

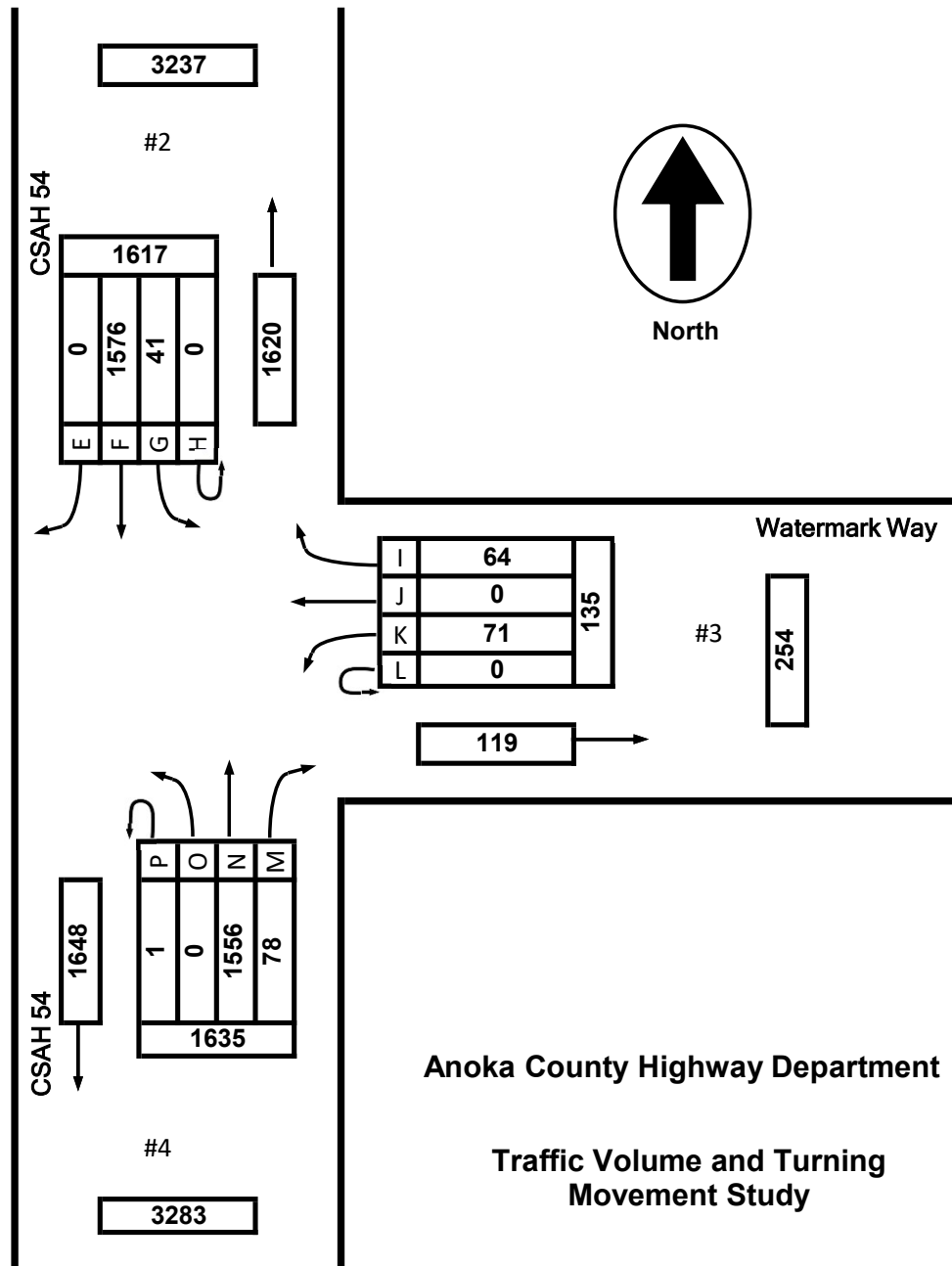
Date : 07/27/23

Count Number : TMC 2381

Location : CSAH 54  
@ Watermark Way

Collection Period : 24 HR

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



Anoka County Highway Department

Traffic Volume and Turning Movement Study

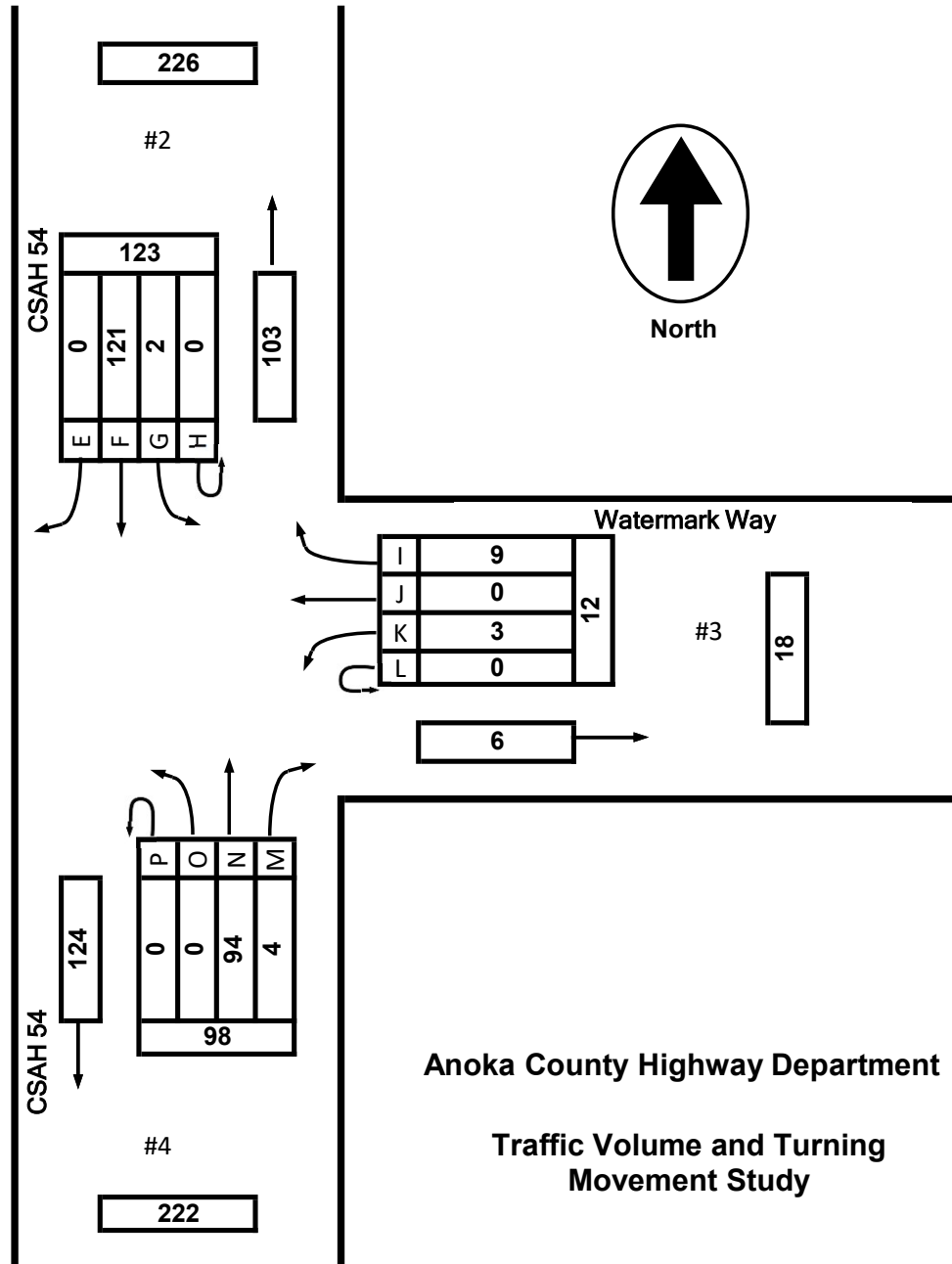
Date : 07/27/23

Count Number : TMC 2381

Location : CSAH 54  
@ Watermark Way

Collection Period : 7:30 AM - 8:30 AM  
**AM PEAK**

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



Anoka County Highway Department

Traffic Volume and Turning Movement Study

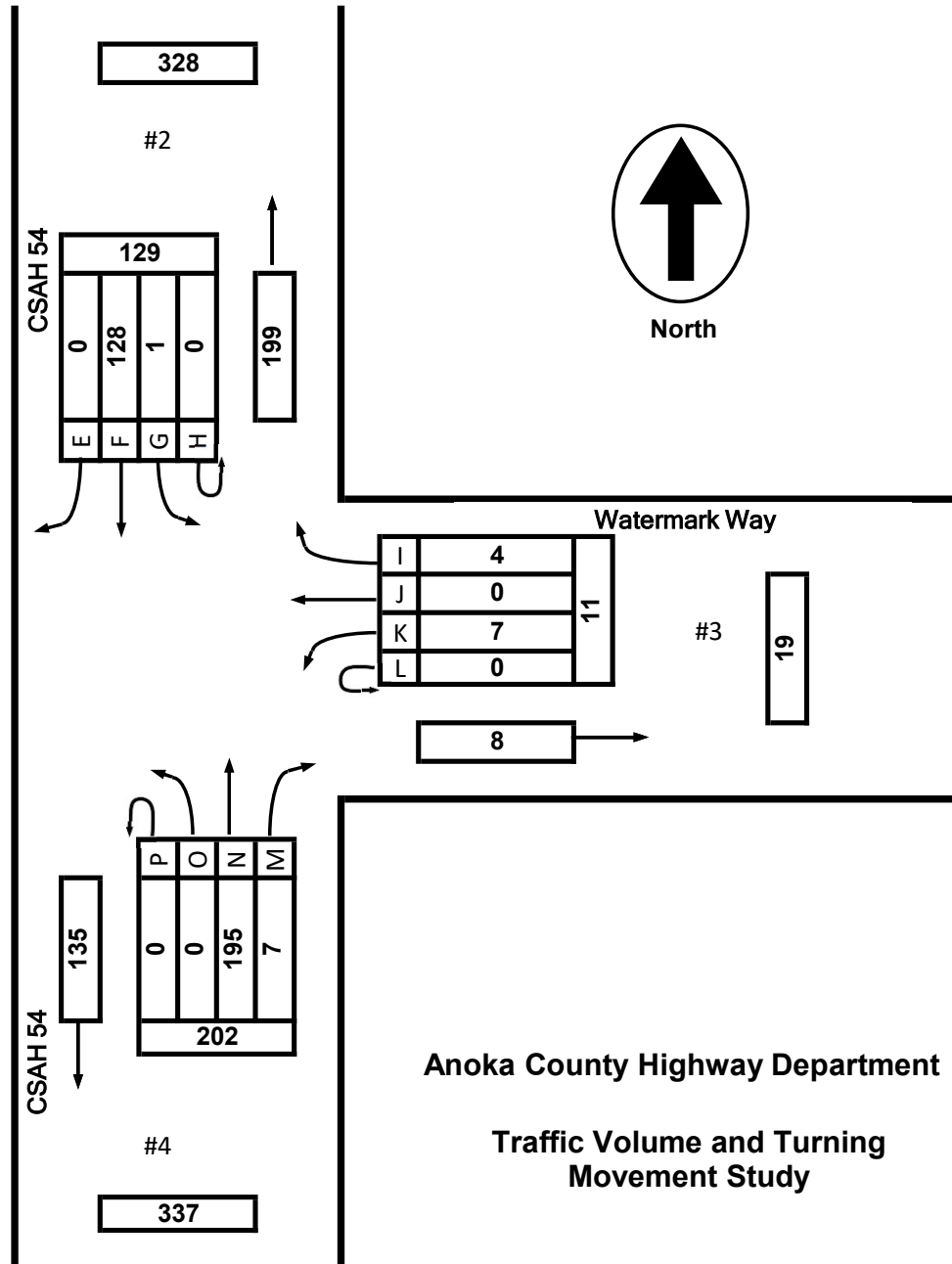
Date : 07/27/23

Count Number : TMC 2381

Location : CSAH 54  
@ Watermark Way

Collection Period : 4 PM - 5 PM  
PM PEAK

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



### TMC 2381 - CSAH 54 @ Watermark Way

0 0

Thursday, July 27, 2023

Time	Southbound 0						Westbound 0						Northbound 0						Eastbound 0						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	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
12:15 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	4
12:30 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	2	0	0	2	0	0	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	10
1:00 AM	0	0	3	0	0	3	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	6
1:15 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	4	0	0	4	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	9
2:00 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
2:15 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
