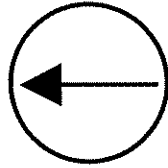


Date : 7/16/99AM 6/31/99PM

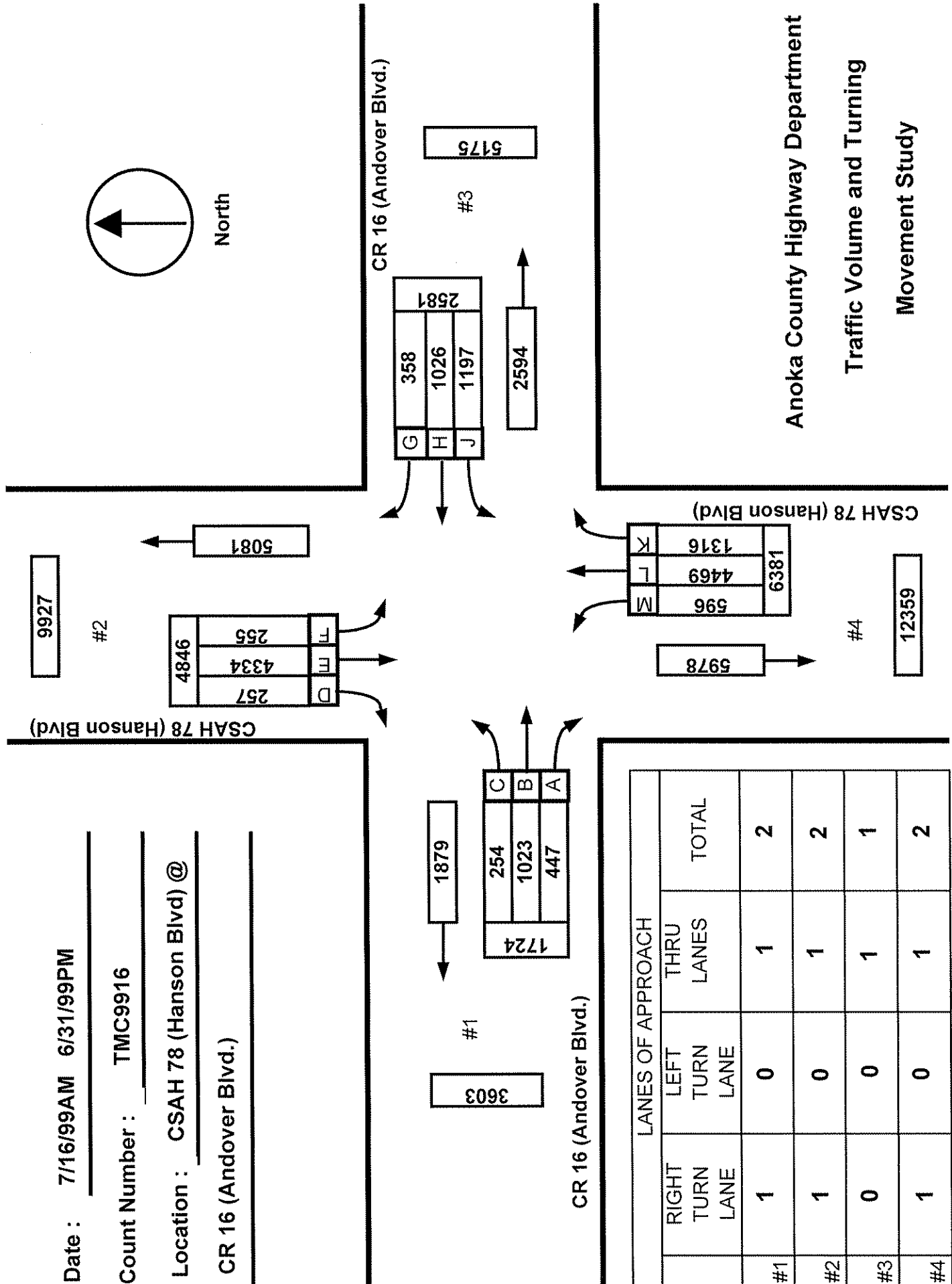
Count Number : TMC9916

Location : CSAH 78 (Hanson Blvd) @

CR 16 (Andover Blvd.)



