

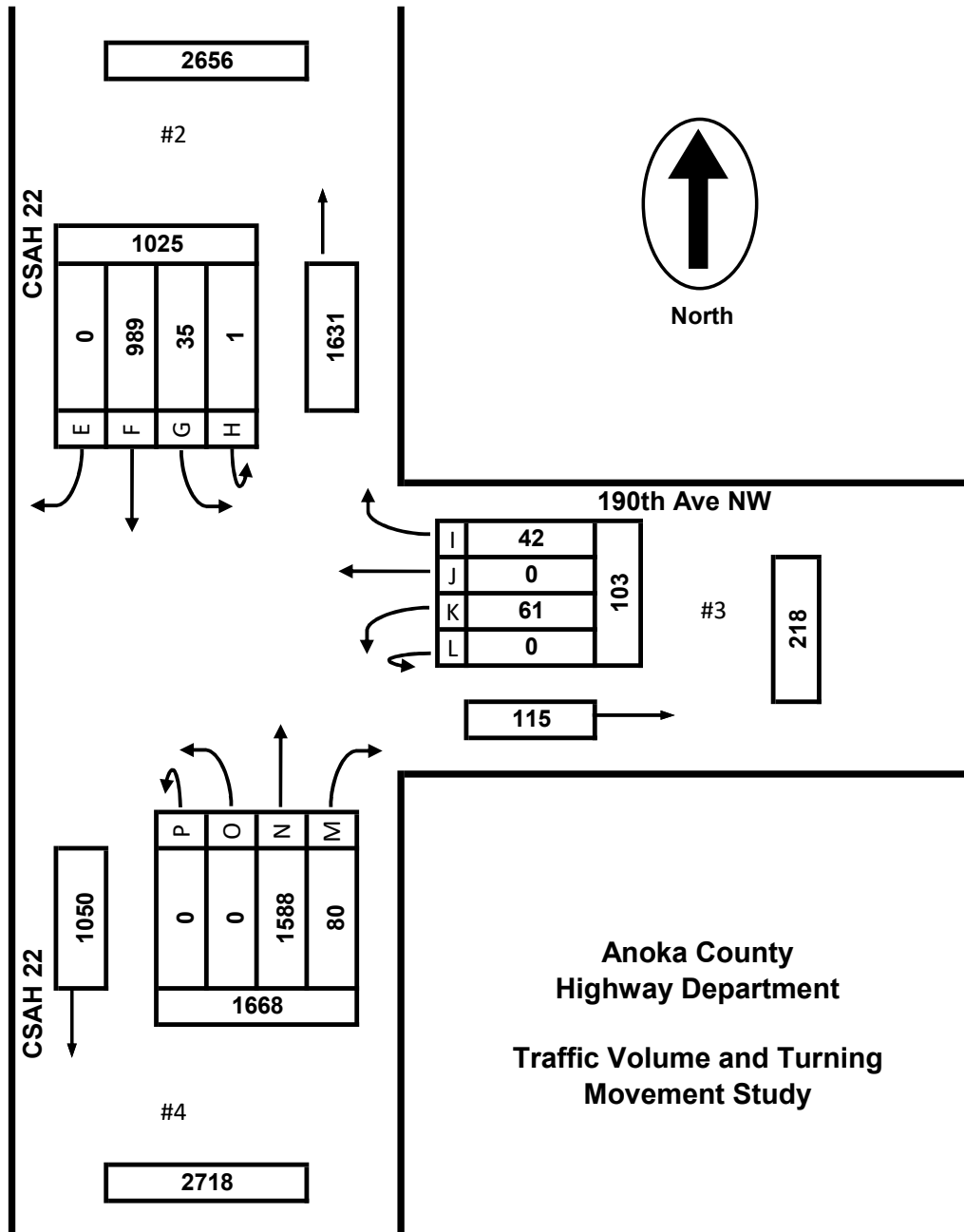
Date: 08/29/24

Count Number: TMC 2473

Location: CSAH 22
@ 190th Ave NW

Collection Period: 24 HR

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



Anoka County
 Highway Department
 Traffic Volume and Turning
 Movement Study

Date: 08/29/24

Count Number: TMC 2473

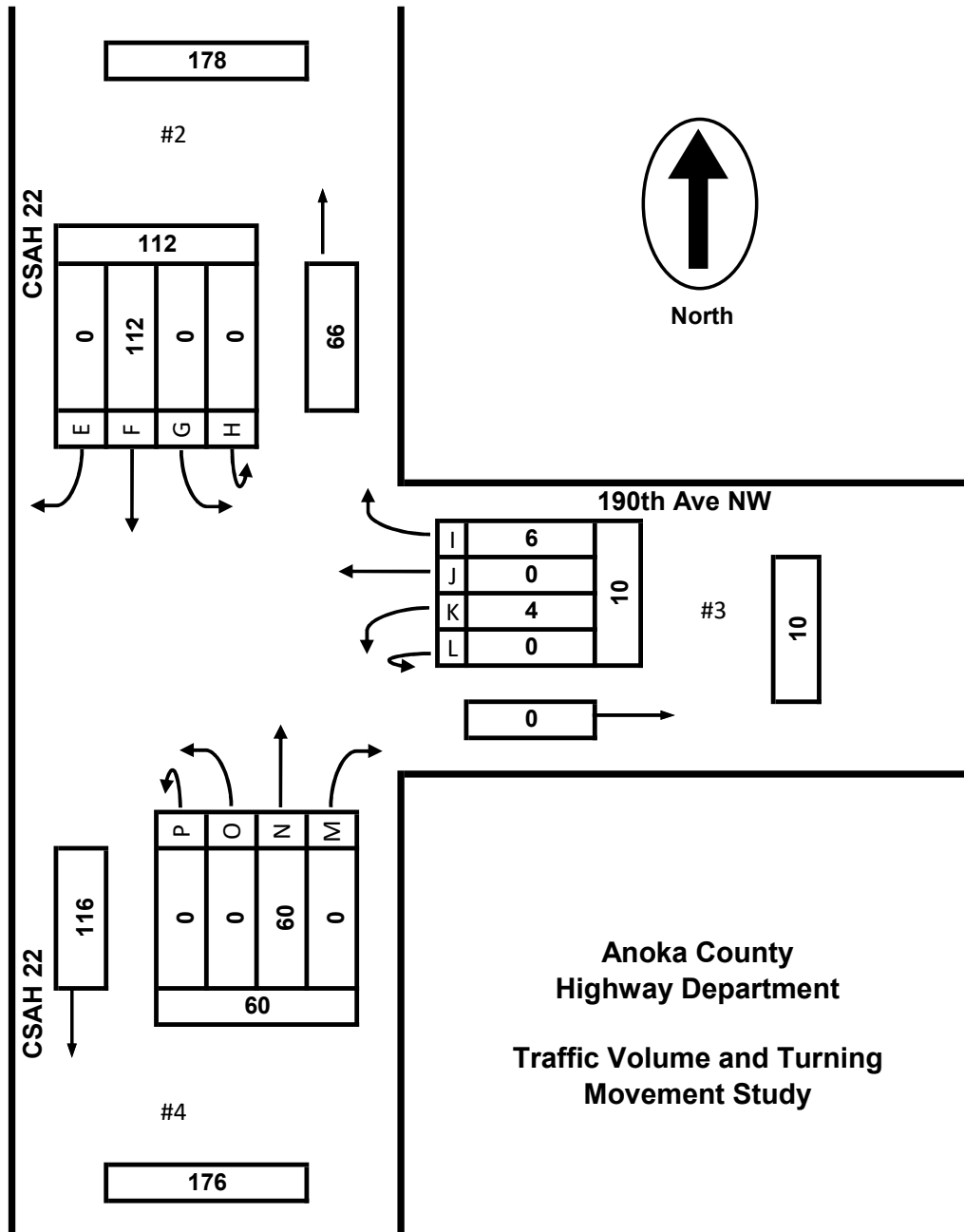
Location: CSAH 22

@ 190th Ave NW

Collection Period: 24 HR

Peak Hour: 7:15 - 8:15 AM

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



Anoka County
Highway Department
Traffic Volume and Turning
Movement Study

Date: 08/29/24

Count Number: TMC 2473

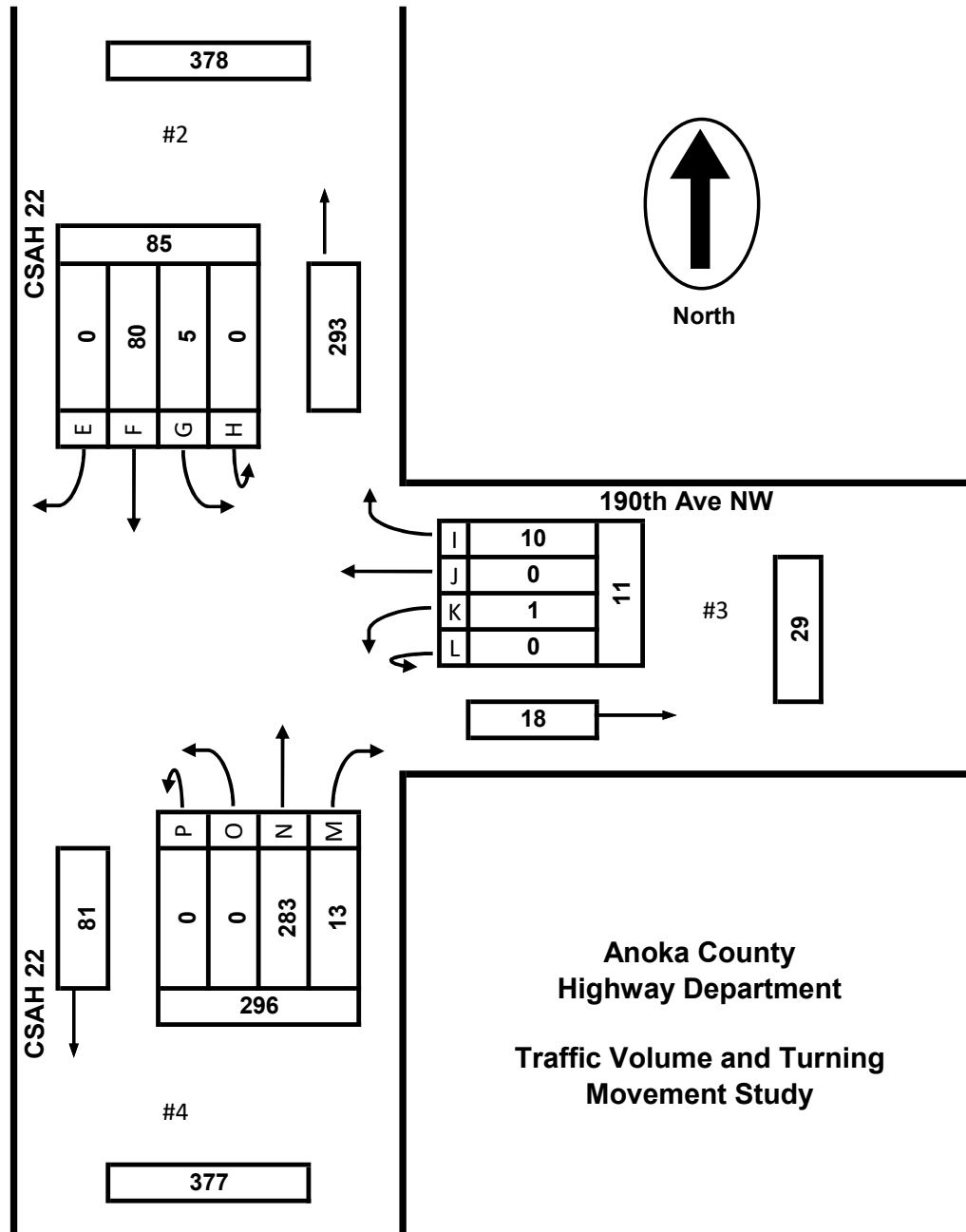
Location: CSAH 22

@ 190th Ave NW

Collection Period: 24 HR

Peak Hour: 3:45 - 4:45 PM

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



**TMC 2473 - CSAH 22 @ 190th Ave NW
Nowthen MN
Thursday, August 29, 2024**

Time	Southbound CSAH 22						Westbound 190th Ave NW						Northbound CSAH 22						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	2	0	0	2	0	2	0	1	0	3	0	0	2	0	0	2	0	0	0	0	0	0	7
12:15 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	1
12:30 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	0
