

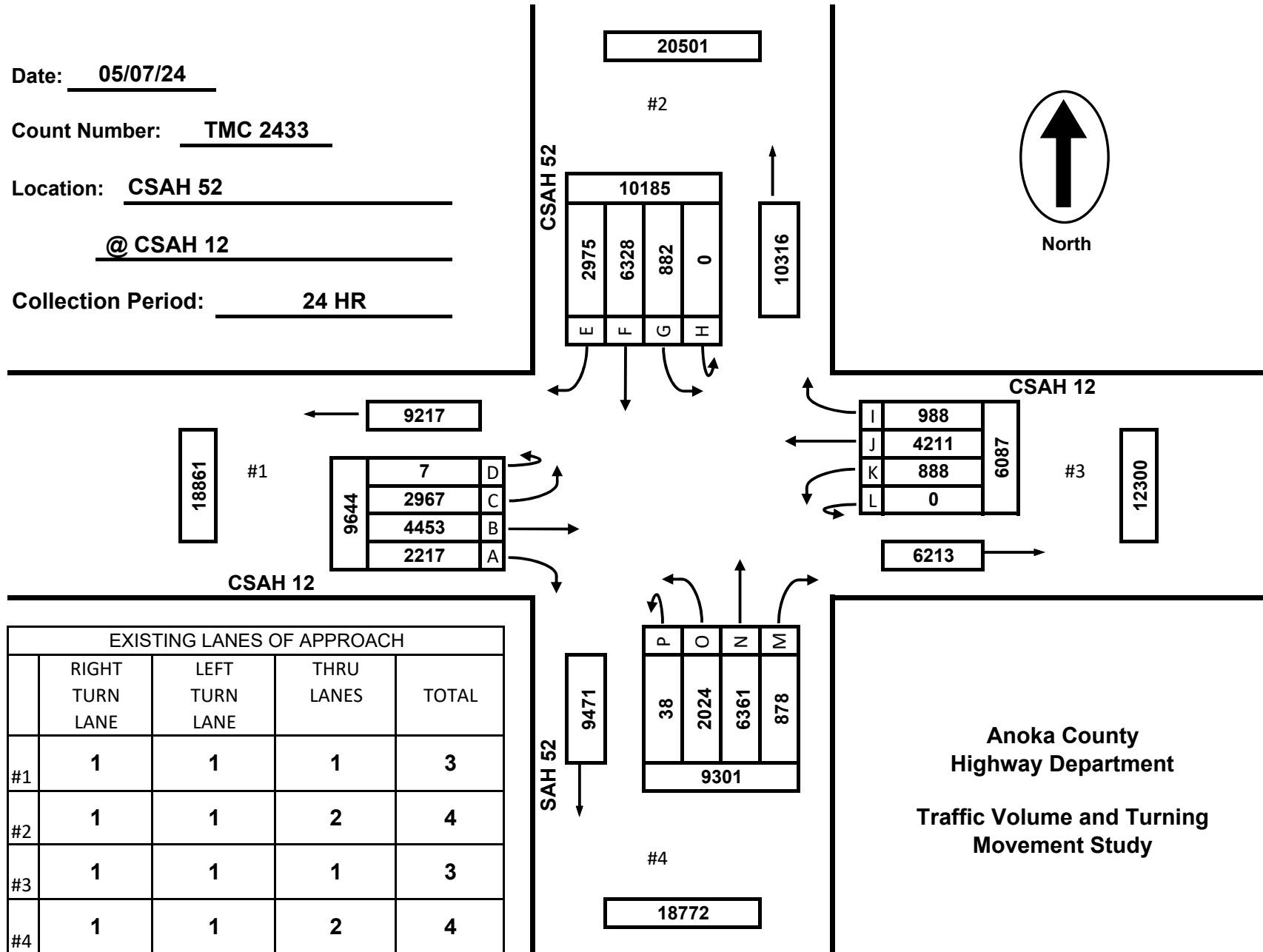
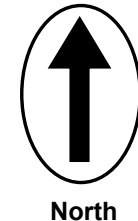
Date: 05/07/24

