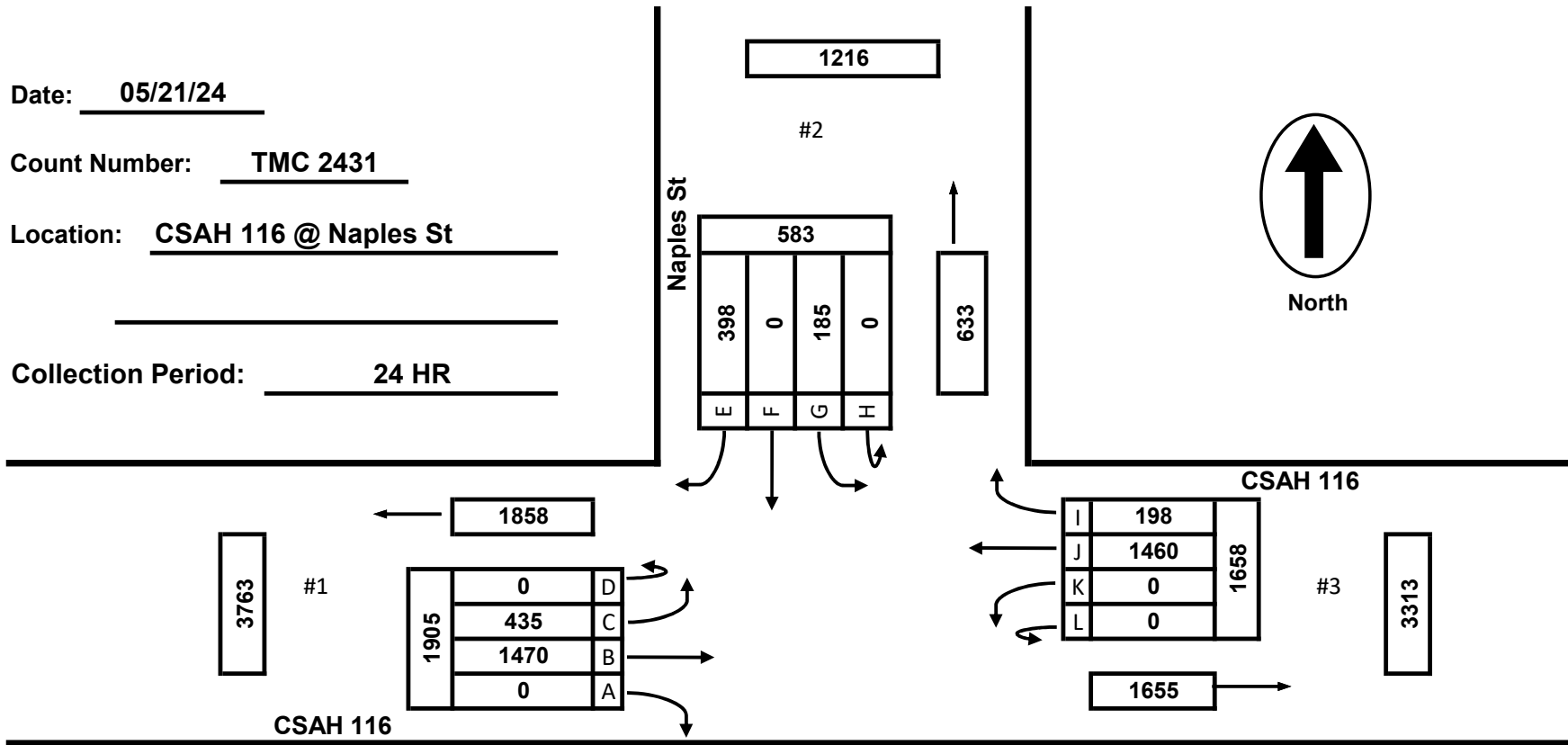


Date: 05/21/24

Count Number: TMC 2431

Location: CSAH 116 @ Naples St

Collection Period: 24 HR



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

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

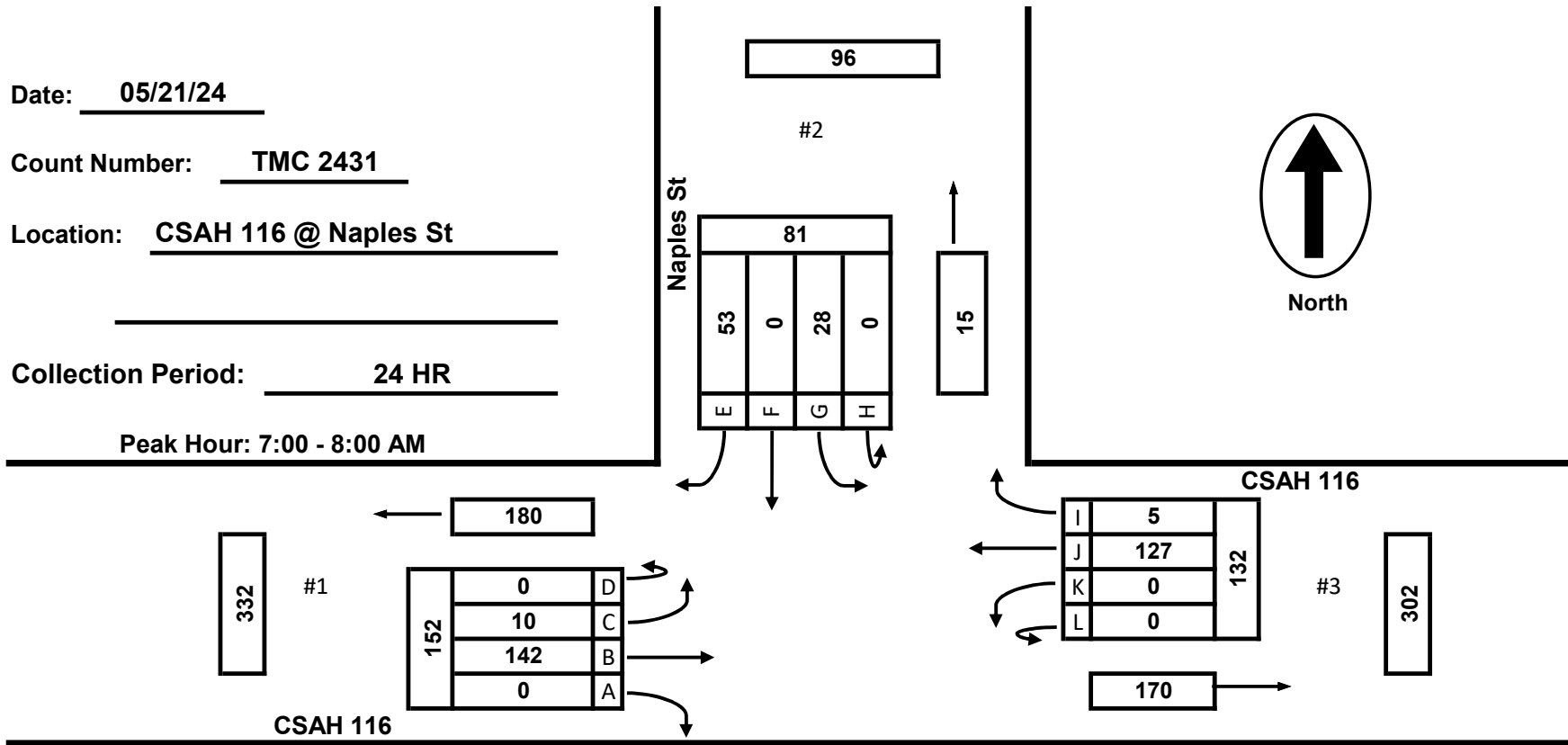
Date: 05/21/24

Count Number: TMC 2431

Location: CSAH 116 @ Naples St

Collection Period: 24 HR

Peak Hour: 7:00 - 8:00 AM



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

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

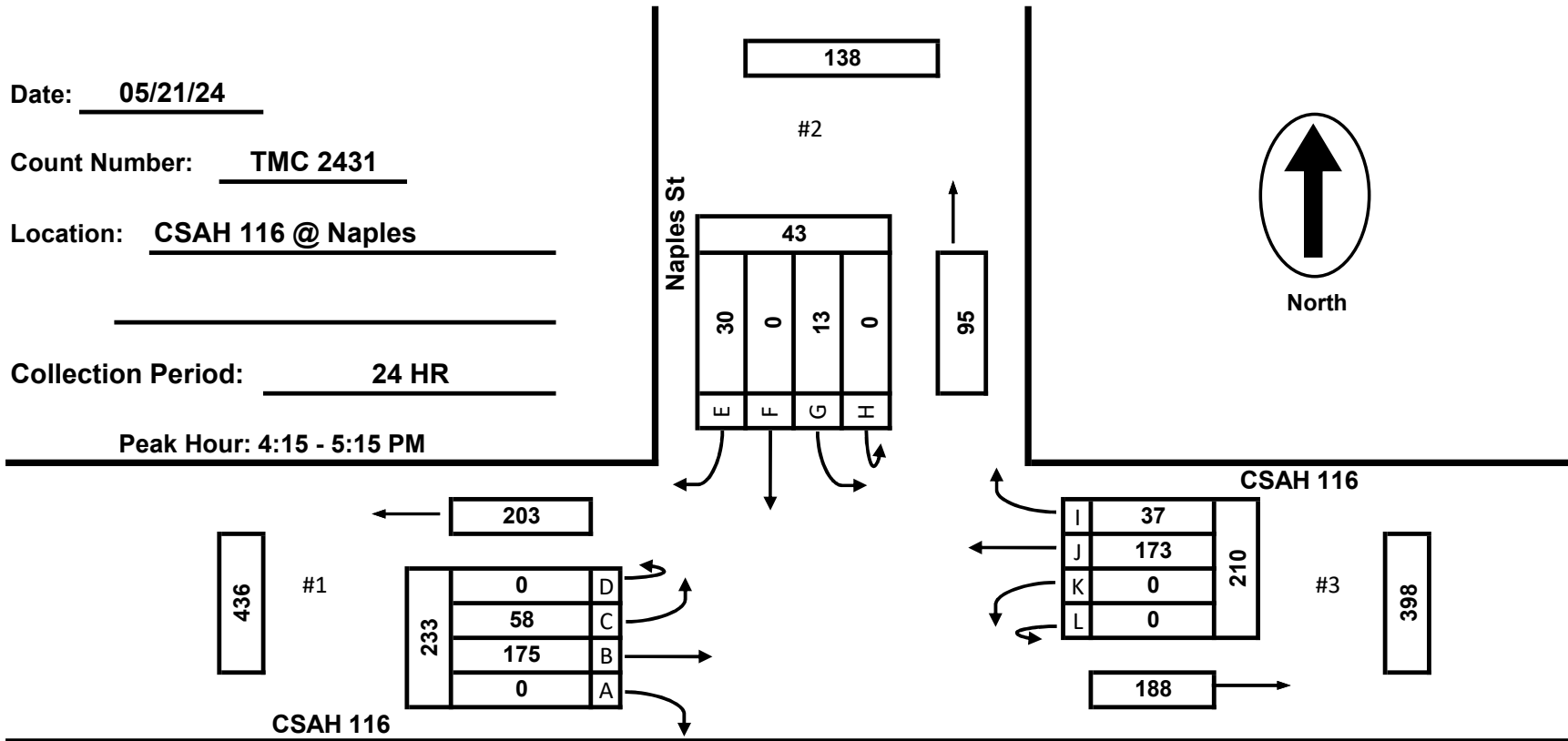
Date: 05/21/24

Count Number: TMC 2431

Location: CSAH 116 @ Naples

Collection Period: 24 HR

Peak Hour: 4:15 - 5:15 PM



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

Anoka County
Highway Department
Traffic Volume and Turning
Movement Study

**TMC 2431 CSAH 116 @ Naples St
Ham Lake MN
Tuesday, May 21, 2024**

Time	Southbound Naples St						Westbound CSAH 116						Northbound 0						Eastbound CSAH 116						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	0	0	0	0	0	1	1	0	0	2	
12:15 AM	0	0	0	0	0	0	0	0	1	2	0	3	0	0	0	0	0	0	0	0	2	0	0	2	