12:45 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	1
Hourly Total	0	0	2	0	0	2	0	2	0	1	0	3	0	0	4	0	0	4	0	0	0	0	0	0	9
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2
1:15 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	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	0
1:45 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	1
Hourly Total	0	1	0	0	0	1	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	4
2:00 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	0
2:15 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	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	1
2:45 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
Hourly Total	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2
3:00 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	1
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	1
3:30 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	2
3:45 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2
Hourly Total	0	0	4	0	0	4	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	6
4:00 AM	0	0	3	0	0	3	0	1	0	1	0	2	0	0	1	0	0	1	0	0	0	0	0	0	6
4:15 AM	0	0	8	0	0	8	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	10
4:30 AM	0	0	4	0	0	4	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	5
4:45 AM	0	0	4	0	0	4	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	6
Hourly Total	0	0	19	0	0	19	0	2	0	1	0	3	0	0	5	0	0	5	0	0	0	0	0	0	27
5:00 AM	0	0	2	0	0	2	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4
5:15 AM	0	0	8	0	0	8	0	2	0	1	0	3	0	0	1	0	0	1	0	0	0	0	0	0	12
5:30 AM	0	0	12	0	0	12	0	1	0	0	0	1	0	0	5	0	0	5	0	0	0	0	0	0	18
5:45 AM	0	0	16	0	0	16	0	1	0	0	0	1	0	0	3	0	0	3	0	0	0	0	0	0	20
Hourly Total	0	0	38	0	0	38	0	4	0	1	0	5	0	0	11	0	0	11	0	0	0	0	0	0	54
6:00 AM	0	0	16	0	0	16	0	3	0	0	0	3	0	0	10	0	0	10	0	0	0	0	0	0	29
6:15 AM	0	0	27	0	0	27	0	3	0	0	0	3	0	0	8	0	0	8	0	0	0	0	0	0	38
6:30 AM	0	0	30	0	0	30	0	4	0	1	0	5	0	0	7	1	0	8	0	0	0	0	0	0	43
6:45 AM	0	1	22	0	0	23	0	3	0	1	0	4	0	0	10	1	0	11	0	0	0	0	0	0	38
Hourly Total	0	1	95	0	0	96	0	13	0	2	0	15	0	0	35	2	0	37	0	0	0	0	0	0	148
7:00 AM	0	1	25	0	0	26	0	0	0	1	0	1	0	0	13	0	0	13	0	0	0	0	0	0	40
7:15 AM	0	0	31	0	0	31	0	0	0	1	0	1	0	0	15	0	0	15	0	0	0	0	0	0	47
7:30 AM	0	0	29	0	0	29	0	2	0	0	0	2	0	0	16	0	0	16	0	0	0	0	0	0	47
7:45 AM	0	0	29	0	0	29	0	2	0	1	0	3	0	0	11	0	0	11	0	0	0	0	0	0	43
Hourly Total	0	1	114	0	0	115	0	4	0	3	0	7	0	0	55	0	0	55	0	0	0	0	0	0	177

