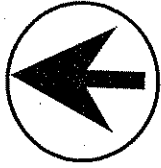


Date : 6/8/04

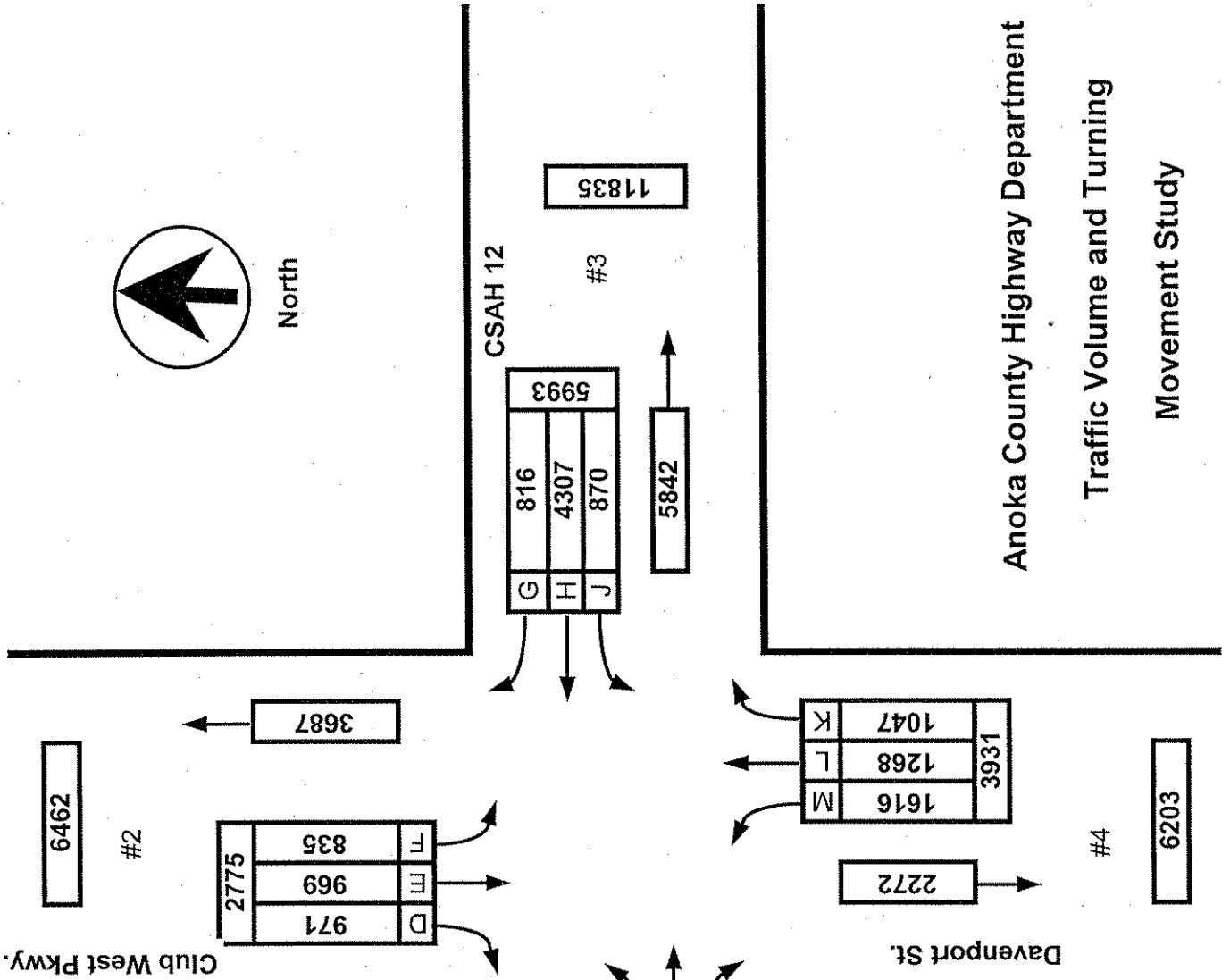
Count Number : TMC0405

Location : CSAH 12 (109th Ave.)

