

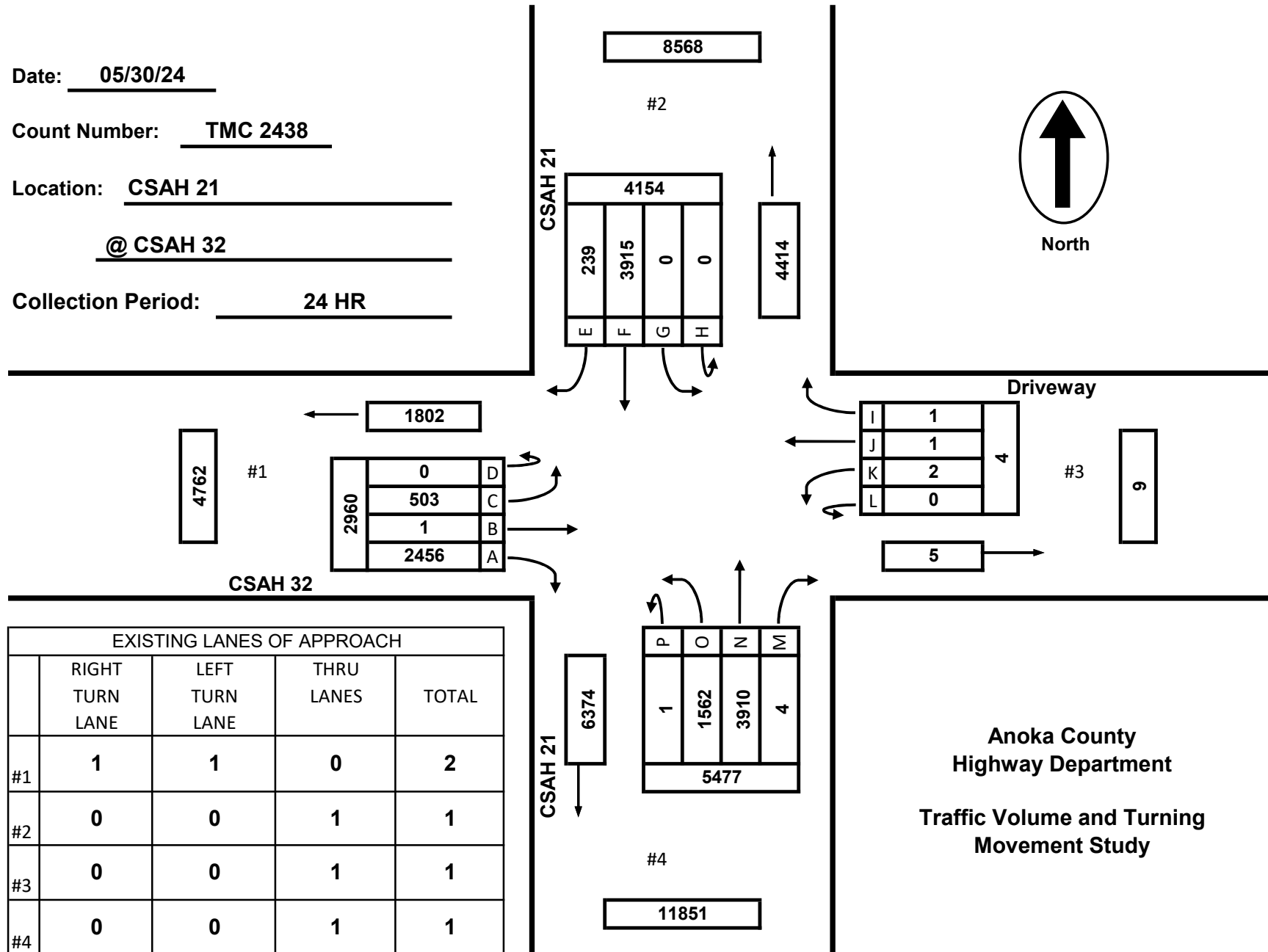
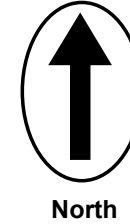
Date: 05/30/24

Count Number: TMC 2438

Location: CSAH 21

@ CSAH 32

Collection Period: 24 HR



8568

#2

4154			
239	3915	0	0
E	F	G	H

4414

Driveway

I	1	4
J	1	
K	2	
L	0	

#3

9

5

4762

#1

1802

0	D
503	C
1	B
2456	A

CSAH 32

P	O	N	M
1	1562	3910	4
5477			

#4

11851

6374

CSAH 21

EXISTING LANES OF APPROACH				
	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	TOTAL
#1	1	1	0	2
#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: 05/30/24