**TMC 2473 - CSAH 22 @ 190th Ave NW
Nowthen MN
Thursday, August 29, 2024**

Time	Southbound CSAH 22						Westbound 190th Ave NW						Northbound CSAH 22						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	0	23	0	0	23	0	0	0	4	0	4	0	0	18	0	0	0	18	0	0	0	0	0	0	45
8:15 AM	0	0	12	0	0	12	0	1	0	1	0	2	0	0	15	0	0	0	15	0	0	0	0	0	0	29
8:30 AM	0	0	12	0	0	12	0	1	0	0	0	1	0	0	7	0	0	0	7	0	0	0	0	0	0	24
8:45 AM	0	0	13	0	0	13	0	1	0	0	0	1	0	0	9	1	0	0	10	0	0	0	0	0	0	20
Hourly Total	0	0	60	0	0	60	0	3	0	5	0	8	0	0	49	1	0	0	50	0	0	0	0	0	0	118
9:00 AM	0	1	14	0	0	15	0	2	0	0	0	2	0	0	15	1	0	0	16	0	0	0	0	0	0	33
9:15 AM	0	0	16	0	0	16	0	0	0	2	0	2	0	0	13	1	0	0	14	0	0	0	0	0	0	32
9:30 AM	0	0	19	0	0	19	0	0	0	2	0	2	0	0	11	0	0	0	11	0	0	0	0	0	0	32
9:45 AM	0	2	15	0	0	17	0	0	0	0	0	0	0	0	11	0	0	0	11	0	0	0	0	0	0	28
Hourly Total	0	3	64	0	0	67	0	2	0	4	0	6	0	0	50	2	0	0	52	0	0	0	0	0	0	125
10:00 AM	0	2	12	0	0	14	0	0	0	1	0	1	0	0	25	1	0	0	26	0	0	0	0	0	0	41
10:15 AM	0	0	20	0	0	20	0	1	0	0	0	1	0	0	16	0	0	0	16	0	0	0	0	0	0	37
10:30 AM	0	0	15	0	0	15	0	0	0	0	0	0	0	0	15	0	0	0	15	0	0	0	0	0	0	30
10:45 AM	0	0	13	0	0	13	0	0	0	1	0	1	0	0	22	1	0	0	23	0	0	0	0	0	0	37
Hourly Total	0	2	60	0	0	62	0	1	0	2	0	3	0	0	78	2	0	0	80	0	0	0	0	0	0	145
11:00 AM	0	0	8	0	0	8	0	1	0	0	0	1	0	0	20	0	0	0	20	0	0	0	0	0	0	29
11:15 AM	0	0	14	0	0	14	0	1	0	0	0	1	0	0	18	1	0	0	19	0	0	0	0	0	0	34
11:30 AM	0	0	16	0	0	16	0	1	0	0	0	1	0	0	19	1	0	0	20	0	0	0	0	0	0	37
11:45 AM	0	0	7	0	0	7	0	0	0	0	0	0	0	0	12	1	0	0	13	0	0	0	0	0	0	20
Hourly Total	0	0	45	0	0	45	0	3	0	0	0	3	0	0	69	3	0	0	72	0	0	0	0	0	0	120
12:00 PM	0	0	13	0	0	13	0	0	0	0	0	0	0	0	20	0	0	0	20	0	0	0	0	0	0	33
12:15 PM	0	1	10	0	0	11	0	2	0	0	0	2	0	0	16	2	0	0	18	0	0	0	0	0	0	31
12:30 PM	0	0	11	0	0	11	0	0	0	1	0	1	0	0	26	2	0	0	28	0	0	0	0	0	0	40
12:45 PM	0	0	12	0	0	12	0	2	0	0	0	2	0	0	16	1	0	0	17	0	0	0	0	0	0	31
Hourly Total	0	1	46	0	0	47	0	4	0	1	0	5	0	0	78	5	0	0	83	0	0	0	0	0	0	135
1:00 PM	0	0	18	0	0	18	0	0	0	0	0	0	0	0	34	1	0	0	35	0	0	0	0	0	0	53
1:15 PM	0	0	11	0	0	11	0	0	0	0	0	0	0	0	14	1	0	0	15	0	0	0	0	0	0	26
1:30 PM	0	1	11	0	0	12	0	0	0	1	0	1	0	0	20	1	0	0	21	0	0	0	0	0	0	34
1:45 PM	0	0	19	0	0	19	0	2	0	0	0	2	0	0	26	2	0	0	28	0	0	0	0	0	0	49
Hourly Total	0	1	59	0	0	60	0	2	0	1	0	3	0	0	94	5	0	0	99	0	0	0	0	0	0	162
2:00 PM	0	0	22	0	0	22	0	0	0	0	0	0	0	0	29	0	0	0	29	0	0	0	0	0	0	51
2:15 PM	0	0	22	0	0	22	0	0	0	0	0	0	0	0	33	2	0	0	35	0	0	0	0	0	0	57
2:30 PM	0	1	26	0	0	27	0	0	0	2	0	2	0	0	37	2	0	0	39	0	0	0	0	0	0	68
2:45 PM	0	0	22	0	0	22	0	0	0	0	0	0	0	0	34	3	0	0	37	0	0	0	0	0	0	59
Hourly Total	0	1	92	0	0	93	0	0	0	2	0	2	0	0	133	7	0	0	140	0	0	0	0	0	0	235
3:00 PM	0	2	15	0	0	17	0	0	0	1	0	1	0	0	54	2	0	0	56	0	0	0	0	0	0	74
3:15 PM	0	0	13	0	0	13	0	2	0	1	0	3	0	0	66	3	0	0	69	0	0	0	0	0	0	85
3:30 PM	0	3	15	0	0	18	0	0	0	0	0	0	0	0	65	4	0	0	69	0	0	0	0	0	0	87
3:45 PM	0	3	24	0	0	27	0	0	0	4	0	4	0	0	75	2	0	0	77	0	0	0	0	0	0	108
Hourly Total	0	8	67	0	0	75	0	2	0	6	0	8	0	0	260	11	0	0	271	0	0	0	0	0	0	354

