

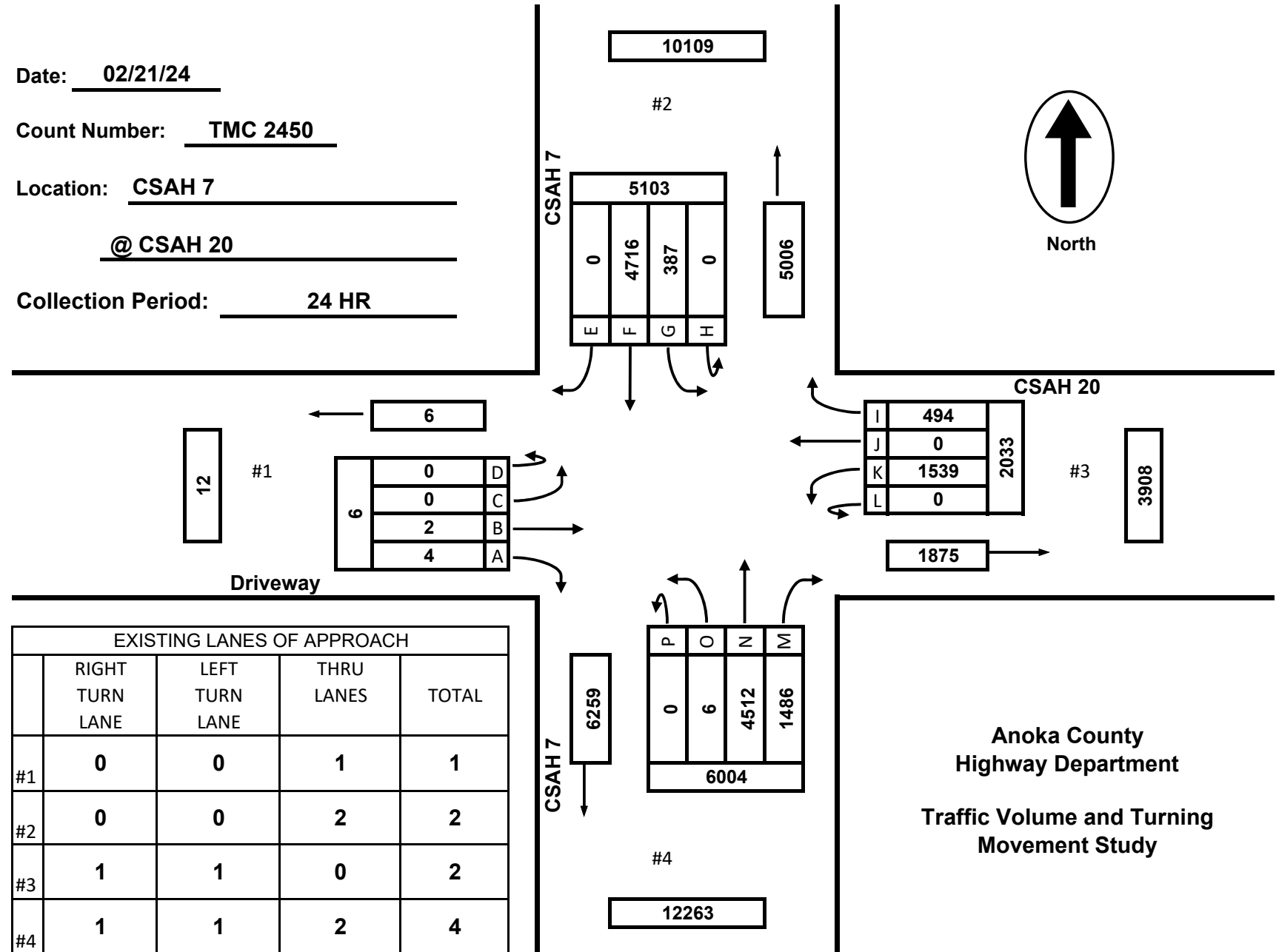
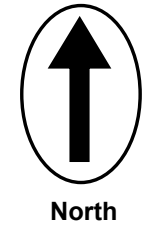
Date: 02/21/24

