

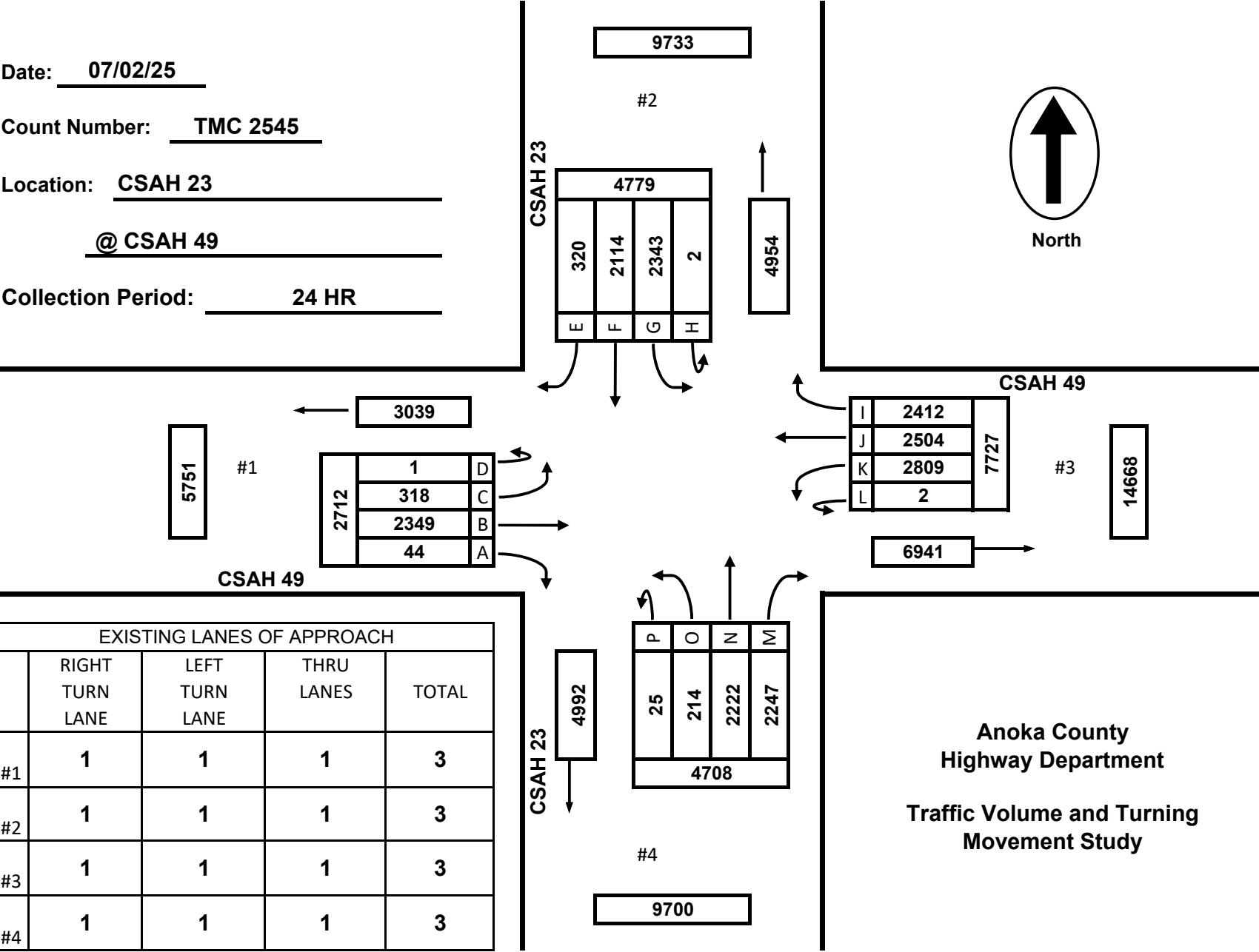
Date: 07/02/25

Count Number: TMC 2545

Location: CSAH 23

@ CSAH 49

Collection Period: 24 HR



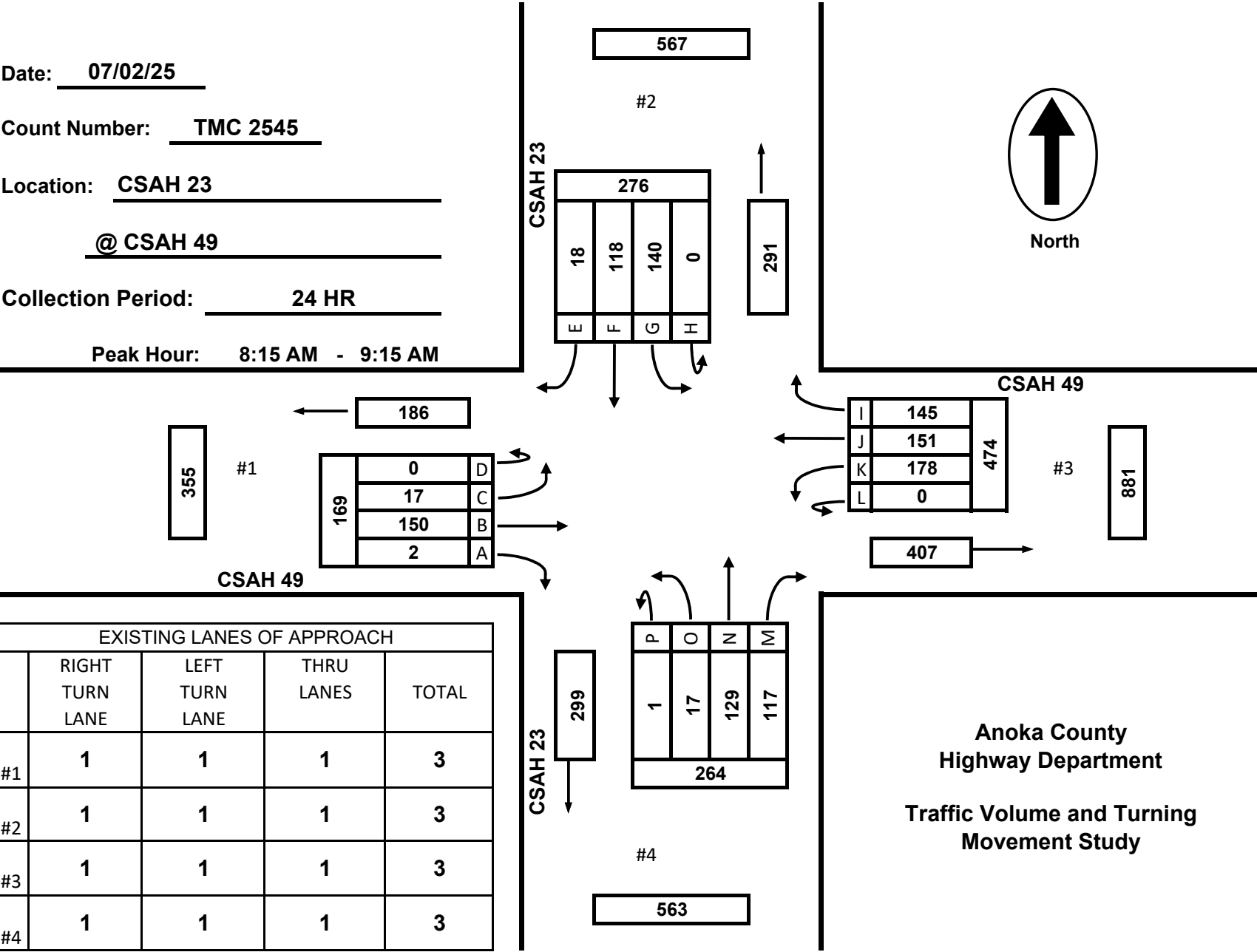
Date: 07/02/25

Count Number: TMC 2545

Location: CSAH 23
@ CSAH 49

Collection Period: 24 HR

Peak Hour: 8:15 AM - 9:15 AM



Peak Hour: 11:45 AM - 12:45 PM

Date: 07/02/25

Count Number: TMC 2545

Location: CSAH 23
@ CSAH 49

Collection Period: 24 HR

Peak Hour: 11:45 AM - 12:45 PM

CSAH 23

CSAH 49

North

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

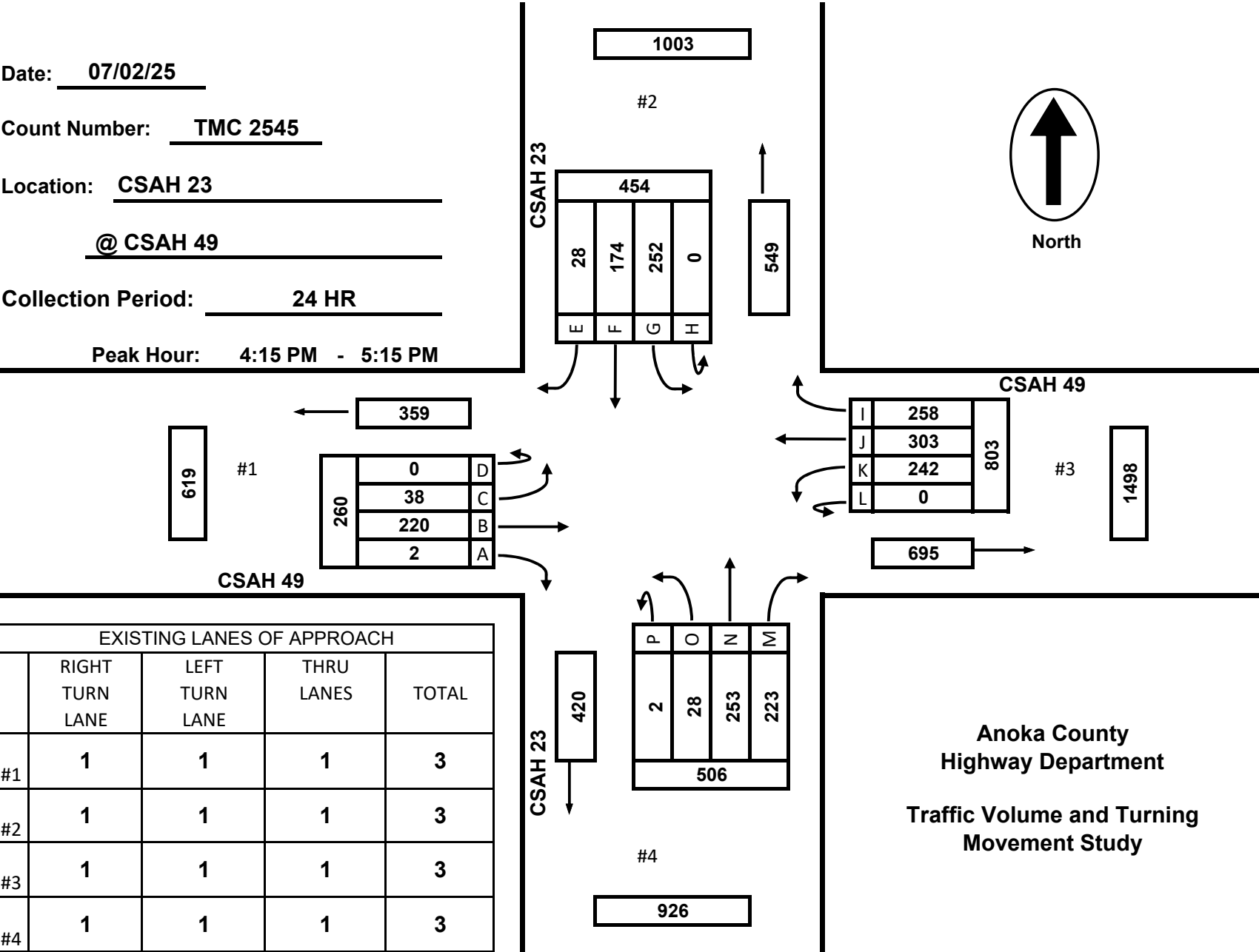