2:30 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
2:45 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Hourly Total	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
3:00 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
3:15 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3:30 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3:45 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Hourly Total	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
4:00 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
4:15 AM	0	0	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
4:30 AM	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
4:45 AM	0	0	5	0	0	5	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	8
Hourly Total	0	0	19	0	0	19	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	23
5:00 AM	0	0	8	0	0	8	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	13
5:15 AM	0	0	17	0	0	17	0	0	0	0	0	0	0	0	8	1	0	9	0	0	0	0	0	0	0	0	0	0	0	0	26
5:30 AM	0	1	13	0	0	14	0	0	0	0	0	0	0	0	5	2	0	7	0	0	0	0	0	0	0	0	0	0	0	0	21
5:45 AM	0	2	19	0	0	21	0	0	0	1	0	1	0	0	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	31
Hourly Total	0	3	57	0	0	60	0	0	0	1	0	1	0	0	27	3	0	30	0	0	0	0	0	0	0	0	0	0	0	0	91
6:00 AM	0	0	22	0	0	22	0	0	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	28
6:15 AM	0	1	35	0	0	36	0	0	0	0	0	0	0	0	14	1	0	15	0	0	0	0	0	0	0	0	0	0	0	0	51
6:30 AM	0	2	24	0	0	26	0	1	0	1	0	2	0	0	12	3	0	15	0	0	0	0	0	0	0	0	0	0	0	0	43
6:45 AM	0	3	35	0	0	38	0	1	0	0	0	1	0	0	18	2	0	20	0	0	0	0	0	0	0	0	0	0	0	0	59
Hourly Total	0	6	116	0	0	122	0	2	0	1	0	3	0	0	50	6	0	56	0	0	0	0	0	0	0	0	0	0	0	0	181
