2

10984	362	F
10589		E
33		D

10619

127th Ave.

#1

118

57	C	B	A
25		4	28

61

127th Ave.

#3

538	G
7	H
234	J

1673

894

CSAH 78

10851

#4

21456

10605	M
21	L
10056	K
528	

LANES OF APPROACH

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

Anoka County Highway Department

Traffic Volume and Turning

Movement Study

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

File Name : TMC0504  
 Site Code : 05040201  
 Start Date : 04/18/2005  
 Page No : 1

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

Groups Printed- Unshifted

Start Time	CSAH 78 Southbound					127TH AVE Westbound					CSAH 78 Northbound					127TH AVE 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	1.0	1.0	1.0			
08:00	0	267	0	5	267	2	1	1	0	4	0	35	0	2	35	0	0	1	0	1	7	307	314
06:15	1	303	0	8	304	6	0	1	0	7	0	65	5	5	70	2	0	0	0	2	13	383	396
06:30	5	325	0	23	330	3	0	7	0	10	0	86	6	4	92	0	0	0	0	0	27	432	459
06:45	7	311	0	31	318	1	0	11	6	12	0	104	5	7	109	0	0	0	0	0	44	439	483
Total	13	1206	0	67	1219	12	1	20	6	33	0	290	16	18	306	2	0	1	0	3	91	1561	1652
07:00	11	320	2	17	333	6	0	4	0	10	0	107	2	6	109	1	0	1	1	2	24	454	478
07:15	6	280	0	11	286	1	0	8	3	9	0	123	6	13	129	0	0	0	0	0	27	424	451
07:30	13	311	0	14	324	5	0	6	3	11	0	96	4	7	100	0	0	0	0	0	24	435	459
07:45	11	276	0	17	287	0	0	6	3	6	0	145	7	17	152	0	0	0	0	0	37	445	482
Total	41	1187	2	59	1230	12	0	24	9	36	0	471	19	43	490	1	0	1	1	2	112	1758	1870
08:00	10	262	1	20	273	7	0	12	8	19	1	106	3	21	110	0	0	1	1	1	50	403	453
08:15	7	240	0	22	247	6	0	10	8	16	0	131	1	7	132	1	0	0	1	1	38	396	434
08:30	12	235	1	22	248	10	0	15	11	25	0	93	3	15	96	0	1	1	2	2	50	371	421
08:45	5	229	0	17	234	5	0	18	9	23	1	124	6	17	131	0	0	2	0	2	43	390	433
Total	34	966	2	81	1002	28	0	55	36	83	2	454	13	60	469	1	1	4	4	6	181	1560	1741
09:00	9	217	0	12	226	5	0	8	1	13	0	102	4	24	106	0	0	1	0	1	37	346	383
09:15	10	170	0	10	180	2	0	13	5	15	0	129	5	27	134	0	0	2	0	2	42	331	373
09:30	7	177	0	11	184	3	1	6	4	10	1	118	3	24	122	0	0	2	0	2	39	318	357
09:45	8	138	0	11	146	6	0	15	5	21	0	88	5	12	93	0	0	0	0	0	28	260	288
Total	34	702	0	44	736	16	1	42	15	59	1	437	17	87	455	0	0	5	0	5	146	1255	1401
10:00	5	145	0	9	150	8	0	7	3	15	0	101	6	9	107	0	0	0	0	0	21	272	293
10:15	5	119	1	7	125	4	0	6	4	10	0	105	6	6	111	1	0	2	0	3	17	249	266