Count Number: TMC 2433

Location: CSAH 52

@ CSAH 12

Collection Period: 24 HR



20501

#2

10185			
E	F	G	H
2975	6328	882	0

10316

North

18861

#1

9644	7	D
	2967	C
	4453	B
	2217	A

9217

CSAH 12

I	988	6087
J	4211	
K	888	
L	0	

#3

12300

6213

CSAH 12

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

SAH 52

9471

P	O	N	M
38	2024	6361	878
9301			

#4

18772

Anoka County Highway Department
Traffic Volume and Turning Movement Study

Date: 05/07/24

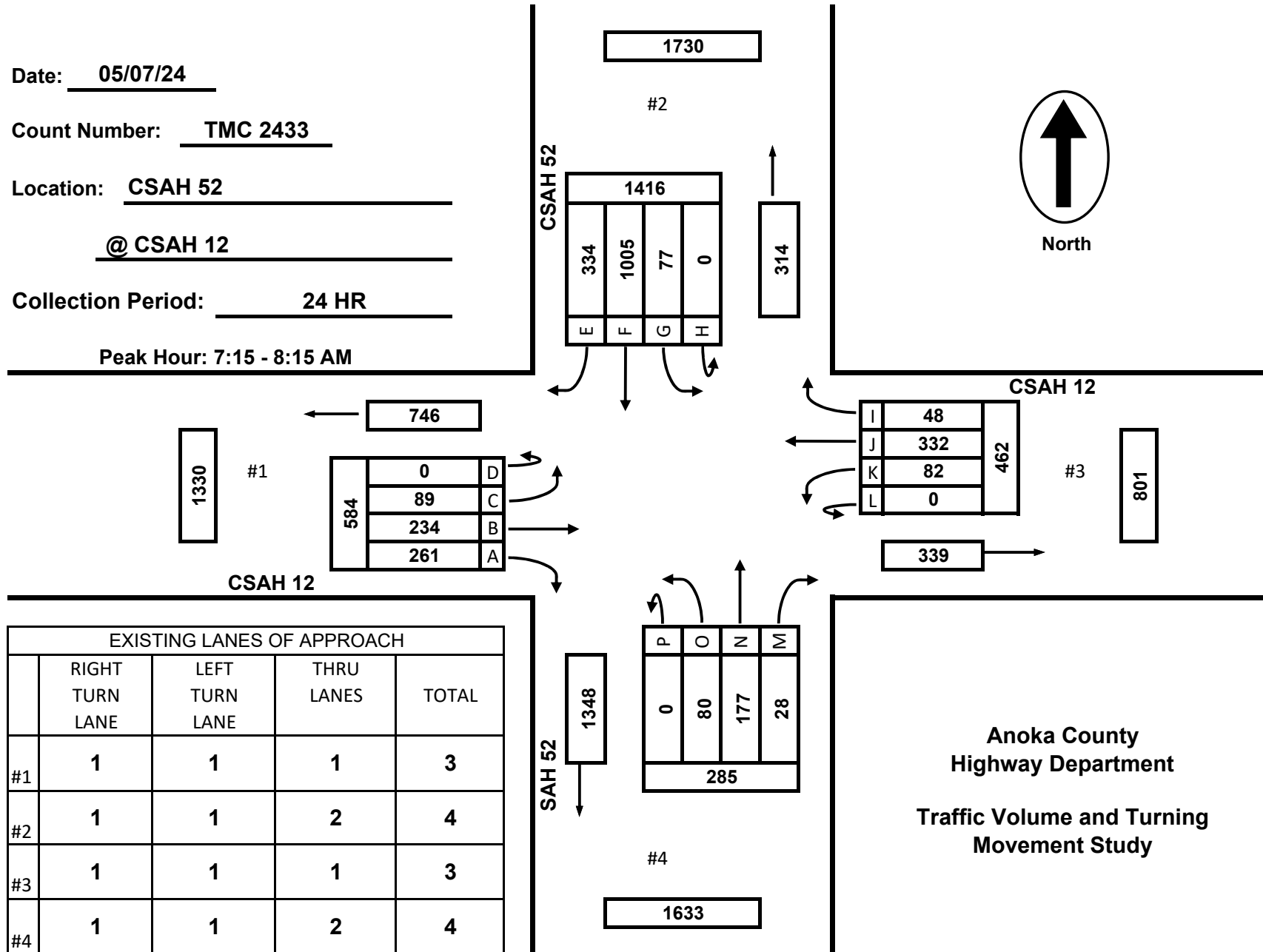
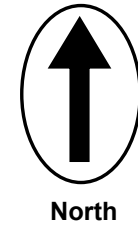
Count Number: TMC 2433

Location: CSAH 52

@ CSAH 12

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	1	1	1	3
#2	1	1	2	4
#3	1	1	1	3
#4	1	1	2	4

