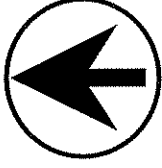


Date : 5/21/02

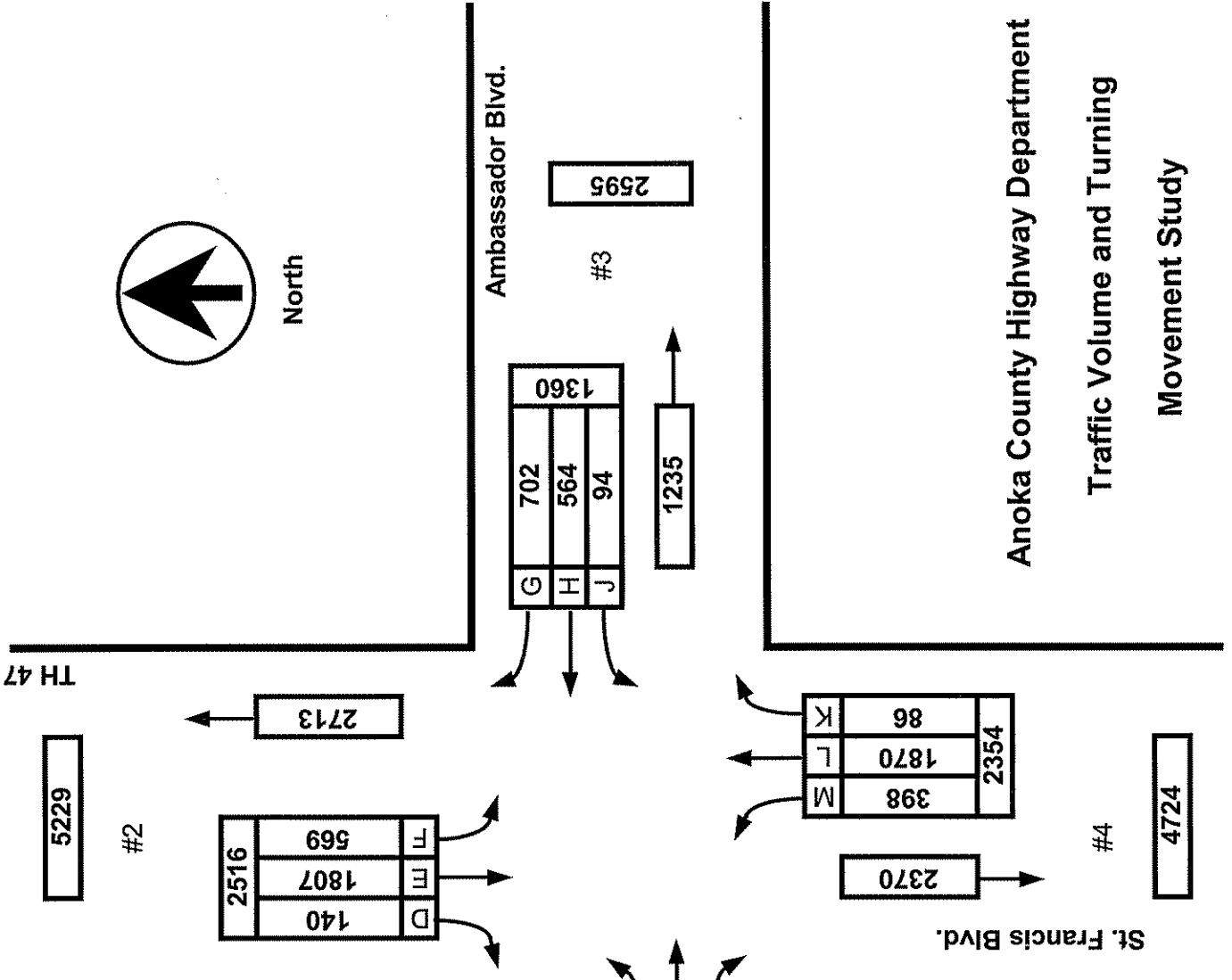
Count Number : TMC0204

Location : TH 47 (St. Francis Blvd.)