10:30	6	151	1	12	158	7	0	7	2	14	0	104	3	9	107	2	0	3	2	5	25	284	309
10:45	4	145	0	7	149	7	0	7	3	14	0	114	8	7	122	0	0	1	0	1	17	286	303
Total	20	560	2	35	582	26	0	27	12	53	0	424	23	31	447	3	0	6	2	9	80	1091	1171
11:00	3	126	0	9	129	7	0	3	3	10	0	116	4	7	120	1	0	0	0	1	19	260	279
11:15	8	135	4	12	147	1	0	2	3	3	0	127	8	5	135	0	0	1	0	1	20	286	306
11:30	10	133	0	10	143	2	0	5	3	7	2	117	8	6	127	4	0	2	0	6	19	283	302
11:45	5	134	2	12	141	6	0	3	2	9	0	124	7	6	131	1	0	2	0	3	20	284	304
Total	26	528	6	43	560	16	0	13	11	29	2	484	27	24	513	6	0	5	0	11	78	1113	1191
12:00	5	127	0	9	132	3	0	11	7	14	0	111	10	4	121	0	0	0	0	0	20	267	287
12:15	0	125	0	4	125	3	0	11	2	14	0	122	8	10	130	0	1	0	1	1	17	270	287
12:30	4	142	0	10	146	2	0	2	0	4	1	132	6	8	139	1	0	1	0	2	18	291	309
12:45	2	145	0	2	147	4	1	4	0	9	0	144	4	4	148	0	1	0	0	1	6	305	311
Total	11	539	0	25	550	12	1	28	9	41	1	509	28	26	538	1	2	1	1	4	61	1133	1194
13:00	3	123	2	7	128	2	0	1	0	3	0	117	2	10	119	0	0	1	0	1	17	251	268
13:15	10	145	2	13	157	3	0	2	0	5	0	159	6	12	165	2	0	0	0	2	25	329	354
13:30	4	125	4	9	133	4	0	3	1	7	1	163	7	18	171	2	0	0	0	2	28	313	341
13:45	4	129	1	18	134	4	0	10	0	14	0	179	7	6	186	1	0	0	0	1	24	335	359
Total	21	522	9	47	552	13	0	16	1	29	1	618	22	46	641	5	0	1	0	6	94	1226	1322
14:00	7	186	0	53	193	5	0	4	2	9	1	175	5	5	181	1	0	0	0	1	60	384	444
14:15	5	188	0	29	193	2	0	2	1	4	0	193	3	13	196	0	0	0	0	0	43	393	436
14:30	7	175	1	15	183	0	0	4	1	4	0	231	8	19	239	0	0	0	0	0	35	426	461
14:45	8	173	0	11	181	1	1	7	2	9	2	223	16	10	241	0	0	1	0	1	23	432	455
Total	27	722	1	108	750	8	1	17	6	26	3	822	32	47	857	1	0	1	0	2	161	1635	1796
15:00	4	152	0	10	156	4	0	9	3	13	0	241	11	4	252	0	0	0	0	0	17	421	438
15:15	6	167	1	6	174	5	0	1	0	6	1	253	17	18	271	0	0	0	0	0	24	451	475
15:30	6	214	0	6	220	1	0	11	2	12	1	276	6	10	283	0	0	0	0	0	18	515	533
15:45	4	183	0	9	187	3	0	15	2	18	1	308	6	4	315	1	0	0	0	1	15	521	536
Total	20	716	1	31	737	13	0	36	7	49	3	1078	40	36	1121	1	0	0	0	1	74	1908	1982
16:00	5	180	0	6	185	4	0	17	4	21	0	323	11	11	334	0	0	0	0	0	21	540	561
16:15	7	219	0	8	226	1	1	18	3	20	0	323	12	13	335	0	0	0	0	0	24	581	605
16:30	4	202	0	1	206	7	0	25	1	32	0	288	12	21	300	0	0	0	0	0	23	538	561
16:45	10	205	3	5	218	0	0	14	0	14	0	313	24	14	337	0	0	0	0	0	19	569	588
Total	26	806	3	20	835	12	1	74	8	87	0	1247	59	59	1306	0	0	0	0	0	87	2228	2315



