

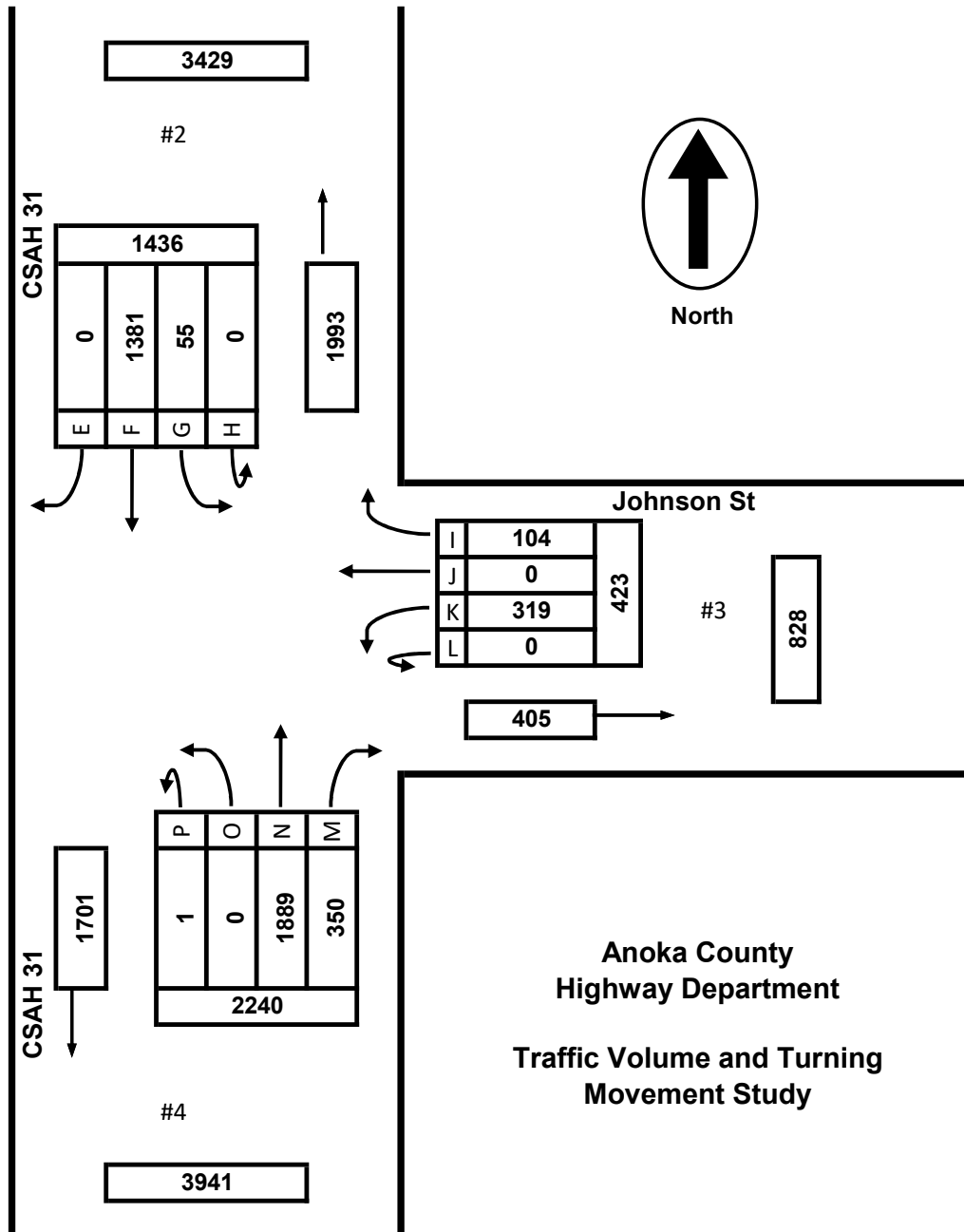
Date: 09/18/24

Count Number: TMC 2477

Location: CSAH 31
@ Johnson St

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: 09/18/24

Count Number: TMC 2477

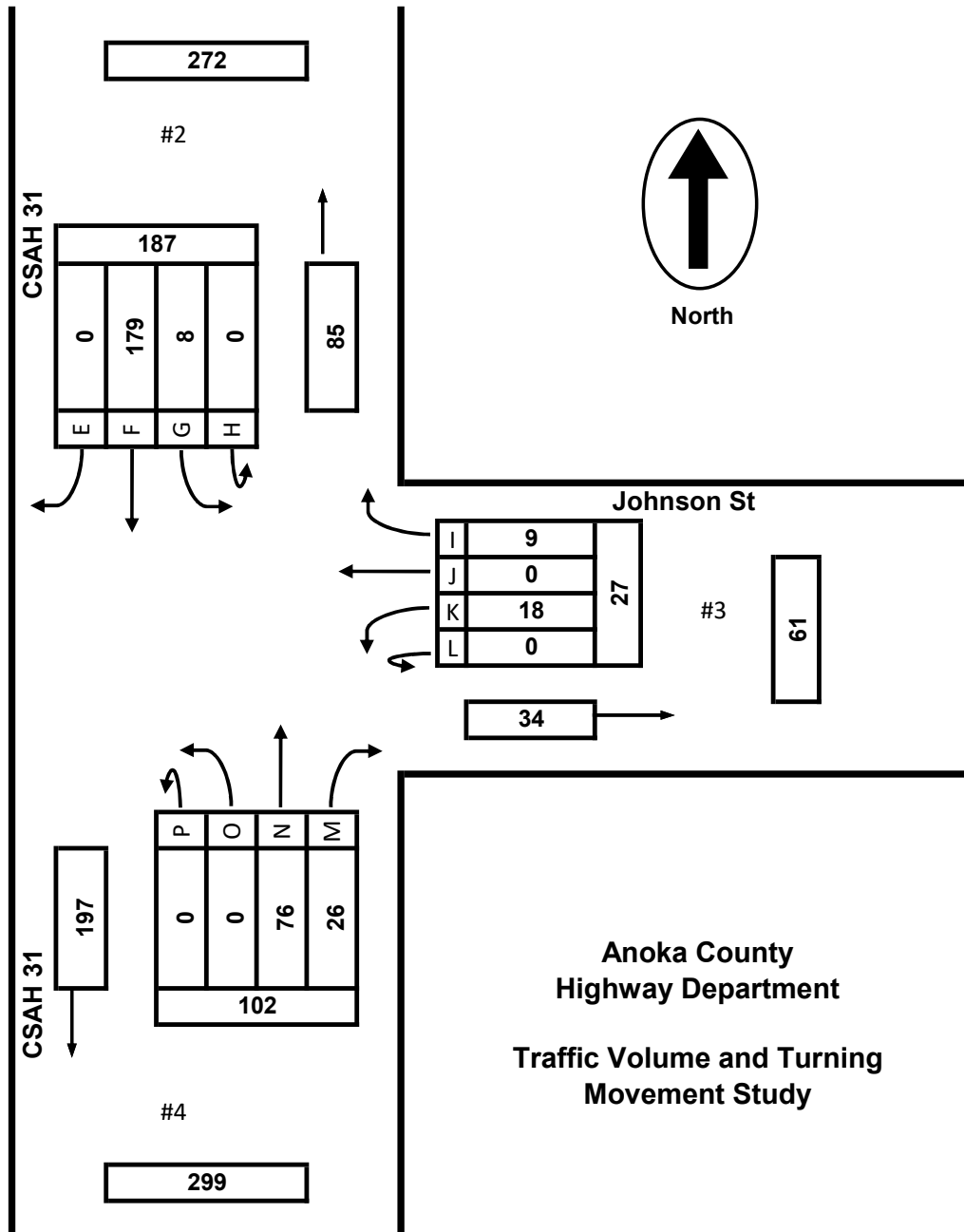
Location: CSAH 31

@ Johnson 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	0	0
#2	0	0	1	1
#3	0	0	1	1
#4	0	0	1	1