**TMC 2473 - CSAH 22 @ 190th Ave NW
Nowthen MN
Thursday, August 29, 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	
7:15 AM	0	0	31	0	0	31	0	0	0	1	0	1	0	0	15	0	0	15	0	0	0	0	0	0	47
7:30 AM	0	0	29	0	0	29	0	2	0	0	2	0	0	16	0	0	16	0	0	0	0	0	0	0	47
7:45 AM	0	0	29	0	0	29	0	2	0	1	3	0	0	11	0	0	11	0	0	0	0	0	0	0	43
8:00 AM	0	0	23	0	0	23	0	0	0	4	4	0	0	18	0	0	18	0	0	0	0	0	0	0	45
Peak Hour Total PHF	0.000	0.000	0.903	0.000	0.000	0.903	0.000	0.500	0.000	0.375	0.000	0.625	0.000	0.000	0.833	0.000	0.000	0.833	0.000	0.000	0.000	0.000	0.000	0.000	0.968

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	
3:45 PM	0	3	24	0	0	27	0	0	0	4	0	4	0	0	75	2	0	77	0	0	0	0	0	0	108
4:00 PM	0	2	22	0	0	24	0	0	0	3	0	3	0	0	64	6	0	70	0	0	0	0	0	0	97
4:15 PM	0	0	23	0	0	23	0	0	0	2	0	2	0	0	68	3	0	71	0	0	0	0	0	0	96
4:30 PM	0	0	11	0	0	11	0	1	0	1	0	2	0	0	76	2	0	78	0	0	0	0	0	0	91
Peak Hour Total PHF	0.000	0.417	0.833	0.000	0.000	0.787	0.000	0.250	0.000	0.625	0.000	0.688	0.000	0.000	0.931	0.542	0.000	0.949	0.000	0.000	0.000	0.000	0.000	0.000	0.907

Total Vehicles On Leg				2656	
Vehicles Entering Intersection		1025	Vehicles Exiting Intersection		1631
Southbound					
Cars	0	800	34	1	0
Heavy	0	189	1	0	0
Total	0	989	35	1	0

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

Cars	Heavy	Total	Westbound	Vehicles Entering Intersection 103	Total Vehicles on Leg 218
41	1	42			
0	0	0			
60	1	61			
0	0	0			
0	0	0	Westbound	Vehicles Exiting Intersection 115	Total Vehicles on Leg 218
0	0	0			
0	0	0			
0	0	0			
0	0	0			

Daily Volumes

Cars	0	0	0	1388	77		
Heavy	0	0	0	200	3		
Total	0	0	0	1588	80		
Northbound							
Vehicles Entering Intersection			1668	Vehicles Exiting Intersection			1050
Total Vehicles On Leg			2718				