Count Number: TMC 2450

Location: CSAH 7

@ CSAH 20

Collection Period: 24 HR



CSAH 7

5103			
E	F	G	H
0	4716	387	0

5006

#1

6	0	D
	0	C
	2	B
	4	A

CSAH 20

I	494	2033
J	0	
K	1539	
L	0	

3908

P	O	N	M
0	6	4512	1486
6004			

6259

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

12263

Anoka County
Highway Department
Traffic Volume and Turning
Movement Study

Date: 02/21/24

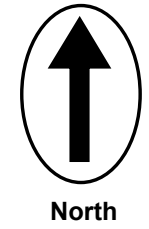
Count Number: TMC 2450

Location: CSAH 7

@ CSAH 20

Collection Period: 24 HR

Peak Hour: 6:45 - 7:45 AM



960

#2

803			
0	744	59	0
E	F	G	H

157

CSAH 20

I	18	273
J	0	
K	255	
L	0	

#3

395

122

#1

0	0	D
	0	C
	0	B
	0	A

Driveway

999

P	O	N	M
0	0	139	63
202			

#4

1201

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

Anoka County
Highway Department
Traffic Volume and Turning
Movement Study

Date: 02/21/24

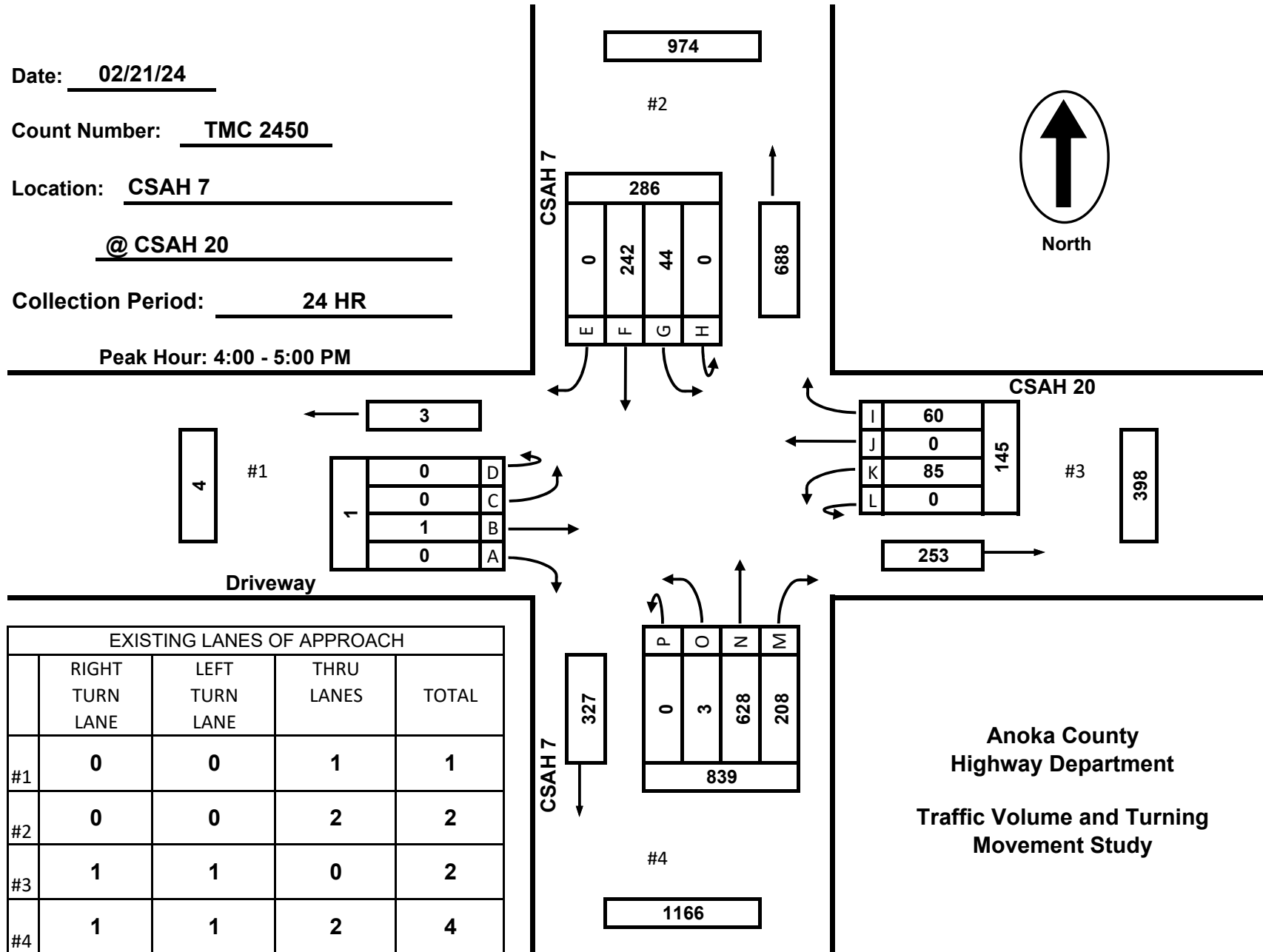
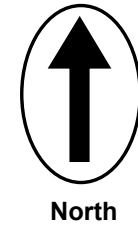
Count Number: TMC 2450