Anoka County
Highway Department
Traffic Volume and Turning
Movement Study

Date: 05/07/24

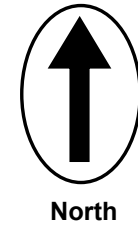
Count Number: TMC 2433

Location: CSAH 52

@ CSAH 12

Collection Period: 24 HR

Peak Hour: 4:15 - 5:15 PM



North

2107

#2

CSAH 52

686			
E	F	G	H
208	387	91	0

1421

CSAH 12

I	95	568
J	393	
K	80	
L	0	

#3

1155

587

1785

#1

936

849	1	D
	281	C
	423	B
	144	A

CSAH 12

SAH 52

617

P	O	N	M
6	334	1045	73
1458			

#4

2075

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

Anoka County
Highway Department
Traffic Volume and Turning
Movement Study

**TMC 2433 - CSAH 52 @ 109th Ave
Blaine MN
Tuesday, May 7, 2024**

Time	Southbound CSAH 52						Westbound CSAH 12						Northbound CSAH 52						Eastbound CSAH 12						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	5	2	0	7	0	0	5	1	0	6	0	5	17	0	0	22	0	5	8	3	0	16	51
12:15 AM	0	0	4	2	0	6	0	1	2	0	0	3	0	6	7	0	0	13	0	4	8	2	0	14	36
12:30 AM	0	1	3	0	0	4	0	0	2	0	0	2	0	1	7	0	0	8	0	0	2	0	0	2	16
12:45 AM	0	1	2	1	0	4	0	1	5	0	0	6	0	1	4	0	0	5	0	1	5	3	0	9	24
Hourly Total	0	2	14	5	0	21	0	2	14	1	0	17	0	13	35	0	0	48	0	10	23	8	0	41	127
1:00 AM	0	0	1	2	0	3	0	0	7	0	0	7	0	5	4	0	0	9	0	1	0	2	0	3	22
1:15 AM	0	0	0	0	0	0	0	0	2	0	0	2	0	1	4	1	0	6	0	2	2	1	0	5	13
1:30 AM	0	0	1	1	0	2	0	0	6	0	0	6	0	1	0	1	0	2	0	1	1	0	0	2	12
1:45 AM	0	0	2	0	0	2	0	0	8	0	0	8	0	2	3	1	0	6	0	1	2	2	0	5	21
Hourly Total	0	0	4	3	0	7	0	0	23	0	0	23	0	9	11	3	0	23	0	5	5	5	0	15	68
2:00 AM	0	0	1	0	0	1	0	0	1	1	0	2	1	0	3	0	0	4	0	0	5	0	0	5	12
2:15 AM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	4	1	0	5	0	1	1	0	0	2	9
2:30 AM	0	0	3	0	0	3	0	0	2	0	0	2	0	2	2	0	0	4	0	1	0	2	0	3	12
2:45 AM	0	0	3	1	0	4	0	2	2	0	0	4	0	1	1	0	0	2	0	1	1	0	0	2	12
Hourly Total	0	0	7	1	0	8	0	2	7	1	0	10	1	3	10	1	0	15	0	3	7	2	0	12	45
3:00 AM	0	0	4	0	0	4	0	0	2	0	0	2	0	2	1	1	0	4	0	0	4	2	0	6	16
3:15 AM	0	0	5	1	0	6	0	0	1	0	0	1	0	0	4	0	0	4	0	0	2	3	0	5	16
3:30 AM	0	0	9	0	0	9	0	1	5	0	0	6	0	3	2	0	0	5	0	0	2	4	0	6	26
3:45 AM	0	0	16	3	0	19	0	0	3	0	0	3	0	0	1	0	0	1	0	0	1	5	0	6	29
Hourly Total	0	0	34	4	0	38	0	1	11	0	0	12	0	5	8	1	0	14	0	0	9	14	0	23	87
4:00 AM	0	1	13	5	0	19	0	0	2	3	0	5	0	1	2	0	0	3	0	0	6	7	0	13	40
4:15 AM	0	0	20	4	0	24	0	0	5	0	0	5	0	1	1	2	0	4	0	1	6	16	0	23	56
4:30 AM	0	2	28	13	0	43	0	3	9	2	0	14	0	3	3	0	0	6	0	3	7	7	0	17	80
4:45 AM	0	0	33	12	0	45	0	1	10	1	0	12	0	5	6	0	0	11	0	2	8	15	0	25	93
Hourly Total	0	3	94	34	0	131	0	4	26	6	0	36	0	10	12	2	0	24	0	6	27	45	0	78	269
5:00 AM	0	3	41	8	0	52	0	8	15	1	0	24	0	2	5	0	0	7	0	2	13	13	0	28	111
5:15 AM	0	2	71	22	0	95	0	5	14	1	0	20	0	2	6	7	0	15	0	3	15	21	0	39	169
5:30 AM	0	5	88	26	0	119	0	5	12	0	0	17	1	0	11	4	0	16	0	7	15	24	0	46	198
5:45 AM	0	5	101	17	0	123	0	10	24	4	0	38	0	5	17	3	0	25	0	7	23	19	0	49	235
Hourly Total	0	15	301	73	0	389	0	28	65	6	0	99	1	9	39	14	0	63	0	19	66	77	0	162	713
6:00 AM	0	6	116	26	0	148	0	12	13	1	0	26	0	6	18	1	0	25	0	7	25	25	0	57	256
6:15 AM	0	11	128	18	0	157	0	11	27	5	0	43	0	6	16	2	0	24	0	11	32	40	0	83	307
6:30 AM	0	10	153	39	0	202	0	19	28	7	0	54	0	5	28	2	0	35	0	7	60	40	0	107	398
6:45 AM	0	14	175	52	0	241	0	14	41	9	0	64	1	10	26	5	0	42	0	6	59	41	0	106	453
Hourly Total	0	41	572	135	0	748	0	56	109	22	0	187	1	27	88	10	0	126	0	31	176	146	0	353	1414
7:00 AM	0	16	221	66	0	303	0	16	42	7	0	65	0	9	42	8	0	59	0	19	42	41	0	102	529
7:15 AM	0	14	263	96	0	373	0	15	72	12	0	99	0	15	37	5	0	57	0	20	60	67	0	147	676
7:30 AM	0	24	250	84	0	358	0	19	74	11	0	104	0	13	41	7	0	61	0	25	58	64	0	147	670
7:45 AM	0	26	284	95	0	405	0	26	104	11	0	141	0	35	50	7	0	92	0	24	68	73	0	165	803
Hourly Total	0	80	1018	341	0	1439	0	76	292	41	0	409	0	72	170	27	0	269	0	88	228	245	0	561	2678