@ Club West Pkwy/Davenport St.



North



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

Anoka County Highway Department
 Traffic Volume and Turning
 Movement Study

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

File Name : TMC0405
 Site Code : 04050101
 Start Date : 06/08/2004
 Page No : 1

Weather: Rainy and Mild
 Counter: TDC-8
 Counted by: Katelyn/Kyle

Groups Printed- 1 - Unshifted

Start Time	Club West Pkwy. Southbound					CSAH 12 Westbound					Davenport St. Northbound					CSAH 12 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	10	20	12	2	42	6	38	4	0	48	5	3	1	1	9	9	30	3	1	42	4	141	145
06:15	16	16	13	1	45	4	41	6	3	51	2	0	2	1	4	14	48	2	2	64	7	164	171
06:30	22	18	18	0	58	10	60	2	1	72	0	1	4	0	5	25	70	10	4	105	5	240	245
06:45	10	34	29	0	73	5	52	12	2	69	1	7	1	0	9	28	86	8	7	122	9	273	282
Total	58	88	72	3	218	25	191	24	6	240	8	11	8	2	27	76	234	23	14	333	25	818	843
07:00	15	41	33	0	89	17	56	7	1	80	1	2	5	1	8	12	75	5	6	92	8	269	277
07:15	15	30	24	5	69	3	80	2	4	85	0	2	3	1	5	19	79	14	11	112	21	271	292
07:30	13	50	19	1	82	17	67	6	5	90	7	4	2	1	13	13	74	10	7	97	14	282	296
07:45	16	27	12	0	55	8	62	11	4	81	5	5	0	2	10	16	85	6	14	107	20	253	273
Total	59	148	88	6	295	45	265	26	14	336	13	13	10	5	36	60	313	35	38	408	63	1075	1138
08:00	8	19	16	0	43	10	68	8	4	86	4	2	10	1	16	6	54	2	8	62	13	207	220
08:15	11	19	7	2	37	11	49	8	7	68	7	11	4	1	22	21	63	8	10	92	20	219	239
08:30	14	20	16	4	50	13	69	5	9	87	8	5	3	0	16	19	62	4	10	85	23	238	261
08:45	8	15	11	4	34	12	52	9	11	73	5	8	6	1	19	12	52	5	5	69	21	195	216
Total	41	73	50	10	164	46	238	30	31	314	24	26	23	3	73	58	231	19	33	308	77	859	936
09:00	15	14	12	1	41	8	56	6	6	70	5	4	12	2	21	12	44	1	13	57	22	189	211
09:15	15	10	10	3	35	5	41	7	4	53	8	5	8	1	21	25	58	2	10	85	18	194	212
09:30	12	8	8	2	28	12	51	9	6	72	12	4	7	4	23	18	59	3	14	80	26	203	229
09:45	18	13	6	3	37	10	66	13	5	89	9	8	4	1	21	24	55	7	13	86	22	233	255
Total	60	45	36	9	141	35	214	35	21	284	34	21	31	8	86	79	216	13	50	308	88	819	907
10:00	14	12	15	5	41	0	0	0	0	0	1	0	3	0	4	18	53	4	9	75	14	120	134
10:15	15	16	7	1	38	9	69	15	4	93	15	15	10	0	40	25	64	5	13	94	18	265	283
10:30	13	7	15	1	35	10	54	5	4	69	15	7	7	0	29	23	47	3	8	73	13	206	219
10:45	9	12	15	1	36	7	70	12	8	89	15	10	10	0	35	22	51	7	11	80	20	240	260
Total	51	47	52	8	150	26	193	32	16	251	46	32	30	0	108	88	215	19	41	322	65	831	896
11:00	13	13	8	1	34	17	50	14	3	81	29	6	9	1	44	20	49	4	6	73	11	232	243
11:15	15	14	20	1	49	16	76	18	3	110	26	13	14	0	53	38	54	6	13	98	17	310	327