Date: 09/18/24

Count Number: TMC 2477

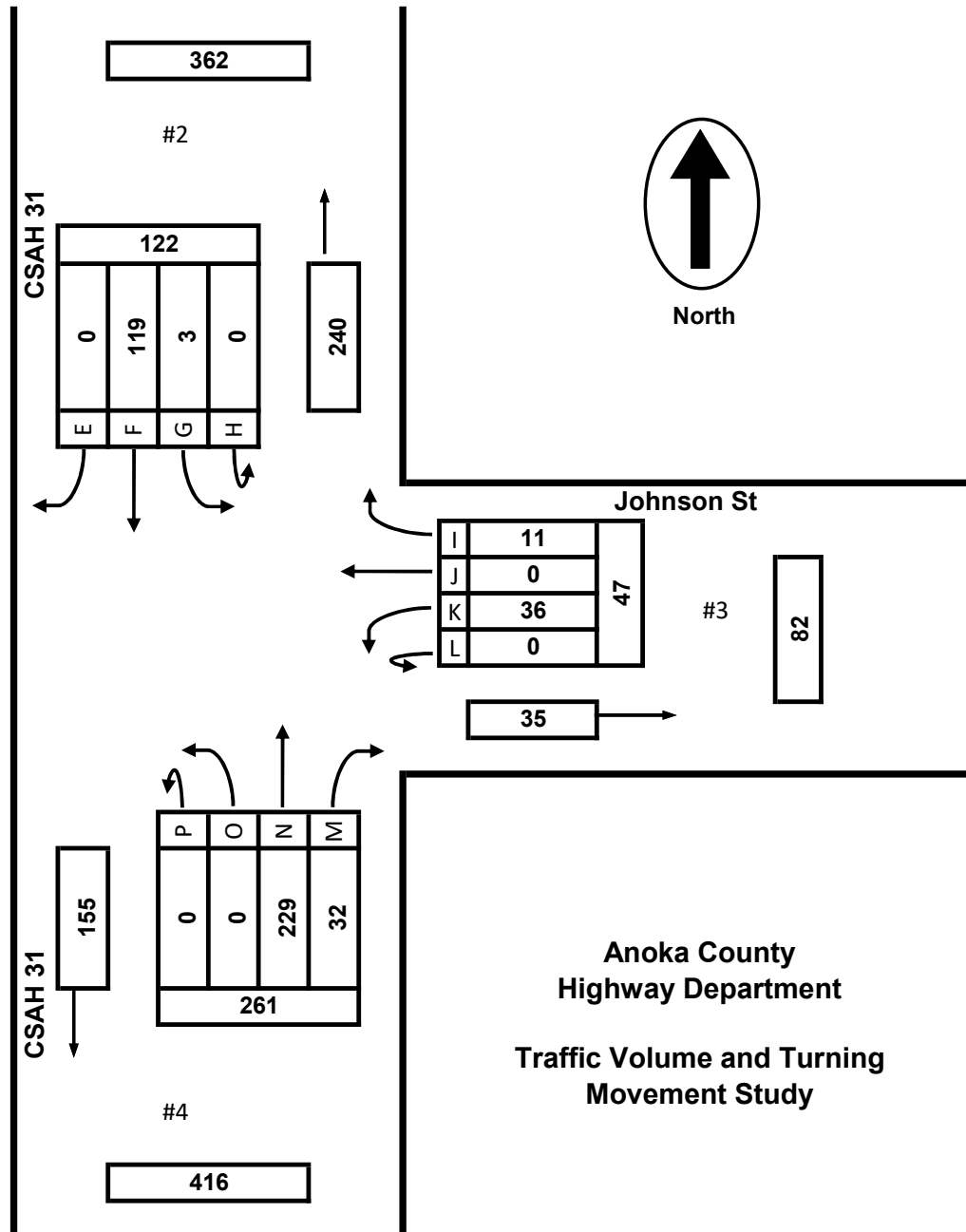
Location: CSAH 31

@ Johnson St

Collection Period: 24 HR

Peak Hour: 3:15 - 4:15 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



362

#2

122			
0	119	3	0
E	F	G	H

240

I	11	47
J	0	
K	36	
L	0	

#3

82

35

CSAH 31

155

P	O	N	M
0	0	229	32
261			

#4

416

**TMC 2477 - CSAH 31 @ Johnson St
Anoka MN
Wednesday, September 18, 2024**

Time	Southbound CSAH 31						Westbound Johnson St						Northbound CSAH 31						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	2	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
12:15 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	3
12:30 AM	0	0	1	0	0	1	0	1	0	0	0	1	0	0	3	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	6
12:45 AM	0	0	1	0	0	1	0	1	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3
Hourly Total	0	0	2	0	0	2	0	3	0	0	0	3	0	0	7	3	0	10	0	0	0	0	0	0	0	0	0	0	0	0	15
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
1:15 AM	0	0	1	0	0	1	0	1	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3
1:30 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	3
1:45 AM	0	0	1	0	0	1	0	1	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3
Hourly Total	0	0	2	0	0	2	0	3	0	0	0	3	0	0	2	3	0	5	0	0	0	0	0	0	0	0	0	0	0	0	10
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
2:15 AM	0	1	1	0	0	2	0	1	0	1	0	2	0	0	2	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	7
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	0	0	0	0	0	0	0
2:45 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	0	0	0	0	0	0	1
Hourly Total	0	1	1	0	0	2	0	1	0	1	0	2	0	0	3	3	0	6	0	0	0	0	0	0	0	0	0	0	0	0	10
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	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	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
