

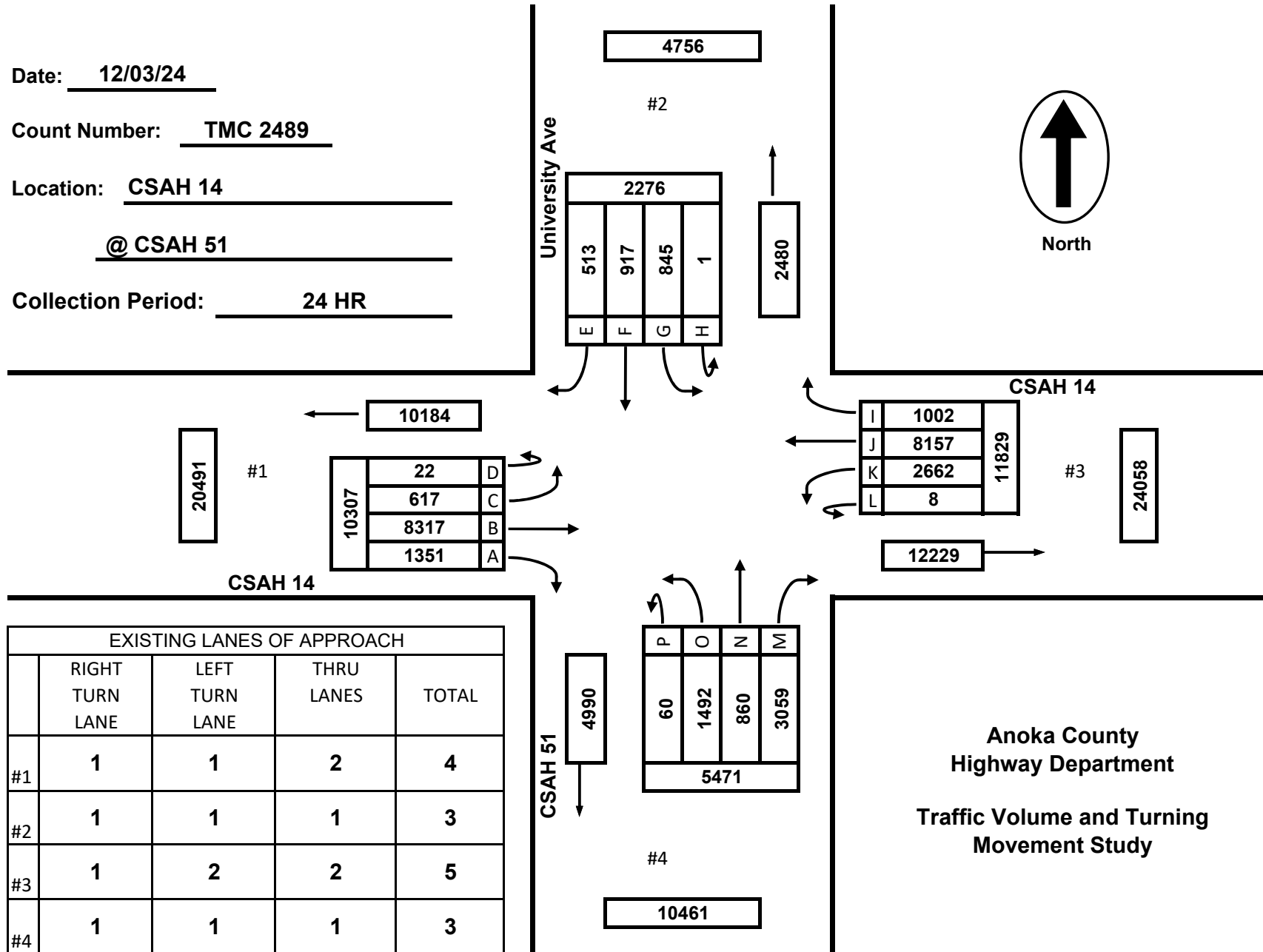
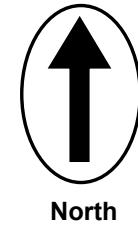
Date: 12/03/24

Count Number: TMC 2489

Location: CSAH 14

@ CSAH 51

Collection Period: 24 HR



EXISTING LANES OF APPROACH				
	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	TOTAL
#1	1	1	2	4
#2	1	1	1	3
#3	1	2	2	5
#4	1	1	1	3