Location: CSAH 7

@ CSAH 20

Collection Period: 24 HR

Peak Hour: 4:00 - 5:00 PM



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

Anoka County
Highway Department
Traffic Volume and Turning
Movement Study

**TMC 2450 - CSAH 7 @ CSAH 20
Andover MN
Wednesday, February 21, 2024**

Time	Southbound CSAH 7						Westbound CSAH 20						Northbound CSAH 7						Eastbound Driveway						VEHICLE TOTAL						
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total							
12:00 AM	0	1	3	0	0	4	0	0	0	0	0	0	0	0	6	3	0	9	0	0	0	0	0	0	0	0	0	0	0	0	13
12:15 AM	0	1	1	0	0	2	0	1	0	0	0	1	0	0	6	1	0	7	0	0	0	0	0	0	0	0	0	0	0	0	10
12:30 AM	0	0	2	0	0	2	0	1	0	0	0	1	0	0	3	2	0	5	0	0	0	0	0	0	0	0	0	0	0	0	8
12:45 AM	0	0	1	0	0	1	0	1	0	0	0	1	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	4
Hourly Total	0	2	7	0	0	9	0	3	0	0	0	3	0	0	17	6	0	23	0	0	0	0	0	0	0	0	0	0	0	0	35
1:00 AM	0	0	1	0	0	1	0	1	0	0	0	1	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	6
1:15 AM	0	0	4	0	0	4	0	0	0	0	0	0	0	0	4	4	0	8	0	0	0	0	0	0	0	0	0	0	0	0	12
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5
1:45 AM	0	0	2	0	0	2	0	2	0	0	0	2	0	0	1	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	7
Hourly Total	0	0	7	0	0	7	0	3	0	0	0	3	0	0	11	9	0	20	0	0	0	0	0	0	0	0	0	0	0	0	30
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
2:15 AM	0	0	1	0	0	1	0	1	0	0	0	1	0	0	2	2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	6
2:30 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	6	1	0	7	0	0	0	0	0	0	0	0	0	0	0	0	8
2:45 AM	0	0	4	0	0	4	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	5
Hourly Total	0	0	6	0	0	6	0	1	0	0	0	1	0	0	11	4	0	15	0	0	0	0	0	0	0	0	0	0	0	0	22
3:00 AM	0	0	10	0	0	10	0	4	0	1	0	5	0	0	7	1	0	8	0	0	0	0	0	0	0	0	0	0	0	0	23
3:15 AM	0	0	6	0	0	6	0	0	0	0	0	0	0	0	2	3	0	5	0	0	0	0	0	0	0	0	0	0	0	0	11
3:30 AM	0	1	13	0	0	14	0	5	0	0	0	5	0	0	2	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	22
3:45 AM	0	1	25	0	0	26	0	3	0	0	0	3	0	0	1	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	32
Hourly Total	0	2	54	0	0	56	0	12	0	1	0	13	0	0	12	7	0	19	0	0	0	0	0	0	0	0	0	0	0	0	88
4:00 AM	0	0	25	0	0	25	0	2	0	0	0	2	0	0	1	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	30
4:15 AM	0	0	22	0	0	22	0	11	0	0	0	11	0	0	2	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	36
4:30 AM	0	0	42	0	0	42	0	19	0	0	0	19	0	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	63
4:45 AM	0	0	43	0	0	43	0	15	0	0	0	15	0	0	4	2	0	6	0	0	0	0	0	0	0	0	0	0	0	0	64
Hourly Total	0	0	132	0	0	132	0	47	0	0	0	47	0	0	8	6	0	14	0	0	0	0	0	0	0	0	0	0	0	0	193
5:00 AM	0	0	64	0	0	64	0	9	0	0	0	9	0	0	6	2	0	8	0	0	0	0	0	0	0	0	0	0	0	0	81
5:15 AM	0	0	97	0	0	97	0	13	0	0	0	13	0	0	4	2	0	6	0	0	0	0	0	0	0	0	0	0	0	0	116
5:30 AM	0	3	98	0	0	101	0	33	0	0	0	33	0	0	6	3	0	9	0	0	0	0	0	0	0	0	0	0	0	0	143
5:45 AM	0	3	117	0	0	120	0	31	0	2	0	33	0	0	6	3	0	9	0	0	0	0	0	0	0	0	0	0	0	0	162
Hourly Total	0	6	376	0	0	382	0	86	0	2	0	88	0	0	22	10	0	32	0	0	0	0	0	0	0	0	0	0	0	0	502
6:00 AM	0	2	124	0	0	126	0	24	0	0	0	24	0	0	13	6	0	19	0	0	0	0	0	0	0	0	0	0	0	0	169
6:15 AM	0	3	156	0	0	159	0	33	0	2	0	35	0	0	19	16	0	35	0	0	0	0	0	0	0	0	0	0	0	0	229
6:30 AM	0	9	153	0	0	162	0	64	0	2	0	66	0	0	20	19	0	39	0	0	0	1	0	0	0	0	0	1	0	1	268
6:45 AM	0	9	166	0	0	175	0	62	0	2	0	64	0	0	36	16	0	52	0	0	0	0	0	0	0	0	0	0	0	0	291
Hourly Total	0	23	599	0	0	622	0	183	0	6	0	189	0	0	88	57	0	145	0	0	0	1	0	0	0	0	0	1	0	1	957
7:00 AM	0	16	196	0	0	212	0	58	0	4	0	62	0	0	19	14	0	33	0	0	0	0	0	0	0	0	0	0	0	0	307
7:15 AM	0	20	218	0	0	238	0	76	0	5	0	81	0	0	41	15	0	56	0	0	0	0	0	0	0	0	0	0	0	0	375
7:30 AM	0	14	164	0	0	178	0	59	0	7	0	66	0	0	43	18	0	61	0	0	0	0	0	0	0	0	0	0	0	0	305
7:45 AM	0	11	119	0	0	130	0	55	0	7	0	62	0	0	44	16	0	60	0	0	0	0	0	0	0	0	0	0	0	0	252
Hourly Total	0	61	697	0	0	758	0	248	0	23	0	271	0	0	147	63	0	210	0	0	0	0	0	0	0	0	0	0	0	0	1239