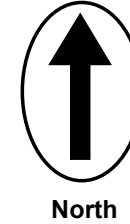
Count Number: TMC 2438

Location: CSAH 21

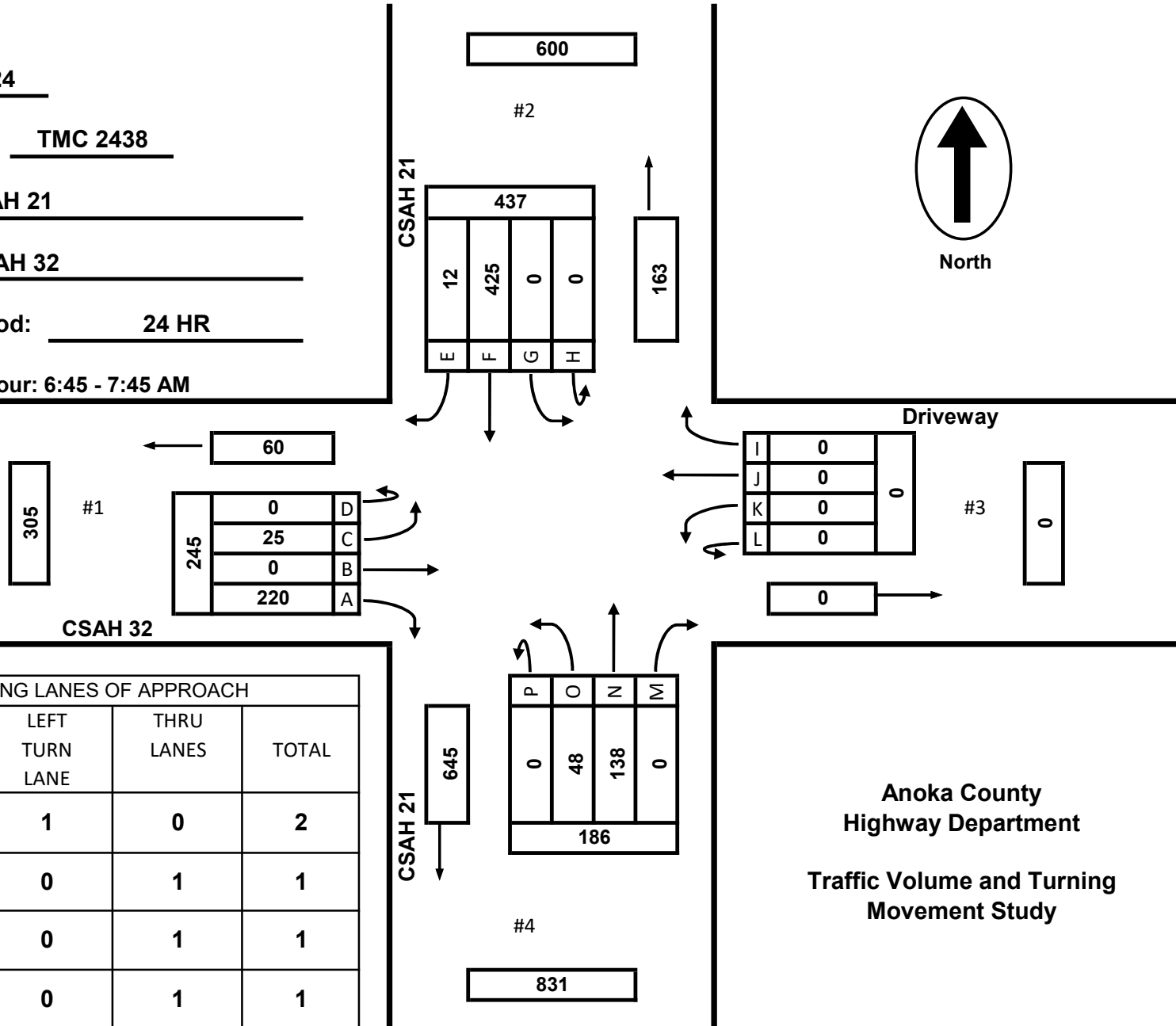
@ CSAH 32

Collection Period: 24 HR

Peak Hour: 6:45 - 7:45 AM



North



EXISTING LANES OF APPROACH				
	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	TOTAL
#1	1	1	0	2
#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: 05/30/24