@ CSAH 28 (Ambassador Blvd.)



North



Anoka County Highway Department
Traffic Volume and Turning
Movement Study

	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

CSAH 28

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

Weather: Cloudy and Mild
Counter TDC-8
Counted by: Blake/Krystal

File Name : TMC0204
Site Code : 02030201
Start Date : 05/22/2002
Page No : 1

Groups Printed- Unshifted

Start Time	TH 47 Southbound					CSAH 28 Westbound					TH 47 Northbound					CSAH 28 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			
	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				
06:00	14	70	3	6	87	0	3	3	2	6	1	7	0	2	8	2	12	6	0	20	10	121	131
06:15	28	93	1	10	122	0	3	3	1	6	4	5	0	3	9	0	16	2	0	18	14	155	169
06:30	18	73	0	8	91	0	2	4	1	6	2	15	0	2	17	3	18	9	3	30	14	144	158
06:45	8	70	3	2	81	2	6	3	2	11	4	7	2	2	13	1	11	11	3	23	9	128	137
Total	68	306	7	26	381	2	14	13	6	29	11	34	2	9	47	6	57	28	6	91	47	548	595
07:00	25	66	6	6	97	1	5	8	3	14	9	18	0	7	27	1	16	12	5	29	21	167	188
07:15	31	71	15	18	117	0	8	7	3	15	14	19	0	7	33	1	21	14	10	36	38	201	239
07:30	6	19	1	3	26	0	9	9	3	18	7	6	0	3	13	1	13	10	3	24	12	81	93
07:45	13	54	4	14	71	1	3	3	1	7	4	13	0	0	17	2	7	8	1	17	16	112	128
Total	75	210	26	41	311	2	25	27	10	54	34	56	0	17	90	5	57	44	19	106	87	561	648
08:00	14	24	3	7	41	0	5	5	1	10	1	10	1	3	12	1	6	8	2	15	13	78	91
08:15	0	5	0	2	5	1	6	8	4	15	0	2	0	0	2	2	7	12	3	21	9	43	52
08:30	11	26	1	3	38	2	7	4	4	13	7	19	1	8	27	0	6	9	3	15	18	93	111
08:45	15	43	1	9	59	2	3	9	1	14	3	16	1	5	20	0	9	12	1	21	16	114	130
Total	40	98	5	21	143	5	21	26	10	52	11	47	3	16	61	3	28	41	9	72	56	328	384
09:00	8	32	3	5	43	0	5	6	2	11	5	26	2	8	33	3	11	12	4	26	19	113	132
09:15	17	24	1	5	42	2	12	10	5	24	4	13	6	5	23	3	10	8	1	21	16	110	126
09:30	3	28	6	1	37	2	8	8	2	18	6	26	0	6	32	1	8	11	4	20	13	107	120
09:45	9	23	2	3	34	0	8	6	2	14	9	9	2	3	20	2	4	9	1	15	9	83	92
Total	37	107	12	14	156	4	33	30	11	67	24	74	10	22	108	9	33	40	10	82	57	413	470
10:00	7	24	1	5	32	5	14	7	3	26	7	26	2	6	35	3	12	4	4	19	18	112	130
10:15	9	18	1	4	28	3	6	6	2	15	6	34	1	9	41	4	11	9	4	24	19	108	127
10:30	9	25	2	4	36	1	5	9	0	15	10	17	2	6	29	1	8	8	3	17	13	97	110