12:30 AM	0	0	0	2	0	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
12:45 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Hourly Total	0	1	0	2	0	3	0	0	2	2	0	4	0	0	0	0	0	0	0	1	3	0	0	4	
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
1:30 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	
1:45 AM	0	0	0	1	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	
Hourly Total	0	0	0	1	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	1	3	0	0	4	
2:00 AM	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	
2:15 AM	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:30 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	
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	
Hourly Total	0	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	4	0	0	4	
3:00 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	
3:15 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
3:30 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	
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	
Hourly Total	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	
4:00 AM	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	
4:15 AM	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	
4:30 AM	0	1	0	3	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	
4:45 AM	0	3	0	1	0	4	0	0	3	0	0	3	0	0	0	0	0	0	0	0	1	0	0	1	
Hourly Total	0	4	0	5	0	9	0	0	4	0	0	4	0	0	0	0	0	0	0	0	7	0	0	7	
5:00 AM	0	2	0	3	0	5	0	0	1	0	0	1	0	0	0	0	0	0	0	1	3	0	0	4	
5:15 AM	0	1	0	0	0	1	0	0	2	0	0	2	0	0	0	0	0	0	0	0	7	0	0	7	
5:30 AM	0	0	0	3	0	3	0	0	9	0	0	9	0	0	0	0	0	0	0	0	3	0	0	3	
5:45 AM	0	7	0	2	0	9	0	0	16	1	0	17	0	0	0	0	0	0	0	0	12	0	0	12	
Hourly Total	0	10	0	8	0	18	0	0	28	1	0	29	0	0	0	0	0	0	0	1	25	0	0	26	
6:00 AM	0	7	0	3	0	10	0	0	9	1	0	10	0	0	0	0	0	0	0	0	14	0	0	14	
6:15 AM	0	4	0	7	0	11	0	0	13	1	0	14	0	0	0	0	0	0	0	1	13	0	0	14	
6:30 AM	0	6	0	8	0	14	0	0	11	1	0	12	0	0	0	0	0	0	0	4	18	0	0	22	
6:45 AM	0	4	0	16	0	20	0	0	28	0	0	28	0	0	0	0	0	0	0	3	22	0	0	25	
Hourly Total	0	21	0	34	0	55	0	0	61	3	0	64	0	0	0	0	0	0	0	8	67	0	0	75	
7:00 AM	0	8	0	24	0	32	0	0	28	0	0	28	0	0	0	0	0	0	0	2	37	0	0	39	
7:15 AM	0	6	0	13	0	19	0	0	45	0	0	45	0	0	0	0	0	0	0	0	24	0	0	24	
7:30 AM	0	7	0	8	0	15	0	0	30	1	0	31	0	0	0	0	0	0	0	3	35	0	0	38	
7:45 AM	0	7	0	8	0	15	0	0	24	4	0	28	0	0	0	0	0	0	0	5	46	0	0	51	
Hourly Total	0	28	0	53	0	81	0	0	127	5	0	132	0	0	0	0	0	0	0	10	142	0	0	152	