3:30 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	4
3:45 AM	0	0	1	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Hourly Total	0	0	3	0	0	3	0	1	0	0	0	1	0	0	4	2	0	6	0	0	0	0	0	0	0	0	0	0	0	0	10
4:00 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
4:15 AM	0	0	2	0	0	2	0	1	0	1	0	2	0	0	1	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	7
4:30 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	3
4:45 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	4	0	6	0	0	0	0	0	0	0	0	0	0	0	0	7
Hourly Total	0	0	4	0	0	4	0	1	0	1	0	2	0	0	6	6	0	12	0	0	0	0	0	0	0	0	0	0	0	0	18
5:00 AM	0	0	4	0	0	4	0	2	0	0	0	2	0	0	3	3	0	6	0	0	0	0	0	0	0	0	0	0	0	0	12
5:15 AM	0	0	9	0	0	9	0	2	0	0	0	2	1	0	6	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	18
5:30 AM	0	0	6	0	0	6	0	0	0	0	0	0	0	0	3	3	0	6	0	0	0	0	0	0	0	0	0	0	0	0	12
5:45 AM	0	0	17	0	0	17	0	1	0	0	0	1	0	0	10	1	0	11	0	0	0	0	0	0	0	0	0	0	0	0	29
Hourly Total	0	0	36	0	0	36	0	5	0	0	0	5	1	0	22	7	0	30	0	0	0	0	0	0	0	0	0	0	0	0	71
6:00 AM	0	0	11	0	0	11	0	2	0	1	0	3	0	0	4	7	0	11	0	0	0	0	0	0	0	0	0	0	0	0	25
6:15 AM	0	0	18	0	0	18	0	2	0	2	0	4	0	0	11	1	0	12	0	0	0	0	0	0	0	0	0	0	0	0	34
6:30 AM	0	0	21	0	0	21	0	3	0	0	0	3	0	0	16	4	0	20	0	0	0	0	0	0	0	0	0	0	0	0	44
6:45 AM	0	0	38	0	0	38	0	1	0	3	0	4	0	0	23	6	0	29	0	0	0	0	0	0	0	0	0	0	0	0	71
Hourly Total	0	0	88	0	0	88	0	8	0	6	0	14	0	0	54	18	0	72	0	0	0	0	0	0	0	0	0	0	0	0	174
7:00 AM	0	2	45	0	2	47	0	5	0	2	4	7	0	0	23	8	0	31	0	0	0	0	0	0	0	0	0	0	0	0	85
7:15 AM	0	3	42	0	0	45	0	4	0	1	0	5	0	0	18	4	1	22	0	0	0	0	0	0	0	0	0	0	0	0	72
7:30 AM	0	3	46	0	0	49	0	3	0	3	3	6	0	0	16	7	0	23	0	0	0	0	0	0	0	0	0	0	0	0	78
7:45 AM	0	0	46	0	0	46	0	6	0	3	1	9	0	0	19	7	0	26	0	0	0	0	0	0	0	0	0	0	0	0	81
Hourly Total	0	8	179	0	2	187	0	18	0	9	8	27	0	0	76	26	1	102	0	0	0	0	0	0	0	0	0	0	0	0	316