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

Study Name : TMC0504  
Study Date : 04/25/05  
Page No. : 1

**Signal Warrants - Summary**

**Major Street Approaches**

**Northbound: CSAH 78**

Number of Lanes: 1  
Approach Speed: 50  
Total Approach Volume: 10,605

**Southbound: CSAH 78**

Number of Lanes: 1  
Approach Speed: 50  
Total Approach Volume: 10,984

**Minor Street Approaches**

**Eastbound: 127TH AVE**

Number of Lanes: 1  
  
Total Approach Volume: 57

**Westbound: 127TH AVE**

Number of Lanes: 2  
  
Total Approach Volume: 779

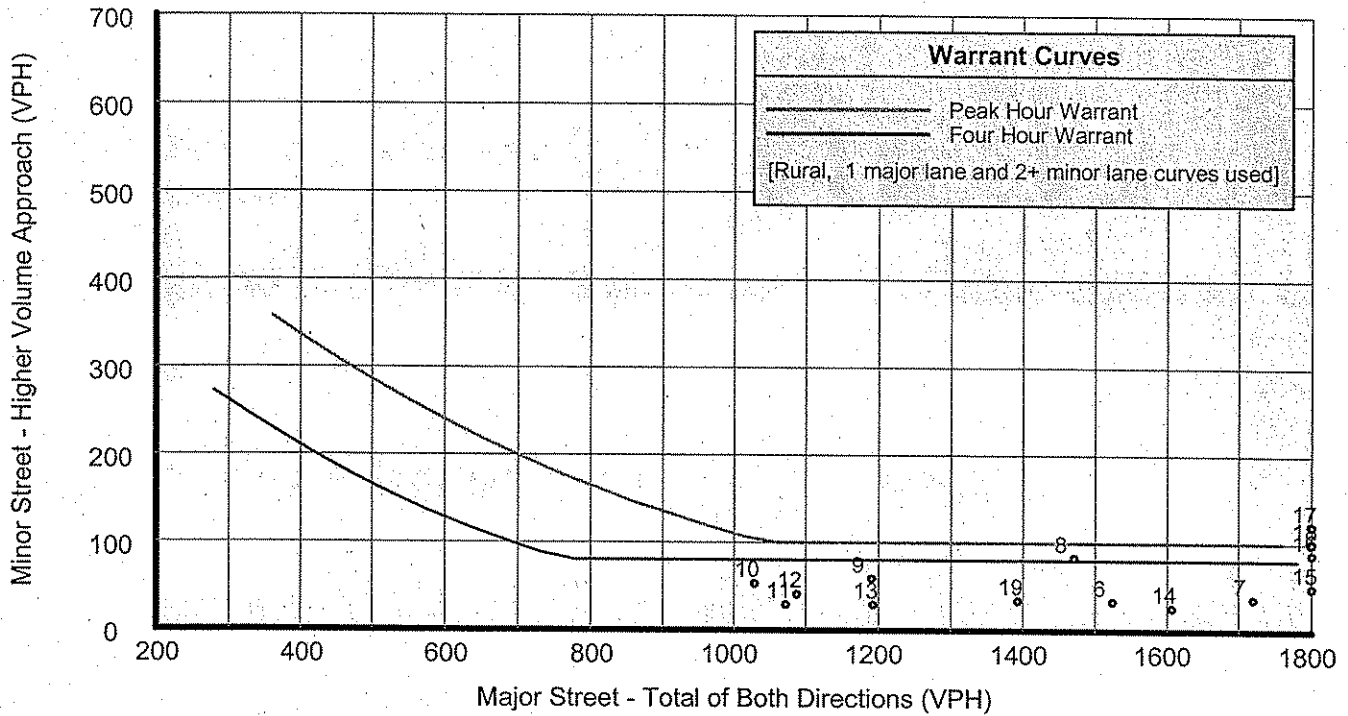
**Warrant Summary (Rural values apply.)**