North



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

Anoka County Highway Department
 Traffic Volume and Turning
 Movement Study

Anoka County Highway Department Traffic Volume & Turning Movement Study

Weather
Counter TDC-8
Counted by Mike and Ryan

File Name : TMC9916
Site Code : 99160102
Start Date : 06/29/1999
Page No : 1

Groups Printed 1 - 1 - Unshifted

Start Time	CSAH 78 (Hanson Blvd.) Southbound				CR 16 (Andover Blvd.) Westbound				CSAH 78 (Hanson Blvd.) Northbound				CR 16 (Andover Blvd.) Eastbound				Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	Heavy	Left	Thru	Right	Heavy	Left	Thru	Right	Heavy	Left	Thru	Right	Heavy			
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			
06:00	1	103	0	1	32	11	3	1	3	10	1	1	0	4	6	0	3	174	177
06:15	3	80	1	2	57	24	0	0	0	20	5	0	0	3	5	0	2	198	200
06:30	5	98	8	4	50	22	4	1	2	29	0	2	3	3	10	0	7	234	241
06:45	7	118	4	2	45	33	6	1	4	43	6	2	6	9	17	0	5	298	303
Total	16	399	13	9	184	90	13	3	9	102	12	5	9	19	38	0	17	904	921
07:00	7	94	3	2	43	21	2	1	5	25	6	1	9	13	9	2	6	237	243
07:15	6	92	6	2	37	16	2	0	4	31	7	2	1	14	13	0	4	229	233
07:30	4	86	11	1	26	25	4	0	6	37	5	3	4	11	4	1	5	223	228
07:45	5	86	9	0	21	34	5	0	4	32	10	2	4	8	15	1	3	233	236
Total	22	358	29	5	127	96	13	1	19	125	28	8	18	46	41	4	18	922	940
08:00	7	67	1	2	21	12	5	0	6	27	11	2	0	12	5	0	4	174	178
08:15	2	76	2	1	21	18	0	3	5	46	6	2	2	14	6	0	6	198	204
08:30	6	58	2	5	23	18	5	1	5	55	8	5	2	6	4	0	11	192	203
08:45	4	68	2	2	19	18	5	1	3	25	12	2	3	9	4	1	6	172	178
Total	19	269	7	10	84	66	15	5	19	153	37	11	7	41	19	1	27	736	763
09:00	1	59	2	5	19	15	4	3	6	32	10	5	2	9	7	2	15	166	181
09:15	4	60	5	3	13	14	6	2	6	27	7	2	0	11	5	1	8	158	166
09:30	8	67	0	2	19	7	0	1	4	50	7	7	2	9	10	4	14	183	197
09:45	4	57	6	2	15	15	6	2	6	34	5	2	2	9	7	0	6	166	172
Total	17	243	13	12	66	51	16	8	22	143	29	16	6	38	29	7	43	673	716
10:00	7	53	1	1	19	19	3	0	6	45	11	8	1	9	8	1	10	182	192
10:15	2	68	2	3	19	17	3	0	2	45	8	6	3	9	4	0	9	182	191
10:30	3	61	2	4	10	7	6	0	7	38	11	0	1	10	5	0	4	161	165
10:45	8	63	4	3	11	16	6	2	2	54	14	3	0	10	5	0	8	193	201
Total	20	245	9	11	59	59	18	2	17	182	44	17	5	38	22	1	31	718	749
11:00	5	61	1	3	20	19	6	2	5	35	16	0	2	12	6	0	5	188	193
11:15	7	55	7	3	20	12	3	1	5	55	16	7	1	12	4	0	11	197	208
11:30	2	45	0	2	21	7	2	3	10	43	6	4	4	11	5	0	9	156	165
11:45	3	66	5	4	26	16	9	1	15	54	16	3	4	12	3	1	9	229	238
Total	17	227	13	12	87	54	20	7	35	187	54	14	11	47	18	1	34	770	804
12:00	12	61	4	3	15	17	5	0	9	38	15	5	6	19	6	0	8	207	215
12:15	4	64	5	4	14	16	2	0	5	61	10	3	2	15	12	0	7	210	217
12:30	7	67	5	4	17	15	2	1	5	69	12	7	4	19	1	1	13	223	236
12:45	8	59	2	4	21	15	2	1	6	48	25	2	2	16	1	1	8	205	213
Total	31	251	16	15	67	63	11	2	25	216	62	17	14	69	20	2	36	845	881
13:00	7	51	7	1	22	14	6	1	7	73	26	6	2	17	4	2	10	236	246
13:15	3	65	3	2	15	12	4	0	7	72	13	4	5	14	9	1	7	222	229
13:30	3	60	2	2	18	10	3	1	12	66	23	5	4	16	8	2	10	225	235
13:45	1	66	3	2	18	25	7	2	7	56	15	2	5	20	10	2	8	233	241
Total	14	242	15	7	73	61	20	4	33	267	77	17	16	67	31	7	35	916	951
14:00	4	60	2	1	12	11	1	0	7	57	14	2	6	13	4	1	4	191	195
14:15	0	44	3	2	14	20	3	1	6	78	13	3	3	12	8	1	7	204	211
14:30	3	49	5	6	13	14	6	3	11	68	14	2	3	12	3	1	12	201	213
14:45	2	55	4	0	23	14	1	0	9	71	20	1	4	16	5	0	1	224	225
Total	9	208	14	9	62	59	11	4	33	274	61	8	16	53	20	3	24	820	844
15:00	2	55	3	2	11	7	1	0	4	68	15	2	2	24	7	0	4	199	203
15:15	1	49	0	2	18	13	5	3	10	79	24	3	3	6	5	1	9	213	222
15:30	1	46	2	5	7	7	4	1	8	88	18	4	4	25	5	0	10	215	225
15:45	1	72	1	5	13	10	5	1	16	118	30	7	7	28	12	0	13	313	326
Total	5	222	6	14	49	37	15	5	38	353	87	16	16	83	29	1	36	940	976