7:00 AM	0	2	30	0	0	32	0	1	0	1	0	2	0	0	18	4	0	22	0	0	0	0	0	0	0	0	0	0	0	0	56
7:15 AM	0	0	30	0	0	30	0	1	0	2	0	3	0	0	16	2	0	18	0	0	0	0	0	0	0	0	0	0	0	0	51
7:30 AM	0	1	34	0	0	35	0	0	0	2	1	2	0	0	25	2	0	27	0	0	0	0	0	0	0	0	0	0	0	0	64
7:45 AM	0	0	26	0	0	26	0	1	0	3	0	4	0	0	26	2	0	28	0	0	0	0	0	0	0	0	0	0	0	0	58
Hourly Total	0	3	120	0	0	123	0	3	0	8	1	11	0	0	85	10	0	95	0	0	0	0	0	0	0	0	0	0	0	0	229

TMC 2381 - CSAH 54 @ Watermark Way

0 0

Thursday, July 27, 2023

Time	Southbound 0						Westbound 0						Northbound 0						Eastbound 0						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	1	35	0	0	36	0	0	0	2	0	2	0	0	20	0	0	20	0	0	0	0	0	0	58
8:15 AM	0	0	26	0	0	26	0	2	0	2	0	4	0	0	23	0	0	23	0	0	0	0	0	0	53
8:30 AM	0	0	27	0	0	27	0	1	0	1	3	2	0	0	13	0	0	13	0	0	0	0	0	0	42
8:45 AM	0	1	24	0	0	25	0	1	0	1	1	2	0	0	19	1	0	20	0	0	0	0	0	0	47
Hourly Total	0	2	112	0	0	114	0	4	0	6	4	10	0	0	75	1	0	76	0	0	0	0	0	0	200
9:00 AM	0	4	21	0	0	25	0	1	0	1	1	2	0	0	17	2	0	19	0	0	0	0	0	0	46
9:15 AM	0	0	24	0	0	24	0	1	0	3	2	4	0	0	14	3	0	17	0	0	0	0	0	0	45
9:30 AM	0	1	22	0	0	23	0	1	0	1	0	2	0	0	20	1	0	21	0	0	0	0	0	0	46
9:45 AM	0	1	25	0	0	26	0	0	0	2	0	2	0	0	21	1	0	22	0	0	0	0	0	0	50
Hourly Total	0	6	92	0	0	98	0	3	0	7	3	10	0	0	72	7	0	79	0	0	0	0	0	0	187
10:00 AM	0	0	28	0	0	28	0	2	0	6	0	8	0	0	24	3	0	27	0	0	0	0	0	0	63
10:15 AM	0	0	20	0	0	20	0	1	0	0	0	1	0	0	29	3	0	32	0	0	0	0	0	0	53
10:30 AM	0	0	17	0	0	17	0	3	0	2	0	5	0	0	24	2	0	26	0	0	0	0	0	0	48
10:45 AM	0	3	31	0	0	34	0	1	0	0	0	1	0	0	21	1	0	22	0	0	0	0	0	0	57
Hourly Total	0	3	96	0	0	99	0	7	0	8	0	15	0	0	98	9	0	107	0	0	0	0	0	0	221
11:00 AM	0	0	16	0	0	16	0	3	0	0	0	3	0	0	23	1	0	24	0	0	0	0	0	0	43