**TMC 2450 - CSAH 7 @ CSAH 20
Andover MN
Wednesday, February 21, 2024**

Time	Southbound CSAH 7						Westbound CSAH 20						Northbound CSAH 7						Eastbound Driveway						VEHICLE TOTAL
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	
8:00 AM	0	6	88	0	0	94	0	26	0	7	0	33	0	0	29	22	0	51	0	0	0	0	0	0	178
8:15 AM	0	8	95	0	0	103	0	29	0	11	0	40	0	0	18	19	0	37	0	0	0	0	0	0	180
8:30 AM	0	9	94	0	0	103	0	27	0	4	0	31	0	0	28	16	0	44	0	0	0	0	0	0	178
8:45 AM	0	10	94	0	0	104	0	26	0	4	0	30	0	0	25	3	0	28	0	0	1	0	0	1	163
Hourly Total	0	33	371	0	0	404	0	108	0	26	0	134	0	0	100	60	0	160	0	0	1	0	0	1	699
9:00 AM	0	6	73	0	0	79	0	18	0	3	0	21	0	0	33	16	0	49	0	0	0	0	0	0	149
9:15 AM	0	11	70	0	0	81	0	20	0	7	0	27	0	0	40	13	0	53	0	0	0	0	0	0	161
9:30 AM	0	10	53	0	0	63	0	26	0	11	0	37	0	0	31	14	0	45	0	0	0	0	0	0	145
9:45 AM	0	12	69	0	0	81	0	18	0	4	0	22	0	0	40	25	0	65	0	0	0	0	0	0	168
Hourly Total	0	39	265	0	0	304	0	82	0	25	0	107	0	0	144	68	0	212	0	0	0	0	0	0	623
10:00 AM	0	5	61	0	0	66	0	11	0	5	0	16	0	0	34	15	0	49	0	0	0	0	0	0	131
10:15 AM	0	5	60	0	0	65	0	14	0	3	0	17	0	0	32	16	0	48	0	0	0	0	0	0	130
10:30 AM	0	8	60	0	0	68	0	12	0	4	0	16	0	0	46	6	0	52	0	0	0	0	0	0	136
10:45 AM	0	1	43	0	0	44	0	21	0	6	0	27	0	0	34	14	0	48	0	0	0	0	0	0	119
Hourly Total	0	19	224	0	0	243	0	58	0	18	0	76	0	0	146	51	0	197	0	0	0	0	0	0	516
11:00 AM	0	2	61	0	0	63	0	14	0	6	0	20	0	0	47	6	0	53	0	0	0	0	0	0	136
11:15 AM	0	3	67	0	0	70	0	13	0	6	0	19	0	0	42	16	0	58	0	0	0	0	0	0	147
11:30 AM	0	3	62	0	0	65	0	18	0	7	0	25	0	0	56	15	0	71	0	0	0	0	0	0	161
11:45 AM	0	4	59	0	0	63	0	24	0	14	0	38	0	0	50	12	0	62	0	0	0	0	0	0	163
Hourly Total	0	12	249	0	0	261	0	69	0	33	0	102	0	0	195	49	0	244	0	0	0	0	0	0	607
12:00 PM	0	3	33	0	0	36	0	12	0	4	0	16	0	0	52	26	0	78	0	0	0	0	0	0	130
12:15 PM	0	5	59	0	0	64	0	20	0	15	0	35	0	0	71	19	0	90	0	0	0	0	0	0	189
12:30 PM	0	7	54	0	0	61	0	10	0	12	0	22	0	0	66	18	0	84	0	0	0	0	0	0	167
12:45 PM	0	2	39	0	0	41	0	24	0	9	0	33	0	0	57	20	0	77	0	0	0	0	0	0	151
Hourly Total	0	17	185	0	0	202	0	66	0	40	0	106	0	0	246	83	0	329	0	0	0	0	0	0	637
1:00 PM	0	4	52	0	0	56	0	17	0	11	0	28	0	0	43	12	0	55	0	0	0	0	0	0	139
1:15 PM	0	1	63	0	0	64	0	16	0	5	0	21	0	0	54	13	0	67	0	0	0	0	0	0	152
1:30 PM	0	4	49	0	0	53	0	19	0	10	0	29	0	0	61	14	0	75	0	0	0	0	0	0	157
1:45 PM	0	2	51	0	0	53	0	14	0	12	0	26	0	0	65	25	0	90	0	0	0	0	0	0	169
Hourly Total	0	11	215	0	0	226	0	66	0	38	0	104	0	0	223	64	0	287	0	0	0	0	0	0	617
2:00 PM	0	6	59	0	0	65	0	16	0	7	0	23	0	0	75	28	0	103	0	0	0	0	0	0	191
2:15 PM	0	3	70	0	0	73	0	22	0	6	0	28	0	0	88	43	0	131	0	0	0	0	0	0	232
2:30 PM	0	4	59	0	0	63	0	28	0	5	0	33	0	0	118	40	0	158	0	0	0	0	0	0	254
2:45 PM	0	6	54	0	0	60	0	16	0	12	0	28	0	0	122	24	0	146	0	0	0	0	0	0	234
Hourly Total	0	19	242	0	0	261	0	82	0	30	0	112	0	0	403	135	0	538	0	0	0	0	0	0	911
3:00 PM	0	5	56	0	0	61	0	18	0	7	0	25	0	0	141	49	0	190	0	0	0	0	0	0	276
3:15 PM	0	10	45	0	0	55	0	22	0	18	0	40	0	1	137	52	0	190	0	0	0	0	0	0	285
3:30 PM	0	8	57	0	0	65	0	12	0	18	0	30	0	0	159	46	0	205	0	0	0	1	0	1	301
3:45 PM	0	7	52	0	0	59	0	27	0	14	0	41	0	1	162	37	0	200	0	0	0	1	0	1	301
Hourly Total	0	30	210	0	0	240	0	79	0	57	0	136	0	2	599	184	0	785	0	0	0	2	0	2	1163