10:45	5	26	0	5	31	3	8	5	1	16	2	17	1	6	20	2	14	4	2	20	14	87	101
Total	30	93	4	18	127	12	33	27	6	72	25	94	6	27	125	10	45	25	13	80	64	404	468
11:00	5	37	6	9	48	1	8	10	0	19	8	22	1	6	31	1	6	10	3	17	18	115	133
11:15	4	24	1	4	29	2	4	5	1	11	7	22	3	6	32	0	8	8	3	16	14	88	102
11:30	4	24	1	4	29	2	7	3	2	12	4	23	1	4	28	0	9	11	2	20	12	89	101
11:45	8	23	5	8	36	0	10	8	3	18	6	20	3	10	29	1	4	1	1	6	22	89	111
Total	21	108	13	25	142	5	29	26	6	60	25	87	8	26	120	2	27	30	9	59	66	381	447
12:00	13	26	2	6	41	1	5	5	4	11	6	22	1	4	29	4	9	8	3	21	17	102	119
12:15	6	22	4	6	32	2	11	6	1	19	1	26	4	4	31	3	5	8	3	16	14	98	112
12:30	4	37	1	4	42	2	9	10	3	21	4	19	0	3	23	1	8	7	1	16	11	102	113
12:45	0	0	0	0	0	1	6	8	0	15	0	0	0	0	0	2	7	5	2	14	2	29	31
Total	23	85	7	16	115	6	31	29	8	66	11	67	5	11	83	10	29	28	9	67	44	331	375
13:00	8	26	0	3	34	1	5	14	3	20	10	28	2	4	40	6	7	5	1	18	11	112	123
13:15	8	25	1	6	34	4	7	12	2	23	3	24	2	4	29	1	5	3	1	9	13	95	108
13:30	6	29	0	2	35	2	10	11	2	23	8	28	3	4	39	0	8	8	2	16	10	113	123
13:45	2	31	0	3	33	2	11	6	3	19	7	29	2	7	38	2	9	9	0	20	13	110	123
Total	24	111	1	14	136	9	33	43	10	85	28	109	9	19	146	9	29	25	4	63	47	430	477
14:00	12	30	1	6	43	0	9	12	3	21	13	17	0	11	30	1	5	8	1	14	21	108	129
14:15	17	44	5	9	66	3	15	7	6	25	11	30	4	1	45	4	16	12	14	32	30	168	198
14:30	9	36	1	4	46	2	11	9	1	22	6	43	3	7	52	1	8	10	3	19	15	139	154
14:45	7	20	2	5	29	1	15	25	5	41	9	40	3	6	52	5	5	7	1	17	17	139	156
Total	45	130	9	24	184	6	50	53	15	109	39	130	10	25	179	11	34	37	19	82	83	554	637
15:00	9	18	1	2	28	0	17	12	7	29	13	46	1	7	60	2	16	10	3	28	19	145	164
15:15	5	25	2	5	32	6	9	19	1	34	9	53	3	8	65	9	13	15	6	37	20	168	188
15:30	17	32	2	6	51	1	17	20	3	38	12	76	9	3	97	4	11	11	5	26	17	212	229
15:45	12	28	2	5	42	4	31	39	4	74	7	70	3	2	80	7	13	7	3	27	14	223	237
Total	43	103	7	18	153	11	74	90	15	175	41	245	16	20	302	22	53	43	17	118	70	748	818
16:00	18	29	4	6	51	4	22	38	3	64	11	63	4	3	78	3	12	7	2	22	14	215	229
16:15	7	28	5	4	40	2	23	25	1	50	11	72	2	3	85	9	14	6	1	29	9	204	213
16:30	11	31	3	7	45	1	18	25	1	44	8	72	1	4	81	1	12	12	4	25	16	195	211
16:45	7	27	1	6	35	1	14	17	3	32	15	84	0	8	99	2	16	10	2	28	19	194	213
Total	43	115	13	23	171	8	77	105	8	190	45	291	7	18	343	15	54	35	9	104	58	808	866