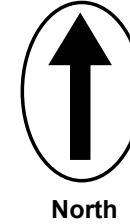
Count Number: TMC 2438

Location: CSAH 21

@ CSAH 32

Collection Period: 24 HR

Peak Hour: 4:30 - 5:30 PM



North

825

#2

CSAH 21

344			
22	322	0	0
E	F	G	H

481

Driveway

I	0	0
J	0	
K	0	
L	0	

#3

0

0

510

#1

302	0	D
	43	C
	0	B
	259	A

CSAH 32

208

P	O	N	M
0	186	438	0
624			

#4

1205

CSAH 21

581

Anoka County
Highway Department

Traffic Volume and Turning
Movement Study

EXISTING LANES OF APPROACH

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

TMC 2438 - CSAH 21 @ CSAH 32
Lino Lakes MN
Thursday, May 30, 2024

Time	Southbound CSAH 21						Westbound Driveway						Northbound CSAH 21						Eastbound CSAH 32						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	0	0	0	0	0	0	2	6	0	0	0	0	0	0	1	0	1	11	
12:15 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	1	4	0	0	0	0	0	0	3	0	3	9	
12:30 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	4	
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	0	0	1	0	0	1	6	
Hourly Total	0	0	4	0	0	4	0	0	0	0	0	0	0	6	14	0	0	0	20	0	2	0	4	0	6	30
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	4	0	2	0	2	0	4	8
1:15 AM	0	0	0	2	0	2	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	4	
1:30 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2	
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
Hourly Total	0	0	1	2	0	3	0	0	0	0	0	0	0	2	3	0	0	0	5	0	4	0	2	0	6	14
2:00 AM	0	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3	
2:15 AM	0	0	2	0	0	2	0	0	0	0	0	0	0	0	4	0	0	0	4	0	2	0	2	0	4	10
2:30 AM	0	0	0	1	0	1	0	0	0	0	0	0	0	1	3	0	0	0	4	0	0	0	1	0	1	6
2:45 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2	
Hourly Total	0	0	4	2	0	6	0	0	0	0	0	0	0	1	7	0	0	0	8	0	4	0	3	0	7	21
3:00 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	3
3:15 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	2	0	3	5	
3:30 AM	0	0	8	0	0	8	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	2	0	3	12	
3:45 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	3	
Hourly Total	0	0	11	0	0	11	0	0	0	0	0	0	0	2	2	0	0	4	0	2	0	6	0	8	23	
4:00 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	
4:15 AM	0	0	8	0	0	8	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	6	0	7	16	
4:30 AM	0	0	4	0	0	4	0	1	0	0	0	1	0	2	6	0	0	8	0	1	0	8	0	9	22	
4:45 AM	0	0	16	0	0	16	0	0	0	0	0	0	0	2	5	0	0	7	0	0	0	8	0	8	31	
Hourly Total	0	0	29	0	0	29	0	1	0	0	0	1	0	4	12	0	0	16	0	2	0	23	0	25	71	
5:00 AM	0	0	18	0	0	18	0	0	0	0	0	0	0	2	4	0	0	6	0	0	0	9	0	9	33	
5:15 AM	0	0	29	1	0	30	0	0	0	0	0	0	0	2	4	0	0	6	0	4	0	10	0	14	50	
5:30 AM	0	0	55	0	0	55	0	0	0	0	0	0	0	2	4	0	0	6	0	0	0	12	0	12	73	
5:45 AM	0	0	52	1	0	53	0	0	0	0	0	0	0	4	11	0	0	15	0	1	0	26	0	27	95	
Hourly Total	0	0	154	2	0	156	0	0	0	0	0	0	0	10	23	0	0	33	0	5	0	57	0	62	251	
6:00 AM	0	0	48	2	0	50	0	0	0	0	0	0	0	7	14	0	0	21	0	4	0	24	0	28	99	
6:15 AM	0	0	63	0	0	63	0	0	0	0	0	0	0	3	8	0	0	11	0	6	0	21	0	27	101	
6:30 AM	0	0	101	3	0	104	0	0	0	0	0	0	0	8	22	0	0	30	0	3	0	37	0	40	174	
6:45 AM	0	0	96	3	0	99	0	0	0	0	0	0	0	8	40	0	0	48	0	8	0	44	0	52	199	
Hourly Total	0	0	308	8	0	316	0	0	0	0	0	0	0	26	84	0	0	110	0	21	0	126	0	147	573	
7:00 AM	0	0	103	2	0	105	0	0	0	0	0	0	0	9	40	0	0	49	0	6	0	60	0	66	220	
7:15 AM	0	0	123	2	0	125	0	0	0	0	0	0	0	15	22	0	0	37	0	8	0	56	0	64	226	
7:30 AM	0	0	103	5	0	108	0	0	0	0	0	0	0	16	36	0	0	52	0	3	0	60	0	63	223	
7:45 AM	0	0	96	4	0	100	0	0	0	0	0	0	0	12	38	0	0	50	0	6	0	43	0	49	199	
Hourly Total	0	0	425	13	0	438	0	0	0	0	0	0	0	52	136	0	0	188	0	23	0	219	0	242	868	