**TMC 2450 - CSAH 7 @ CSAH 20
Andover MN
Wednesday, February 21, 2024**

AM Peak Hour

Time	Southbound						Westbound						Northbound						Eastbound						VEHICLE TOTAL						
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total							
6:45 AM	0	9	166	0	0	175	0	62	0	2	0	64	0	0	36	16	0	52	0	0	0	0	0	0	0	0	0	0	0	0	291
7:00 AM	0	16	196	0	0	212	0	58	0	4	0	62	0	0	19	14	0	33	0	0	0	0	0	0	0	0	0	0	0	0	307
7:15 AM	0	20	218	0	0	238	0	76	0	5	0	81	0	0	41	15	0	56	0	0	0	0	0	0	0	0	0	0	0	0	375
7:30 AM	0	14	164	0	0	178	0	59	0	7	0	66	0	0	43	18	0	61	0	0	0	0	0	0	0	0	0	0	0	0	305
Peak Hour Total	0	59	744	0	0	803	0	255	0	18	0	273	0	0	139	63	0	202	0	0	0	0	0	0	0	0	0	0	0	0	1278
PHF	0.000	0.738	0.853	0.000	0.000	0.843	0.000	0.839	0.000	0.643	0.000	0.843	0.000	0.000	0.808	0.875	0.000	0.828	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.852	

PM Peak Hour

Time	Southbound						Westbound						Northbound						Eastbound						VEHICLE TOTAL						
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total							
4:00 PM	0	12	59	0	0	71	0	20	0	20	0	40	0	0	148	52	0	200	0	0	0	0	0	0	0	0	0	0	0	0	311
4:15 PM	0	9	67	0	0	76	0	19	0	14	0	33	0	1	163	57	0	221	0	0	0	0	0	0	0	0	0	0	0	0	330
4:30 PM	0	13	63	0	0	76	0	27	0	10	0	37	0	0	148	48	0	196	0	0	1	0	0	0	0	0	1	0	0	1	310
4:45 PM	0	10	53	0	0	63	0	19	0	16	0	35	0	2	169	51	0	222	0	0	0	0	0	0	0	0	0	0	0	0	320
Peak Hour Total	0	44	242	0	0	286	0	85	0	60	0	145	0	3	628	208	0	839	0	0	1	0	0	1	0	0	1	0	0	1	1271
PHF	0.000	0.846	0.903	0.000	0.000	0.941	0.000	0.787	0.000	0.750	0.000	0.906	0.000	0.375	0.929	0.912	0.000	0.945	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.963	