<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 0 hours, 8 are needed	
<b>Warrant 1B - Interruption of Continuous Traffic</b> .....	<b>Not Satisfied</b>
Required volumes reached for 4 hours, 8 are needed	
<b>Warrant 1 A&amp;B - Combination of Warrants</b> .....	<b>Not Satisfied</b>
Required volumes reached for 1 hours, 8 are needed	
<b>Warrant 2 - Four Hour Volumes</b> .....	<b>Satisfied</b>
Number of hours (4) 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>Not Satisfied</b>
Approach volumes on minor street don't exceed minimums for any hour. 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 : TMC0504  
Study Date : 04/25/05  
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	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
01:00	0	0	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
02:00	0	0	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
03:00	0	0	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
04:00	0	0	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
05:00	0	0	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
06:00	1,525	33	WB	350-Yes	140-No	Major	525-Yes	70-No	Major	420-Yes	112-No	Major
07:00	1,720	36	WB	350-Yes	140-No	Major	525-Yes	70-No	Major	420-Yes	112-No	Major
08:00	1,471	83	WB	350-Yes	140-No	Major	525-Yes	70-Yes	Both	420-Yes	112-No	Major
09:00	1,191	59	WB	350-Yes	140-No	Major	525-Yes	70-No	Major	420-Yes	112-No	Major
10:00	1,029	53	WB	350-Yes	140-No	Major	525-Yes	70-No	Major	420-Yes	112-No	Major
11:00	1,073	29	WB	350-Yes	140-No	Major	525-Yes	70-No	Major	420-Yes	112-No	Major
12:00	1,088	41	WB	350-Yes	140-No	Major	525-Yes	70-No	Major	420-Yes	112-No	Major
13:00	1,193	29	WB	350-Yes	140-No	Major	525-Yes	70-No	Major	420-Yes	112-No	Major
14:00	1,607	26	WB	350-Yes	140-No	Major	525-Yes	70-No	Major	420-Yes	112-No	Major
15:00	1,858	49	WB	350-Yes	140-No	Major	525-Yes	70-No	Major	420-Yes	112-No	Major
16:00	2,141	87	WB	350-Yes	140-No	Major	525-Yes	70-Yes	Both	420-Yes	112-No	Major
17:00	2,253	120	WB	350-Yes	140-No	Major	525-Yes	70-Yes	Both	420-Yes	112-Yes	Both
18:00	2,047	100	WB	350-Yes	140-No	Major	525-Yes	70-Yes	Both	420-Yes	112-No	Major
19:00	1,393	34	WB	350-Yes	140-No	Major	525-Yes	70-No	Major	420-Yes	112-No	Major
20:00	0	0	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
21:00	0	0	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
22:00	0	0	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---
23:00	0	0	EB	350-No	140-No	---	525-No	70-No	---	420-No	112-No	---

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

Study Name : TMC0504  
Study Date : 04/25/05

**Multi-Way Stop Warrant Report**

**Major Street Approaches**

**Northbound: CSAH 78**  
Total Approach Volume: 10,605  
Approach Speed: 50

**Southbound: CSAH 78**  
Total Approach Volume: 10,984  
Approach Speed: 50

**Minor Street Approaches**

**Eastbound: 127TH AVE**  
Total Approach Volume: 57

**Westbound: 127TH AVE**  
Total Approach Volume: 779

**Warrant Summary**

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

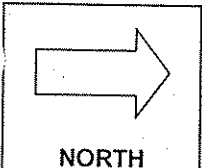
**Criteria B - Crash Experience** ..... Not Evaluated  
Number of crashes (0) is less than the minimum required (5).

**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 0 hours, 8 are needed

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

Time	Major Crit		Crit C			Crit D		
	Total	Minor 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	1,525	36	210-Yes	140-No	Major	240-Yes	160-No	Major
07:00 - 08:00	1,720	38	210-Yes	140-No	Major	240-Yes	160-No	Major
08:00 - 09:00	1,471	89	210-Yes	140-No	Major	240-Yes	160-No	Major
09:00 - 10:00	1,191	64	210-Yes	140-No	Major	240-Yes	160-No	Major
10:00 - 11:00	1,029	62	210-Yes	140-No	Major	240-Yes	160-No	Major
11:00 - 12:00	1,073	40	210-Yes	140-No	Major	240-Yes	160-No	Major
12:00 - 13:00	1,088	45	210-Yes	140-No	Major	240-Yes	160-No	Major
13:00 - 14:00	1,193	35	210-Yes	140-No	Major	240-Yes	160-No	Major
14:00 - 15:00	1,607	28	210-Yes	140-No	Major	240-Yes	160-No	Major
15:00 - 16:00	1,858	50	210-Yes	140-No	Major	240-Yes	160-No	Major
16:00 - 17:00	2,141	87	210-Yes	140-No	Major	240-Yes	160-No	Major
17:00 - 18:00	2,253	124	210-Yes	140-No	Major	240-Yes	160-No	Major
18:00 - 19:00	2,047	102	210-Yes	140-No	Major	240-Yes	160-No	Major
19:00 - 20:00	1,393	36	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



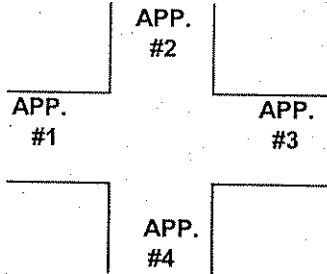
COUNT LOCATION:

CSAH 78 (Hanson Blvd.) @  
127th Ave.