Anoka County
Highway Department
Traffic Volume and Turning
Movement Study

Date: 12/03/24

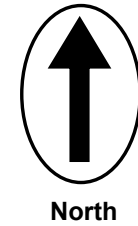
Count Number: TMC 2489

Location: CSAH 14

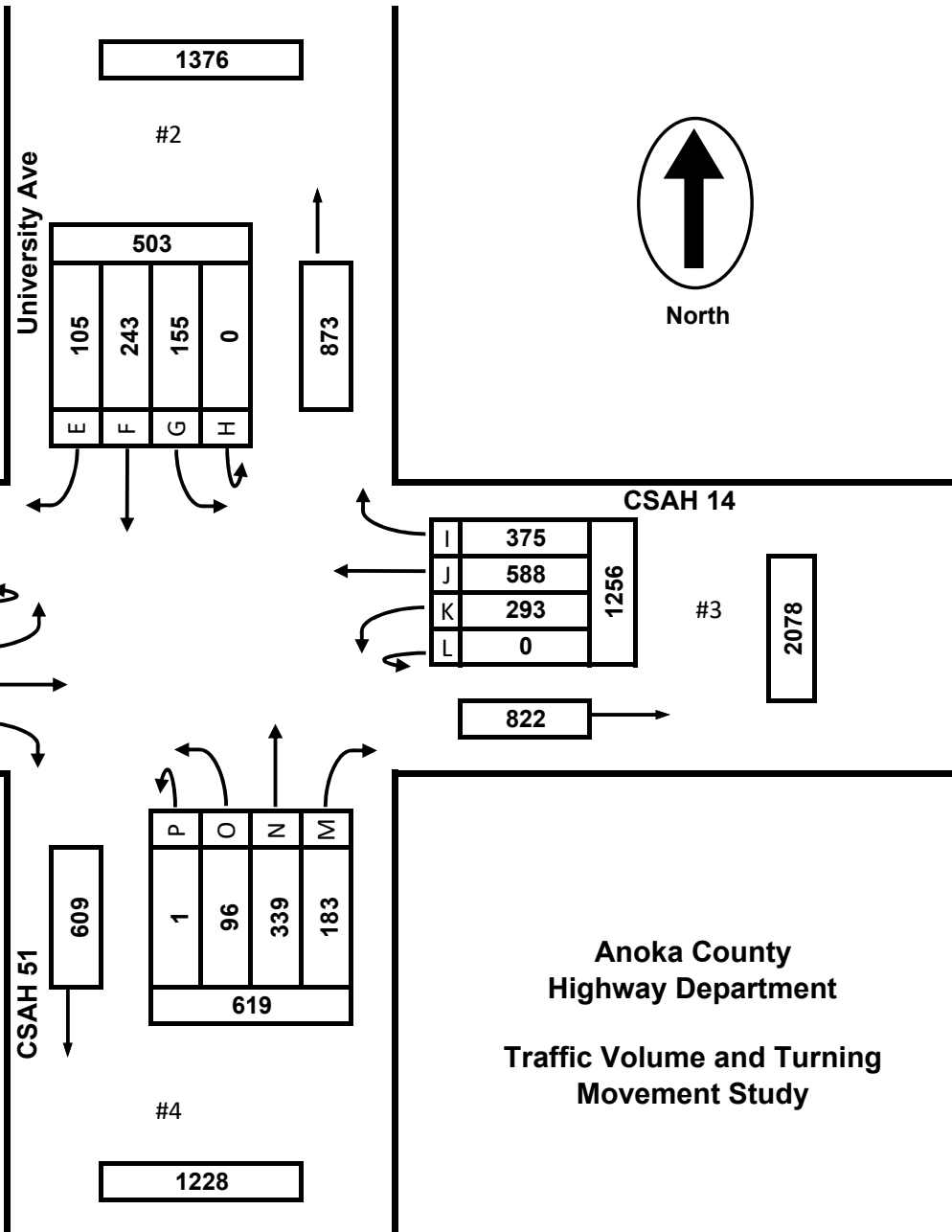
@ CSAH 51

Collection Period: 24 HR

Peak Hour: 7:00 - 8:00 AM



North



CSAH 14

CSAH 14

CSAH 51

University Ave

EXISTING LANES OF APPROACH				
	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	TOTAL
#1	1	1	2	4
#2	1	1	1	3
#3	1	2	2	5
#4	1	1	1	3