ANOKA COUNTY HIGHWAY

PC - WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2473

Study Date : 09/03/2024

Signal Warrants - Summary

Major Street Approaches

Northbound: CSAH 22

Number of Lanes : 1

Total Approach Volume: 1,668

Southbound: CSAH 22

Number of Lanes : 1

Total Approach Volume: 1,025

Minor Street Approaches

Westbound: 190th Ave NW

Number of Lanes : 1

Total Approach Volume: 103

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 2473

Study Date : 09/03/2024

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 NB	+	Major SB	=		Minor EB	Minor WB	
15:45 - 16:45	296	+	85	=	381	0	11	No
15:30 - 16:30	287	+	92	=	379	0	9	No
15:15 - 16:15	285	+	82	=	367	0	10	No
16:00 - 17:00	286	+	75	=	361	0	8	No
15:00 - 16:00	271	+	75	=	346	0	8	No
16:15 - 17:15	272	+	62	=	334	0	8	No
16:30 - 17:30	247	+	54	=	301	0	10	No
14:45 - 15:45	231	+	70	=	301	0	4	No
14:30 - 15:30	201	+	79	=	280	0	6	No
16:45 - 17:45	211	+	50	=	261	0	9	No
14:15 - 15:15	167	+	88	=	255	0	3	No
14:00 - 15:00	140	+	93	=	233	0	2	No
17:00 - 18:00	180	+	42	=	222	0	11	No
13:45 - 14:45	131	+	90	=	221	0	4	No
17:15 - 18:15	155	+	44	=	199	0	9	No
13:30 - 14:30	113	+	75	=	188	0	3	No
17:30 - 18:30	141	+	45	=	186	0	5	No
07:15 - 08:15	60	+	112	=	172	0	10	No
07:00 - 08:00	55	+	115	=	170	0	7	No
17:45 - 18:45	120	+	48	=	168	0	5	No
06:45 - 07:45	55	+	109	=	164	0	8	No
13:00 - 14:00	99	+	60	=	159	0	3	No
13:15 - 14:15	93	+	64	=	157	0	3	No
06:30 - 07:30	47	+	110	=	157	0	11	No
07:30 - 08:30	60		93		153	0	11	No

ANOKA COUNTY HIGHWAY

PC - WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2473

Study Date : 09/03/2024

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 NB	+	Major SB	=		Minor EB	Minor WB	
15:45 - 16:45	296	+	85	=	381	0	11	No
15:30 - 16:30	287	+	92	=	379	0	9	No
15:15 - 16:15	285	+	82	=	367	0	10	No
16:00 - 17:00	286	+	75	=	361	0	8	No
15:00 - 16:00	271	+	75	=	346	0	8	No
16:15 - 17:15	272	+	62	=	334	0	8	No
16:30 - 17:30	247	+	54	=	301	0	10	No
14:45 - 15:45	231	+	70	=	301	0	4	No
14:30 - 15:30	201	+	79	=	280	0	6	No
16:45 - 17:45	211	+	50	=	261	0	9	No
14:15 - 15:15	167	+	88	=	255	0	3	No
14:00 - 15:00	140	+	93	=	233	0	2	No
17:00 - 18:00	180	+	42	=	222	0	11	No
13:45 - 14:45	131	+	90	=	221	0	4	No
17:15 - 18:15	155	+	44	=	199	0	9	No
13:30 - 14:30	113	+	75	=	188	0	3	No
17:30 - 18:30	141	+	45	=	186	0	5	No
07:15 - 08:15	60	+	112	=	172	0	10	No
07:00 - 08:00	55	+	115	=	170	0	7	No
17:45 - 18:45	120	+	48	=	168	0	5	No
06:45 - 07:45	55	+	109	=	164	0	8	No
13:00 - 14:00	99	+	60	=	159	0	3	No
13:15 - 14:15	93	+	64	=	157	0	3	No
06:30 - 07:30	47	+	110	=	157	0	11	No
07:30 - 08:30	60		93		153	0	11	No

ANOKA COUNTY HIGHWAY

PC - WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2473

Study Date : 09/03/2024

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 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 22

Minor Road 190th Ave NW

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1A?
15:45 - 16:45	296	+	85	=	381	0	11	No
15:30 - 16:30	287	+	92	=	379	0	9	No
15:15 - 16:15	285	+	82	=	367	0	10	No
16:00 - 17:00	286	+	75	=	361	0	8	No
15:00 - 16:00	271	+	75	=	346	0	8	No
16:15 - 17:15	272	+	62	=	334	0	8	No
16:30 - 17:30	247	+	54	=	301	0	10	No
14:45 - 15:45	231	+	70	=	301	0	4	No
14:30 - 15:30	201	+	79	=	280	0	6	No
16:45 - 17:45	211	+	50	=	261	0	9	No
14:15 - 15:15	167	+	88	=	255	0	3	No
14:00 - 15:00	140		93		233	0	2	No

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1B?
15:45 - 16:45	296	+	85	=	381	0	11	No
15:30 - 16:30	287	+	92	=	379	0	9	No
15:15 - 16:15	285	+	82	=	367	0	10	No
16:00 - 17:00	286	+	75	=	361	0	8	No
15:00 - 16:00	271	+	75	=	346	0	8	No
16:15 - 17:15	272	+	62	=	334	0	8	No
14:45 - 15:45	231	+	70	=	301	0	4	No
16:30 - 17:30	247	+	54	=	301	0	10	No
14:30 - 15:30	201	+	79	=	280	0	6	No
16:45 - 17:45	211	+	50	=	261	0	9	No
14:15 - 15:15	167	+	88	=	255	0	3	No
14:00 - 15:00	140		93		233	0	2	No

ANOKA COUNTY HIGHWAY

PC - WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2473

Study Date : 09/03/2024

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.