11:15 AM	0	1	23	0	0	24	0	1	0	0	0	1	1	0	18	1	0	20	0	0	0	0	0	0	45
11:30 AM	0	0	19	0	0	19	0	4	0	0	0	4	0	0	14	0	0	14	0	0	0	0	0	0	37
11:45 AM	0	2	16	0	0	18	0	1	0	3	0	4	0	0	23	0	0	23	0	0	0	0	0	0	45
Hourly Total	0	3	74	0	0	77	0	9	0	3	0	12	1	0	78	2	0	81	0	0	0	0	0	0	170
12:00 PM	0	2	27	0	0	29	0	3	0	2	0	5	0	0	21	3	0	24	0	0	0	0	0	0	58
12:15 PM	0	0	20	0	0	20	0	2	0	1	1	3	0	0	20	0	0	20	0	0	0	0	0	0	43
12:30 PM	0	0	26	0	0	26	0	1	0	0	0	1	0	0	29	2	0	31	0	0	0	0	0	0	58
12:45 PM	0	0	17	0	0	17	0	1	0	2	0	3	0	0	19	3	0	22	0	0	0	0	0	0	42
Hourly Total	0	2	90	0	0	92	0	7	0	5	1	12	0	0	89	8	0	97	0	0	0	0	0	0	201
1:00 PM	0	0	21	0	0	21	0	1	0	1	0	2	0	0	19	5	0	24	0	0	0	0	0	0	47
1:15 PM	0	0	20	0	0	20	0	1	0	1	0	2	0	0	29	0	0	29	0	0	0	0	0	0	51
1:30 PM	0	0	29	0	0	29	0	5	0	3	0	8	0	0	20	0	0	20	0	0	0	0	0	0	57
1:45 PM	0	1	26	0	0	27	0	3	0	0	0	3	0	0	28	2	0	30	0	0	0	0	0	0	60
Hourly Total	0	1	96	0	0	97	0	10	0	5	0	15	0	0	96	7	0	103	0	0	0	0	0	0	215
2:00 PM	0	0	19	0	0	19	0	1	0	0	0	1	0	0	21	1	0	22	0	0	0	0	0	0	42
2:15 PM	0	0	24	0	0	24	0	0	0	0	0	0	0	0	32	2	0	34	0	0	0	0	0	0	58
2:30 PM	0	1	27	0	0	28	0	2	0	1	0	3	0	0	28	0	0	28	0	0	0	0	0	0	59
2:45 PM	0	0	16	0	0	16	0	4	0	0	0	4	0	0	34	0	0	34	0	0	0	0	0	0	54
Hourly Total	0	1	86	0	0	87	0	7	0	1	0	8	0	0	115	3	0	118	0	0	0	0	0	0	213
3:00 PM	0	2	38	0	0	40	0	0	0	0	0	0	0	0	29	0	0	29	0	0	0	0	0	0	69
3:15 PM	0	0	34	0	0	34	0	1	0	1	1	2	0	0	41	2	0	43	0	0	0	0	0	0	79
3:30 PM	0	0	31	0	0	31	0	4	0	3	2	7	0	0	42	0	0	42	0	0	0	0	0	0	80
3:45 PM	0	0	25	0	0	25	0	1	0	1	0	2	0	0	41	1	0	42	0	0	0	0	0	0	69
Hourly Total	0	2	128	0	0	130	0	6	0	5	3	11	0	0	153	3	0	156	0	0	0	0	0	0	297