Anoka County
Highway Department
Traffic Volume and Turning
Movement Study

TMC 2489 - CSAH 14 @ CSAH 51

Blaine MN

Tuesday, December 3, 2024

Time	Southbound University Ave						Westbound CSAH 14						Northbound CSAH 51						Eastbound CSAH 14						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	4	7	0	0	11	0	0	1	5	0	6	0	1	12	2	1	15	32
12:15 AM	0	0	1	0	0	1	0	5	4	0	0	9	0	0	1	4	0	5	0	0	10	2	0	12	27
12:30 AM	0	0	0	0	0	0	0	3	5	1	0	9	0	0	0	6	0	6	0	0	7	1	0	8	23
12:45 AM	0	0	0	0	0	0	0	0	5	0	0	5	0	1	0	7	0	8	0	0	2	1	0	3	16
Hourly Total	0	0	1	0	0	1	0	12	21	1	0	34	0	1	2	22	0	25	0	1	31	6	1	38	98
1:00 AM	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	4	0	4	0	0	4	1	0	5	13
1:15 AM	0	0	0	0	0	0	0	1	5	0	0	6	0	0	1	2	0	3	0	0	8	3	0	11	20
1:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	2	0	3	0	0	6	1	0	7	11
1:45 AM	0	0	0	0	0	0	0	2	5	0	0	7	1	0	0	2	0	3	0	0	3	1	0	4	14
Hourly Total	0	0	0	0	0	0	0	3	15	0	0	18	1	1	1	10	0	13	0	0	21	6	0	27	58
2:00 AM	0	0	0	0	0	0	0	1	6	1	0	8	0	1	0	2	0	3	0	0	3	2	0	5	16
2:15 AM	0	0	1	0	0	1	0	1	1	0	0	2	0	2	3	2	0	7	0	0	3	2	0	5	15
2:30 AM	0	0	1	0	0	1	0	2	2	0	0	4	0	0	0	0	0	0	0	0	5	1	0	6	11
2:45 AM	0	0	0	0	0	0	0	4	7	0	0	11	0	0	0	3	0	3	0	0	0	0	0	0	14
Hourly Total	0	0	2	0	0	2	0	8	16	1	0	25	0	3	3	7	0	13	0	0	11	5	0	16	56
3:00 AM	0	0	0	0	0	0	0	1	3	0	0	4	0	1	0	0	0	1	0	0	2	0	0	2	7
3:15 AM	0	0	0	0	0	0	0	1	3	0	0	4	0	2	0	1	0	3	0	0	3	1	0	4	11
3:30 AM	0	0	0	0	0	0	0	1	7	0	0	8	0	1	0	2	0	3	0	0	5	1	0	6	17
3:45 AM	0	0	0	0	0	0	0	2	6	0	0	8	0	6	1	3	0	10	0	0	6	0	0	6	24
Hourly Total	0	0	0	0	0	0	0	5	19	0	0	24	0	10	1	6	0	17	0	0	16	2	0	18	59
4:00 AM	0	1	1	0	0	2	0	3	6	0	0	9	0	2	0	0	0	2	0	0	9	0	0	9	22
4:15 AM	0	1	3	0	0	4	0	7	10	0	0	17	0	2	0	2	0	4	0	0	11	1	0	12	37
4:30 AM	0	0	2	0	0	2	0	6	27	0	0	33	0	6	1	5	0	12	0	0	14	0	0	14	61
4:45 AM	0	1	2	0	0	3	0	9	19	1	0	29	0	3	1	5	0	9	0	1	18	1	0	20	61
Hourly Total	0	3	8	0	0	11	0	25	62	1	0	88	0	13	2	12	0	27	0	1	52	2	0	55	181
5:00 AM	0	1	2	0	0	3	0	11	22	0	0	33	0	11	0	0	0	11	0	0	17	0	0	17	64
5:15 AM	0	0	3	0	0	3	0	15	16	3	0	34	0	5	0	9	0	14	0	2	26	3	0	31	82
5:30 AM	0	1	8	2	0	11	0	24	56	4	0	84	0	14	1	5	0	20	0	6	41	4	0	51	166
5:45 AM	0	1	3	2	0	6	0	18	51	0	0	69	0	7	3	18	0	28	0	3	52	5	0	60	163
Hourly Total	0	3	16	4	0	23	0	68	145	7	0	220	0	37	4	32	0	73	0	11	136	12	0	159	475
6:00 AM	0	4	4	1	0	9	0	20	69	5	0	94	0	17	1	14	0	32	0	1	56	7	0	64	199
6:15 AM	0	4	3	3	0	10	0	30	61	4	0	95	0	6	8	17	0	31	0	8	72	6	0	86	222
6:30 AM	0	3	12	2	0	17	1	46	119	10	0	176	0	19	4	20	0	43	0	10	96	17	0	123	359
6:45 AM	0	3	8	6	0	17	0	46	108	25	0	179	0	15	22	27	0	64	0	19	87	12	0	118	378
Hourly Total	0	14	27	12	0	53	1	142	357	44	0	544	0	57	35	78	0	170	0	38	311	42	0	391	1158
7:00 AM	0	16	30	22	0	68	0	46	125	91	0	262	0	23	78	26	0	127	0	59	99	6	0	164	621
7:15 AM	0	61	104	37	0	202	0	45	119	163	0	327	0	26	143	54	0	223	0	50	114	10	0	174	926
7:30 AM	0	73	89	41	0	203	0	88	167	112	7	367	0	24	108	61	0	193	0	46	133	25	0	204	967
7:45 AM	0	5	20	5	0	30	0	114	177	9	0	300	1	23	10	42	0	76	1	4	138	31	0	174	580
Hourly Total	0	155	243	105	0	503	0	293	588	375	7	1256	1	96	339	183	0	619	1	159	484	72	0	716	3094