**TMC 2477 - CSAH 31 @ Johnson St
Anoka MN
Wednesday, September 18, 2024**

Time	Southbound CSAH 31						Westbound Johnson St						Northbound CSAH 31						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	25	0	0	25	0	2	0	3	2	5	0	0	15	6	3	21	0	0	0	0	0	0	51
8:15 AM	0	3	19	0	0	22	0	3	0	1	4	4	0	0	31	6	0	37	0	0	0	0	0	0	63
8:30 AM	0	0	20	0	0	20	0	3	0	1	2	4	0	0	20	6	0	26	0	0	0	0	0	0	50
8:45 AM	0	1	20	0	0	21	0	6	0	2	1	8	0	0	19	4	2	23	0	0	0	0	0	0	52
Hourly Total	0	4	84	0	0	88	0	14	0	7	9	21	0	0	85	22	5	107	0	0	0	0	0	0	216
9:00 AM	0	1	17	0	0	18	0	1	0	3	1	4	0	0	20	1	0	21	0	0	0	0	0	0	43
9:15 AM	0	1	24	0	0	25	0	6	0	3	1	9	0	0	21	9	1	30	0	0	0	0	0	0	64
9:30 AM	0	1	15	0	0	16	0	4	0	4	0	8	0	0	14	2	0	16	0	0	0	0	0	0	40
9:45 AM	0	1	24	0	0	25	0	4	0	2	0	6	0	0	14	2	0	16	0	0	0	0	0	0	47
Hourly Total	0	4	80	0	0	84	0	15	0	12	2	27	0	0	69	14	1	83	0	0	0	0	0	0	194
10:00 AM	0	1	15	0	0	16	0	7	0	0	1	7	0	0	23	4	0	27	0	0	0	0	0	0	50
10:15 AM	0	0	15	0	0	15	0	1	0	0	0	1	0	0	25	4	0	29	0	0	0	0	0	0	45
10:30 AM	0	0	24	0	0	24	0	4	0	2	1	6	0	0	17	3	0	20	0	0	0	0	0	0	50
10:45 AM	0	1	22	0	0	23	0	5	0	0	0	5	0	0	22	5	0	27	0	0	0	0	0	0	55
Hourly Total	0	2	76	0	0	78	0	17	0	2	2	19	0	0	87	16	0	103	0	0	0	0	0	0	200
11:00 AM	0	2	22	0	0	24	0	6	0	2	0	8	0	0	22	11	2	33	0	0	0	0	0	0	65
11:15 AM	0	0	21	0	0	21	0	6	0	4	1	10	0	0	24	6	2	30	0	0	0	0	0	0	61
11:30 AM	0	0	24	0	0	24	0	5	0	5	0	10	0	0	25	9	1	34	0	0	0	0	0	0	68
11:45 AM	0	0	18	0	0	18	0	5	0	0	3	5	0	0	20	6	1	26	0	0	0	0	0	0	49
Hourly Total	0	2	85	0	0	87	0	22	0	11	4	33	0	0	91	32	6	123	0	0	0	0	0	0	243
12:00 PM	0	2	13	0	0	15	0	5	0	2	0	7	0	0	22	5	0	27	0	0	0	0	0	0	49
12:15 PM	0	1	21	0	0	22	0	6	0	0	0	6	0	0	29	4	0	33	0	0	0	0	0	0	61
12:30 PM	0	1	24	0	0	25	0	11	0	1	0	12	0	0	36	6	0	42	0	0	0	0	0	0	79
12:45 PM	0	1	25	0	0	26	0	3	0	3	0	6	0	0	28	1	0	29	0	0	0	0	0	0	61
Hourly Total	0	5	83	0	0	88	0	25	0	6	0	31	0	0	115	16	0	131	0	0	0	0	0	0	250
1:00 PM	0	0	14	0	0	14	0	5	0	0	1	5	0	0	26	3	0	29	0	0	0	0	0	0	48
1:15 PM	0	2	22	0	0	24	0	5	0	0	1	5	0	0	25	1	0	26	0	0	0	0	0	0	55
1:30 PM	0	0	21	0	0	21	0	9	0	2	2	11	0	0	22	3	0	25	0	0	0	0	0	0	57
1:45 PM	0	1	12	0	0	13	0	10	0	1	0	11	0	0	36	3	0	39	0	0	0	0	0	0	63
Hourly Total	0	3	69	0	0	72	0	29	0	3	4	32	0	0	109	10	0	119	0	0	0	0	0	0	223
2:00 PM	0	0	26	0	0	26	0	5	0	0	1	5	0	0	34	9	0	43	0	0	0	0	0	0	74
2:15 PM	0	0	23	0	0	23	0	2	0	0	2	2	0	0	36	3	0	39	0	0	0	0	0	0	64
2:30 PM	0	4	21	0	0	25	0	2	0	2	1	4	0	0	39	4	0	43	0	0	0	0	0	0	72
2:45 PM	0	0	23	0	0	23	0	3	0	5	1	8	0	0	30	4	0	34	0	0	0	0	0	0	65
Hourly Total	0	4	93	0	0	97	0	12	0	7	5	19	0	0	139	20	0	159	0	0	0	0	0	0	275
3:00 PM	0	4	20	0	0	24	0	5	0	1	3	6	0	0	51	5	0	56	0	0	0	0	0	0	86
3:15 PM	0	1	23	0	1	24	0	8	0	3	0	11	0	0	47	11	0	58	0	0	0	0	0	0	93
3:30 PM	0	1	26	0	0	27	0	12	0	3	1	15	0	0	63	5	0	68	0	0	0	0	0	0	110
3:45 PM	0	0	33	0	0	33	0	5	0	3	1	8	0	0	59	9	0	68	0	0	0	0	0	0	109
Hourly Total	0	6	102	0	1	108	0	30	0	10	5	40	0	0	220	30	0	250	0	0	0	0	0	0	398