TMC 2433 - CSAH 52 @ 109th Ave

Blaine MN

Tuesday, May 7, 2024

Time	Southbound CSAH 52						Westbound CSAH 12						Northbound CSAH 52						Eastbound CSAH 12						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	13	208	59	0	280	0	22	82	14	0	118	0	17	49	9	0	75	0	20	48	57	0	125	598
8:15 AM	0	19	137	65	0	221	0	12	64	6	0	82	1	15	43	9	0	68	0	24	50	56	0	130	501
8:30 AM	0	13	149	47	0	209	0	14	47	16	0	77	2	22	43	4	1	71	0	30	55	48	0	133	490
8:45 AM	0	16	142	76	0	234	0	14	80	18	0	112	0	20	61	7	0	88	0	32	48	38	0	118	552
Hourly Total	0	61	636	247	0	944	0	62	273	54	0	389	3	74	196	29	1	302	0	106	201	199	0	506	2141
9:00 AM	0	16	107	65	0	188	0	12	53	15	0	80	1	21	47	8	0	77	0	32	55	33	0	120	465
9:15 AM	0	8	107	43	0	158	0	16	61	8	0	85	0	21	52	7	0	80	1	20	64	29	0	114	437
9:30 AM	0	15	85	62	0	162	0	7	52	12	0	71	1	20	41	12	0	74	0	26	53	35	0	114	421
9:45 AM	0	15	70	35	0	120	0	5	64	8	0	77	0	16	41	10	0	67	0	14	60	24	0	98	362
Hourly Total	0	54	369	205	0	628	0	40	230	43	0	313	2	78	181	37	0	298	1	92	232	121	0	446	1685
10:00 AM	0	12	68	39	0	119	0	14	46	13	0	73	0	21	40	6	0	67	0	21	63	29	0	113	372
10:15 AM	0	15	63	44	0	122	0	7	64	13	0	84	2	17	47	7	0	73	0	27	63	26	0	116	395
10:30 AM	0	10	66	50	0	126	0	19	53	17	0	89	1	16	49	7	0	73	0	34	59	40	0	133	421
10:45 AM	0	7	63	42	0	112	0	17	56	17	0	90	1	21	44	7	0	73	0	39	62	24	0	125	400
Hourly Total	0	44	260	175	0	479	0	57	219	60	0	336	4	75	180	27	0	286	0	121	247	119	0	487	1588
11:00 AM	0	9	56	40	0	105	0	12	73	10	0	95	1	23	60	12	0	96	0	35	53	34	0	122	418
11:15 AM	0	8	78	58	0	144	0	10	58	12	0	80	2	26	59	14	0	101	0	34	39	29	0	102	427
11:30 AM	0	11	66	45	0	122	0	14	58	17	0	89	0	36	57	16	0	109	0	47	78	30	1	155	475
11:45 AM	0	14	69	47	0	130	0	11	77	18	0	106	1	29	50	17	0	97	0	51	70	28	0	149	482
Hourly Total	0	42	269	190	0	501	0	47	266	57	0	370	4	114	226	59	0	403	0	167	240	121	1	528	1802
12:00 PM	0	14	67	48	0	129	0	9	75	15	0	99	3	30	73	14	0	120	0	39	81	28	0	148	496
12:15 PM	0	13	84	51	0	148	0	14	69	18	0	101	0	23	74	10	0	107	0	51	76	13	0	140	496
12:30 PM	0	7	61	39	0	107	0	11	73	18	0	102	1	31	66	13	0	111	0	36	66	35	0	137	457
12:45 PM	0	9	57	41	0	107	0	15	72	18	0	105	1	23	74	14	0	112	0	49	65	30	0	144	468
Hourly Total	0	43	269	179	0	491	0	49	289	69	0	407	5	107	287	51	0	450	0	175	288	106	0	569	1917
1:00 PM	0	11	74	31	0	116	0	13	74	19	0	106	0	31	78	10	0	119	0	52	73	28	0	153	494
1:15 PM	0	10	54	43	0	107	0	16	66	11	0	93	1	38	56	19	0	114	0	33	65	36	0	134	448
1:30 PM	0	21	72	44	0	137	0	12	71	6	0	89	0	30	59	16	0	105	0	35	80	39	0	154	485
1:45 PM	0	14	54	55	0	123	0	11	48	12	0	71	0	30	90	15	0	135	0	39	78	21	0	138	467
Hourly Total	0	56	254	173	0	483	0	52	259	48	0	359	1	129	283	60	0	473	0	159	296	124	0	579	1894
2:00 PM	0	13	80	33	0	126	0	8	70	17	0	95	0	33	92	17	0	142	0	51	48	31	0	130	493
2:15 PM	0	19	81	51	0	151	0	10	68	11	0	89	0	33	115	21	0	169	0	48	64	39	0	151	560
2:30 PM	0	9	73	43	0	125	0	13	62	22	0	97	1	36	115	19	0	171	0	68	103	28	0	199	592
2:45 PM	0	20	62	39	0	121	0	15	63	21	0	99	1	46	151	22	0	220	0	46	74	31	0	151	591
Hourly Total	0	61	296	166	0	523	0	46	263	71	0	380	2	148	473	79	0	702	0	213	289	129	0	631	2236
3:00 PM	0	14	80	43	0	137	0	23	82	26	0	131	2	37	196	16	0	251	0	81	77	31	0	189	708
3:15 PM	0	19	74	39	0	132	0	15	86	24	0	125	0	51	174	26	0	251	0	59	89	37	0	185	693
3:30 PM	0	19	84	43	0	146	0	11	73	23	0	107	2	41	214	20	0	277	0	74	94	38	1	206	736
3:45 PM	0	19	77	57	0	153	0	15	92	26	0	133	0	69	258	25	0	352	1	56	77	32	0	166	804
Hourly Total	0	71	315	182	0	568	0	64	333	99	0	496	4	198	842	87	0	1131	1	270	337	138	1	746	2941