11:30	17	17	19	4	53	16	63	17	4	96	13	19	12	2	44	33	79	7	13	119	23	312	335
11:45	13	13	13	4	39	19	58	4	8	81	19	13	17	1	49	22	62	8	5	92	18	261	279
Total	58	57	60	10	175	68	247	53	18	368	87	51	52	4	190	113	244	25	37	382	69	1115	1184
12:00	18	14	12	2	44	19	76	17	5	112	36	22	26	2	84	11	50	3	8	64	17	304	321
12:15	18	14	12	0	44	21	53	18	6	92	27	17	20	5	64	18	59	9	5	86	16	286	302
12:30	18	16	25	1	59	18	66	29	9	113	32	11	18	2	61	49	70	9	13	128	25	361	386
12:45	22	15	19	4	56	22	64	17	7	103	32	24	14	3	70	36	87	7	15	130	29	359	388
Total	76	59	68	7	203	80	259	81	27	420	127	74	78	12	279	114	266	28	41	408	87	1310	1397
13:00	25	23	13	0	61	8	64	21	4	93	32	18	14	1	64	26	52	12	6	90	11	308	319
13:15	14	17	21	2	52	10	64	16	8	90	23	18	15	0	56	23	80	10	15	113	25	311	336
13:30	14	14	13	2	41	11	74	8	3	93	25	13	17	0	55	26	85	13	13	124	18	313	331
13:45	20	7	15	5	42	18	67	11	1	96	21	12	16	2	49	24	79	4	18	107	26	294	320
Total	73	61	62	9	196	47	269	56	16	372	101	61	62	3	224	99	296	39	52	434	80	1226	1306
14:00	9	10	10	2	29	9	60	5	9	74	21	12	17	1	50	16	38	8	10	62	22	215	237
14:15	8	12	17	1	37	7	64	13	3	84	28	17	20	2	65	16	57	5	1	78	7	264	271
14:30	16	13	16	5	45	8	79	14	7	101	31	17	22	1	70	33	64	7	4	104	17	320	337
14:45	10	11	19	0	40	14	81	9	4	104	37	25	20	2	82	22	62	6	7	90	13	316	329
Total	43	46	62	8	151	38	284	41	23	363	117	71	79	6	267	87	221	26	22	334	59	1115	1174
15:00	5	13	13	1	31	12	107	10	7	129	32	25	11	1	68	16	47	7	5	70	14	298	312
15:15	6	6	10	1	22	17	74	12	2	103	24	31	13	1	68	32	64	11	9	107	13	300	313
15:30	10	4	21	5	35	10	115	11	3	136	35	29	24	0	88	38	83	5	7	126	15	385	400
15:45	12	9	14	0	35	12	90	10	4	112	45	41	30	4	116	37	58	1	3	96	11	359	370
Total	33	32	58	7	123	51	386	43	16	480	136	126	78	6	340	123	252	24	24	399	53	1342	1395
16:00	12	15	18	2	45	19	114	19	5	152	48	49	38	0	135	24	85	3	5	112	12	444	456
16:15	19	13	19	0	51	17	130	28	5	175	50	53	37	0	140	24	58	5	0	87	5	453	458
16:30	14	12	16	1	42	13	88	15	1	116	40	39	23	0	102	19	68	2	1	89	3	349	352
16:45	10	5	6	1	21	8	53	15	2	76	23	41	11	1	75	11	49	10	1	70	5	242	247
Total	55	45	59	4	159	57	385	77	13	519	161	182	109	1	452	78	260	20	7	358	25	1488	1513
17:00	15	9	16	1	40	23	98	24	5	145	54	71	37	2	162	29	84	9	2	122	10	469	479
17:15	18	18	17	0	53	18	121	29	0	168	47	77	40	0	164	33	93	8	1	134	1	519	520
17:30	23	16	19	2	58	27	98	27	2	152	50	62	48	0	160	49	73	9	3	131	7	501	508
17:45	13	16	20	0	49	28	108	29	6	165	49	40	46	1	135	40	63	13	3	116	10	465	475
Total	69	59	72	3	200																		