**TMC 2477 - CSAH 31 @ Johnson St
Anoka MN
Wednesday, September 18, 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	2	45	0	2	47	0	5	0	2	4	7	0	0	23	8	0	31	0	0	0	0	0	0	85
7:15 AM	0	3	42	0	0	45	0	4	0	1	0	5	0	0	18	4	1	22	0	0	0	0	0	0	72
7:30 AM	0	3	46	0	0	49	0	3	0	3	3	6	0	0	16	7	0	23	0	0	0	0	0	0	78
7:45 AM	0	0	46	0	0	46	0	6	0	3	1	9	0	0	19	7	0	26	0	0	0	0	0	0	81
Peak Hour Total	0	8	179	0	2	187	0	18	0	9	8	27	0	0	76	26	1	102	0	0	0	0	0	0	316
PHF	0.000	0.667	0.973	0.000	0.250	0.954	0.000	0.750	0.000	0.750	0.500	0.750	0.000	0.000	0.826	0.813	0.250	0.823	0.000	0.000	0.000	0.000	0.000	0.000	0.929

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	
3:15 PM	0	1	23	0	1	24	0	8	0	3	0	11	0	0	47	11	0	58	0	0	0	0	0	0	93
3:30 PM	0	1	26	0	0	27	0	12	0	3	1	15	0	0	63	5	0	68	0	0	0	0	0	0	110
3:45 PM	0	0	33	0	0	33	0	5	0	3	1	8	0	0	59	9	0	68	0	0	0	0	0	0	109
4:00 PM	0	1	37	0	3	38	0	11	0	2	1	13	0	0	60	7	0	67	0	0	0	0	0	0	118
Peak Hour Total	0	3	119	0	4	122	0	36	0	11	3	47	0	0	229	32	0	261	0	0	0	0	0	0	430
PHF	0.000	0.750	0.804	0.000	0.333	0.803	0.000	0.750	0.000	0.917	0.750	0.783	0.000	0.000	0.909	0.727	0.000	0.960	0.000	0.000	0.000	0.000	0.000	0.000	0.911

Total Vehicles On Leg				3429			
Vehicles Entering Intersection				1436			
Vehicles Exiting Intersection				1993			
Southbound							
Cars	0	1299	53	0	6		
Heavy	0	82	2	0	3		
Total	0	1381	55	0	9		

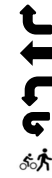


Total Vehicles on Leg 0	Eastbound	Vehicles Entering Intersection	0		
		Cars	0	0	0
		Heavy	0	0	0
		Total	0	0	0
		Vehicles Exiting Intersection	0		