Total Vehicles On Leg		10109	
Vehicles Entering Intersection	5103	Vehicles Exiting Intersection	5006
Southbound			
Cars	0	4649	375
Heavy	0	67	12
Total	0	4716	387



Total Vehicles on Leg 12	Vehicles Entering Intersection 6	Eastbound	Cars	Heavy	Total	
			0	0	0	
			0	0	0	
	Vehicles Exiting Intersection 6		Cars	Heavy	Total	
	0		0	0		
2	0	2				
4	0	4				

Daily Volumes

Cars	Heavy	Total	Westbound	Vehicles Entering Intersection 2033	Total Vehicles on Leg 3908
477	17	494			
0	0	0			
1488	51	1539			
0	0	0			
0	0	0	Vehicles Exiting Intersection 1875		

Cars	0	0	6	4442	1441
Heavy	0	0	0	70	45
Total	0	0	6	4512	1486
Northbound					
Vehicles Entering Intersection			Vehicles Exiting Intersection		
6004			6259		
Total Vehicles On Leg			12263		

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2450

Study Date : 02/28/2024

Signal Warrants - Summary

Major Street Approaches

Northbound: CSAH 7

Number of Lanes : 2+

Total Approach Volume: 6,004

Southbound: CSAH 7

Number of Lanes :2+

Total Approach Volume: 5,103

Minor Street Approaches

Eastbound: Driveway

Number of Lanes :1

Total Approach Volume: 6

Westbound: CSAH 20

Number of Lanes :1

Total Approach Volume: 2,033

Warrant Summary (Rural Values Apply)

Warrant 1 - Eight Hour Vehicular Volumes.....Satisfied

Warrant 1A - Minimum Vehicular Volume.....Satisfied

Required volumes reached for 10 hours, 8 are needed

Warrant 1B - Interruption of Continuous Traffic.....Not Satisfied

Required volumes reached for 7 hours, 8 are needed

Warrant 1C - Combination of Warrants.....Satisfied

Required 1A volumes reached for 13 hours, 8 are needed

Required 1B volumes reached for 12 hours, 8 are needed

Warrant 2 - Four Hour Volumes.....Satisfied

Number of hours (7) volumes exceed minimum >= minimum required (4).

Warrant 3 - Peak Hour.....Satisfied

Warrant 3A - Peak Hour Delay.....Satisfied

Number of one hour periods (24) volumes exceed minimum >= required (1). Delay data not evaluated.

Warrant 3B - Peak Hour Volumes.....Satisfied

Volumes exceed minimums for at least one hour period.

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

Warrant 9 - Intersection Near a Grade Crossing.....Not Evaluated

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2450

Study Date : 02/28/2024

Warrant 1A - Minimum Volumes

Description

Intended for sites where the volume of intersecting traffic is the principal reason for consideration of a signal installation.

Summary

10 one hour periods meet minimums.
Warrant IS met.

Site Data Required

Rural Settings Apply = **True**
 Number of Major Lanes = **2 or more**
 Number of Minor Lanes = **1**

Volume Requirements

Rural Factor of 70 % applied
 Veh/Hr Major = **420**
 Veh/Hr Minor = **105**

Time	Major Road				Total	Minor Road		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
15:45 - 16:45	817	+	282	=	1099	2	151	Yes
14:45 - 15:45	731	+	241	=	972	1	123	Yes
16:45 - 17:45	727	+	243	=	970	0	154	Yes
06:30 - 07:30	180	+	787	=	967	1	273	Yes
13:45 - 14:45	482	+	254	=	736	0	110	Yes
07:30 - 08:30	209	+	505	=	714	0	201	Yes
05:30 - 06:30	72	+	506	=	578	0	125	Yes
08:30 - 09:30	174	+	367	=	541	1	109	Yes
11:30 - 12:30	301	+	228	=	529	0	114	Yes
12:45 - 13:45	274	+	214	=	488	0	111	Yes
17:45 - 18:45	471	+	208	=	679	0	102	No
18:00 - 19:00	408	+	177	=	585	0	76	No
18:15 - 19:15	358	+	155	=	513	0	67	No
12:30 - 13:30	283	+	222	=	505	0	104	No
11:00 - 12:00	244	+	261	=	505	0	102	No
11:15 - 12:15	269	+	234	=	503	0	98	No
09:45 - 10:45	214	+	280	=	494	0	71	No
05:15 - 06:15	43	+	444	=	487	0	103	No
09:30 - 10:30	207	+	275	=	482	0	92	No
10:45 - 11:45	230	+	242	=	472	0	91	No
18:30 - 19:30	331	+	139	=	470	0	71	No
10:30 - 11:30	211	+	245	=	456	0	82	No
10:15 - 11:15	201	+	240	=	441	0	80	No
10:00 - 11:00	197	+	243	=	440	0	76	No
18:45 - 19:45	299		116		415	1	64	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2450

Study Date : 02/28/2024

Warrant 1B - Interruption of Continuous Traffic

Description

Intended for sites where the volume of the major street is so heavy that traffic on the minor street suffers excessive delay or hazard.