**TMC 2431 CSAH 116 @ Naples St
Ham Lake MN
Tuesday, May 21, 2024**

Time	Southbound Naples St						Westbound CSAH 116						Northbound 0						Eastbound CSAH 116						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	0	4	0	10	0	0	25	1	0	26	0	0	0	0	0	0	0	3	22	0	0	25	61
8:15 AM	0	0	0	10	0	10	0	0	27	1	0	28	0	0	0	0	0	0	0	4	25	0	0	29	67
8:30 AM	0	2	0	6	0	8	0	0	22	1	0	23	0	0	0	0	0	0	0	3	32	0	0	35	66
8:45 AM	0	3	0	3	0	6	0	0	14	4	0	18	0	0	0	0	0	0	0	4	17	0	0	21	45
Hourly Total	0	11	0	23	0	34	0	0	88	7	0	95	0	0	0	0	0	0	0	14	96	0	0	110	239
9:00 AM	0	5	0	5	0	10	0	0	18	1	0	19	0	0	0	0	0	0	0	4	21	0	0	25	54
9:15 AM	0	2	0	6	0	8	0	0	14	3	0	17	0	0	0	0	0	0	1	24	0	0	25	50	
9:30 AM	0	5	0	7	0	12	0	0	14	0	0	14	0	0	0	0	0	0	0	4	16	0	0	20	46
9:45 AM	0	2	0	6	0	8	0	0	15	0	0	15	0	0	0	0	0	0	0	4	17	0	0	21	44
Hourly Total	0	14	0	24	0	38	0	0	61	4	0	65	0	0	0	0	0	0	0	13	78	0	0	91	194
10:00 AM	0	1	0	6	0	7	0	0	9	1	0	10	0	0	0	0	0	0	0	4	13	0	0	17	34
10:15 AM	0	3	0	7	0	10	0	0	17	3	0	20	0	0	0	0	0	0	0	1	17	0	0	18	48
10:30 AM	0	2	0	4	0	6	0	0	26	0	0	26	0	0	0	0	0	0	0	3	13	0	0	16	48
10:45 AM	0	2	0	2	0	4	0	0	19	1	0	20	0	0	0	0	0	0	0	4	19	0	0	23	47
Hourly Total	0	8	0	19	0	27	0	0	71	5	0	76	0	0	0	0	0	0	0	12	62	0	0	74	177
11:00 AM	0	4	0	3	0	7	0	0	16	2	0	18	0	0	0	0	0	0	0	4	19	0	0	23	48
11:15 AM	0	4	0	4	0	8	0	0	14	3	0	17	0	0	0	0	0	0	0	5	19	0	0	24	49
11:30 AM	0	5	0	8	0	13	0	0	15	4	0	19	0	0	0	0	0	0	0	3	10	0	0	13	45
11:45 AM	0	0	0	9	0	9	0	0	24	4	0	28	0	0	0	0	0	0	0	4	19	0	0	23	60
Hourly Total	0	13	0	24	0	37	0	0	69	13	0	82	0	0	0	0	0	0	0	16	67	0	0	83	202
12:00 PM	0	1	0	6	0	7	0	0	21	3	0	24	0	0	0	0	0	0	0	4	15	0	0	19	50
12:15 PM	0	2	0	4	0	6	0	0	20	1	0	21	0	0	0	0	0	0	0	7	13	0	0	20	47
12:30 PM	0	4	0	3	0	7	0	0	26	3	0	29	0	0	0	0	0	0	0	8	11	0	0	19	55
12:45 PM	0	1	0	3	0	4	0	0	15	2	0	17	0	0	0	0	0	0	0	10	29	0	0	39	60
Hourly Total	0	8	0	16	0	24	0	0	82	9	0	91	0	0	0	0	0	0	0	29	68	0	0	97	212
1:00 PM	0	1	0	5	0	6	0	0	19	1	0	20	0	0	0	0	0	0	0	5	10	0	0	15	41
1:15 PM	0	2	0	7	0	9	0	0	12	1	0	13	0	0	0	0	0	0	0	3	15	0	0	18	40
1:30 PM	0	1	0	3	0	4	0	0	23	2	0	25	0	0	0	0	0	0	0	6	14	0	0	20	49
1:45 PM	0	1	0	3	0	4	0	0	19	1	0	20	0	0	0	0	0	0	0	7	20	0	0	27	51
Hourly Total	0	5	0	18	0	23	0	0	73	5	0	78	0	0	0	0	0	0	0	21	59	0	0	80	181
2:00 PM	0	2	0	6	0	8	0	0	18	2	0	20	0	0	0	0	0	0	0	6	19	0	0	25	53
2:15 PM	0	2	0	7	0	9	0	0	30	1	0	31	0	0	0	0	0	0	0	6	24	0	0	30	70
2:30 PM	0	0	0	4	0	4	0	0	26	4	0	30	0	0	0	0	0	0	0	14	38	0	0	52	86
2:45 PM	0	1	0	13	0	14	0	0	31	7	0	38	0	0	0	0	0	0	0	12	33	0	0	45	97
Hourly Total	0	5	0	30	0	35	0	0	105	14	0	119	0	0	0	0	0	0	0	38	114	0	0	152	306
3:00 PM	0	1	0	5	0	6	0	0	37	4	0	41	0	0	0	0	0	0	0	12	24	0	0	36	83
3:15 PM	0	4	0	7	0	11	0	0	26	3	0	29	0	0	0	0	0	0	0	10	40	0	0	50	90
3:30 PM	0	1	0	4	0	5	0	0	35	4	0	39	0	0	0	0	0	0	0	9	27	0	0	36	80
3:45 PM	0	1	0	6	0	7	0	0	46	8	0	54	0	0	0	0	0	0	0	8	38	0	0	46	107
Hourly Total	0	7	0	22	0	29	0	0	144	19	0	163	0	0	0	0	0	0	0	39	129	0	0	168	360