TMC 2438 - CSAH 21 @ CSAH 32
Lino Lakes MN
Thursday, May 30, 2024

Time	Southbound CSAH 21						Westbound Driveway						Northbound CSAH 21						Eastbound CSAH 32						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	96	6	0	102	0	0	0	0	0	0	0	15	41	0	0	56	0	6	0	42	0	48	206
8:15 AM	0	0	93	5	0	98	0	0	0	0	0	0	0	16	46	0	0	62	0	6	0	47	0	53	213
8:30 AM	0	0	90	4	0	94	0	0	0	0	0	0	0	19	41	0	0	60	0	5	0	36	0	41	195
8:45 AM	0	0	66	2	0	68	0	0	0	0	0	0	0	13	39	0	0	52	0	16	0	33	0	49	169
Hourly Total	0	0	345	17	0	362	0	0	0	0	0	0	0	63	167	0	0	230	0	33	0	158	0	191	783
9:00 AM	0	0	63	6	0	69	0	0	0	0	0	0	0	12	40	0	0	52	0	10	0	40	0	50	171
9:15 AM	0	0	73	4	0	77	0	0	0	0	0	0	0	17	32	0	0	49	0	12	0	32	0	44	170
9:30 AM	0	0	62	4	0	66	0	0	0	0	0	0	0	15	39	0	0	54	0	7	0	43	0	50	170
9:45 AM	0	0	63	3	0	66	0	0	0	0	0	0	0	18	30	0	0	48	0	5	0	49	0	54	168
Hourly Total	0	0	261	17	0	278	0	0	0	0	0	0	0	62	141	0	0	203	0	34	0	164	0	198	679
10:00 AM	0	0	64	3	0	67	0	0	0	0	0	0	0	18	34	0	0	52	0	9	0	40	0	49	168
10:15 AM	0	0	48	3	0	51	0	0	0	0	0	0	0	20	38	0	0	58	0	5	0	23	0	28	137
10:30 AM	0	0	49	7	0	56	0	0	0	0	0	0	0	8	46	0	0	54	0	8	0	44	0	52	162
10:45 AM	0	0	50	2	0	52	0	0	0	0	0	0	0	15	50	0	0	65	0	12	1	38	0	51	168
Hourly Total	0	0	211	15	0	226	0	0	0	0	0	0	0	61	168	0	0	229	0	34	1	145	0	180	635
11:00 AM	0	0	51	8	0	59	0	0	0	0	0	0	0	15	26	0	0	41	0	9	0	29	0	38	138
11:15 AM	0	0	44	1	0	45	0	0	0	0	0	0	0	26	48	1	0	75	0	2	0	37	0	39	159
11:30 AM	0	0	47	3	0	50	0	1	0	0	0	1	0	17	57	0	0	74	0	7	0	20	0	27	152
11:45 AM	0	0	59	6	0	65	0	0	1	0	0	1	0	20	50	2	0	72	0	3	0	33	0	36	174
Hourly Total	0	0	201	18	0	219	0	1	1	0	0	2	0	78	181	3	0	262	0	21	0	119	0	140	623
12:00 PM	0	0	49	4	0	53	0	0	0	0	0	0	0	15	45	0	0	60	0	7	0	28	0	35	148
12:15 PM	0	0	39	2	0	41	0	0	0	0	0	0	0	15	49	0	0	64	0	4	0	30	0	34	139
12:30 PM	0	0	55	3	0	58	0	0	0	0	0	0	0	16	53	0	0	69	0	8	0	31	0	39	166
12:45 PM	0	0	59	4	0	63	0	0	0	0	0	0	0	28	33	0	0	61	0	1	0	44	0	45	169
Hourly Total	0	0	202	13	0	215	0	0	0	0	0	0	0	74	180	0	0	254	0	20	0	133	0	153	622
1:00 PM	0	0	41	5	0	46	0	0	0	0	0	0	0	27	65	0	0	92	0	4	0	30	0	34	172
1:15 PM	0	0	53	3	0	56	0	0	0	0	0	0	0	29	62	0	0	91	0	5	0	26	0	31	178
1:30 PM	0	0	54	1	0	55	0	0	0	0	0	0	0	17	66	0	0	83	0	10	0	28	0	38	176
1:45 PM	0	0	48	2	0	50	0	0	0	0	0	0	0	24	59	0	0	83	0	7	0	32	0	39	172
Hourly Total	0	0	196	11	0	207	0	0	0	0	0	0	0	97	252	0	0	349	0	26	0	116	0	142	698
2:00 PM	0	0	55	3	0	58	0	0	0	0	0	0	0	21	57	0	0	78	0	10	0	29	0	39	175
2:15 PM	0	0	49	0	0	49	0	0	0	0	0	0	0	29	61	0	0	90	0	7	0	37	0	44	183
2:30 PM	0	0	39	1	0	40	0	0	0	0	0	0	0	35	81	0	0	116	0	9	0	43	0	52	208
2:45 PM	0	0	36	3	0	39	0	0	0	1	0	1	0	26	88	0	0	114	0	7	0	43	0	50	204
Hourly Total	0	0	179	7	0	186	0	0	0	1	0	1	0	111	287	0	0	398	0	33	0	152	0	185	770
3:00 PM	0	0	55	4	0	59	0	0	0	0	0	0	0	30	86	0	0	116	0	8	0	32	0	40	215
3:15 PM	0	0	48	7	0	55	0	0	0	0	0	0	0	37	115	0	0	152	0	15	0	49	0	64	271
3:30 PM	0	0	55	6	0	61	0	0	0	0	0	0	0	49	114	0	0	163	0	13	0	37	0	50	274
3:45 PM	0	0	75	5	0	80	0	0	0	0	0	0	0	47	126	0	0	173	0	13	0	44	0	57	310
Hourly Total	0	0	233	22	0	255	0	0	0	0	0	0	0	163	441	0	0	604	0	49	0	162	0	211	1070