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

Study Name : TMC0405
Study Date : 06/11/04

Multi-Way Stop Warrant Report

Major Street Approaches

Eastbound: CSAH 12
Total Approach Volume: 5,996
Approach Speed: 55

Westbound: CSAH 12
Total Approach Volume: 5,993
Approach Speed: 55

Minor Street Approaches

Northbound: Davenport St.
Total Approach Volume: 3,931

Southbound: Club West Pkwy.
Total Approach Volume: 2,775

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 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
Required volumes reached for 0 hours, 8 are needed

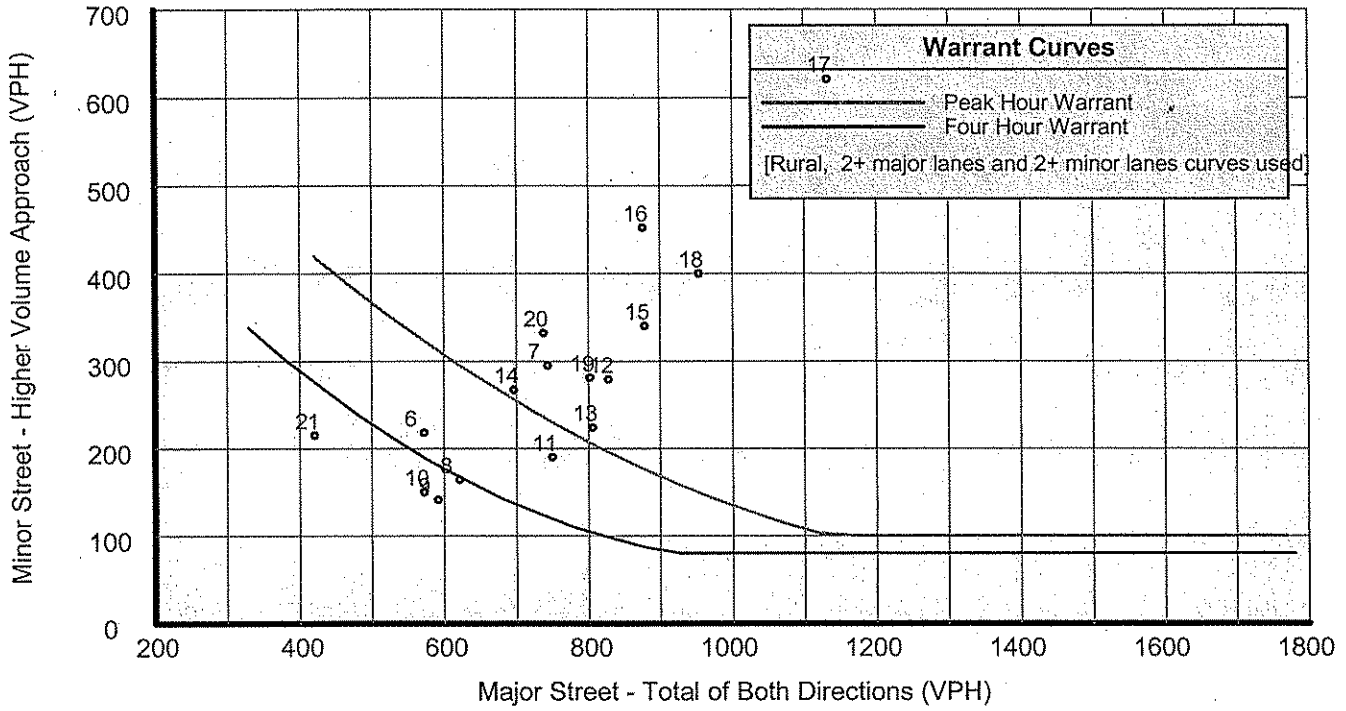
Analysis of 8-Hour Volume Warrants:

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	573	245	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
07:00 - 08:00	744	331	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
08:00 - 09:00	622	237	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
09:00 - 10:00	592	227	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
10:00 - 11:00	573	258	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
11:00 - 12:00	750	365	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
12:00 - 13:00	828	482	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
13:00 - 14:00	806	420	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
14:00 - 15:00	697	418	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
15:00 - 16:00	879	463	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
16:00 - 17:00	877	611	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
17:00 - 18:00	1,133	821	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
18:00 - 19:00	954	624	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
19:00 - 20:00	802	455	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
20:00 - 21:00	738	465	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
21:00 - 22:00	421	284	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

ANOKA COUNTY HIGHWAY PC-WARRANTS TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name : TMC0405
Study Date : 06/11/04
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	NB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
01:00	0	0	NB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
02:00	0	0	NB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
03:00	0	0	NB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
04:00	0	0	NB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
05:00	0	0	NB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
06:00	573	218	SB	420-Yes	140-Yes	Both	630-No	70-Yes	Minor	504-Yes	112-Yes	Both
07:00	744	295	SB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
08:00	622	164	SB	420-Yes	140-Yes	Both	630-No	70-Yes	Minor	504-Yes	112-Yes	Both
09:00	592	141	SB	420-Yes	140-Yes	Both	630-No	70-Yes	Minor	504-Yes	112-Yes	Both
10:00	573	150	SB	420-Yes	140-Yes	Both	630-No	70-Yes	Minor	504-Yes	112-Yes	Both
11:00	750	190	NB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
12:00	828	279	NB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
13:00	806	224	NB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
14:00	697	267	NB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
15:00	879	340	NB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
16:00	877	452	NB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
17:00	1,133	621	NB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
18:00	954	400	NB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
19:00	802	281	NB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
20:00	738	332	NB	420-Yes	140-Yes	Both	630-Yes	70-Yes	Both	504-Yes	112-Yes	Both
21:00	421	215	NB	420-Yes	140-Yes	Both	630-No	70-Yes	Minor	504-No	112-Yes	Minor
22:00	0	0	NB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
23:00	0	0	NB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---

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

Study Name : TMC0405
Study Date : 06/11/04
Page No. : 1

Signal Warrants - Summary

Major Street Approaches

Eastbound: CSAH 12
Number of Lanes: 2
Approach Speed: 55
Total Approach Volume: 5,996

Westbound: CSAH 12
Number of Lanes: 2
Approach Speed: 55
Total Approach Volume: 5,993

Minor Street Approaches

Northbound: Davenport St.
Number of Lanes: 2

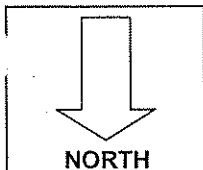
Total Approach Volume: 3,931

Southbound: Club West Pkwy.
Number of Lanes: 2

Total Approach Volume: 2,775

Warrant Summary (Rural values apply.)

Warrant 1 - Eight Hour Vehicular Volumes	Satisfied
Warrant 1A - Minimum Vehicular Volume	Satisfied
Required volumes reached for 16 hours, 8 are needed	
Warrant 1B - Interruption of Continuous Traffic	Satisfied
Required volumes reached for 11 hours, 8 are needed	
Warrant 1 A&B - Combination of Warrants	Satisfied
Required volumes reached for 15 hours, 8 are needed	
Warrant 2 - Four Hour Volumes	Satisfied
Number of hours (12) volumes exceed minimum >= minimum required (4).	
Warrant 3 - Peak Hour	Satisfied
Warrant 3A - Peak Hour Volumes	Satisfied
Volumes exceed minimums for at least one hour.	
Warrant 3B - Peak Hour Delay	Satisfied
Number of hours (42) volumes exceed minimum >= required (1). 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



COUNT LOCATION:

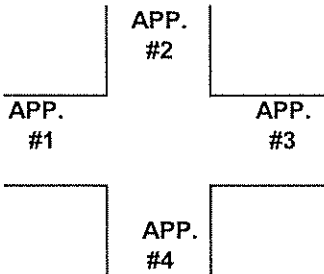
CSAH 12 (109th Ave.)