TMC 2433 - CSAH 52 @ 109th Ave
Blaine MN

Tuesday, May 7, 2024

Time	Southbound CSAH 52						Westbound CSAH 12						Northbound CSAH 52						Eastbound CSAH 12						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	15	78	54	0	147	0	13	76	32	0	121	0	70	222	23	0	315	0	77	97	29	0	203	786
4:15 PM	0	22	66	50	0	138	0	16	111	30	0	157	2	97	262	13	0	374	0	74	100	47	0	221	890
4:30 PM	0	28	124	45	0	197	0	20	92	35	0	147	3	72	259	26	0	360	0	58	99	32	0	189	893
4:45 PM	0	14	124	57	0	195	0	25	104	13	0	142	1	62	250	14	0	327	0	77	111	26	0	214	878
Hourly Total	0	79	392	206	0	677	0	74	383	110	0	567	6	301	993	76	0	1376	0	286	407	134	0	827	3447
5:00 PM	0	27	73	56	0	156	0	19	86	17	0	122	0	103	274	20	0	397	1	72	113	39	0	225	900
5:15 PM	0	18	115	58	0	191	0	23	101	24	0	148	0	78	243	21	0	342	1	61	95	37	0	194	875
5:30 PM	0	14	125	51	0	190	0	37	74	25	0	136	0	53	199	21	0	273	0	79	79	36	0	194	793
5:45 PM	0	11	100	47	0	158	0	11	70	22	0	103	0	51	166	15	0	232	0	82	78	39	0	199	692
Hourly Total	0	70	413	212	0	695	0	90	331	88	0	509	0	285	882	77	0	1244	2	294	365	151	0	812	3260
6:00 PM	0	11	84	55	0	150	0	17	78	19	0	114	1	38	130	19	0	188	0	65	69	33	0	167	619
6:15 PM	0	20	83	34	0	137	0	18	90	16	0	124	1	38	105	14	0	158	2	59	80	23	0	164	583
6:30 PM	0	10	80	48	0	138	0	27	55	16	0	98	0	27	139	16	0	182	0	77	84	27	0	188	606
6:45 PM	0	10	66	42	0	118	0	12	77	17	0	106	1	25	93	20	0	139	1	69	93	18	0	181	544
Hourly Total	0	51	313	179	0	543	0	74	300	68	0	442	3	128	467	69	0	667	3	270	326	101	0	700	2352
7:00 PM	0	12	46	22	2	80	0	8	50	12	0	70	0	36	87	16	0	139	0	80	66	27	0	173	462
7:15 PM	0	20	50	26	0	96	0	7	52	14	0	73	0	12	77	21	0	110	0	47	59	18	0	124	403
7:30 PM	0	7	58	28	0	93	0	7	41	10	0	58	0	15	93	22	0	130	0	56	59	23	0	138	419
7:45 PM	0	12	50	28	0	90	0	16	44	14	0	74	0	20	84	9	0	113	0	60	62	21	0	143	420
Hourly Total	0	51	204	104	2	359	0	38	187	50	0	275	0	83	341	68	0	492	0	243	246	89	0	578	1704
8:00 PM	0	9	45	15	0	69	0	6	40	18	0	64	0	20	89	17	0	126	0	56	59	17	0	132	391
8:15 PM	0	8	35	14	0	57	0	3	43	14	0	60	0	19	61	15	0	95	0	54	65	20	0	139	351
8:30 PM	0	9	31	14	0	54	0	1	41	8	0	50	0	16	74	10	0	100	0	46	46	17	0	109	313
8:45 PM	0	10	29	18	0	57	0	3	36	18	0	57	1	23	55	10	0	89	0	27	38	15	0	80	283
Hourly Total	0	36	140	61	0	237	0	13	160	58	0	231	1	78	279	52	0	410	0	183	208	69	0	460	1338
9:00 PM	0	1	24	23	0	48	0	2	31	9	0	42	0	9	63	13	0	85	0	45	28	16	0	89	264
9:15 PM	0	5	28	22	0	55	0	5	24	4	0	33	0	9	67	13	0	89	0	45	31	11	0	87	264
9:30 PM	0	3	25	10	0	38	0	1	18	4	0	23	0	11	50	9	0	70	0	30	31	8	0	69	200
9:45 PM	0	4	15	10	0	29	0	1	20	4	0	25	0	5	38	4	0	47	0	20	29	7	0	56	157
Hourly Total	0	13	92	65	0	170	0	9	93	21	0	123	0	34	218	39	0	291	0	140	119	42	0	301	885
10:00 PM	0	4	11	9	0	24	0	2	13	2	0	17	0	10	27	5	0	42	0	18	17	4	0	39	122
10:15 PM	0	0	13	4	0	17	0	1	16	6	0	23	0	7	25	3	0	35	0	20	23	8	0	51	126
10:30 PM	0	2	11	9	0	22	0	0	10	0	0	10	0	7	28	1	0	36	0	13	20	6	0	39	107
10:45 PM	0	0	7	7	0	14	0	0	5	3	0	8	0	8	20	0	0	28	0	7	20	8	0	35	85
Hourly Total	0	6	42	29	0	77	0	3	44	11	0	58	0	32	100	9	0	141	0	58	80	26	0	164	440
11:00 PM	0	2	5	2	0	9	0	0	11	2	0	13	0	2	11	0	0	13	0	9	7	2	0	18	53
11:15 PM	0	0	5	1	0	6	0	0	9	0	0	9	0	4	11	1	0	16	0	6	13	1	0	20	51
11:30 PM	0	0	5	1	0	6	0	0	12	0	0	12	0	4	6	0	0	10	0	6	8	2	0	16	44
11:45 PM	0	1	5	2	0	8	0	1	2	2	0	5	0	2	12	0	0	14	0	7	3	1	0	11	38
Hourly Total	0	3	20	6	0	29	0	1	34	4	0	39	0	12	40	1	0	53	0	28	31	6	0	65	186
DAILY TOTAL	0	882	6328	2975	2	10185	0	888	4211	988	0	6087	38	2024	6361	878	1	9301	7	2967	4453	2217	2	9644	35217
Cars	0	868	6195	2942	2	10005	0	868	4163	964	0	5995	38	1998	6245	855	1	9136	7	2924	4382	2173	0	9486	34622
Heavy Vehicles	0	14	133	33	0	180	0	20	48	24	0	92	0	26	116	23	0	165	0	43	71	44	2	158	595
Heavy Vehicle %	0.00%	1.59%	2.10%	1.11%	0.00%	1.77%	0.00%	2.25%	1.14%	2.43%	0.00%	1.51%	0.00%	1.28%	1.82%	2.62%	0.00%	1.77%	0.00%	1.45%	1.59%	1.98%	100.00%	1.64%	1.69%