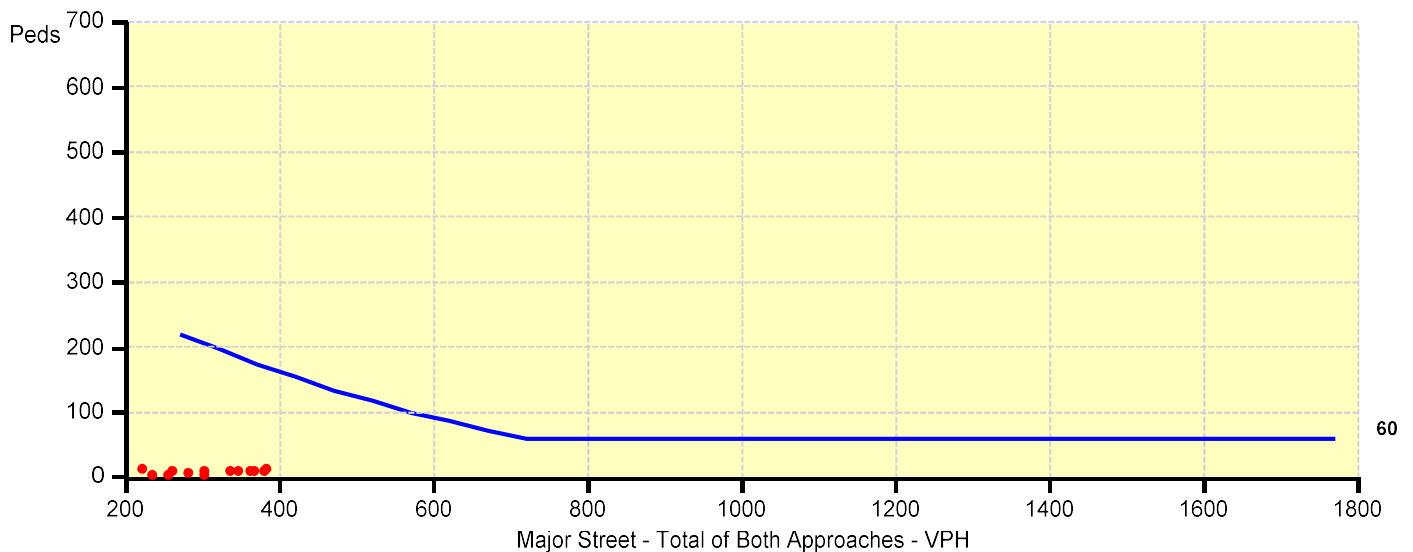
Summary

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 22				Total	Minor Road 190th Ave NW		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
15:45 - 16:45	296	+	85	=	381	0	11	No
15:30 - 16:30	287	+	92	=	379	0	9	No
15:15 - 16:15	285	+	82	=	367	0	10	No
16:00 - 17:00	286	+	75	=	361	0	8	No
15:00 - 16:00	271	+	75	=	346	0	8	No
16:15 - 17:15	272	+	62	=	334	0	8	No
16:30 - 17:30	247	+	54	=	301	0	10	No
14:45 - 15:45	231	+	70	=	301	0	4	No
14:30 - 15:30	201	+	79	=	280	0	6	No
16:45 - 17:45	211	+	50	=	261	0	9	No
14:15 - 15:15	167	+	88	=	255	0	3	No
14:00 - 15:00	140		93		233	0	2	No



ANOKA COUNTY HIGHWAY

PC - WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2473

Study Date : 09/03/2024

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.