TMC 2489 - CSAH 14 @ CSAH 51

Blaine MN

Tuesday, December 3, 2024

Time	Southbound University Ave						Westbound CSAH 14						Northbound CSAH 51						Eastbound CSAH 14						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	4	12	2	0	18	0	106	126	8	0	240	2	16	12	66	0	96	0	3	93	20	0	116	470
8:15 AM	0	7	11	1	0	19	0	40	138	8	2	186	1	14	4	46	0	65	1	1	103	19	0	124	394
8:30 AM	0	5	11	4	0	20	0	37	117	13	0	167	0	34	7	33	0	74	0	3	99	11	0	113	374
8:45 AM	0	10	12	11	0	33	0	55	132	13	0	200	0	25	10	36	0	71	0	6	112	21	0	139	443
Hourly Total	0	26	46	18	0	90	0	238	513	42	2	793	3	89	33	181	0	306	1	13	407	71	0	492	1681
9:00 AM	0	3	8	5	0	16	0	50	96	7	0	153	0	19	7	30	0	56	1	3	104	14	0	122	347
9:15 AM	0	2	5	3	0	10	0	49	157	7	0	213	0	34	5	33	0	72	0	4	107	12	0	123	418
9:30 AM	0	10	4	1	0	15	0	34	139	6	0	179	0	22	4	27	0	53	0	4	104	14	0	122	369
9:45 AM	0	5	3	4	0	12	0	35	137	9	1	181	1	26	7	23	0	57	0	23	116	17	0	156	406
Hourly Total	0	20	20	13	0	53	0	168	529	29	1	726	1	101	23	113	0	238	1	34	431	57	0	523	1540
10:00 AM	0	12	15	17	0	44	0	23	125	10	1	158	0	24	5	32	1	61	1	14	90	10	0	115	378
10:15 AM	0	5	6	4	0	15	0	27	129	2	0	158	0	17	2	18	0	37	0	6	109	17	0	132	342
10:30 AM	0	10	5	5	0	20	0	24	123	7	1	154	0	15	6	22	0	43	0	6	116	12	0	134	351
10:45 AM	0	6	5	1	0	12	0	17	136	9	0	162	2	20	8	23	0	53	0	2	93	13	0	108	335
Hourly Total	0	33	31	27	0	91	0	91	513	28	2	632	2	76	21	95	1	194	1	28	408	52	0	489	1406
11:00 AM	0	3	0	1	0	4	0	32	96	7	2	135	1	25	3	30	0	59	0	8	120	21	0	149	347
11:15 AM	0	24	12	13	0	49	0	23	125	8	0	156	1	15	7	31	0	54	0	9	117	22	0	148	407
11:30 AM	0	8	3	5	0	16	0	33	120	5	0	158	1	10	2	30	0	43	1	4	130	14	0	149	366
11:45 AM	0	6	6	10	0	22	0	23	135	5	0	163	0	24	4	32	0	60	0	3	135	15	0	153	398
Hourly Total	0	41	21	29	0	91	0	111	476	25	2	612	3	74	16	123	0	216	1	24	502	72	0	599	1518
12:00 PM	0	3	6	4	0	13	0	21	134	4	0	159	2	25	3	44	0	74	0	5	134	21	0	160	406
12:15 PM	0	11	4	1	0	16	0	33	120	10	0	163	0	22	5	21	0	48	0	5	157	16	0	178	405
12:30 PM	0	6	3	6	0	15	0	32	94	10	0	136	1	12	5	33	0	51	1	2	132	13	0	148	350
12:45 PM	0	5	4	5	0	14	0	35	126	7	0	168	1	11	3	33	0	48	1	4	135	21	0	161	391
Hourly Total	0	25	17	16	0	58	0	121	474	31	0	626	4	70	16	131	0	221	2	16	558	71	0	647	1552
1:00 PM	0	10	15	6	0	31	0	25	110	9	0	144	0	22	9	33	0	64	0	6	121	13	0	140	379
1:15 PM	0	9	6	5	0	20	0	30	113	8	0	151	1	20	6	36	0	63	0	9	120	21	0	150	384
1:30 PM	0	12	7	6	0	25	0	29	119	8	0	156	0	26	7	33	0	66	0	11	126	17	0	154	401
1:45 PM	0	9	10	8	0	27	0	29	110	11	0	150	0	14	19	31	0	64	0	25	147	26	0	198	439
Hourly Total	0	40	38	25	0	103	0	113	452	36	0	601	1	82	41	133	0	257	0	51	514	77	0	642	1603
2:00 PM	0	18	13	11	0	42	0	33	130	28	0	191	1	23	28	49	0	101	1	37	130	23	0	191	525
2:15 PM	0	74	61	26	2	161	0	31	108	25	19	164	2	23	30	59	3	114	0	24	131	21	0	176	615
2:30 PM	0	83	77	30	0	190	1	43	117	32	6	193	1	30	25	64	0	120	2	20	133	12	0	167	670
2:45 PM	0	48	51	38	0	137	1	48	137	14	0	200	1	33	11	57	0	102	0	10	167	30	0	207	646
Hourly Total	0	223	202	105	2	530	2	155	492	99	25	748	5	109	94	229	3	437	3	91	561	86	0	741	2456
3:00 PM	0	11	21	18	0	50	1	52	152	5	0	210	1	23	10	84	0	118	2	8	136	25	0	171	549
3:15 PM	0	8	13	11	0	32	0	91	172	15	1	278	2	28	6	88	0	124	0	8	155	39	0	202	636
3:30 PM	0	14	19	11	0	44	1	56	163	21	0	241	1	35	6	103	0	145	0	8	177	31	0	216	646
3:45 PM	0	10	14	15	0	39	0	59	137	10	0	206	1	57	16	96	0	170	0	5	193	24	0	222	637
Hourly Total	0	43	67	55	0	165	2	258	624	51	1	935	5	143	38	371	0	557	2	29	661	119	0	811	2468