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

Weather: Cloudy and Mild
Counter TDC-8
Printed by: Blake/Krystal

File Name : TMC0204
Site Code : 02030201
Start Date : 05/22/2002
Page No : 2

Groups Printed- Unshifted

Start Time	TH 47 Southbound					CSAH 28 Westbound					TH 47 Northbound					CSAH 28 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				
17:00	11	30	3	3	44	2	12	19	0	33	16	72	0	6	88	4	8	8	3	20	12	185	197
17:15	9	26	6	0	41	4	11	24	2	39	9	65	1	2	75	3	16	6	0	25	4	180	184
17:30	8	36	0	4	44	1	15	27	4	43	11	73	0	4	84	4	18	13	1	35	13	206	219
17:45	8	37	2	5	47	0	14	26	1	40	11	62	0	4	73	3	13	7	1	23	11	183	194
Total	36	129	11	12	176	7	52	96	7	155	47	272	1	16	320	14	55	34	5	103	40	754	794
18:00	10	37	4	0	51	2	13	27	1	42	7	48	0	5	55	1	13	10	1	24	7	172	179
18:15	8	32	3	4	43	1	18	18	1	37	18	57	1	2	76	1	8	8	1	17	8	173	181
18:30	9	27	3	1	39	5	13	26	2	44	5	64	0	3	69	1	9	10	2	20	8	172	180
18:45	15	26	2	3	43	0	14	18	2	32	6	53	2	5	61	1	7	6	2	14	12	150	162
Total	42	122	12	8	176	8	58	89	6	155	36	222	3	15	261	4	37	34	6	75	35	667	702
19:00	11	22	3	3	36	1	8	17	2	26	5	39	2	2	46	3	4	3	0	10	7	118	125
19:15	10	29	7	1	46	3	5	10	2	18	5	38	2	4	45	10	18	8	3	36	10	145	155
19:30	11	14	3	0	28	1	12	13	0	26	7	31	0	1	38	7	14	11	2	32	3	124	127
19:45	10	25	0	5	35	4	9	8	1	21	4	34	2	3	40	1	6	3	1	10	10	106	116
Total	42	90	13	9	145	9	34	48	5	91	21	142	6	10	169	21	42	25	6	88	30	493	523
Grand Total	569	1807	140	269	2516	94	564	702	123	1360	398	1870	86	251	2354	141	580	469	141	1190	784	7420	8204
Apprch %	22.6	71.8	5.6			6.9	41.5	51.6			16.9	79.4	3.7			11.8	48.7	39.4					
Total %	7.7	24.4	1.9		33.9	1.3	7.6	9.5		18.3	5.4	25.2	1.2		31.7	1.9	7.8	6.3		16.0	9.6	90.4	

Major Street Approaches:

Northbound:

TH 47

Data File: E:\2002 COUNT FILES\TMC0204.war
 Count Type: IMC. Channel: 0. Count Date: 5/22/ 2
 Number of Lanes: 2
 Approach Speed: 55
 Total Approach Traffic: 2354

Southbound:

TH 47

Data File: E:\2002 COUNT FILES\TMC0204.war
 Count Type: IMC. Channel: 0. Count Date: 5/22/ 2
 Number of Lanes: 2
 Approach Speed: 55
 Total Approach Traffic: 2516

Minor Street Approaches:

Eastbound:

CSAH 28

Data File: E:\2002 COUNT FILES\TMC0204.war
 Count Type: IMC. Channel: 0. Count Date: 5/22/ 2
 Number of Lanes: 1
 Approach Speed: 55
 Total Approach Traffic: 1190

Westbound:

CSAH 28

Data File: E:\2002 COUNT FILES\TMC0204.war
 Count Type: IMC. Channel: 0. Count Date: 5/22/ 2
 Number of Lanes: 1
 Approach Speed: 45
 Total Approach Traffic: 1360

Analysis of 8-Hour Volume Warrants (Criteria refers to high volume side street for that hour):