**TMC 2433 - CSAH 52 @ 109th Ave
Blaine MN**

Tuesday, May 7, 2024

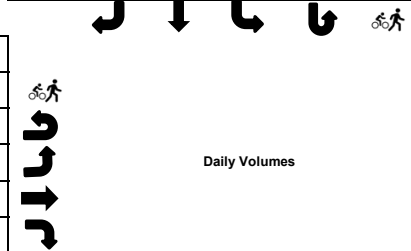
AM Peak Hour

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	14	263	96	0	373	0	15	72	12	0	99	0	15	37	5	0	57	0	20	60	67	0	147	0	24	250	84	0	358	0	19	74	11	0	104	0	13	41	7	0	61	0	25	58	64	0	147	676
7:30 AM	0	24	250	84	0	358	0	19	74	11	0	104	0	13	41	7	0	61	0	25	58	64	0	147	0	24	284	95	0	405	0	26	104	11	0	141	0	35	50	7	0	92	0	24	68	73	0	165	803
7:45 AM	0	26	284	95	0	405	0	26	104	11	0	141	0	35	50	7	0	92	0	24	68	73	0	165	0	13	208	59	0	280	0	22	82	14	0	118	0	17	49	9	0	75	0	20	48	57	0	125	598
8:00 AM	0	13	208	59	0	280	0	22	82	14	0	118	0	17	49	9	0	75	0	20	48	57	0	125	0	77	1005	334	0	1416	0	82	332	48	0	462	0	80	177	28	0	285	0	89	234	261	0	584	2747
Peak Hour Total	0	77	1005	334	0	1416	0	82	332	48	0	462	0	80	177	28	0	285	0	89	234	261	0	584	0	77	1005	334	0	1416	0	82	332	48	0	462	0	80	177	28	0	285	0	89	234	261	0	584	2747
PHF	0.000	0.740	0.885	0.870	0.000	0.874	0.000	0.788	0.798	0.857	0.000	0.819	0.000	0.571	0.885	0.778	0.000	0.774	0.000	0.890	0.860	0.894	0.000	0.885	0.000	0.740	0.885	0.870	0.000	0.874	0.000	0.788	0.798	0.857	0.000	0.819	0.000	0.571	0.885	0.778	0.000	0.774	0.000	0.890	0.860	0.894	0.000	0.885	0.855

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																									
4:15 PM	0	22	66	50	0	138	0	16	111	30	0	157	2	97	262	13	0	374	0	74	100	47	0	221	0	28	124	45	0	197	0	20	92	35	0	147	3	72	259	26	0	360	0	58	99	32	0	189	890
4:30 PM	0	28	124	45	0	197	0	20	92	35	0	147	3	72	259	26	0	360	0	58	99	32	0	189	0	14	124	57	0	195	0	25	104	13	0	142	1	62	250	14	0	327	0	77	111	26	0	214	878
4:45 PM	0	14	124	57	0	195	0	25	104	13	0	142	1	62	250	14	0	327	0	77	111	26	0	214	0	27	73	56	0	156	0	19	86	17	0	122	0	103	274	20	0	397	1	72	113	39	0	225	900
5:00 PM	0	27	73	56	0	156	0	19	86	17	0	122	0	103	274	20	0	397	1	72	113	39	0	225	0	91	387	208	0	686	0	80	393	95	0	568	6	334	1045	73	0	1458	1	281	423	144	0	849	3561
Peak Hour Total	0	91	387	208	0	686	0	80	393	95	0	568	6	334	1045	73	0	1458	1	281	423	144	0	849	0	91	387	208	0	686	0	80	393	95	0	568	6	334	1045	73	0	1458	1	281	423	144	0	849	3561
PHF	0.000	0.813	0.780	0.912	0.000	0.871	0.000	0.800	0.885	0.679	0.000	0.904	0.500	0.811	0.953	0.702	0.000	0.918	0.250	0.912	0.936	0.766	0.000	0.943	0.000	0.813	0.780	0.912	0.000	0.871	0.000	0.800	0.885	0.679	0.000	0.904	0.500	0.811	0.953	0.702	0.000	0.918	0.250	0.912	0.936	0.766	0.000	0.943	0.989

Total Vehicles On Leg		20501	
Vehicles Entering Intersection	10185	Vehicles Exiting Intersection	10316
Southbound			
Cars	2942	6195	868
Heavy	33	133	14
Total	2975	6328	882



Cars	Heavy	Total	Westbound	Vehicles Entering Intersection	Total Vehicles on Leg 12300
964	24	988		6087	
4163	48	4211			
868	20	888		Vehicles Exiting Intersection	
0	0	0		6213	
0	0	0			

Total Vehicles on Leg 18861	Vehicles Entering Intersection	Eastbound	Cars	Heavy	Total
	9644		0	2	2
			7	0	7
	Vehicles Exiting Intersection		2924	43	2967
	9217		4382	71	4453
	2173	44	2217		

Cars	1	38	1998	6245	855
Heavy	0	0	26	116	23
Total	1	38	2024	6361	878
Northbound					
Vehicles Entering Intersection	9301		Vehicles Exiting Intersection	9471	
Total Vehicles On Leg	18772				

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2433

Study Date : 05/13/2024

Signal Warrants - Summary

Major Street Approaches

Northbound: CSAH 52

Number of Lanes : 2+

Total Approach Volume: 6,815

Southbound: CSAH 52

Number of Lanes :2+

Total Approach Volume: 4,151

Minor Street Approaches

Eastbound: 109th Ave

Number of Lanes :2+

Total Approach Volume: 2,603

Westbound: 109th Ave

Number of Lanes :2+

Total Approach Volume: 3,598

Warrant Summary (Rural Values Apply)

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

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

Required volumes reached for 13 hours, 8 are needed

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

Required volumes reached for 11 hours, 8 are needed

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

Required 1A volumes reached for 13 hours, 8 are needed

Required 1B volumes reached for 12 hours, 8 are needed

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

Number of hours (12) volumes exceed minimum >= minimum required (4).