**TMC 2489 - CSAH 14 @ CSAH 51
Blaine MN
Tuesday, December 3, 2024**

Time	Southbound University Ave						Westbound CSAH 14						Northbound CSAH 51						Eastbound CSAH 14						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	14	18	12	0	44	0	52	190	17	1	259	2	39	14	93	0	148	0	7	225	38	0	270	721
4:15 PM	0	13	12	10	0	35	0	49	198	22	0	269	2	42	16	117	0	177	1	13	221	35	0	270	751
4:30 PM	0	20	12	8	0	40	1	66	176	17	1	260	0	36	18	123	0	177	0	9	163	47	0	219	696
4:45 PM	0	28	24	9	0	61	0	49	187	23	0	259	1	33	26	105	0	165	0	6	235	29	0	270	755
Hourly Total	0	75	66	39	0	180	1	216	751	79	2	1047	5	150	74	438	0	667	1	35	844	149	0	1029	2923
5:00 PM	0	17	23	11	0	51	0	52	180	26	1	258	0	36	17	103	0	156	1	6	219	34	0	260	725
5:15 PM	1	11	16	8	0	36	0	48	162	8	0	218	1	45	9	90	0	145	0	7	207	35	0	249	648
5:30 PM	0	6	9	3	0	18	0	44	192	17	0	253	2	32	8	92	0	134	0	7	147	32	0	186	591
5:45 PM	0	3	3	5	0	11	0	49	147	14	0	210	1	30	17	62	0	110	1	5	183	18	0	207	538
Hourly Total	1	37	51	27	0	116	0	193	681	65	1	939	4	143	51	347	0	545	2	25	756	119	0	902	2502
6:00 PM	0	3	2	1	0	6	0	40	145	6	0	191	1	15	2	53	0	71	0	1	144	30	0	175	443
6:15 PM	0	5	4	3	0	12	0	28	115	15	0	158	1	30	8	48	0	87	0	10	159	18	0	187	444
6:30 PM	0	3	5	2	0	10	0	26	111	12	0	149	2	19	2	32	0	55	0	3	121	22	0	146	360
6:45 PM	0	11	4	6	0	21	0	23	107	11	0	141	1	10	7	38	0	56	0	6	102	19	0	127	345
Hourly Total	0	22	15	12	0	49	0	117	478	44	0	639	5	74	19	171	0	269	0	20	526	89	0	635	1592
7:00 PM	0	34	17	3	0	54	0	25	94	7	0	126	4	13	1	20	0	38	0	3	112	21	0	136	354
7:15 PM	0	6	4	3	0	13	0	24	78	5	0	107	1	15	2	35	0	53	0	3	100	14	0	117	290
7:30 PM	0	5	1	4	0	10	1	28	72	3	0	104	3	10	4	35	0	52	0	3	95	12	0	110	276
7:45 PM	0	3	1	1	0	5	0	31	69	6	0	106	1	10	2	25	0	38	0	5	99	20	0	124	273
Hourly Total	0	48	23	11	0	82	1	108	313	21	0	443	9	48	9	115	0	181	0	14	406	67	0	487	1193
8:00 PM	0	7	5	4	0	16	1	24	71	1	0	97	0	15	2	31	0	48	2	5	80	28	0	115	276
8:15 PM	0	8	3	1	0	12	0	32	63	2	0	97	0	20	8	23	0	51	0	2	78	17	0	97	257
8:30 PM	0	12	5	3	0	20	0	28	85	6	0	119	0	12	5	28	0	45	1	5	84	12	0	102	286
8:45 PM	0	3	3	2	0	8	0	21	49	4	0	74	1	5	3	13	0	22	1	1	57	17	0	76	180
Hourly Total	0	30	16	10	0	56	1	105	268	13	0	387	1	52	18	95	0	166	4	13	299	74	0	390	999
9:00 PM	0	2	2	1	0	5	0	13	65	1	0	79	2	10	6	26	0	44	0	4	59	14	0	77	205
9:15 PM	0	0	0	0	0	0	0	23	52	0	0	75	2	15	3	13	0	33	0	0	56	22	0	78	186
9:30 PM	0	1	0	0	0	1	0	10	44	2	0	56	0	5	1	21	0	27	1	0	53	8	0	62	146
9:45 PM	0	1	0	2	0	3	0	13	51	1	0	65	1	8	2	16	0	27	0	1	42	9	0	52	147
Hourly Total	0	4	2	3	0	9	0	59	212	4	0	275	5	38	12	76	0	131	1	5	210	53	0	269	684
10:00 PM	0	0	1	0	0	1	0	8	28	0	0	36	1	3	2	18	0	24	1	1	36	22	0	60	121
10:15 PM	0	1	3	0	0	4	0	7	25	0	0	32	0	7	0	17	0	24	0	1	35	5	0	41	101
10:30 PM	0	0	1	0	0	1	0	12	31	0	0	43	1	3	0	12	0	16	0	3	27	5	0	35	95
10:45 PM	0	1	0	0	0	1	0	8	23	2	0	33	2	6	0	11	0	19	0	1	13	4	0	18	71
Hourly Total	0	2	5	0	0	7	0	35	107	2	0	144	4	19	2	58	0	83	1	6	111	36	0	154	388
11:00 PM	0	0	0	0	0	0	0	5	18	1	0	24	0	4	2	8	0	14	0	2	16	3	0	21	59
11:15 PM	0	0	0	1	0	1	0	3	11	2	0	16	0	1	1	7	0	9	0	0	13	5	0	18	44
11:30 PM	0	0	0	0	0	0	0	2	17	1	0	20	0	1	1	5	0	7	0	0	19	1	0	20	47
11:45 PM	0	1	0	1	0	2	0	8	5	0	0	13	1	0	2	13	0	16	1	1	13	3	0	18	49
Hourly Total	0	1	0	2	0	3	0	18	51	4	0	73	1	6	6	33	0	46	1	3	61	12	0	77	199
DAILY TOTAL	1	845	917	513	2	2276	8	2662	8157	1002	43	11829	60	1492	860	3059	4	5471	22	617	8317	1351	1	10307	29883
Cars	1	806	885	487	2	2179	8	2615	7944	964	43	11531	60	1443	831	3006	4	5340	22	546	8124	1311	1	10003	29053
Heavy Vehicles	0	39	32	26	0	97	0	47	213	38	0	298	0	49	29	53	0	131	0	71	193	40	0	304	830
Heavy Vehicle %	0.00%	4.62%	3.49%	5.07%	0.00%	4.26%	0.00%	1.77%	2.61%	3.79%	0.00%	2.52%	0.00%	3.28%	3.37%	1.73%	0.00%	2.39%	0.00%	11.51%	2.32%	2.96%	0.00%	2.95%	2.78%