TMC 2438 - CSAH 21 @ CSAH 32
Lino Lakes MN
Thursday, May 30, 2024

Time	Southbound CSAH 21						Westbound Driveway						Northbound CSAH 21						Eastbound CSAH 32						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	0	62	6	0	68	0	0	0	0	0	0	0	41	120	0	0	161	0	7	0	56	0	63	292	
4:15 PM	0	0	76	8	0	84	0	0	0	0	0	0	0	47	106	1	0	154	0	12	0	60	0	72	310	
4:30 PM	0	0	76	4	0	80	0	0	0	0	0	0	0	57	119	0	0	176	0	10	0	62	0	72	328	
4:45 PM	0	0	76	3	0	79	0	0	0	0	0	0	0	36	119	0	0	155	0	9	0	83	0	92	326	
Hourly Total	0	0	290	21	0	311	0	0	0	0	0	0	0	181	464	1	0	646	0	38	0	261	0	299	1256	
5:00 PM	0	0	85	7	0	92	0	0	0	0	0	0	0	49	96	0	0	145	0	12	0	53	0	65	302	
5:15 PM	0	0	85	8	0	93	0	0	0	0	0	0	0	44	104	0	0	148	0	12	0	61	0	73	314	
5:30 PM	0	0	70	5	0	75	0	0	0	0	0	0	0	35	116	0	0	151	0	11	0	52	0	63	289	
5:45 PM	0	0	56	0	0	56	0	0	0	0	0	0	0	43	93	0	0	136	0	13	0	57	0	70	262	
Hourly Total	0	0	296	20	0	316	0	0	0	0	0	0	0	171	409	0	0	580	0	48	0	223	0	271	1167	
6:00 PM	0	0	62	2	0	64	0	0	0	0	0	0	0	37	74	0	0	111	0	7	0	30	0	37	212	
6:15 PM	0	0	57	2	0	59	0	0	0	0	0	0	0	26	86	0	0	112	0	10	0	42	0	52	223	
6:30 PM	0	0	45	1	0	46	0	0	0	0	0	0	0	31	62	0	0	93	0	12	0	38	0	50	189	
6:45 PM	0	0	52	7	0	59	0	0	0	0	0	0	0	22	70	0	0	92	0	7	0	35	0	42	193	
Hourly Total	0	0	216	12	0	228	0	0	0	0	0	0	0	116	292	0	0	408	0	36	0	145	0	181	817	
7:00 PM	0	0	43	2	0	45	0	0	0	0	0	0	0	1	25	54	0	0	80	0	9	0	24	0	33	158
7:15 PM	0	0	34	7	0	41	0	0	0	0	0	0	0	23	48	0	0	71	0	9	0	28	0	37	149	
7:30 PM	0	0	31	5	0	36	0	0	0	0	0	0	0	24	53	0	0	77	0	2	0	23	0	25	138	
7:45 PM	0	0	33	3	0	36	0	0	0	0	0	0	0	27	51	0	0	78	0	4	0	21	0	25	139	
Hourly Total	0	0	141	17	0	158	0	0	0	0	0	0	0	99	206	0	0	306	0	24	0	96	0	120	584	
8:00 PM	0	0	28	1	0	29	0	0	0	0	0	0	0	23	50	0	0	73	0	9	0	22	0	31	133	
8:15 PM	0	0	30	1	0	31	0	0	0	0	0	0	0	25	57	0	0	82	0	0	0	15	0	15	128	
8:30 PM	0	0	27	3	0	30	0	0	0	0	0	0	0	17	37	0	0	54	0	6	0	14	0	20	104	
8:45 PM	0	0	21	2	0	23	0	0	0	0	0	0	0	22	44	0	0	66	0	6	0	10	0	16	105	
Hourly Total	0	0	106	7	0	113	0	0	0	0	0	0	0	87	188	0	0	275	0	21	0	61	0	82	470	
9:00 PM	0	0	19	2	0	21	0	0	0	0	0	0	0	20	35	0	0	55	0	3	0	19	0	22	98	
9:15 PM	0	0	15	2	0	17	0	0	0	0	0	0	0	15	26	0	0	41	0	5	0	11	0	16	74	
9:30 PM	0	0	7	2	0	9	0	0	0	0	0	0	0	11	39	0	0	50	0	5	0	9	0	14	73	
9:45 PM	0	0	12	1	0	13	0	0	0	0	0	0	0	7	30	0	0	37	0	2	0	10	0	12	62	
Hourly Total	0	0	53	7	0	60	0	0	0	0	0	0	0	53	130	0	0	183	0	15	0	49	0	64	307	
10:00 PM	0	0	13	0	0	13	0	0	0	0	0	0	0	10	21	0	0	31	0	1	0	6	0	7	51	
10:15 PM	0	0	11	2	0	13	0	0	0	0	0	0	0	7	27	0	0	34	0	1	0	8	0	9	56	
10:30 PM	0	0	4	2	0	6	0	0	0	0	0	0	0	8	18	0	0	26	0	0	0	4	0	4	36	
10:45 PM	0	0	5	1	0	6	0	0	0	0	0	0	0	5	14	0	0	19	0	2	0	1	0	3	28	
Hourly Total	0	0	33	5	0	38	0	0	0	0	0	0	0	30	80	0	0	110	0	4	0	19	0	23	171	
11:00 PM	0	0	5	0	0	5	0	0	0	0	0	0	0	4	19	0	0	23	0	1	0	3	0	4	32	
11:15 PM	0	0	7	2	0	9	0	0	0	0	0	0	0	4	10	0	0	14	0	0	0	4	0	4	27	
11:30 PM	0	0	1	0	0	1	0	0	0	0	0	0	0	1	10	0	0	11	0	0	0	3	0	3	15	
11:45 PM	0	0	3	1	0	4	0	0	0	0	0	0	0	4	4	0	0	8	0	3	0	3	0	6	18	
Hourly Total	0	0	16	3	0	19	0	0	0	0	0	0	0	13	43	0	0	56	0	4	0	13	0	17	92	
DAILY TOTAL	0	0	3915	239	0	4154	0	2	1	1	0	4	1	1562	3910	4	0	5477	0	503	1	2456	0	2960	12595	
Cars	0	0	3847	224	0	4071	0	2	1	1	0	4	1	1538	3836	4	0	5379	0	482	1	2419	0	2902	12356	
Heavy Vehicles	0	0	68	15	0	83	0	0	0	0	0	0	0	24	74	0	0	98	0	21	0	37	0	58	239	
Heavy Vehicle %	0.00%	0.00%	1.74%	6.28%	0.00%	2.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.54%	1.89%	0.00%	0.00%	1.79%	0.00%	4.17%	0.00%	1.51%	0.00%	1.96%	1.90%	