**TMC 2431 CSAH 116 @ Naples St
Ham Lake MN
Tuesday, May 21, 2024**

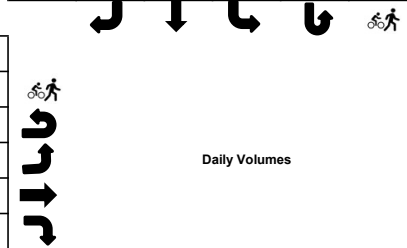
Time	Southbound Naples St						Westbound CSAH 116						Northbound 0						Eastbound CSAH 116						VEHICLE TOTAL
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	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	4	0	5	0	9	0	0	44	5	0	49	0	0	0	0	0	0	0	17	33	0	0	50	108
4:15 PM	0	3	0	4	0	7	0	0	41	3	0	44	0	0	0	0	0	0	0	17	46	0	0	63	114
4:30 PM	0	2	0	8	0	10	0	0	45	7	0	52	0	0	0	0	0	0	0	13	54	0	0	67	129
4:45 PM	0	3	0	8	0	11	0	0	44	17	0	61	0	0	0	0	0	0	0	12	41	0	0	53	125
Hourly Total	0	12	0	25	0	37	0	0	174	32	0	206	0	0	0	0	0	0	0	59	174	0	0	233	476
5:00 PM	0	5	0	10	0	15	0	0	43	10	0	53	0	0	0	0	0	0	0	16	34	0	0	50	118
5:15 PM	0	5	0	9	0	14	0	0	39	10	0	49	0	0	0	0	0	0	0	11	32	0	0	43	106
5:30 PM	0	0	0	7	0	7	0	0	40	8	0	48	0	0	0	0	0	0	0	16	23	0	0	39	94
5:45 PM	0	2	0	5	0	7	0	0	28	3	0	31	0	0	0	0	0	0	0	10	20	0	0	30	68
Hourly Total	0	12	0	31	0	43	0	0	150	31	0	181	0	0	0	0	0	0	0	53	109	0	0	162	386
6:00 PM	0	3	0	8	0	11	0	0	33	5	0	38	0	0	0	0	0	0	0	10	25	0	0	35	84
6:15 PM	0	1	0	1	0	2	0	0	33	8	0	41	0	0	0	0	0	0	0	4	19	0	0	23	66
6:30 PM	0	0	0	9	0	9	0	0	28	3	0	31	0	0	0	0	0	0	0	4	15	0	0	19	59
6:45 PM	0	1	0	5	0	6	0	0	28	4	0	32	0	0	0	0	0	0	0	10	19	0	0	29	67
Hourly Total	0	5	0	23	0	28	0	0	122	20	0	142	0	0	0	0	0	0	0	28	78	0	0	106	276
7:00 PM	0	3	0	4	0	7	0	0	16	2	0	18	0	0	0	0	0	0	0	13	30	0	0	43	68
7:15 PM	0	1	0	2	0	3	0	0	7	1	0	8	0	0	0	0	0	0	0	13	11	0	0	24	35
7:30 PM	0	8	0	6	0	14	0	0	9	0	0	9	0	0	0	0	0	0	0	1	21	0	0	22	45
7:45 PM	0	4	0	4	0	8	0	0	7	2	0	9	0	0	0	0	0	0	0	7	13	0	0	20	37
Hourly Total	0	16	0	16	0	32	0	0	39	5	0	44	0	0	0	0	0	0	0	34	75	0	0	109	185
8:00 PM	0	0	0	4	0	4	0	0	6	2	0	8	0	0	0	0	0	0	0	3	15	0	0	18	30
8:15 PM	0	0	0	4	0	4	0	0	6	5	0	11	0	0	0	0	0	0	0	5	13	0	0	18	33
8:30 PM	0	2	0	3	0	5	0	0	9	0	0	9	0	0	0	0	0	0	0	4	12	0	0	16	30
8:45 PM	0	0	0	2	0	2	0	0	7	1	0	8	0	0	0	0	0	0	0	7	7	0	0	14	24
Hourly Total	0	2	0	13	0	15	0	0	28	8	0	36	0	0	0	0	0	0	0	19	47	0	0	66	117
9:00 PM	0	0	0	3	0	3	0	0	1	1	0	2	0	0	0	0	0	0	0	4	7	0	0	11	16
9:15 PM	0	1	0	2	0	3	0	0	11	4	0	15	0	0	0	0	0	0	0	6	9	0	0	15	33
9:30 PM	0	0	0	0	0	0	0	0	3	1	0	4	0	0	0	0	0	0	0	7	11	0	0	18	22
9:45 PM	0	0	0	1	0	1	0	0	2	1	0	3	0	0	0	0	0	0	0	2	13	0	0	15	19
Hourly Total	0	1	0	6	0	7	0	0	17	7	0	24	0	0	0	0	0	0	0	19	40	0	0	59	90
10:00 PM	0	0	0	2	0	2	0	0	0	4	0	4	0	0	0	0	0	0	0	4	3	0	0	7	13
10:15 PM	0	0	0	0	0	0	0	0	4	2	0	6	0	0	0	0	0	0	0	6	4	0	0	10	16
10:30 PM	0	1	0	1	0	2	0	0	2	0	0	2	0	0	0	0	0	0	0	4	6	0	0	10	14
10:45 PM	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3	4
Hourly Total	0	1	0	4	0	5	0	0	6	6	0	12	0	0	0	0	0	0	0	15	15	0	0	30	47
11:00 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	3	5	0	0	8	9
11:15 PM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
11:30 PM	0	0	0	0	0	0	0	0	4	1	0	5	0	0	0	0	0	0	0	0	1	0	0	1	6
11:45 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	1	0	0	2	3
Hourly Total	0	0	0	0	0	0	0	0	8	1	0	9	0	0	0	0	0	0	0	4	7	0	0	11	20
DAILY TOTAL	0	185	0	398	0	583	0	0	1460	198	0	1658	0	0	0	0	0	0	0	435	1470	0	0	1905	4146
Cars	0	177	0	390	0	567	0	0	1412	188	0	1600	0	0	0	0	0	0	0	425	1431	0	0	1856	4023
Heavy Vehicles	0	8	0	8	0	16	0	0	48	10	0	58	0	0	0	0	0	0	0	10	39	0	0	49	123
Heavy Vehicle %	0.00%	4.32%	0.00%	2.01%	0.00%	2.74%	0.00%	0.00%	3.29%	5.05%	0.00%	3.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.30%	2.65%	0.00%	0.00%	2.57%	2.97%