Anoka County Highway Department Traffic Volume & Turning Movement Study

File Name : TMC9916
Site Code : 99160102
Start Date : 06/29/1999
Page No : 2

Groups Printed 1 - 1 - Unshifted

Start Time	CSAH 78 (Hanson Blvd.) Southbound				CR 16 (Andover Blvd.) Westbound				CSAH 78 (Hanson Blvd.) Northbound				CR 16 (Andover Blvd.) Eastbound				Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	Heavy	Left	Thru	Right	Heavy	Left	Thru	Right	Heavy	Left	Thru	Right	Heavy			
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			
16:00	0	59	4	3	11	10	5	0	15	114	28	2	4	24	2	0	5	276	281
16:15	2	70	4	3	10	16	11	0	20	116	22	6	3	28	8	1	10	310	320
16:30	6	83	4	2	11	17	13	0	8	99	31	5	6	17	10	0	7	305	312
16:45	0	67	5	1	13	17	13	0	18	125	24	2	5	21	4	1	4	312	316
Total	8	279	17	9	45	60	42	0	61	454	105	15	18	90	24	2	26	1203	1229
17:00	3	70	4	3	18	13	12	1	20	124	59	3	4	34	5	1	8	366	374
17:15	4	71	7	2	18	21	13	2	22	123	62	0	11	19	6	0	4	377	381
17:30	0	63	8	0	22	11	8	0	22	137	54	3	10	28	16	1	4	379	383
17:45	1	82	10	0	12	17	14	0	18	147	78	2	6	27	9	0	2	421	423
Total	8	286	29	5	70	62	47	3	82	531	253	8	31	108	36	2	18	1543	1561
18:00	2	55	9	2	15	29	21	2	20	120	40	1	9	19	10	0	5	349	354
18:15	1	79	8	1	15	19	20	1	17	136	59	1	5	25	9	0	3	393	396
18:30	3	61	7	1	20	15	13	1	13	128	31	4	7	15	5	1	7	318	325
18:45	2	82	6	0	11	24	8	0	16	111	39	3	10	19	9	0	3	337	340
Total	8	277	30	4	61	87	62	4	66	495	169	9	31	78	33	1	18	1397	1415
19:00	3	73	3	0	17	20	15	0	10	123	32	0	2	28	3	0	0	329	329
19:15	8	95	6	1	17	23	6	0	9	113	36	1	6	25	14	0	2	358	360
19:30	5	110	5	2	14	22	6	1	9	109	25	3	3	22	12	0	6	342	348
19:45	2	59	5	0	18	13	4	0	13	88	13	4	2	22	7	1	5	246	251
Total	18	337	19	3	66	78	31	1	41	433	106	8	13	97	36	1	13	1275	1288
20:00	5	73	1	0	9	7	4	0	11	76	22	3	8	11	6	0	3	233	236
20:15	6	73	4	0	10	15	2	0	9	47	17	0	0	11	8	0	0	202	202
20:30	6	51	4	0	17	24	2	0	16	70	26	1	3	19	11	0	1	249	250
20:45	7	63	5	2	15	14	3	0	13	77	23	0	3	23	6	0	2	252	254
Total	24	260	14	2	51	60	11	0	49	270	88	4	14	64	31	0	6	936	942
21:00	5	59	3	0	10	11	2	0	18	72	24	4	12	22	8	0	4	246	250
21:15	7	76	6	0	13	9	6	0	7	78	25	0	12	19	5	0	0	263	263
21:30	2	47	1	1	12	12	2	0	11	72	26	0	4	22	3	0	1	214	215
21:45	5	49	3	2	11	11	3	0	11	62	29	0	1	22	4	0	2	211	213
Total	19	231	13	3	46	43	13	0	47	284	104	4	29	85	20	0	7	934	941
Grand Total	255	4334	257	130	1197	1026	358	49	596	4469	1316	177	254	1023	447	33	389	15532	15921
Apprch %	5.3	89.4	5.3		46.4	39.8	13.9		9.3	70.0	20.6		14.7	59.3	25.9				
Total %	1.6	27.9	1.7		7.7	6.6	2.3		3.8	28.8	8.5		1.6	6.6	2.9		2.4	97.6	