Hour	Main	Side	Warrant 1	Warrant 2	Warrant 8
Begin	(Total)	Vol. Dir.	Rank	Meets? Criteria	Meets? Criteria
0	0	0 W	15	105	52 84
1	0	0 W	16	105	52 84
2	0	0 W	17	105	52 84
3	0	0 W	18	105	52 84
4	0	0 W	19	105	52 84
5	0	0 W	20	105	52 84
6	428	91 E	7	MAIN 105	SIDE 52 SIDE 84
7	401	106 E	6	SIDE 105	SIDE 52 SIDE 84
8	204	72 E	12	105	SIDE 52 84
9	264	82 E	10	105	SIDE 52 84
10	252	80 E	11	105	SIDE 52 84
11	262	60 W	14	105	SIDE 52 84
12	198	67 E	13	105	SIDE 52 84
13	282	85 W	9	105	SIDE 52 SIDE 84
14	363	109 W	5	SIDE 105	SIDE 52 SIDE 84
15	455	175 W	2	--BOTH-- 105	SIDE 52 SIDE 84
16	514	190 W	1	--BOTH-- 105	SIDE 52 --BOTH-- 84
17	496	155 W	3	--BOTH-- 105	SIDE 52 SIDE 84
18	437	155 W	4	--BOTH-- 105	SIDE 52 SIDE 84
19	314	91 W	8	105	SIDE 52 SIDE 84
20	0	0 W	21	105	52 84
21	0	0 W	22	105	52 84
22	0	0 W	23	105	52 84
23	0	0 W	24	105	52 84

Warrant Summary:

Rural values apply.

Warrant 1 - Minimum Vehicular Volumes

NOT SATISFIED. Required values reached for 4 hours. Criteria--Main St.: 420; Side St.: See Volume Summary.

Warrant 2 - Interruption of Continuous Traffic

NOT SATISFIED. Required values reached for 0 hours. Criteria--Main St.: 630; Side St.: See Volume Summary.

Warrant 3 - Minimum Pedestrian Volumes

NOT SATISFIED. 8th-High Hour--Pedestrians: 0. Criteria--Pedestrians: 105; Vehicles: 420.

Warrant 4 - School Crossing

NOT APPLICABLE. Gap data has not been defined.

Warrant 5 - Progressive Movement

NOT SATISFIED. Adjacent signals closer than 1000 feet and/or not part of coordinated system.

Warrant 6 - Accident Experience

NOT SATISFIED. 0 correctable accidents is fewer than required 5.

Correctable Accidents: 0; Right Angle Accidents: 0; Left Turn Accidents: 0; Other Accidents: 0.

Warrant 7 - Systems Warrant

SATISFIED. Peak hour total entering volume: 808. Approaches on both streets satisfy one of the following criteria:

NSEW- Approaches which are part of the principal through traffic roadway network.

- Approaches which connect areas of principal traffic generation.
- Approaches which include rural or suburban highways outside, entering or traversing a city.
- Approaches which have surface street freeway or expressway ramp terminals.
- Approaches which appear as a major route in an official transportation plan.

Warrant 8 - Combination of Warrants

NOT SATISFIED. Required values reached for 1 hours. Criteria--Main: 504; Side: See Volume Summary.

Warrant 9 - Four Hour Volumes

NOT SATISFIED. Required values reached for 1 hours.