**TMC 2431 CSAH 116 @ Naples St
Ham Lake MN
Tuesday, May 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	
7:00 AM	0	8	0	24	0	32	0	0	28	0	0	28	0	0	0	0	0	0	0	2	37	0	0	39	99
7:15 AM	0	6	0	13	0	19	0	0	45	0	0	45	0	0	0	0	0	0	0	0	24	0	0	24	88
7:30 AM	0	7	0	8	0	15	0	0	30	1	0	31	0	0	0	0	0	0	0	3	35	0	0	38	84
7:45 AM	0	7	0	8	0	15	0	0	24	4	0	28	0	0	0	0	0	0	0	5	46	0	0	51	94
Peak Hour Total PHF	0.000	0.875	0.000	0.552	0.000	0.633	0.000	0.000	0.706	0.313	0.000	0.733	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.772	0.000	0.000	0.745	0.922

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	
4:15 PM	0	3	0	4	0	7	0	0	41	3	0	44	0	0	0	0	0	0	0	17	46	0	0	63	114
4:30 PM	0	2	0	8	0	10	0	0	45	7	0	52	0	0	0	0	0	0	0	13	54	0	0	67	129
4:45 PM	0	3	0	8	0	11	0	0	44	17	0	61	0	0	0	0	0	0	0	12	41	0	0	53	125
5:00 PM	0	5	0	10	0	15	0	0	43	10	0	53	0	0	0	0	0	0	0	16	34	0	0	50	118
Peak Hour Total PHF	0.000	0.650	0.000	0.750	0.000	0.717	0.000	0.000	0.961	0.544	0.000	0.861	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.853	0.810	0.000	0.000	0.869	0.942

Total Vehicles On Leg		1216	
Vehicles Entering Intersection	583	Vehicles Exiting Intersection	633
Southbound			
Cars	390	0	177
Heavy	8	0	8
Total	398	0	185



Total Vehicles on Leg 3763	Vehicles Entering Intersection 1905	Eastbound	Cars	Heavy	Total	
			0	0	0	
	0		0	0		
	425		10	435		
	1431		39	1470		
Vehicles Exiting Intersection 1858	0	0	0			

Cars	Heavy	Total	Westbound	Vehicles Entering Intersection 1658	Total Vehicles on Leg 3313
188	10	198			
1412	48	1460			
0	0	0			
0	0	0			
0	0	0	Vehicles Exiting Intersection 1655		

Cars	0	0	0	0	0
Heavy	0	0	0	0	0
Total	0	0	0	0	0
Northbound					
Vehicles Entering Intersection	0		Vehicles Exiting Intersection	0	
Total Vehicles On Leg	0				