**TMC 2489 - CSAH 14 @ CSAH 51
Blaine MN
Tuesday, December 3, 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	16	30	22	0	68	0	46	125	91	0	262	0	23	78	26	0	127	0	59	99	6	0	164	0	174
7:15 AM	0	61	104	37	0	202	0	45	119	163	0	327	0	26	143	54	0	223	0	50	114	10	0	174	0	926
7:30 AM	0	73	89	41	0	203	0	88	167	112	7	367	0	24	108	61	0	193	0	46	133	25	0	204	0	967
7:45 AM	0	5	20	5	0	30	0	114	177	9	0	300	1	23	10	42	0	76	1	4	138	31	0	174	0	580
Peak Hour Total	0	155	243	105	0	503	0	293	588	375	7	1256	1	96	339	183	0	619	1	159	484	72	0	716	0	3094
PHF	0.000	0.531	0.584	0.640	0.000	0.619	0.000	0.643	0.831	0.575	0.250	0.856	0.250	0.923	0.593	0.750	0.000	0.694	0.250	0.674	0.877	0.581	0.000	0.877	0.000	0.800

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	13	12	10	0	35	0	49	198	22	0	269	2	42	16	117	0	177	1	13	221	35	0	270	0	751
4:30 PM	0	20	12	8	0	40	1	66	176	17	1	260	0	36	18	123	0	177	0	9	163	47	0	219	0	696
4:45 PM	0	28	24	9	0	61	0	49	187	23	0	259	1	33	26	105	0	165	0	6	235	29	0	270	0	755
5:00 PM	0	17	23	11	0	51	0	52	180	26	1	258	0	36	17	103	0	156	1	6	219	34	0	260	0	725
Peak Hour Total	0	78	71	38	0	187	1	216	741	88	2	1046	3	147	77	448	0	675	2	34	838	145	0	1019	0	2927
PHF	0.000	0.696	0.740	0.864	0.000	0.766	0.250	0.818	0.936	0.846	0.500	0.972	0.375	0.875	0.740	0.911	0.000	0.953	0.500	0.654	0.891	0.771	0.000	0.944	0.000	0.969

Total Vehicles On Leg		4756					
Vehicles Entering Intersection		2276		Vehicles Exiting Intersection		2480	
Southbound							
Cars	487	885	806	1	2		
Heavy	26	32	39	0	0		
Total	513	917	845	1	2		



Total Vehicles on Leg 20491	Vehicles Entering Intersection 10307	Eastbound	Cars	Heavy	Total	
			1	0	1	
			22	0	22	
	546		71	617		
	8124		193	8317		
	Vehicles Exiting Intersection 10184		1311	40	1351	

Daily Volumes

Cars	Heavy	Total	Westbound	Vehicles Entering Intersection 11829	Total Vehicles on Leg 24058
964	38	1002			
7944	213	8157			
2615	47	2662			
8	0	8			
43	0	43		Vehicles Exiting Intersection 12229	



Cars	4	60	1443	831	3006		
Heavy	0	0	49	29	53		
Total	4	60	1492	860	3059		
Vehicles Entering Intersection		5471		Vehicles Exiting Intersection		4990	
Total Vehicles On Leg		10461					

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2489

Study Date : 01/03/2025

Signal Warrants - Summary

Major Street Approaches

Eastbound: CSAH 14

Number of Lanes : 2+

Total Approach Volume: 10,307

Westbound: CSAH 14

Number of Lanes :2+

Total Approach Volume: 11,829

Minor Street Approaches

Northbound: CSAH 51

Number of Lanes :2+

Total Approach Volume: 2,412

Southbound: University Ave

Number of Lanes :2+

Total Approach Volume: 1,763

Warrant Summary (Rural Values Apply)

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

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

Required volumes reached for 8 hours, 8 are needed

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

Required volumes reached for 15 hours, 8 are needed

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

Required 1A volumes reached for 9 hours, 8 are needed

Required 1B volumes reached for 16 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: TMC 2489