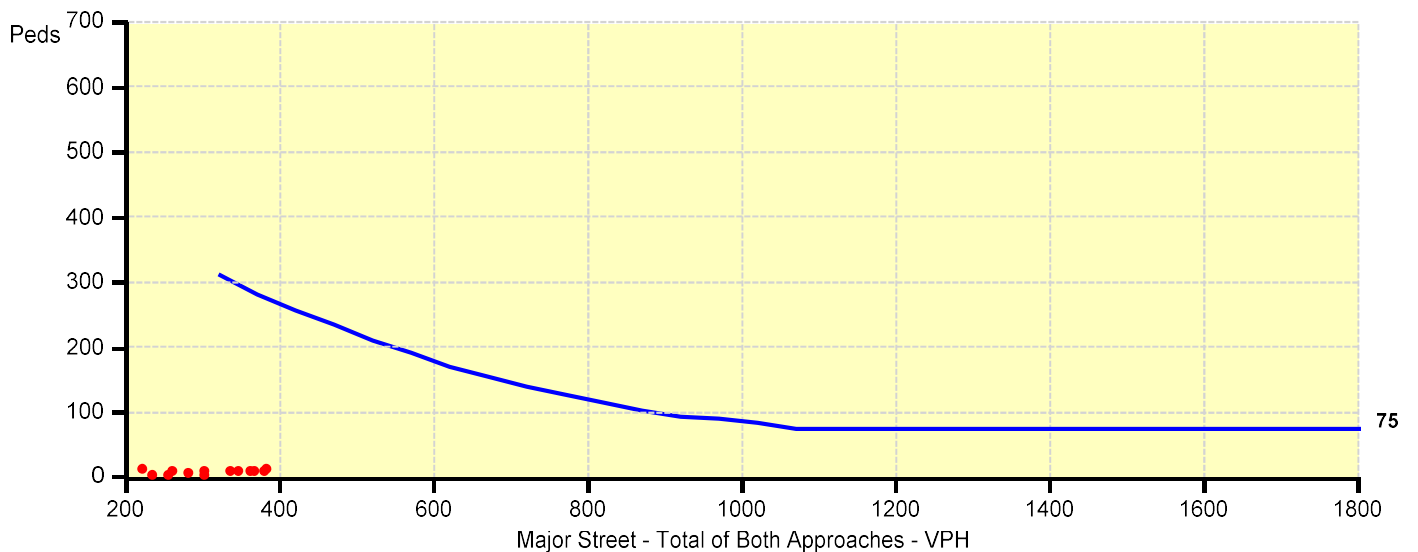
Summary

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 22				Total	Minor Road 190th Ave NW		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
15:45 - 16:45	296	+	85	=	381	0	11	No
15:30 - 16:30	287	+	92	=	379	0	9	No
15:15 - 16:15	285	+	82	=	367	0	10	No
16:00 - 17:00	286	+	75	=	361	0	8	No
15:00 - 16:00	271	+	75	=	346	0	8	No
16:15 - 17:15	272	+	62	=	334	0	8	No
16:30 - 17:30	247	+	54	=	301	0	10	No
14:45 - 15:45	231	+	70	=	301	0	4	No
14:30 - 15:30	201	+	79	=	280	0	6	No
16:45 - 17:45	211	+	50	=	261	0	9	No
14:15 - 15:15	167	+	88	=	255	0	3	No
14:00 - 15:00	140		93		233	0	2	No



ANOKA COUNTY HIGHWAY

PC - WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2473

Study Date : 09/03/2024

Multiway Stop Warrants - Summary

Major Street Approaches

Northbound: CSAH 22
 Number of Lanes : 1
 Total Approach Volume: 1,668

Southbound: CSAH 22
 Number of Lanes : 1
 Total Approach Volume: 1,025

Minor Street Approaches

Eastbound:
 Number of Lanes : 2+
 Total Approach Volume: 0

Westbound: 190th Ave NW
 Number of Lanes : 1
 Total Approach Volume: 103

Warrant Summary (Rural Values Apply)

Criteria A - Interim Measure	Not Evaluated
If traffic signals are justified, stop signs can be installed as an interim measure.	
Criteria B - Crash Experience	Not Satisfied
Number of crashes (-1) is less than minimum required (5).	
Criteria C - Minimum Volumes and Delays	Not Satisfied
Average of 8 highest hours is less than volume criteria.	
Criteria D - 80% of Volumes, Delays, and Crashes	Not Satisfied
Number of crashes (-1) is less than minimum required (4). Average of 8 highest hours is less than volume criteria.	

Criteria C Volume Summary

Time	Major Total	Major Avg	Minor Total	Minor Avg	Major Crit	Minor Crit	Meets?
15:45 - 16:45	381	225.0	11	07.6	210	140	No
14:45 - 15:45	301		4				
16:45 - 17:45	261		9				
13:45 - 14:45	221		4				
07:15 - 08:15	172		10				
17:45 - 18:45	168		5				
06:15 - 07:15	146		13				
12:15 - 13:15	150		5				
10:00 - 11:00	142		3				
09:00 - 10:00	119		6				
11:15 - 12:15	122		2				
18:45 - 19:45	82		4				

Criteria D Volume Summary

Time	Major Total	Major Avg	Minor Total	Minor Avg	Major Crit	Minor Crit	Meets?
15:45 - 16:45	381	225.0	11	07.6	240	160	No
14:45 - 15:45	301		4				
16:45 - 17:45	261		9				
13:45 - 14:45	221		4				
07:15 - 08:15	172		10				
17:45 - 18:45	168		5				
12:15 - 13:15	150		5				
06:15 - 07:15	146		13				
10:00 - 11:00	142		3				
11:15 - 12:15	122		2				
09:00 - 10:00	119		6				
18:45 - 19:45	82		4				