or Street Approaches:

Northbound:

CSAH 78 (Hanson Blvd.)
 Data File: C:\Program Files\JAMAR\PETRA\Data Files\TMC9916.war
 Count Type: IMC. Channel: 0. Count Date: 6/29/99
 Number of Lanes: 2
 Approach Speed: 55
 Total Approach Traffic: 6381

Southbound:

CSAH 78 (Hanson Blvd.)
 Data File: C:\Program Files\JAMAR\PETRA\Data Files\TMC9916.war
 Count Type: IMC. Channel: 0. Count Date: 6/29/99
 Number of Lanes: 2
 Approach Speed: 55
 Total Approach Traffic: 4846

Minor Street Approaches:

Eastbound:

CR 16 (Andover Blvd.)
 Data File: C:\Program Files\JAMAR\PETRA\Data Files\TMC9916.war
 Count Type: IMC. Channel: 0. Count Date: 6/29/99
 Number of Lanes: 2
 Approach Speed: 40
 Total Approach Traffic: 1724

Westbound:

CR 16 (Andover Blvd.)
 Data File: C:\Program Files\JAMAR\PETRA\Data Files\TMC9916.war
 Count Type: IMC. Channel: 0. Count Date: 6/29/99
 Number of Lanes: 1
 Approach Speed: 50
 Total Approach Traffic: 2581

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	Meets? Criteria
0	0	0 W 17	105	52	84
1	0	0 W 18	105	52	84
2	0	0 W 19	105	52	84
3	0	0 W 20	105	52	84
4	0	0 W 21	105	52	84
5	0	0 W 22	105	52	84
6	551	287 W 1	--BOTH-- 105	SIDE 52	--BOTH-- 84
7	581	236 W 2	--BOTH-- 105	SIDE 52	--BOTH-- 84
8	504	165 W 6	--BOTH-- 105	SIDE 52	--BOTH-- 84
9	467	133 W 13	--BOTH-- 105	SIDE 52	SIDE 84
10	517	136 W 11	--BOTH-- 105	SIDE 52	--BOTH-- 84
11	533	161 W 7	--BOTH-- 105	SIDE 52	--BOTH-- 84
12	601	141 W 10	--BOTH-- 105	SIDE 52	--BOTH-- 84
13	648	154 W 8	--BOTH-- 105	--BOTH-- 52	--BOTH-- 84
14	599	132 W 14	--BOTH-- 105	SIDE 52	--BOTH-- 84
15	711	128 E 15	MAIN 140	--BOTH-- 70	--BOTH-- 112
16	924	147 W 9	--BOTH-- 105	--BOTH-- 52	--BOTH-- 84
17	1189	179 W 4	--BOTH-- 105	--BOTH-- 52	--BOTH-- 84
18	1045	210 W 3	--BOTH-- 105	--BOTH-- 52	--BOTH-- 84
19	954	175 W 5	--BOTH-- 105	--BOTH-- 52	--BOTH-- 84
20	705	122 W 16	--BOTH-- 105	--BOTH-- 52	--BOTH-- 84
21	698	134 E 12	MAIN 140	--BOTH-- 70	--BOTH-- 112
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

SATISFIED for 14 hours. Criteria--Main St.: 420; Side St.: See Volume Summary.

Warrant 2 - Interruption of Continuous Traffic

SATISFIED for 8 hours. Criteria--Main St.: 630; Side St.: See Volume Summary.

Warrant 3 - Minimum Pedestrian Volumes

NOT SATISFIED. Ped volumes too low. Criteria--190 Peds in peak hour, 100 peds in 4th high hour.