Study Date : 01/03/2025

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

8 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 EB	+	Major WB	=		Minor NB	Minor SB	
16:15 - 17:15	1019	+	1046	=	2065	227	149	Yes
07:15 - 08:15	668	+	1234	=	1902	365	368	Yes
15:15 - 16:15	910	+	984	=	1894	207	110	Yes
17:15 - 18:15	817	+	872	=	1689	163	54	Yes
14:15 - 15:15	721	+	767	=	1488	190	426	Yes
13:15 - 14:15	693	+	648	=	1341	145	84	Yes
08:30 - 09:30	497	+	733	=	1230	141	56	Yes
06:15 - 07:15	491	+	712	=	1203	175	79	Yes
11:30 - 12:30	640	+	643	=	1283	98	47	No
12:00 - 13:00	647	+	626	=	1273	90	42	No
11:45 - 12:45	639	+	621	=	1260	103	45	No
11:15 - 12:15	610	+	636	=	1246	94	68	No
13:00 - 14:00	642	+	601	=	1243	124	78	No
12:15 - 13:15	627	+	611	=	1238	91	58	No
12:45 - 13:45	605	+	619	=	1224	106	68	No
11:00 - 12:00	599	+	612	=	1211	93	62	No
08:15 - 09:15	498	+	706	=	1204	121	67	No
09:30 - 10:30	525	+	676	=	1201	108	60	No
12:30 - 13:30	599	+	599	=	1198	91	58	No
09:45 - 10:45	537	+	651	=	1188	103	61	No
18:15 - 19:15	596	+	574	=	1170	98	83	No
10:45 - 11:45	554	+	611	=	1165	95	61	No
10:30 - 11:30	539	+	607	=	1146	103	65	No
10:15 - 11:15	523	+	609	=	1132	99	40	No
10:00 - 11:00	489		632		1121	99	64	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2489

Study Date : 01/03/2025

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

15 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 EB	+	Major WB	=		Minor NB	Minor SB	
16:00 - 17:00	1029	+	1047	=	2076	229	141	Yes
07:00 - 08:00	716	+	1256	=	1972	436	398	Yes
17:00 - 18:00	902	+	939	=	1841	198	89	Yes
15:00 - 16:00	811	+	935	=	1746	186	110	Yes
14:00 - 15:00	741	+	748	=	1489	208	425	Yes
08:00 - 09:00	492	+	793	=	1285	125	72	Yes
18:00 - 19:00	635	+	639	=	1274	98	37	Yes
12:00 - 13:00	647	+	626	=	1273	90	42	Yes
09:00 - 10:00	523	+	726	=	1249	125	40	Yes
13:00 - 14:00	642	+	601	=	1243	124	78	Yes
11:00 - 12:00	599	+	612	=	1211	93	62	Yes
10:00 - 11:00	489	+	632	=	1121	99	64	Yes
06:00 - 07:00	391	+	544	=	935	92	41	Yes
19:00 - 20:00	487	+	443	=	930	66	71	Yes
20:00 - 21:00	390	+	387	=	777	71	46	Yes
05:45 - 06:45	333	+	434	=	767	65	34	No
05:30 - 06:30	261	+	342	=	603	57	28	No
21:00 - 22:00	269	+	275	=	544	55	6	No
05:15 - 06:15	206	+	281	=	487	48	24	No
21:15 - 22:15	252	+	232	=	484	43	3	No
21:30 - 22:30	215	+	189	=	404	30	7	No
05:00 - 06:00	159	+	220	=	379	41	19	No
21:45 - 22:45	188	+	176	=	364	28	7	No
04:45 - 05:45	119	+	180	=	299	35	18	No
22:00 - 23:00	154		144		298	25	7	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2489

Study Date : 01/03/2025

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

9 hours meet 1A minimums.
16 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 14

Minor Road CSAH 51

Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met1A?
16:00 - 17:00	1029	+	1047	=	2076	229	141	Yes
07:15 - 08:15	668	+	1234	=	1902	365	368	Yes
17:00 - 18:00	902	+	939	=	1841	198	89	Yes
15:00 - 16:00	811	+	935	=	1746	186	110	Yes
14:00 - 15:00	741	+	748	=	1489	208	425	Yes
09:15 - 10:15	516	+	731	=	1247	128	56	Yes
13:00 - 14:00	642	+	601	=	1243	124	78	Yes
08:15 - 09:15	498	+	706	=	1204	121	67	Yes
06:15 - 07:15	491	+	712	=	1203	175	79	Yes
11:30 - 12:30	640	+	643	=	1283	98	47	No
18:00 - 19:00	635	+	639	=	1274	98	37	No
12:00 - 13:00	647	+	626	=	1273	90	42	No

Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met1B?
16:30 - 17:30	998	+	995	=	1993	222	152	Yes
15:30 - 16:30	978	+	975	=	1953	231	114	Yes
07:30 - 08:30	618	+	1093	=	1711	215	221	Yes
14:30 - 15:30	747	+	881	=	1628	171	312	Yes
17:30 - 18:30	755	+	812	=	1567	147	35	Yes
06:30 - 07:30	579	+	944	=	1523	330	237	Yes
13:30 - 14:30	719	+	661	=	1380	173	204	Yes
11:30 - 12:30	640	+	643	=	1283	98	47	Yes
08:30 - 09:30	497	+	733	=	1230	141	56	Yes
09:30 - 10:30	525	+	676	=	1201	108	60	Yes
12:30 - 13:30	599	+	599	=	1198	91	58	Yes
10:30 - 11:30	539	+	607	=	1146	103	65	Yes

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2489

Study Date : 01/03/2025

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.