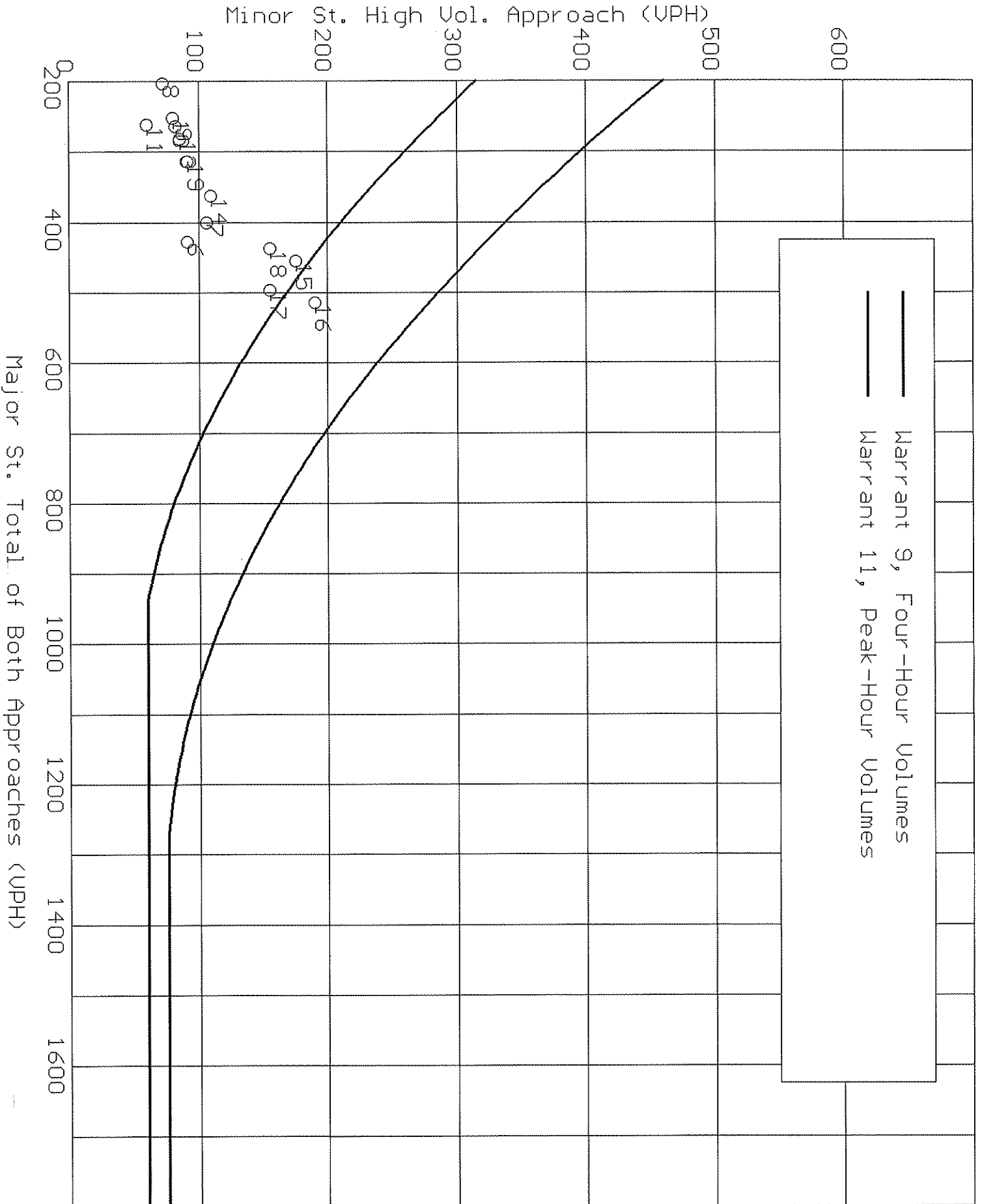
Warrant 10 - Peak Hour Delay

NOT SATISFIED. Peak hour (1600 hours) volume not adequate.

Criteria--Main St.: 800 (4 approaches), 650 (3 approaches); Side St.: 100.

Warrant 11 - Peak Hour Volume

NOT SATISFIED.



Multiway Stop Warrant Analysis
TMC 0204 TH 47 @ CSAH 28 (Ambassador Blvd.)
Speed Limit of Major Roadway..... 55

Minimum Traffic Volumes Multiway Stop Warrant Criteria:

- a) The total vehicular volume entering the intersection from all approaches must average at least 500 vehicles per hour (vph) for any 8 hours of an average day, AND:
- b) The combined vehicular and pedestrian volume from the minor street or highway must average at least 200 vph for the same 8 hours, with an average delay to minor street vehicular traffic of at least 30 seconds per vehicle during the maximum hour, BUT:
- c) When the 85-percentile approach speed of the major street traffic exceeds 40 miles per hour, the minimum volume warrant is 70% of the above requirements.