TMC 2438 - CSAH 21 @ CSAH 32
Lino Lakes MN
Thursday, May 30, 2024

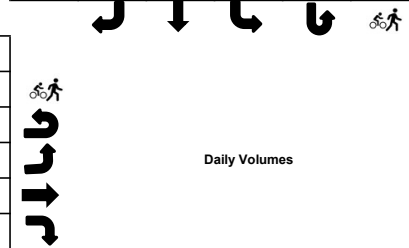
AM Peak Hour

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	0	96	3	0	99	0	0	0	0	0	0	0	8	40	0	0	48	0	8	0	44	0	52	199
7:00 AM	0	0	103	2	0	105	0	0	0	0	0	0	0	9	40	0	0	49	0	6	0	60	0	66	220
7:15 AM	0	0	123	2	0	125	0	0	0	0	0	0	0	15	22	0	0	37	0	8	0	56	0	64	226
7:30 AM	0	0	103	5	0	108	0	0	0	0	0	0	0	16	36	0	0	52	0	3	0	60	0	63	223
Peak Hour Total	0	0	425	12	0	437	0	0	0	0	0	0	0	48	138	0	0	186	0	25	0	220	0	245	868
PHF	0.000	0.000	0.864	0.600	0.000	0.874	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.863	0.000	0.000	0.894	0.000	0.781	0.000	0.917	0.000	0.928	0.960

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	
4:30 PM	0	0	76	4	0	80	0	0	0	0	0	0	0	57	119	0	0	176	0	10	0	62	0	72	328
4:45 PM	0	0	76	3	0	79	0	0	0	0	0	0	0	36	119	0	0	155	0	9	0	83	0	92	326
5:00 PM	0	0	85	7	0	92	0	0	0	0	0	0	0	49	96	0	0	145	0	12	0	53	0	65	302
5:15 PM	0	0	85	8	0	93	0	0	0	0	0	0	0	44	104	0	0	148	0	12	0	61	0	73	314
Peak Hour Total	0	0	322	22	0	344	0	0	0	0	0	0	0	186	438	0	0	624	0	43	0	259	0	302	1270
PHF	0.000	0.000	0.947	0.688	0.000	0.925	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.816	0.920	0.000	0.000	0.886	0.000	0.896	0.000	0.780	0.000	0.821	0.968

Total Vehicles On Leg		8568	
Vehicles Entering Intersection	4154	Vehicles Exiting Intersection	4414
Southbound			
Cars	224	3847	0
Heavy	15	68	0
Total	239	3915	0



Total Vehicles on Leg 4762	Vehicles Entering Intersection 2960	Eastbound	Cars	Heavy	Total	
			0	0	0	
	0		0	0		
	482		21	503		
	1		0	1		
Vehicles Exiting Intersection 1802		2419	37	2456		

Cars	Heavy	Total	Westbound	Vehicles Entering Intersection 4	Total Vehicles on Leg 9
1	0	1			
1	0	1			
2	0	2			
0	0	0			
0	0	0	Vehicles Exiting Intersection 5		

Cars	0	1	1538	3836	4
Heavy	0	0	24	74	0
Total	0	1	1562	3910	4
Northbound					
Vehicles Entering Intersection	5477	Vehicles Exiting Intersection	6374		
Total Vehicles On Leg	11851				

ANOKA COUNTY HIGHWAY

PC - WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 06/04/2024

Signal Warrants - Summary

Major Street Approaches

Northbound: CSAH 21

Number of Lanes : 1

Total Approach Volume: 5,477

Southbound: CSAH 21

Number of Lanes : 1

Total Approach Volume: 4,154

Minor Street Approaches

Eastbound: CSAH 32

Number of Lanes : 1

Total Approach Volume: 2,960

Westbound: Driveway

Number of Lanes : 1

Total Approach Volume: 4

Warrant Summary (Rural Values Apply)

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

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

Required volumes reached for 14 hours, 8 are needed

Warrant 1B - Interruption of Continuous Traffic.....Satisfied

Required volumes reached for 9 hours, 8 are needed

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

Required 1A volumes reached for 15 hours, 8 are needed

Required 1B volumes reached for 14 hours, 8 are needed

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

Number of hours (13) volumes exceed minimum >= minimum required (4).