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2431

Study Date : 05/24/2024

Signal Warrants - Summary

Major Street Approaches

Eastbound: CSAH 116

Number of Lanes : 1

Total Approach Volume: 1,905

Westbound: CSAH 116

Number of Lanes : 1

Total Approach Volume: 1,658

Minor Street Approaches

Southbound: Naples St

Number of Lanes : 1

Total Approach Volume: 583

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 1 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 2431

Study Date : 05/24/2024

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

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 EB	+	Major WB	=		Minor NB	Minor SB	
16:15 - 17:15	233	+	210	=	443	0	43	No
16:00 - 17:00	233	+	206	=	439	0	37	No
16:30 - 17:30	213	+	215	=	428	0	50	No
15:45 - 16:45	226	+	199	=	425	0	33	No
16:45 - 17:45	185	+	211	=	396	0	47	No
15:30 - 16:30	195	+	186	=	381	0	28	No
15:15 - 16:15	182	+	171	=	353	0	32	No
17:00 - 18:00	162	+	181	=	343	0	43	No
15:00 - 16:00	168	+	163	=	331	0	29	No
14:30 - 15:30	183	+	138	=	321	0	35	No
14:45 - 15:45	167	+	147	=	314	0	36	No
17:15 - 18:15	147	+	166	=	313	0	39	No
14:15 - 15:15	163	+	140	=	303	0	33	No
17:30 - 18:30	127	+	158	=	285	0	27	No
07:00 - 08:00	152	+	132	=	284	0	81	No
14:00 - 15:00	152	+	119	=	271	0	35	No
07:15 - 08:15	138	+	130	=	268	0	59	No
06:45 - 07:45	126	+	132	=	258	0	86	No
07:30 - 08:30	143	+	113	=	256	0	50	No
17:45 - 18:45	107	+	141	=	248	0	29	No
18:00 - 19:00	106	+	142	=	248	0	28	No
07:45 - 08:45	140	+	105	=	245	0	43	No
18:15 - 19:15	114	+	122	=	236	0	24	No
13:45 - 14:45	134	+	101	=	235	0	25	No
06:30 - 07:30	110		113		223	0	85	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2431

Study Date : 05/24/2024

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 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 EB	+	Major WB	=		Minor NB	Minor SB	
16:15 - 17:15	233	+	210	=	443	0	43	No
16:00 - 17:00	233	+	206	=	439	0	37	No
16:30 - 17:30	213	+	215	=	428	0	50	No
15:45 - 16:45	226	+	199	=	425	0	33	No
16:45 - 17:45	185	+	211	=	396	0	47	No
15:30 - 16:30	195	+	186	=	381	0	28	No
15:15 - 16:15	182	+	171	=	353	0	32	No
17:00 - 18:00	162	+	181	=	343	0	43	No
15:00 - 16:00	168	+	163	=	331	0	29	No
14:30 - 15:30	183	+	138	=	321	0	35	No
14:45 - 15:45	167	+	147	=	314	0	36	No
17:15 - 18:15	147	+	166	=	313	0	39	No
14:15 - 15:15	163	+	140	=	303	0	33	No
17:30 - 18:30	127	+	158	=	285	0	27	No
07:00 - 08:00	152	+	132	=	284	0	81	No
14:00 - 15:00	152	+	119	=	271	0	35	No
07:15 - 08:15	138	+	130	=	268	0	59	No
06:45 - 07:45	126	+	132	=	258	0	86	No
07:30 - 08:30	143	+	113	=	256	0	50	No
17:45 - 18:45	107	+	141	=	248	0	29	No
18:00 - 19:00	106	+	142	=	248	0	28	No
07:45 - 08:45	140	+	105	=	245	0	43	No
18:15 - 19:15	114	+	122	=	236	0	24	No
13:45 - 14:45	134	+	101	=	235	0	25	No
06:30 - 07:30	110		113		223	0	85	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2431

Study Date : 05/24/2024

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

Only 0 hours meet 1A minimums.
Only 1 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 116

Minor Road Naples St

Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met1A?
16:15 - 17:15	233	+	210	=	443	0	43	No
16:00 - 17:00	233	+	206	=	439	0	37	No
16:30 - 17:30	213	+	215	=	428	0	50	No
15:45 - 16:45	226	+	199	=	425	0	33	No
16:45 - 17:45	185	+	211	=	396	0	47	No
15:30 - 16:30	195	+	186	=	381	0	28	No
15:15 - 16:15	182	+	171	=	353	0	32	No
17:00 - 18:00	162	+	181	=	343	0	43	No
15:00 - 16:00	168	+	163	=	331	0	29	No
14:30 - 15:30	183	+	138	=	321	0	35	No
14:45 - 15:45	167	+	147	=	314	0	36	No
17:15 - 18:15	147	+	166	=	313	0	39	No

Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met1B?
16:15 - 17:15	233	+	210	=	443	0	43	Yes
16:00 - 17:00	233	+	206	=	439	0	37	No
15:45 - 16:45	226	+	199	=	425	0	33	No
15:30 - 16:30	195	+	186	=	381	0	28	No
15:15 - 16:15	182	+	171	=	353	0	32	No
15:00 - 16:00	168	+	163	=	331	0	29	No
14:30 - 15:30	183	+	138	=	321	0	35	No
14:45 - 15:45	167	+	147	=	314	0	36	No
17:15 - 18:15	147	+	166	=	313	0	39	No
14:15 - 15:15	163	+	140	=	303	0	33	No
17:30 - 18:30	127	+	158	=	285	0	27	No
07:00 - 08:00	152	+	132	=	284	0	81	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2431

Study Date : 05/24/2024

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.