Hour	Total Vehicular Traffic Entering the Intersection	Vehicular Traffic Entering on First Minor Roadway	Vehicular Traffic Entering on Second Minor Roadway	Sum of Minor Approaches	Hours Stop Warrant Met
6 AM - 7 AM	548	91	29	120	NO
7 AM - 8 AM	561	106	54	160	YES
8 AM - 9 AM	328	72	52	124	NO
9 AM - 10 AM	413	82	67	149	YES
10 AM - 11 AM	404	80	72	152	YES
11 AM - 12 PM	381	59	60	119	NO
12 PM - 13 PM	331	67	66	133	NO
1 PM - 2 PM	430	63	85	148	YES
2 PM - 3 PM	554	82	109	191	YES
3 PM - 4 PM	748	118	175	293	YES
4 PM - 5 PM	808	104	190	294	YES
5 PM - 6 PM	754	103	155	258	YES
6 PM - 7 PM	667	75	155	230	YES
7 PM - 8 PM	493	88	91	179	YES

TOTAL HOURS MET: 10

MULTIWAY STOP WARRANT IS MET



COUNT LOCATION:

TH 47 (St. Francis Blvd.) @

DATE:

5/22/02

CSAH 28 (Ambassador Blvd.)

NORTH

APP. #1= TH 47

APP. #2 = CSAH 28

APP. #3= TH 47

APP. #4= CSAH 28

APP. #2

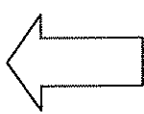
APP. #1

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		1			1	9		1
6:15-6:30						13		1
6:30-6:45						13		1
6:45-7:00						8		1
HOURLY TOTAL					1	HOURLY TOTAL		47
7:00-7:15						12		9
7:15-7:30						22		17
7:30-7:45						3	1	7
7:45-8:00						15		
HOURLY TOTAL						HOURLY TOTAL		86
8:00-8:15						14		
8:15-8:30						6		2
8:30-8:45						14		4
8:45-9:00						13		2
HOURLY TOTAL						HOURLY TOTAL		55
9:00-9:15						16		5
9:15-9:30						13		4
9:30-9:45						11		2
9:45-10:00						7		3
HOURLY TOTAL						HOURLY TOTAL		61
10:00-10:15						17		1
10:15-10:30						15		4
10:30-10:45						9	1	3
10:45-11:00						10		4
HOURLY TOTAL						HOURLY TOTAL		64
11:00-11:15						17		1
11:15-11:30						11		3
11:30-11:45						11		1
11:45-12:00						20		1
HOURLY TOTAL						HOURLY TOTAL		65
12:00-12:15						16		1
12:15-12:30						15		
12:30-12:45						11		
12:45-1:00						2		
HOURLY TOTAL						HOURLY TOTAL		45
1:00-1:15						8		3
1:15-1:30						13		
1:30-1:45						10		
1:45-2:00						12		1
HOURLY TOTAL						HOURLY TOTAL		47



NORTH

COUNT LOCATION:

TH 47 (St. Francis Blvd.) @

DATE:

5/21/02

CSAH 28 (Ambassador Blvd.)

APP. #1= TH 47

APP. #2 = CSAH 28

APP. #3= TH 47

APP. #4= CSAH 28

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			1		1	11		10
2:15-2:30						12		17
2:30-2:45						8		7
2:45-3:00						14		3
HOURLY TOTAL					1	HOURLY TOTAL		82
3:00-3:15						15		4
3:15-3:30						18		2
3:30-3:45			2		2	11		6
3:45-4:00	2				2	9		5
HOURLY TOTAL					4	HOURLY TOTAL		70
4:00-4:15						12		2
4:15-4:30						9		
4:30-4:45						16		
4:45-5:00						18		
HOURLY TOTAL						HOURLY TOTAL		57
5:00-5:15						10		2
5:15-5:30						3	1	
5:30-5:45						13		
5:45-6:00						11		
HOURLY TOTAL						HOURLY TOTAL		40
6:00-6:15						7		
6:15-6:30						8		
6:30-6:45						8		
6:45-7:00						11		
HOURLY TOTAL						HOURLY TOTAL		34
7:00-7:15						6	1	
7:15-7:30						11		
7:30-7:45						3		
7:45-8:00						9	1	
HOURLY TOTAL						HOURLY TOTAL		31