Warrant 3 - Peak Hour.....Satisfied

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

Number of one hour periods (22) 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:

Study Date : 06/04/2024

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

14 one hour periods meet minimums.
Warrant IS 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	646	+	311	=	957	299	0	Yes
17:00 - 18:00	580	+	316	=	896	271	0	Yes
15:00 - 16:00	604	+	255	=	859	211	0	Yes
18:00 - 19:00	408	+	228	=	636	181	0	Yes
07:00 - 08:00	188	+	438	=	626	242	0	Yes
08:00 - 09:00	230	+	362	=	592	191	0	Yes
14:00 - 15:00	398	+	186	=	584	185	1	Yes
13:00 - 14:00	349	+	207	=	556	142	0	Yes
11:00 - 12:00	262	+	219	=	481	140	2	Yes
09:00 - 10:00	203	+	278	=	481	198	0	Yes
12:00 - 13:00	254	+	215	=	469	153	0	Yes
19:00 - 20:00	306	+	158	=	464	120	0	Yes
10:00 - 11:00	229	+	226	=	455	180	0	Yes
06:00 - 07:00	110	+	316	=	426	147	0	Yes
20:00 - 21:00	275	+	113	=	388	82	0	No
20:15 - 21:15	257	+	105	=	362	73	0	No
05:45 - 06:45	77	+	270	=	347	122	0	No
20:30 - 21:30	216	+	91	=	307	74	0	No
20:45 - 21:45	212	+	70	=	282	68	0	No
05:30 - 06:30	53	+	221	=	274	94	0	No
21:00 - 22:00	183	+	60	=	243	64	0	No
05:15 - 06:15	48	+	188	=	236	81	0	No
21:15 - 22:15	159	+	52	=	211	49	0	No
21:30 - 22:30	152	+	48	=	200	42	0	No
05:00 - 06:00	33		156		189	62	0	No

ANOKA COUNTY HIGHWAY

PC - WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 06/04/2024

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

9 one hour periods meet minimums.
Warrant IS 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	
16:30 - 17:30	624	+	344	=	968	302	0	Yes
15:30 - 16:30	651	+	293	=	944	242	0	Yes
17:30 - 18:30	510	+	254	=	764	222	0	Yes
14:30 - 15:30	498	+	193	=	691	206	1	Yes
07:30 - 08:30	220	+	408	=	628	213	0	Yes
06:30 - 07:30	164	+	433	=	597	222	0	Yes
13:30 - 14:30	334	+	212	=	546	160	0	Yes
12:30 - 13:30	313	+	223	=	536	149	0	Yes
18:30 - 19:30	336	+	191	=	527	162	0	Yes
08:30 - 09:30	213	+	308	=	521	184	0	No
06:15 - 07:15	138	+	371	=	509	185	0	No
12:15 - 13:15	286	+	208	=	494	152	0	No
11:15 - 12:15	281	+	213	=	494	137	2	No
08:45 - 09:45	207	+	280	=	487	193	0	No
11:45 - 12:45	265	+	217	=	482	144	1	No
11:00 - 12:00	262	+	219	=	481	140	2	No
09:00 - 10:00	203	+	278	=	481	198	0	No
11:30 - 12:30	270	+	209	=	479	132	2	No
09:15 - 10:15	203	+	276	=	479	197	0	No
12:00 - 13:00	254	+	215	=	469	153	0	No
09:30 - 10:30	212	+	250	=	462	181	0	No
10:45 - 11:45	255	+	206	=	461	155	1	No
10:00 - 11:00	229	+	226	=	455	180	0	No
09:45 - 10:45	212	+	240	=	452	183	0	No
10:30 - 11:30	235		212		447	180	0	No

ANOKA COUNTY HIGHWAY

PC - WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 06/04/2024

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

15 hours meet 1A minimums.
14 hours meet 1B minimums.
Warrant IS 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 21

Minor Road CSAH 32

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1A?
15:45 - 16:45	664	+	312	=	976	264	0	Yes
16:45 - 17:45	599	+	339	=	938	293	0	Yes
14:45 - 15:45	545	+	214	=	759	204	1	Yes
17:45 - 18:45	452	+	225	=	677	209	0	Yes
06:45 - 07:45	186	+	437	=	623	245	0	Yes
07:45 - 08:45	228	+	394	=	622	191	0	Yes
13:45 - 14:45	367	+	197	=	564	174	0	Yes
12:45 - 13:45	327	+	220	=	547	148	0	Yes
18:45 - 19:45	320	+	181	=	501	137	0	Yes
08:45 - 09:45	207	+	280	=	487	193	0	Yes
11:45 - 12:45	265	+	217	=	482	144	1	Yes
10:45 - 11:45	255	+	206	=	461	155	1	Yes

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1B?
16:00 - 17:00	646	+	311	=	957	299	0	Yes
17:00 - 18:00	580	+	316	=	896	271	0	Yes
15:00 - 16:00	604	+	255	=	859	211	0	Yes
18:00 - 19:00	408	+	228	=	636	181	0	Yes
07:00 - 08:00	188	+	438	=	626	242	0	Yes
08:00 - 09:00	230	+	362	=	592	191	0	Yes
14:00 - 15:00	398	+	186	=	584	185	1	Yes
13:00 - 14:00	349	+	207	=	556	142	0	Yes
09:00 - 10:00	203	+	278	=	481	198	0	Yes
11:00 - 12:00	262	+	219	=	481	140	2	Yes
12:00 - 13:00	254	+	215	=	469	153	0	Yes
19:00 - 20:00	306	+	158	=	464	120	0	Yes

ANOKA COUNTY HIGHWAY

PC - WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 06/04/2024

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.