DATE:

06/10/2004

Club West Pkwy/Davenport St.

NORTH
APP. #1 = CSAH 12
APP. #2 = Davenport St.
APP. #3 = CSAH 12
APP. #4 = Club West Pkwy.

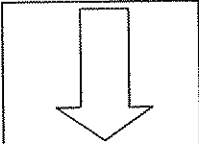


HEAVY VEHICLE- ANY VEHICLE HAVING MORE THAN FOUR TIRES TOUCHING THE PAVEMENT

- 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						6		1
6:30-6:45						5		
6:45-7:00						9		
HOURLY TOTAL						HOURLY TOTAL		25
7:00-7:15						8		
7:15-7:30						20		1
7:30-7:45						15		
7:45-8:00						15		1
HOURLY TOTAL						HOURLY TOTAL		60
8:00-8:15						13		1
8:15-8:30						20		
8:30-8:45						23		2
8:45-9:00						20		1
HOURLY TOTAL						HOURLY TOTAL		80
9:00-9:15						23		1
9:15-9:30						18		1
9:30-9:45						27		1
9:45-10:00						23		
HOURLY TOTAL						HOURLY TOTAL		94
10:00-10:15						14		
10:15-10:30						19		
10:30-10:45						15		
10:45-11:00						20		
HOURLY TOTAL						HOURLY TOTAL		68
11:00-11:15						12		
11:15-11:30						17		
11:30-11:45						22		
11:45-12:00						20		1
HOURLY TOTAL						HOURLY TOTAL		72
12:00-12:15						12		
12:15-12:30						15		1
12:30-12:45						24		1
12:45-1:00						27		1
HOURLY TOTAL						HOURLY TOTAL		81
1:00-1:15						10		1
1:15-1:30						24		1
1:30-1:45						18		
1:45-2:00						25		1
HOURLY TOTAL						HOURLY TOTAL		80
TOTAL						TOTAL		560

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COUNT LOCATION:

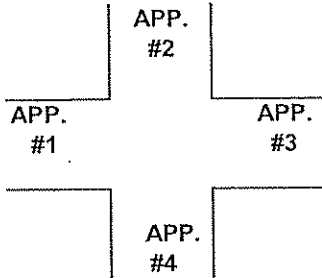
CSAH 12 (109th Ave.)

DATE:

06/08/2004

Club West Pkwy/Davenport St.

NORTH
APP. #1 = CSAH 12
APP. #2 = Davenport St.
APP. #3 = CSAH 12
APP. #4 = Club West Pkwy.



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						20		2
2:15-2:30						6		1
2:30-2:45						16		1
2:45-3:00						12		1
HOURLY TOTAL						HOURLY TOTAL		59
3:00-3:15						12		1
3:15-3:30						12		
3:30-3:45						10		5
3:45-4:00						9		2
HOURLY TOTAL						HOURLY TOTAL		51
4:00-4:15						10		2
4:15-4:30						5		
4:30-4:45						3		
4:45-5:00						4		1
HOURLY TOTAL						HOURLY TOTAL		25
5:00-5:15						9		1
5:15-5:30						1		
5:30-5:45						4		2
5:45-6:00						8		2
HOURLY TOTAL						HOURLY TOTAL		27
6:00-6:15						2		
6:15-6:30						1		
6:30-6:45						4		
6:45-7:00						1		1
HOURLY TOTAL						HOURLY TOTAL		9
7:00-7:15						2		1
7:15-7:30						1		1
7:30-7:45								
7:45-8:00						1		
HOURLY TOTAL						HOURLY TOTAL		6
8:00-8:15								
8:15-8:30								
8:30-8:45						1	1	
8:45-9:00						2		
HOURLY TOTAL						HOURLY TOTAL		4
9:00-9:15								
9:15-9:30						1		
9:30-9:45						1	1	
9:45-10:00								
HOURLY TOTAL						HOURLY TOTAL		3
TOTAL						TOTAL		744

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