Warrant 3 - Peak Hour.....Satisfied

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

Number of one hour periods (45) 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: TMC 2433

Study Date : 05/13/2024

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

13 one hour periods meet minimums.
Warrant IS met.

Site Data Required

Rural Settings Apply = **True**
 Number of Major Lanes = **2 or more**
 Number of Minor Lanes = **2 or more**

Volume Requirements

Rural Factor of 70 % applied
 Veh/Hr Major = **420**
 Veh/Hr Minor = **140**

Time	Major Road				Total	Minor Road		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
	CSAH 52					109th Ave		
10:45 - 11:45	556	+	428	=	984	231	358	Yes
11:45 - 12:45	612	+	371	=	983	238	337	Yes
13:45 - 14:45	609	+	328	=	937	224	288	Yes
12:45 - 13:45	593	+	329	=	922	229	308	Yes
15:45 - 16:45	570	+	345	=	915	208	297	Yes
14:45 - 15:45	565	+	312	=	877	247	280	Yes
16:45 - 17:45	555	+	307	=	862	176	285	Yes
09:45 - 10:45	457	+	402	=	859	226	323	Yes
17:45 - 18:45	520	+	264	=	784	174	240	Yes
18:45 - 19:45	470	+	226	=	696	175	169	Yes
08:45 - 09:45	415	+	271	=	686	131	261	Yes
19:45 - 20:45	330	+	179	=	509	121	143	Yes
07:45 - 08:45	270	+	202	=	472	103	151	Yes
07:30 - 08:30	226	+	169	=	395	94	122	No
07:15 - 08:15	201	+	144	=	345	84	110	No
07:00 - 08:00	179	+	121	=	300	81	96	No
06:45 - 07:45	159	+	102	=	261	74	95	No
06:30 - 07:30	136	+	84	=	220	57	83	No
06:15 - 07:15	118	+	82	=	200	41	80	No
06:00 - 07:00	92	+	69	=	161	33	58	No
20:45 - 21:45	84	+	34	=	118	20	25	No
05:45 - 06:45	48	+	48	=	96	22	33	No
05:30 - 06:30	27	+	31	=	58	13	20	No
05:15 - 06:15	16	+	13	=	29	11	6	No
05:00 - 06:00	3		1		4	2	3	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2433

Study Date : 05/13/2024

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

11 one hour periods meet minimums.
Warrant IS met.

Site Data Required

Rural Settings Apply = **True**
 Number of Major Lanes = **2 or more**
 Number of Minor Lanes = **2 or more**

Volume Requirements

Rural Factor of 70 % applied
 Veh/Hr Major = **630**
 Veh/Hr Minor = **70**

Time	Major Road				Total	Minor Road		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
	CSAH 52					109th Ave		
12:30 - 13:30	646	+	356	=	1002	229	339	Yes
11:30 - 12:30	572	+	418	=	990	244	324	Yes
10:30 - 11:30	530	+	400	=	930	231	343	Yes
15:30 - 16:30	565	+	348	=	913	238	300	Yes
14:30 - 15:30	599	+	312	=	911	223	284	Yes
13:30 - 14:30	583	+	312	=	895	235	276	Yes
16:30 - 17:30	553	+	317	=	870	175	285	Yes
09:30 - 10:30	441	+	381	=	822	196	321	Yes
17:30 - 18:30	534	+	265	=	799	182	245	Yes
18:30 - 19:30	498	+	234	=	732	169	198	Yes
08:30 - 09:30	401	+	255	=	656	132	249	Yes
08:15 - 09:15	339	+	233	=	572	123	211	No
19:30 - 20:30	350	+	195	=	545	130	148	No
19:45 - 20:45	330	+	179	=	509	121	143	No
08:00 - 09:00	291	+	210	=	501	114	181	No
20:00 - 21:00	318	+	161	=	479	111	131	No
07:45 - 08:45	270	+	202	=	472	103	151	No
07:30 - 08:30	226	+	169	=	395	94	122	No
20:15 - 21:15	240	+	107	=	347	72	89	No
07:15 - 08:15	201	+	144	=	345	84	110	No
07:00 - 08:00	179	+	121	=	300	81	96	No
06:45 - 07:45	159	+	102	=	261	74	95	No
20:30 - 21:30	152	+	72	=	224	51	57	No
06:30 - 07:30	136	+	84	=	220	57	83	No
06:15 - 07:15	118		82		200	41	80	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2433

Study Date : 05/13/2024

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

13 hours meet 1A minimums.
12 hours meet 1B minimums.
Warrant IS met.

Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **2 or more**

Volume Requirements

Rural Factor of 70% applied
Warrant 1A 1B
Veh/Hr Major = **336 504**

Veh/Hr Minor = **112 56**

Major Road CSAH 52

Minor Road 109th Ave

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1A?
12:30 - 13:30	646	+	356	=	1002	229	339	Yes
11:30 - 12:30	572	+	418	=	990	244	324	Yes
10:30 - 11:30	530	+	400	=	930	231	343	Yes
15:30 - 16:30	565	+	348	=	913	238	300	Yes
14:30 - 15:30	599	+	312	=	911	223	284	Yes
13:30 - 14:30	583	+	312	=	895	235	276	Yes
16:30 - 17:30	553	+	317	=	870	175	285	Yes
09:30 - 10:30	441	+	381	=	822	196	321	Yes
17:30 - 18:30	534	+	265	=	799	182	245	Yes
18:30 - 19:30	498	+	234	=	732	169	198	Yes
08:30 - 09:30	401	+	255	=	656	132	249	Yes
19:30 - 20:30	350		195		545	130	148	Yes

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1B?
12:15 - 13:15	644	+	364	=	1008	245	342	Yes
11:15 - 12:15	567	+	433	=	1000	256	345	Yes
10:15 - 11:15	524	+	416	=	940	239	333	Yes
15:15 - 16:15	565	+	369	=	934	262	292	Yes
14:15 - 15:15	605	+	289	=	894	218	282	Yes
16:15 - 17:15	554	+	338	=	892	180	288	Yes
13:15 - 14:15	570	+	300	=	870	209	280	Yes
17:15 - 18:15	536	+	275	=	811	173	263	Yes
09:15 - 10:15	425	+	330	=	755	161	299	Yes
18:15 - 19:15	515	+	230	=	745	156	218	Yes
19:15 - 20:15	394	+	226	=	620	171	157	Yes
08:15 - 09:15	339		233		572	123	211	Yes

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2433

Study Date : 05/13/2024

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.