Summary

Only 7 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = **True**
 Number of Major Lanes = **2 or more**
 Number of Minor Lanes = **1**

Volume Requirements

Rural Factor of 70 % applied
 Veh/Hr Major = **630**
 Veh/Hr Minor = **53**

Time	Major Road				Total	Minor Road		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
15:30 - 16:30	826	+	271	=	1097	2	144	Yes
16:30 - 17:30	778	+	259	=	1037	1	156	Yes
06:45 - 07:45	202	+	803	=	1005	0	273	Yes
14:30 - 15:30	684	+	239	=	923	0	126	Yes
17:30 - 18:30	513	+	228	=	741	0	120	Yes
05:45 - 06:45	102	+	567	=	669	1	158	Yes
13:30 - 14:30	399	+	244	=	643	0	106	Yes
07:45 - 08:45	192	+	430	=	622	0	166	No
05:30 - 06:30	72	+	506	=	578	0	125	No
13:15 - 14:15	335	+	235	=	570	0	99	No
08:00 - 09:00	160	+	404	=	564	1	134	No
08:15 - 09:15	158	+	389	=	547	1	122	No
08:30 - 09:30	174	+	367	=	541	1	109	No
11:45 - 12:45	314	+	224	=	538	0	111	No
12:00 - 13:00	329	+	202	=	531	0	106	No
11:30 - 12:30	301	+	228	=	529	0	114	No
12:15 - 13:15	306	+	222	=	528	0	118	No
09:00 - 10:00	212	+	304	=	516	0	107	No
13:00 - 14:00	287	+	226	=	513	0	104	No
12:30 - 13:30	283	+	222	=	505	0	104	No
11:00 - 12:00	244	+	261	=	505	0	102	No
11:15 - 12:15	269	+	234	=	503	0	98	No
09:15 - 10:15	212	+	291	=	503	0	102	No
08:45 - 09:45	175	+	327	=	502	1	115	No
09:45 - 10:45	214		280		494	0	71	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2450

Study Date : 02/28/2024

Warrant 1C Combination of Warrants

Description

Intended for sites where the traffic volumes don't meet individual warrants but where Warrants 1A and 1B are both met to 80% of their stated values.

Summary

13 hours meet 1A minimums.
12 hours meet 1B minimums.
Warrant IS met.

Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

Volume Requirements

Rural Factor of 70% applied
Warrant 1A 1B
Veh/Hr Major = **336 504**

Veh/Hr Minor = **84 42**

Major Road CSAH 7

Minor Road Driveway

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1A?
15:45 - 16:45	817	+	282	=	1099	2	151	Yes
14:45 - 15:45	731	+	241	=	972	1	123	Yes
16:45 - 17:45	727	+	243	=	970	0	154	Yes
07:00 - 08:00	210	+	758	=	968	0	271	Yes
06:00 - 07:00	145	+	622	=	767	1	189	Yes
13:45 - 14:45	482	+	254	=	736	0	110	Yes
17:45 - 18:45	471	+	208	=	679	0	102	Yes
08:00 - 09:00	160	+	404	=	564	1	134	Yes
11:45 - 12:45	314	+	224	=	538	0	111	Yes
09:00 - 10:00	212	+	304	=	516	0	107	Yes
12:45 - 13:45	274	+	214	=	488	0	111	Yes
10:45 - 11:45	230		242		472	0	91	Yes

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1B?
16:00 - 17:00	839	+	286	=	1125	1	145	Yes
15:00 - 16:00	785	+	240	=	1025	2	136	Yes
06:30 - 07:30	180	+	787	=	967	1	273	Yes
17:00 - 18:00	646	+	245	=	891	0	161	Yes
14:00 - 15:00	538	+	261	=	799	0	112	Yes
07:30 - 08:30	209	+	505	=	714	0	201	Yes
18:00 - 19:00	408	+	177	=	585	0	76	Yes
05:30 - 06:30	72	+	506	=	578	0	125	Yes
08:30 - 09:30	174	+	367	=	541	1	109	Yes
12:00 - 13:00	329	+	202	=	531	0	106	Yes
13:00 - 14:00	287	+	226	=	513	0	104	Yes
11:00 - 12:00	244		261		505	0	102	Yes

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2450

Study Date : 02/28/2024

Warrant 2 - Four Hour Volumes

Description

Intended for sites where the volume of intersecting traffic during any four hours of the day is the principal reason for consideration of a signal installation.