Daily Volumes

Cars	95	9	104
Heavy	0	0	0
Total	311	8	319
Cars	0	0	0
Heavy	49	9	58
Total	49	9	58



Cars	26	1	0	1808	340
Heavy	2	0	0	81	10
Total	28	1	0	1889	350
Northbound					
Vehicles Entering Intersection			2240		
Vehicles Exiting Intersection			1701		
Total Vehicles On Leg			3941		



ANOKA COUNTY HIGHWAY

PC - WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2477

Study Date : 09/20/2024

Signal Warrants - Summary

Major Street Approaches

Northbound: CSAH 31

Number of Lanes : 1

Total Approach Volume: 2,240

Southbound: CSAH 31

Number of Lanes : 1

Total Approach Volume: 1,436

Minor Street Approaches

Westbound: Johnson St

Number of Lanes : 1

Total Approach Volume: 423

Warrant Summary (Urban 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 2477

Study Date : 09/20/2024

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 = **False**
 Number of Major Lanes = **1**
 Number of Minor Lanes = **1**

Volume Requirements

Veh/Hr Major = **500**

Veh/Hr Minor = **150**

Time	Major Road				Total	Minor Road		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
15:45 - 16:45	268	+	126	=	394	0	35	No
15:15 - 16:15	261	+	122	=	383	0	47	No
15:30 - 16:30	258	+	123	=	381	0	41	No
16:00 - 17:00	244	+	122	=	366	0	32	No
16:30 - 17:30	249	+	116	=	365	0	31	No
16:15 - 17:15	252	+	109	=	361	0	26	No
15:00 - 16:00	250	+	108	=	358	0	40	No
16:45 - 17:45	216	+	118	=	334	0	31	No
14:45 - 15:45	216	+	98	=	314	0	40	No
17:00 - 18:00	201	+	111	=	312	0	32	No
07:00 - 08:00	102	+	187	=	289	0	27	No
14:30 - 15:30	191	+	96	=	287	0	29	No
06:45 - 07:45	105	+	179	=	284	0	22	No
14:15 - 15:15	172	+	95	=	267	0	20	No
17:15 - 18:15	150	+	110	=	260	0	33	No
07:15 - 08:15	92	+	165	=	257	0	25	No
14:00 - 15:00	159	+	97	=	256	0	19	No
06:30 - 07:30	102	+	151	=	253	0	19	No
13:45 - 14:45	164	+	87	=	251	0	22	No
07:30 - 08:30	107	+	142	=	249	0	24	No
18:00 - 19:00	164	+	77	=	241	0	24	No
17:30 - 18:30	143	+	95	=	238	0	29	No
18:15 - 19:15	166	+	65	=	231	0	22	No
13:30 - 14:30	146	+	83	=	229	0	29	No
17:45 - 18:45	147		77		224	0	23	No

ANOKA COUNTY HIGHWAY

PC - WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2477

Study Date : 09/20/2024

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 = **False**
 Number of Major Lanes = **1**
 Number of Minor Lanes = **1**

Volume Requirements

Veh/Hr Major = **750**

Veh/Hr Minor = **75**

Time	Major Road				Total	Minor Road		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
15:45 - 16:45	268	+	126	=	394	0	35	No
15:15 - 16:15	261	+	122	=	383	0	47	No
15:30 - 16:30	258	+	123	=	381	0	41	No
16:00 - 17:00	244	+	122	=	366	0	32	No
16:30 - 17:30	249	+	116	=	365	0	31	No
16:15 - 17:15	252	+	109	=	361	0	26	No
15:00 - 16:00	250	+	108	=	358	0	40	No
16:45 - 17:45	216	+	118	=	334	0	31	No
14:45 - 15:45	216	+	98	=	314	0	40	No
17:00 - 18:00	201	+	111	=	312	0	32	No
07:00 - 08:00	102	+	187	=	289	0	27	No
14:30 - 15:30	191	+	96	=	287	0	29	No
06:45 - 07:45	105	+	179	=	284	0	22	No
14:15 - 15:15	172	+	95	=	267	0	20	No
17:15 - 18:15	150	+	110	=	260	0	33	No
07:15 - 08:15	92	+	165	=	257	0	25	No
14:00 - 15:00	159	+	97	=	256	0	19	No
06:30 - 07:30	102	+	151	=	253	0	19	No
13:45 - 14:45	164	+	87	=	251	0	22	No
07:30 - 08:30	107	+	142	=	249	0	24	No
18:00 - 19:00	164	+	77	=	241	0	24	No
17:30 - 18:30	143	+	95	=	238	0	29	No
18:15 - 19:15	166	+	65	=	231	0	22	No
13:30 - 14:30	146	+	83	=	229	0	29	No
17:45 - 18:45	147		77		224	0	23	No

ANOKA COUNTY HIGHWAY

PC - WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2477

Study Date : 09/20/2024

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 = **False**
Number of Major Lanes = **1**
Number of Minor Lanes = **1**