## TMC 2381 - CSAH 54 @ Watermark Way 0 0

**Thursday, July 27, 2023**

**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							
7:30 AM	0	1	34	0	0	35	0	0	0	2	1	2	0	0	25	2	0	27	0	0	0	0	0	0	0	0	0	0	0	0	64
7:45 AM	0	0	26	0	0	26	0	1	0	3	0	4	0	0	26	2	0	28	0	0	0	0	0	0	0	0	0	0	0	0	58
8:00 AM	0	1	35	0	0	36	0	0	0	2	0	2	0	0	20	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	58
8:15 AM	0	0	26	0	0	26	0	2	0	2	0	4	0	0	23	0	0	23	0	0	0	0	0	0	0	0	0	0	0	0	53
Peak Hour Total	0	2	121	0	0	123	0	3	0	9	1	12	0	0	94	4	0	98	0	0	0	0	0	0	0	0	0	0	0	0	233
PHF	0.000	0.500	0.864	0.000	0.000	0.854	0.000	0.375	0.000	0.750	0.250	0.750	0.000	0.000	0.904	0.500	0.000	0.875	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.910

**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	1	39	0	0	40	0	3	0	0	0	3	0	0	45	4	0	49	0	0	0	0	0	0	0	0	0	0	0	0	92
4:15 PM	0	0	30	0	0	30	0	1	0	2	0	3	0	0	36	1	0	37	0	0	0	0	0	0	0	0	0	0	0	0	70
4:30 PM	0	0	31	0	0	31	0	1	0	0	0	1	0	0	60	0	0	60	0	0	0	0	0	0	0	0	0	0	0	0	92
4:45 PM	0	0	28	0	0	28	0	2	0	2	0	4	0	0	54	2	0	56	0	0	0	0	0	0	0	0	0	0	0	0	88
Peak Hour Total	0	1	128	0	0	129	0	7	0	4	0	11	0	0	195	7	0	202	0	0	0	0	0	0	0	0	0	0	0	0	342
PHF	0.000	0.250	0.821	0.000	0.000	0.806	0.000	0.583	0.000	0.500	0.000	0.688	0.000	0.000	0.813	0.438	0.000	0.842	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.929