DATE:

04/19/2005

<b>NORTH</b>
APP. #1 = CSAH 78
APP. #2 = 127th Ave.
APP. #3 = CSAH 78
APP. #4 = 127th Ave.



- 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		3
6:15-6:30						5	1	7
6:30-6:45						7	1	20
6:45-7:00						19		26
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>93</b>
7:00-7:15						11		12
7:15-7:30			1		1	15		12
7:30-7:45						19		5
7:45-8:00						27		10
<b>HOURLY TOTAL</b>					<b>1</b>	<b>HOURLY TOTAL</b>		<b>111</b>
8:00-8:15						28		19
8:15-8:30	1				1	29		10
8:30-8:45						36		16
8:45-9:00						31		11
<b>HOURLY TOTAL</b>					<b>1</b>	<b>HOURLY TOTAL</b>		<b>180</b>
9:00-9:15						20		16
9:15-9:30	1				1	24		18
9:30-9:45						28		13
9:45-10:00						23	1	2
<b>HOURLY TOTAL</b>					<b>1</b>	<b>HOURLY TOTAL</b>		<b>145</b>
10:00-10:15						17		4
10:15-10:30						14		1
10:30-10:45						24		1
10:45-11:00						18		1
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>80</b>
11:00-11:15						14		3
11:15-11:30						15		5
11:30-11:45						13		6
11:45-12:00						18		2
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>76</b>
12:00-12:15						17		1
12:15-12:30						11		6
12:30-12:45						8		11
12:45-1:00						8		
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>62</b>
1:00-1:15						13		1
1:15-1:30						17		12
1:30-1:45						16		8
1:45-2:00						8		16
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>91</b>
<b>TOTAL</b>					<b>3</b>	<b>TOTAL</b>		<b>838</b>

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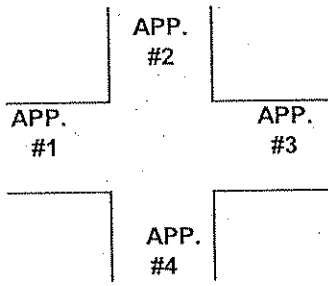


NORTH

APP. #1 = CSAH 78
APP. #2 = 127th Ave.
APP. #3 = CSAH 78
APP. #4 = 127th Ave.

COUNT LOCATION: CSAH 78 (Hanson Blvd.) @ 127th Ave.

DATE: 04/18/2005



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						11		48
2:15-2:30						16		26
2:30-2:45				1	1	13	1	24
2:45-3:00		1			1	13		9
<b>HOURLY TOTAL</b>					<b>2</b>	<b>HOURLY TOTAL</b>		<b>161</b>
3:00-3:15						8		9
3:15-3:30						13		11
3:30-3:45			1		1	7		11
3:45-4:00						9		6
<b>HOURLY TOTAL</b>					<b>1</b>	<b>HOURLY TOTAL</b>		<b>74</b>
4:00-4:15						9		11
4:15-4:30						9		15
4:30-4:45						7		20
4:45-5:00						5		9
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>85</b>
5:00-5:15						10		15
5:15-5:30						8		7
5:30-5:45						3		6
5:45-6:00	2			1	3	3		2
<b>HOURLY TOTAL</b>					<b>3</b>	<b>HOURLY TOTAL</b>		<b>54</b>
6:00-6:15						6		2
6:15-6:30						6		4
6:30-6:45						5		3
6:45-7:00						3		
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>29</b>
7:00-7:15						1		
7:15-7:30						3		
7:30-7:45						2		1
7:45-8:00						2		
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>9</b>
					<b>TOTAL</b>	<b>9</b>	<b>TOTAL</b>	<b>1250</b>

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