Volume Requirements

Warrant 1A 1B
Veh/Hr Major = **400** **600**

Veh/Hr Minor = **120** **60**

Major Road
CSAH 31

Minor Road
Johnson St

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1A?
15:45 - 16:45	268	+	126	=	394	0	35	No
15:15 - 16:15	261	+	122	=	383	0	47	No
15:30 - 16:30	258	+	123	=	381	0	41	No
16:00 - 17:00	244	+	122	=	366	0	32	No
16:30 - 17:30	249	+	116	=	365	0	31	No
16:15 - 17:15	252	+	109	=	361	0	26	No
15:00 - 16:00	250	+	108	=	358	0	40	No
16:45 - 17:45	216	+	118	=	334	0	31	No
14:45 - 15:45	216	+	98	=	314	0	40	No
17:00 - 18:00	201	+	111	=	312	0	32	No
07:00 - 08:00	102	+	187	=	289	0	27	No
14:30 - 15:30	191		96		287	0	29	No

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1B?
15:45 - 16:45	268	+	126	=	394	0	35	No
15:15 - 16:15	261	+	122	=	383	0	47	No
15:30 - 16:30	258	+	123	=	381	0	41	No
16:00 - 17:00	244	+	122	=	366	0	32	No
16:30 - 17:30	249	+	116	=	365	0	31	No
16:15 - 17:15	252	+	109	=	361	0	26	No
15:00 - 16:00	250	+	108	=	358	0	40	No
16:45 - 17:45	216	+	118	=	334	0	31	No
14:45 - 15:45	216	+	98	=	314	0	40	No
17:00 - 18:00	201	+	111	=	312	0	32	No
07:00 - 08:00	102	+	187	=	289	0	27	No
14:30 - 15:30	191		96		287	0	29	No

ANOKA COUNTY HIGHWAY

PC - WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2477

Study Date : 09/20/2024

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.

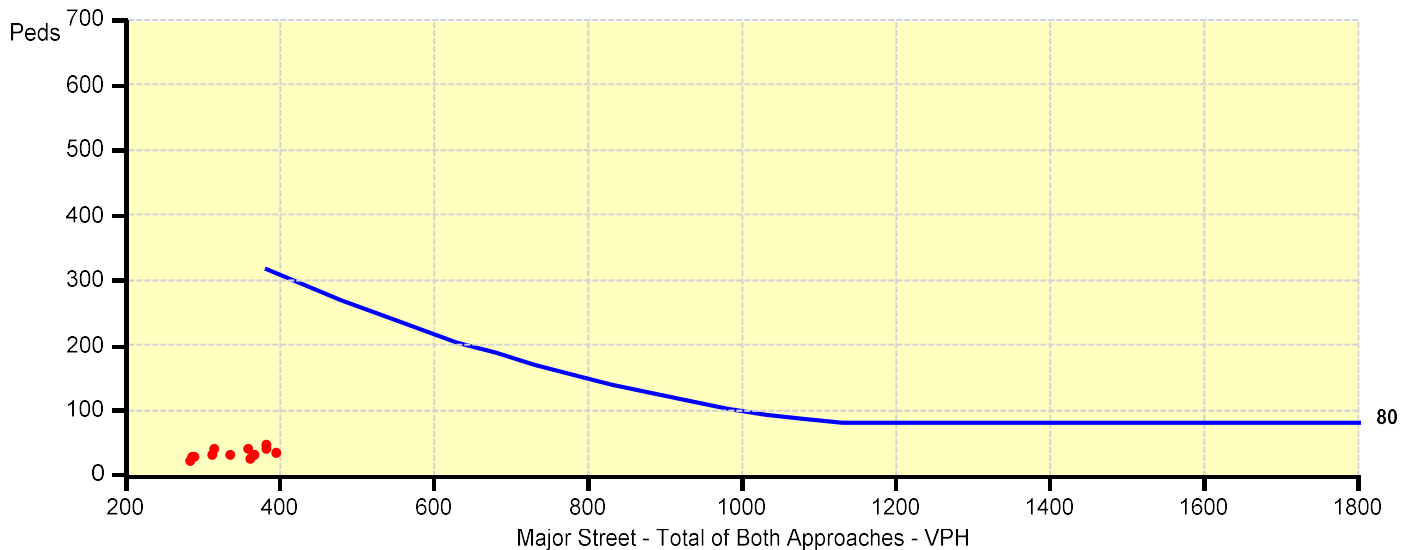
Summary

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

Site Data Required

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

Time	Major Road CSAH 31					Minor Road Johnson St		Met?
	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	
15:45 - 16:45	268	+	126	=	394	0	35	No
15:15 - 16:15	261	+	122	=	383	0	47	No
15:30 - 16:30	258	+	123	=	381	0	41	No
16:00 - 17:00	244	+	122	=	366	0	32	No
16:30 - 17:30	249	+	116	=	365	0	31	No
16:15 - 17:15	252	+	109	=	361	0	26	No
15:00 - 16:00	250	+	108	=	358	0	40	No
16:45 - 17:45	216	+	118	=	334	0	31	No
14:45 - 15:45	216	+	98	=	314	0	40	No
17:00 - 18:00	201	+	111	=	312	0	32	No
07:00 - 08:00	102	+	187	=	289	0	27	No
14:30 - 15:30	191		96		287	0	29	No



ANOKA COUNTY HIGHWAY

PC - WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2477

Study Date : 09/20/2024

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.