Total Vehicles On Leg				3237	
Vehicles Entering Intersection		1617	Vehicles Exiting Intersection		1620
<b>Southbound</b>					
Cars	0	1456	32	0	0
Heavy	0	120	9	0	0
<b>Total</b>	<b>0</b>	<b>1576</b>	<b>41</b>	<b>0</b>	<b>0</b>



Total Vehicles on Leg 0	Vehicles Entering Intersection	Eastbound	Cars	Heavy	Total	
	0		0	0		
	0		0	0		
	0		0	0		
	Vehicles Exiting Intersection		0	0	0	

Daily Volumes

Cars	Heavy	Total	Westbound	Vehicles Entering Intersection	Total Vehicles on Leg 254
51	13	64		135	
0	0	0			
64	7	71			
0	0	0		Vehicles Exiting Intersection	
11	1	12	119		



Cars	1	1	0	1432	70
Heavy	0	0	0	124	8
<b>Total</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>1556</b>	<b>78</b>
<b>Northbound</b>					
Vehicles Entering Intersection			Vehicles Exiting Intersection		
1635			1648		
Total Vehicles On Leg			3283		







# ANOKA COUNTY HIGHWAY

## PC - WARRANTS

### TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2381

Study Date : 07/31/2023

## Signal Warrants - Summary

### Major Street Approaches

Northbound: CSAH 54

Number of Lanes : 1

Total Approach Volume: 1,635

Southbound: CSAH 54

Number of Lanes : 1

Total Approach Volume: 1,617

### Minor Street Approaches

Westbound: Watermark Way

Number of Lanes : 1

Total Approach Volume: 135

### Warrant Summary (Rural Values Apply)

Warrant 1 - Eight Hour Vehicular Volumes.....Not Satisfied

Warrant 1A - Minimum Vehicular Volume.....Not Satisfied

Required volumes reached for 0 hours, 8 are needed

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

Required volumes reached for 0 hours, 8 are needed

Warrant 1C - Combination of Warrants.....Not Satisfied

Required 1A volumes reached for 0 hours, 8 are needed

Required 1B volumes reached for 0 hours, 8 are needed

Warrant 2 - Four Hour Volumes.....Not Satisfied

Number of hours (0) volumes exceed minimum < minimum required (4).

Warrant 3 - Peak Hour.....Not Satisfied

Warrant 3A - Peak Hour Delay.....Not Satisfied

Approach volumes on minor street don't exceed minimums for any one hour period. Delay data not evaluated.

Warrant 3B - Peak Hour Volumes.....Not Satisfied

Volumes do not exceed minimums for any 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 2381

Study Date : 07/31/2023

## 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

Only 0 one hour periods meet minimums.  
Warrant is NOT met.

#### Site Data Required

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

#### Volume Requirements

Rural Factor of 70 % applied  
Veh/Hr Major = **350**  
  
Veh/Hr Minor = **105**

Time	Major Road				Total	Minor Road		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
16:00 - 17:00	202	+	129	=	331	0	11	No
15:45 - 16:45	188	+	126	=	314	0	9	No
15:15 - 16:15	176	+	130	=	306	0	14	No
16:15 - 17:15	182	+	120	=	302	0	9	No
15:30 - 16:30	170	+	126	=	296	0	15	No
16:30 - 17:30	185	+	107	=	292	0	6	No
15:00 - 16:00	156	+	130	=	286	0	11	No
14:45 - 15:45	148	+	121	=	269	0	13	No
16:45 - 17:45	175	+	92	=	267	0	8	No
14:30 - 15:30	134	+	118	=	252	0	9	No
17:00 - 18:00	154	+	81	=	235	0	7	No
14:15 - 15:15	125	+	108	=	233	0	7	No
17:30 - 18:30	142	+	87	=	229	0	6	No
17:15 - 18:15	154	+	72	=	226	0	6	No
06:45 - 07:45	87	+	135	=	222	0	8	No
07:30 - 08:30	98	+	123	=	221	0	12	No
07:15 - 08:15	93	+	127	=	220	0	11	No
07:00 - 08:00	95	+	123	=	218	0	11	No
13:45 - 14:45	114	+	98	=	212	0	7	No
10:00 - 11:00	107	+	99	=	206	0	15	No
14:00 - 15:00	118	+	87	=	205	0	8	No
17:45 - 18:45	117	+	88	=	205	0	4	No
13:30 - 14:30	106	+	99	=	205	0	12	No
06:15 - 07:15	72	+	132	=	204	0	5	No
06:30 - 07:30	75		126		201	0	8	No