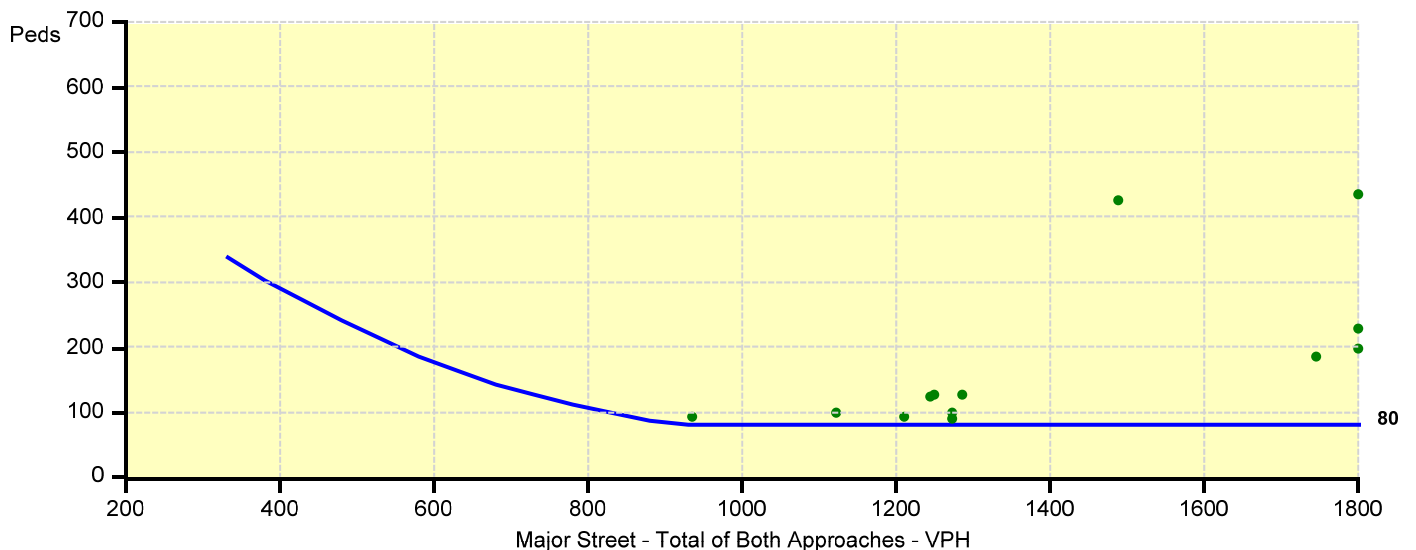
Summary

13 one hour periods meet minimums.
Warrant IS met.

Site Data Required

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

Time	Major Road CSAH 14				Total	Minor Road CSAH 51		Met?
	Major EB	+	Major WB	=		Minor NB	Minor SB	
16:00 - 17:00	1029	+	1047	=	2076	229	141	Yes
07:00 - 08:00	716	+	1256	=	1972	436	398	Yes
17:00 - 18:00	902	+	939	=	1841	198	89	Yes
15:00 - 16:00	811	+	935	=	1746	186	110	Yes
14:00 - 15:00	741	+	748	=	1489	208	425	Yes
08:00 - 09:00	492	+	793	=	1285	125	72	Yes
18:00 - 19:00	635	+	639	=	1274	98	37	Yes
12:00 - 13:00	647	+	626	=	1273	90	42	Yes
09:00 - 10:00	523	+	726	=	1249	125	40	Yes
13:00 - 14:00	642	+	601	=	1243	124	78	Yes
11:00 - 12:00	599	+	612	=	1211	93	62	Yes
10:00 - 11:00	489	+	632	=	1121	99	64	Yes



ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2489

Study Date : 01/03/2025

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 14				Total	Minor Road CSAH 51		Met?
	Major EB	+	Major WB	=		Minor NB	Minor SB	
16:00 - 17:00	1029	+	1047	=	2076	229	141	Yes
16:15 - 17:15	1019	+	1046	=	2065	227	149	Yes
16:30 - 17:30	998	+	995	=	1993	222	152	Yes
15:45 - 16:45	981	+	994	=	1975	243	113	Yes
07:00 - 08:00	716	+	1256	=	1972	436	398	Yes
15:30 - 16:30	978	+	975	=	1953	231	114	Yes
16:45 - 17:45	965	+	988	=	1953	210	135	Yes
07:15 - 08:15	668	+	1234	=	1902	365	368	Yes
15:15 - 16:15	910	+	984	=	1894	207	110	Yes
17:00 - 18:00	902	+	939	=	1841	198	89	Yes
06:45 - 07:45	660	+	1135	=	1795	439	384	Yes
15:00 - 16:00	811	+	935	=	1746	186	110	Yes