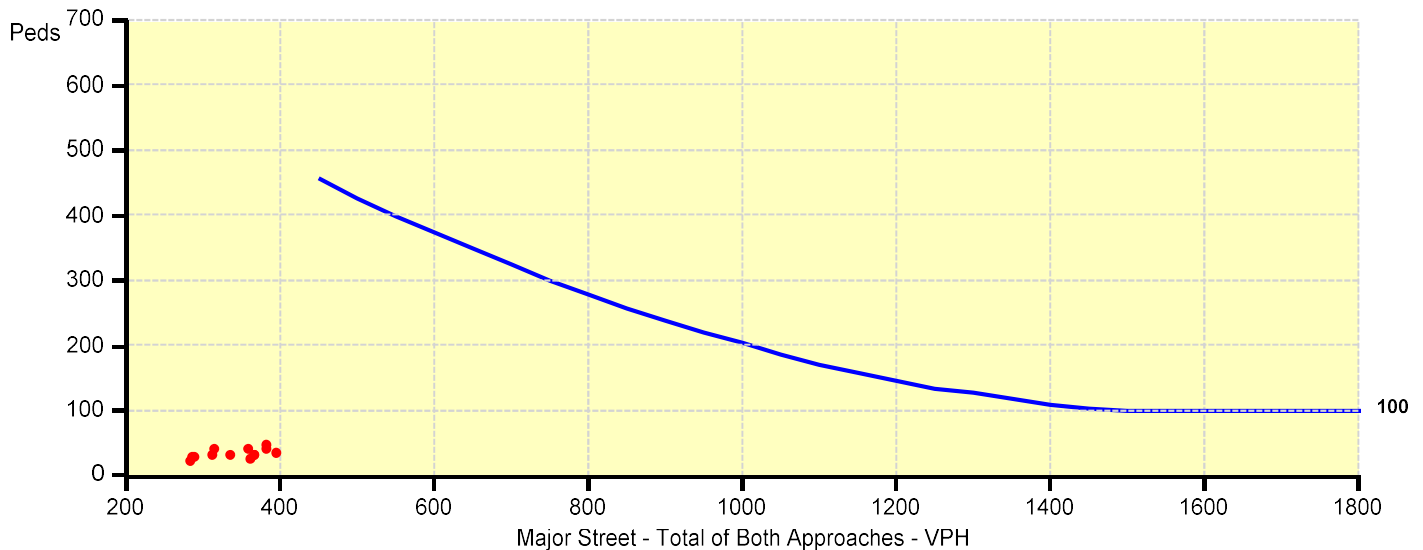
Summary

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

Site Data Required

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

Time	Major Road CSAH 31				Total	Minor Road Johnson St		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
15:45 - 16:45	268	+	126	=	394	0	35	No
15:15 - 16:15	261	+	122	=	383	0	47	No
15:30 - 16:30	258	+	123	=	381	0	41	No
16:00 - 17:00	244	+	122	=	366	0	32	No
16:30 - 17:30	249	+	116	=	365	0	31	No
16:15 - 17:15	252	+	109	=	361	0	26	No
15:00 - 16:00	250	+	108	=	358	0	40	No
16:45 - 17:45	216	+	118	=	334	0	31	No
14:45 - 15:45	216	+	98	=	314	0	40	No
17:00 - 18:00	201	+	111	=	312	0	32	No
07:00 - 08:00	102	+	187	=	289	0	27	No
14:30 - 15:30	191	+	96	=	287	0	29	No



ANOKA COUNTY HIGHWAY

PC - WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2477

Study Date : 09/20/2024

Multiway Stop Warrants - Summary

Major Street Approaches

Northbound: CSAH 31
 Number of Lanes : 1
 Total Approach Volume: 2,240

Southbound: CSAH 31
 Number of Lanes : 1
 Total Approach Volume: 1,436

Minor Street Approaches

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

Westbound: Johnson St
 Number of Lanes :1
 Total Approach Volume: 423

Warrant Summary (Urban 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?
15:15 - 16:15	383	274.3	72	48.0	300	200	No
16:30 - 17:30	365		54				
07:00 - 08:00	289		62				
14:15 - 15:15	267		35				
17:30 - 18:30	238		46				
12:00 - 13:00	219		36				
13:15 - 14:15	217		40				
10:45 - 11:45	216		39				
18:30 - 19:30	205		35				
08:00 - 09:00	195		46				
09:15 - 10:15	171		37				
06:00 - 07:00	160		35				

Criteria D Volume Summary

Time	Major Total	Major Avg	Minor Total	Minor Avg	Major Crit	Minor Crit	Meets?
15:15 - 16:15	383	274.3	72	48.0	240	160	No
16:30 - 17:30	365		54				
07:00 - 08:00	289		62				
14:15 - 15:15	267		35				
17:30 - 18:30	238		46				
12:00 - 13:00	219		36				
13:15 - 14:15	217		40				
10:45 - 11:45	216		39				
18:30 - 19:30	205		35				
08:00 - 09:00	195		46				
09:15 - 10:15	171		37				
06:00 - 07:00	160		35				