# ANOKA COUNTY HIGHWAY

## PC - WARRANTS

### TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2381

Study Date : 07/31/2023

## 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 0 one hour periods meet minimums.  
Warrant is NOT met.

#### Site Data Required

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

#### Volume Requirements

Rural Factor of 70 % applied  
Veh/Hr Major = **525**  
  
Veh/Hr Minor = **52**

Time	Major Road				Total	Minor Road		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
16:00 - 17:00	202	+	129	=	331	0	11	No
15:45 - 16:45	188	+	126	=	314	0	9	No
15:15 - 16:15	176	+	130	=	306	0	14	No
16:15 - 17:15	182	+	120	=	302	0	9	No
15:30 - 16:30	170	+	126	=	296	0	15	No
16:30 - 17:30	185	+	107	=	292	0	6	No
15:00 - 16:00	156	+	130	=	286	0	11	No
14:45 - 15:45	148	+	121	=	269	0	13	No
16:45 - 17:45	175	+	92	=	267	0	8	No
14:30 - 15:30	134	+	118	=	252	0	9	No
17:00 - 18:00	154	+	81	=	235	0	7	No
14:15 - 15:15	125	+	108	=	233	0	7	No
17:30 - 18:30	142	+	87	=	229	0	6	No
17:15 - 18:15	154	+	72	=	226	0	6	No
06:45 - 07:45	87	+	135	=	222	0	8	No
07:30 - 08:30	98	+	123	=	221	0	12	No
07:15 - 08:15	93	+	127	=	220	0	11	No
07:00 - 08:00	95	+	123	=	218	0	11	No
13:45 - 14:45	114	+	98	=	212	0	7	No
10:00 - 11:00	107	+	99	=	206	0	15	No
14:00 - 15:00	118	+	87	=	205	0	8	No
17:45 - 18:45	117	+	88	=	205	0	4	No
13:30 - 14:30	106	+	99	=	205	0	12	No
06:15 - 07:15	72	+	132	=	204	0	5	No
06:30 - 07:30	75		126		201	0	8	No

# ANOKA COUNTY HIGHWAY

## PC - WARRANTS

### TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2381

Study Date : 07/31/2023

## 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

Only 0 hours meet 1A minimums.  
Only 0 hours meet 1B minimums.  
Warrant is NOT met.

#### Site Data Required

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

#### Volume Requirements

Rural Factor of 70% applied  
Warrant 1A 1B  
Veh/Hr Major = **280 420**  
  
Veh/Hr Minor = **84 42**

#### Major Road CSAH 54

#### Minor Road Watermark Way

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1A?
16:00 - 17:00	202	+	129	=	331	0	11	No
15:45 - 16:45	188	+	126	=	314	0	9	No
15:15 - 16:15	176	+	130	=	306	0	14	No
16:15 - 17:15	182	+	120	=	302	0	9	No
15:30 - 16:30	170	+	126	=	296	0	15	No
16:30 - 17:30	185	+	107	=	292	0	6	No
15:00 - 16:00	156	+	130	=	286	0	11	No
14:45 - 15:45	148	+	121	=	269	0	13	No
16:45 - 17:45	175	+	92	=	267	0	8	No
14:30 - 15:30	134	+	118	=	252	0	9	No
17:00 - 18:00	154	+	81	=	235	0	7	No
14:15 - 15:15	125		108		233	0	7	No

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1B?
16:00 - 17:00	202	+	129	=	331	0	11	No
15:45 - 16:45	188	+	126	=	314	0	9	No
15:15 - 16:15	176	+	130	=	306	0	14	No
16:15 - 17:15	182	+	120	=	302	0	9	No
15:30 - 16:30	170	+	126	=	296	0	15	No
16:30 - 17:30	185	+	107	=	292	0	6	No
15:00 - 16:00	156	+	130	=	286	0	11	No
14:45 - 15:45	148	+	121	=	269	0	13	No
16:45 - 17:45	175	+	92	=	267	0	8	No
14:30 - 15:30	134	+	118	=	252	0	9	No
17:00 - 18:00	154	+	81	=	235	0	7	No
14:15 - 15:15	125		108		233	0	7	No