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

NOT SATISFIED. At least one street has no major approaches. Peak hour total entering volume: 1543.

- Approaches which are part of the principal through traffic roadway network.
- Approaches which include rural or suburban highways outside, entering or traversing a city.
- Approaches which appear as a major route in an official transportation plan.

Warrant 8 - Combination of Warrants

SATISFIED for 15 hours. Criteria--Main: 504; Side: See Volume Summary.

Warrant 9 - Four Hour Volumes

SATISFIED for 9 hours.

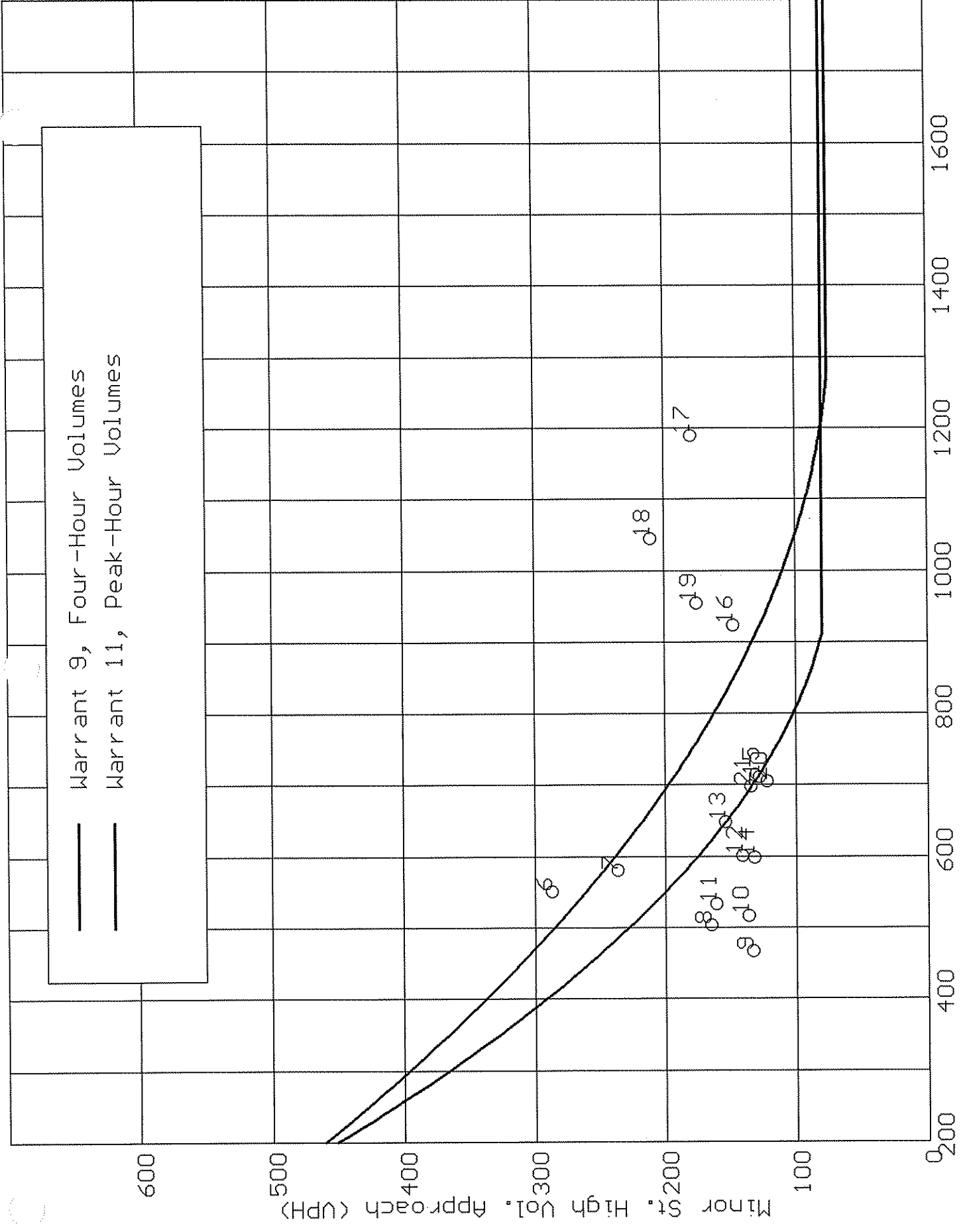
Warrant 10 - Peak Hour Delay

NOT APPLICABLE. Volume requirements satisfied, but side street peak hour delay not defined.