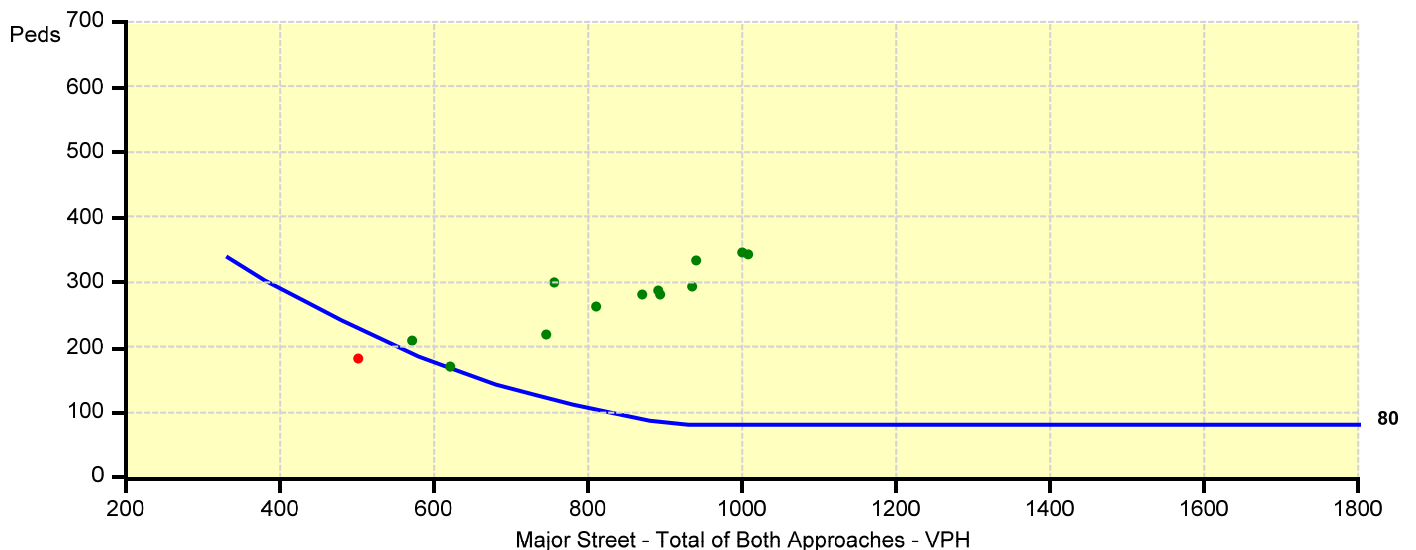
Summary

12 one hour periods meet minimums.
Warrant IS met.

Site Data Required

Rural Settings Apply = **True**
 Number of Major Lanes = **2 or more**
 Number of Minor Lanes = **2 or more**

Time	Major Road CSAH 52					Minor Road 109th Ave		Met?
	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	
12:15 - 13:15	644	+	364	=	1008	245	342	Yes
11:15 - 12:15	567	+	433	=	1000	256	345	Yes
10:15 - 11:15	524	+	416	=	940	239	333	Yes
15:15 - 16:15	565	+	369	=	934	262	292	Yes
14:15 - 15:15	605	+	289	=	894	218	282	Yes
16:15 - 17:15	554	+	338	=	892	180	288	Yes
13:15 - 14:15	570	+	300	=	870	209	280	Yes
17:15 - 18:15	536	+	275	=	811	173	263	Yes
09:15 - 10:15	425	+	330	=	755	161	299	Yes
18:15 - 19:15	515	+	230	=	745	156	218	Yes
19:15 - 20:15	394	+	226	=	620	171	157	Yes
08:15 - 09:15	339		233		572	123	211	Yes



ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2433

Study Date : 05/13/2024

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

38 one hour periods meet minimums.
Warrant IS met.

Site Data Required

Rural Settings Apply = **True**
 Number of Major Lanes = **2 or more**
 Number of Minor Lanes = **2 or more**

Time	Major Road CSAH 52					Minor Road 109th Ave		Met?
	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	
12:00 - 13:00	653	+	379	=	1032	234	335	Yes
12:15 - 13:15	644	+	364	=	1008	245	342	Yes
12:30 - 13:30	646	+	356	=	1002	229	339	Yes
11:15 - 12:15	567	+	433	=	1000	256	345	Yes
11:30 - 12:30	572	+	418	=	990	244	324	Yes
11:00 - 12:00	557	+	433	=	990	258	357	Yes
10:45 - 11:45	556	+	428	=	984	231	358	Yes
11:45 - 12:45	612	+	371	=	983	238	337	Yes
10:15 - 11:15	524	+	416	=	940	239	333	Yes
13:45 - 14:45	609	+	328	=	937	224	288	Yes
15:15 - 16:15	565	+	369	=	934	262	292	Yes
10:30 - 11:30	530	+	400	=	930	231	343	Yes