# ANOKA COUNTY HIGHWAY

## PC - WARRANTS

### TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2381

Study Date : 07/31/2023

## 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.

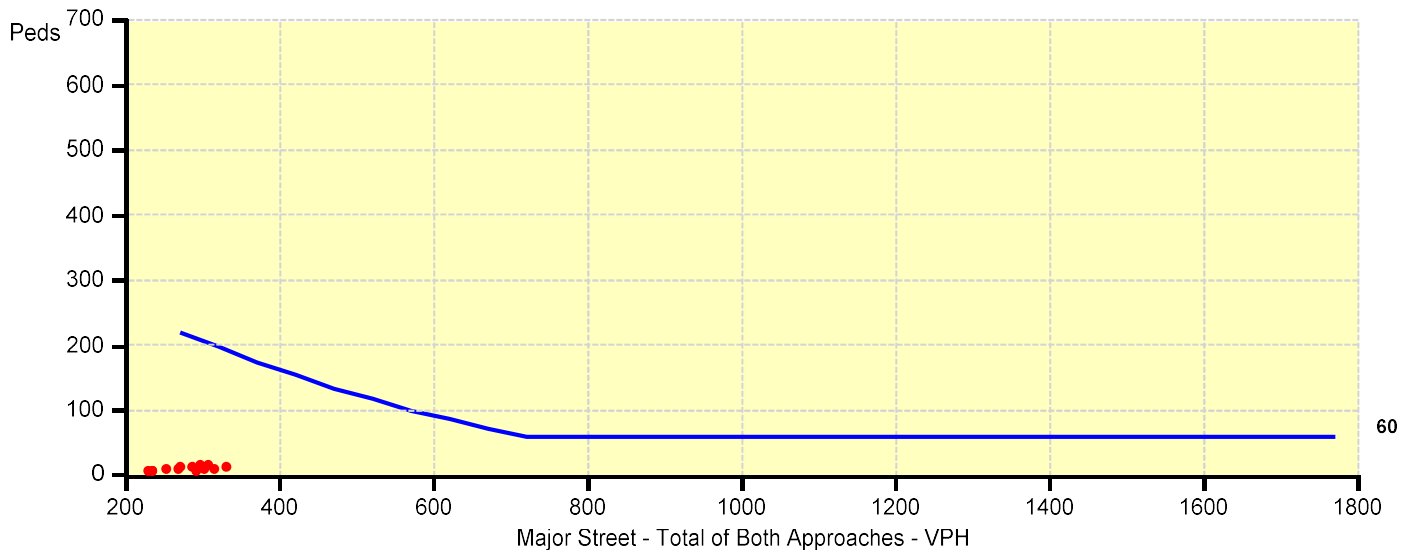
#### Summary

Only 0 one hour periods meet minimums.  
Warrant is NOT met.

#### Site Data Required

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

Time	Major Road CSAH 54				Total	Minor Road Watermark Way		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
16:00 - 17:00	202	+	129	=	331	0	11	No
15:45 - 16:45	188	+	126	=	314	0	9	No
15:15 - 16:15	176	+	130	=	306	0	14	No
16:15 - 17:15	182	+	120	=	302	0	9	No
15:30 - 16:30	170	+	126	=	296	0	15	No
16:30 - 17:30	185	+	107	=	292	0	6	No
15:00 - 16:00	156	+	130	=	286	0	11	No
14:45 - 15:45	148	+	121	=	269	0	13	No
16:45 - 17:45	175	+	92	=	267	0	8	No
14:30 - 15:30	134	+	118	=	252	0	9	No
17:00 - 18:00	154	+	81	=	235	0	7	No
14:15 - 15:15	125		108		233	0	7	No



# ANOKA COUNTY HIGHWAY

## PC - WARRANTS

### TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2381

Study Date : 07/31/2023

## 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

Only 0 one hour periods meet minimums.  
Warrant is NOT met.

### Site Data Required

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

Time	Major Road CSAH 54					Minor Road Watermark Way		Met?
	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	
16:00 - 17:00	202	+	129	=	331	0	11	No
15:45 - 16:45	188	+	126	=	314	0	9	No
15:15 - 16:15	176	+	130	=	306	0	14	No
16:15 - 17:15	182	+	120	=	302	0	9	No
15:30 - 16:30	170	+	126	=	296	0	15	No
16:30 - 17:30	185	+	107	=	292	0	6	No
15:00 - 16:00	156	+	130	=	286	0	11	No
14:45 - 15:45	148	+	121	=	269	0	13	No
16:45 - 17:45	175	+	92	=	267	0	8	No
14:30 - 15:30	134	+	118	=	252	0	9	No
17:00 - 18:00	154	+	81	=	235	0	7	No
14:15 - 15:15	125		108		233	0	7	No