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

Warrant 11 - Peak Hour Volume

SATISFIED for 5 hours.



— Warrant 9, Four-Hour Volumes
 - - - Warrant 11, Peak-Hour Volumes

Major St. Total of Both Approaches (VPH)

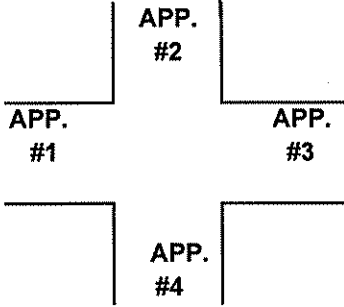


NORTH

COUNT LOCATION: 78 (HANSON BLVD.) @
16 (ANDOVER BLVD.)

DATE: 7/16/99

APP. #1= 16 (ANDOVER BLVD.)
APP. #2 = 78 (HANSON BLVD.)
APP. #3= 16 (ANDOVER BLVD.)
APP. #4=78 (HANSON BLVD.)



- 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						2	1	
6:15-6:30						2		
6:30-6:45						6		1
6:45-7:00						1	1	3
HOURLY TOTAL						HOURLY TOTAL		17
7:00-7:15						4		2
7:15-7:30						2		1
7:30-7:45						3		1
7:45-8:00						3		
HOURLY TOTAL						HOURLY TOTAL		16
8:00-8:15						3		1
8:15-8:30						6		
8:30-8:45						11		
8:45-9:00						3		2
HOURLY TOTAL						HOURLY TOTAL		26
9:00-9:15						13		2
9:15-9:30						6		2
9:30-9:45						15		
9:45-10:00						6		
HOURLY TOTAL						HOURLY TOTAL		44
10:00-10:15						10		
10:15-10:30			1		1	8		
10:30-10:45	1				1	5		
10:45-11:00						7		
HOURLY TOTAL					2	HOURLY TOTAL		30
11:00-11:15						3		2
11:15-11:30						10		1
11:30-11:45			2	2	4	8	1	
11:45-12:00						8		
HOURLY TOTAL					4	HOURLY TOTAL		33
12:00-12:15						8		
12:15-12:30						6		
12:30-12:45		1		2	3	13		1
12:45-1:00						9		
HOURLY TOTAL					3	HOURLY TOTAL		37
1:00-1:15						9		1
1:15-1:30		1			1	6		
1:30-1:45	1				1	10		
1:45-2:00						7	1	
HOURLY TOTAL					2	HOURLY TOTAL		34



NORTH

COUNT LOCATION:

78 (HANSONBLVD.) @

DATE:

6/30/99

16 (ANDOVER BLVD.)

APP. #1=16
(ANDOVER BLVD.)

APP. #2 =78
(HANSON BLVD.)

APP. #3=16
(ANDOVER BLVD.)

APP. #4=78
(HANSON BLVD.)

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						3		1
2:15-2:30	1			2	3	7		
2:30-2:45		1			1	10		1
2:45-3:00						3		
HOURLY TOTAL					4	HOURLY TOTAL		25
3:00-3:15			2		2	5		
3:15-3:30						7		
3:30-3:45		1			1	10		
3:45-4:00		1	1		2	12	1	1
HOURLY TOTAL					5	HOURLY TOTAL		36
4:00-4:15	1				1	5	1	
4:15-4:30	1				1	8		1
4:30-4:45		1	1		2	6		2
4:45-5:00						4		
HOURLY TOTAL		1	3		4	HOURLY TOTAL		27
5:00-5:15						6	1	1
5:15-5:30			2	3	5	3		
5:30-5:45				1	1	4		
5:45-6:00						3		
HOURLY TOTAL					6	HOURLY TOTAL		18
6:00-6:15	1				1	3		
6:15-6:30						3		
6:30-6:45	1	1	2		4	5	2	
6:45-7:00								
HOURLY TOTAL					5	HOURLY TOTAL		13
7:00-7:15		1	1	2	4	2		
7:15-7:30			2	2	4	2	1	
7:30-7:45				1	1	5	1	
7:45-8:00						4	1	
HOURLY TOTAL					9	HOURLY TOTAL		16
8:00-8:15			2	2	4	3		
8:15-8:30		1		1	2			
8:30-8:45		1			1	1		
8:45-9:00				1	1	1		
HOURLY TOTAL					8	HOURLY TOTAL		5
9:00-9:15						5		
9:15-9:30		1			1			
9:30-9:45						1		
9:45-10:00						2		
HOURLY TOTAL					1	HOURLY TOTAL		8