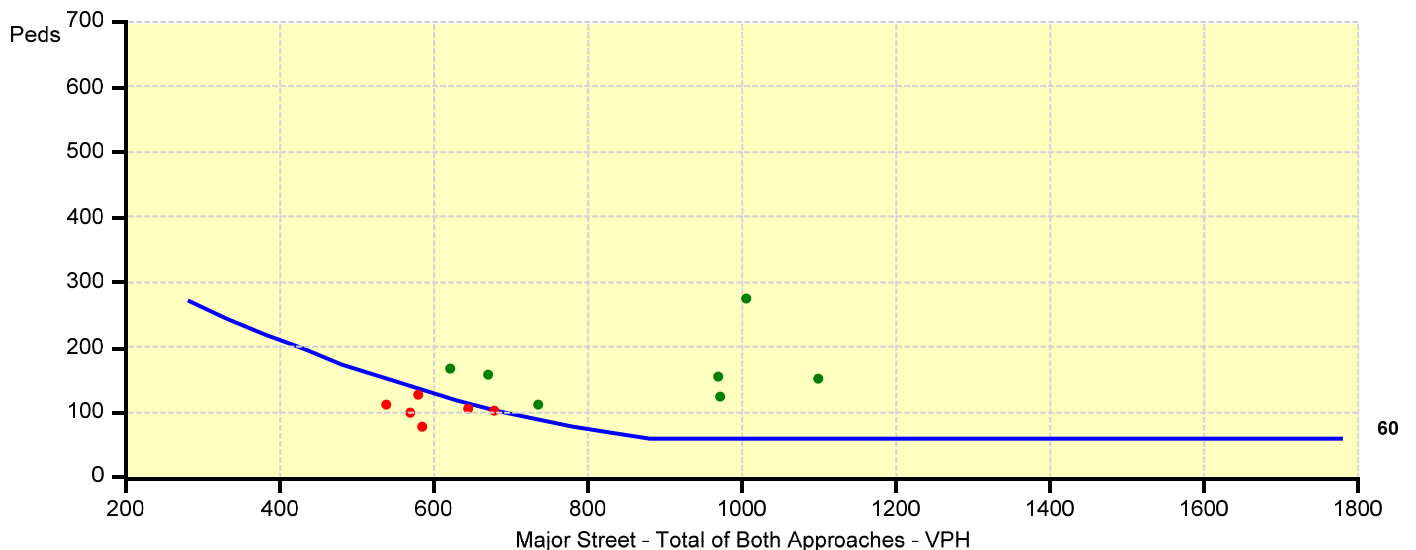
Summary

7 one hour periods meet minimums.
Warrant IS met.

Site Data Required

Rural Settings Apply = **True**
 Number of Major Lanes = **2 or more**
 Number of Minor Lanes = **1**

Time	Major Road CSAH 7				Total	Minor Road Driveway		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
15:45 - 16:45	817	+	282	=	1099	2	151	Yes
06:45 - 07:45	202	+	803	=	1005	0	273	Yes
14:45 - 15:45	731	+	241	=	972	1	123	Yes
16:45 - 17:45	727	+	243	=	970	0	154	Yes
13:45 - 14:45	482	+	254	=	736	0	110	Yes
05:45 - 06:45	102	+	567	=	669	1	158	Yes
07:45 - 08:45	192	+	430	=	622	0	166	Yes
17:45 - 18:45	471	+	208	=	679	0	102	No
13:30 - 14:30	399	+	244	=	643	0	106	No
18:00 - 19:00	408	+	177	=	585	0	76	No
05:30 - 06:30	72	+	506	=	578	0	125	No
13:15 - 14:15	335	+	235	=	570	0	99	No



ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2450

Study Date : 02/28/2024

Warrant 3B - Peak Hour Volumes

Description

Intended for sites where the volume of intersecting traffic during one hour of the day is the principal reason for consideration of a signal installation.

Summary

17 one hour periods meet minimums.
Warrant IS met.

Site Data Required

Rural Settings Apply = **True**
 Number of Major Lanes = **2 or more**
 Number of Minor Lanes = **1**

Time	Major Road CSAH 7					Minor Road Driveway		Met?
	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	
16:00 - 17:00	839	+	286	=	1125	1	145	Yes
15:45 - 16:45	817	+	282	=	1099	2	151	Yes
15:30 - 16:30	826	+	271	=	1097	2	144	Yes
16:15 - 17:15	813	+	269	=	1082	1	142	Yes
15:15 - 16:15	795	+	250	=	1045	2	151	Yes
16:30 - 17:30	778	+	259	=	1037	1	156	Yes
15:00 - 16:00	785	+	240	=	1025	2	136	Yes
06:45 - 07:45	202	+	803	=	1005	0	273	Yes
14:45 - 15:45	731	+	241	=	972	1	123	Yes
16:45 - 17:45	727	+	243	=	970	0	154	Yes
07:00 - 08:00	210	+	758	=	968	0	271	Yes
06:30 - 07:30	180		787		967	1	273	Yes