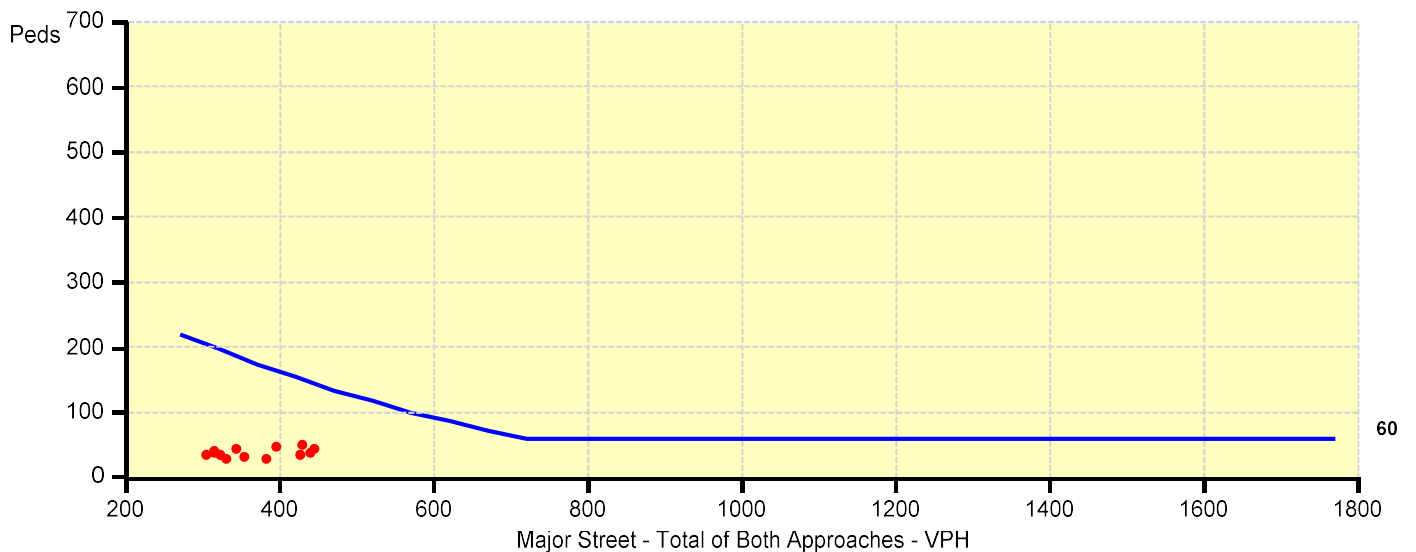
Summary

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 116				Total	Minor Road Naples St		Met?
	Major EB	+	Major WB	=		Minor NB	Minor SB	
16:15 - 17:15	233	+	210	=	443	0	43	No
16:00 - 17:00	233	+	206	=	439	0	37	No
16:30 - 17:30	213	+	215	=	428	0	50	No
15:45 - 16:45	226	+	199	=	425	0	33	No
16:45 - 17:45	185	+	211	=	396	0	47	No
15:30 - 16:30	195	+	186	=	381	0	28	No
15:15 - 16:15	182	+	171	=	353	0	32	No
17:00 - 18:00	162	+	181	=	343	0	43	No
15:00 - 16:00	168	+	163	=	331	0	29	No
14:30 - 15:30	183	+	138	=	321	0	35	No
14:45 - 15:45	167	+	147	=	314	0	36	No
17:15 - 18:15	147		166		313	0	39	No



ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2431

Study Date : 05/24/2024

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

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 116				Total	Minor Road Naples St		Met?
	Major EB	+	Major WB	=		Minor NB	Minor SB	
16:15 - 17:15	233	+	210	=	443	0	43	No
16:00 - 17:00	233	+	206	=	439	0	37	No
16:30 - 17:30	213	+	215	=	428	0	50	No
15:45 - 16:45	226	+	199	=	425	0	33	No
16:45 - 17:45	185	+	211	=	396	0	47	No
15:30 - 16:30	195	+	186	=	381	0	28	No
15:15 - 16:15	182	+	171	=	353	0	32	No
17:00 - 18:00	162	+	181	=	343	0	43	No
15:00 - 16:00	168	+	163	=	331	0	29	No
14:30 - 15:30	183	+	138	=	321	0	35	No
14:45 - 15:45	167	+	147	=	314	0	36	No
17:15 - 18:15	147		166		313	0	39	No