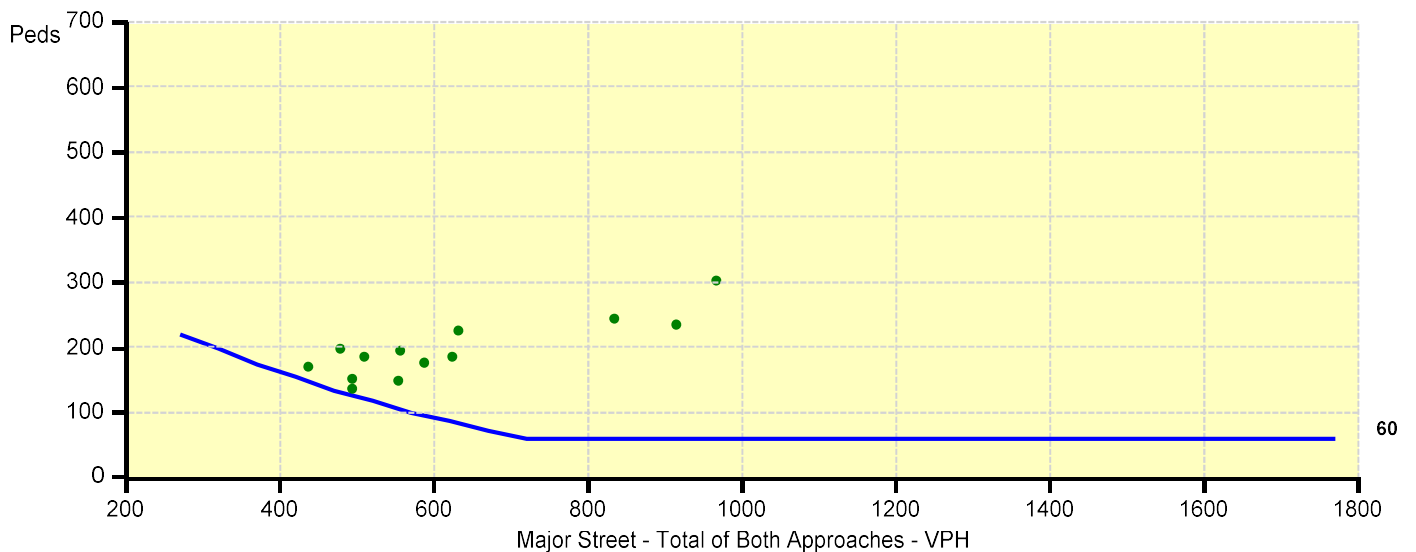
Summary

13 one hour periods meet minimums.
Warrant IS met.

Site Data Required

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

Time	Major Road CSAH 21				Total	Minor Road CSAH 32		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
16:15 - 17:15	630	+	335	=	965	301	0	Yes
15:15 - 16:15	649	+	264	=	913	234	0	Yes
17:15 - 18:15	546	+	288	=	834	243	0	Yes
07:15 - 08:15	195	+	435	=	630	224	0	Yes
14:15 - 15:15	436	+	187	=	623	186	1	Yes
18:15 - 19:15	377	+	209	=	586	177	0	Yes
08:15 - 09:15	226	+	329	=	555	193	0	Yes
13:15 - 14:15	335	+	219	=	554	147	0	Yes
06:15 - 07:15	138	+	371	=	509	185	0	Yes
12:15 - 13:15	286	+	208	=	494	152	0	Yes
11:15 - 12:15	281	+	213	=	494	137	2	Yes
09:15 - 10:15	203		276		479	197	0	Yes



ANOKA COUNTY HIGHWAY

PC - WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 06/04/2024

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

24 one hour periods meet minimums.
Warrant IS met.

Site Data Required

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

Time	Major Road				Minor Road			Met?
	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	
15:45 - 16:45	664	+	312	=	976	264	0	Yes
16:30 - 17:30	624	+	344	=	968	302	0	Yes
16:15 - 17:15	630	+	335	=	965	301	0	Yes
16:00 - 17:00	646	+	311	=	957	299	0	Yes
15:30 - 16:30	651	+	293	=	944	242	0	Yes
16:45 - 17:45	599	+	339	=	938	293	0	Yes
15:15 - 16:15	649	+	264	=	913	234	0	Yes
17:00 - 18:00	580	+	316	=	896	271	0	Yes
15:00 - 16:00	604	+	255	=	859	211	0	Yes
17:15 - 18:15	546	+	288	=	834	243	0	Yes
17:30 - 18:30	510	+	254	=	764	222	0	Yes
14:45 - 15:45	545		214		759	204	1	Yes