Date: 07/02/25

Count Number: TMC 2545

Location: CSAH 23
@ CSAH 49

Collection Period: 24 HR

Peak Hour: 4:15 PM - 5:15 PM



Anoka County
Highway Department
Traffic Volume and Turning
Movement Study

TMC 2545 - CSAH 23 @ CSAH 49
Lino Lakes MN
Wednesday, July 2, 2025

Time	Southbound CSAH 23						Westbound CSAH 49						Northbound CSAH 23						Eastbound CSAH 49						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	6	5	0	0	11	0	6	2	4	0	12	0	1	3	1	0	5	0	0	3	0	0	3	31
12:15 AM	0	0	2	0	0	2	0	1	4	3	0	8	0	1	2	2	0	5	0	0	2	0	0	2	17
12:30 AM	0	2	1	0	0	3	0	3	4	1	0	8	0	0	1	2	0	3	0	0	3	0	0	3	17
12:45 AM	0	1	0	0	0	1	0	1	1	1	0	3	0	0	0	2	0	2	0	2	2	0	0	4	10
Hourly Total	0	9	8	0	0	17	0	11	11	9	0	31	0	2	6	7	0	15	0	2	10	0	0	12	75
1:00 AM	0	0	0	0	0	0	0	4	3	2	0	9	0	1	3	1	0	5	0	0	0	0	0	0	14
1:15 AM	0	1	0	1	0	2	0	2	0	2	0	4	0	0	2	1	0	3	0	0	2	0	0	2	11
1:30 AM	0	3	1	0	0	4	0	2	1	1	0	4	0	0	1	0	0	1	0	0	0	0	0	0	9
1:45 AM	0	1	0	1	0	2	0	1	1	3	0	5	0	0	1	1	0	2	0	1	0	0	0	1	10
Hourly Total	0	5	1	2	0	8	0	9	5	8	0	22	0	1	7	3	0	11	0	1	2	0	0	3	44
2:00 AM	0	0	0	0	0	0	0	2	1	3	0	6	0	0	1	0	0	1	0	0	1	0	0	1	8
2:15 AM	0	1	2	0	0	3	0	1	0	3	0	4	0	0	1	0	0	1	0	0	1	0	0	1	9
2:30 AM	0	2	0	0	0	2	0	1	0	0	0	1	0	0	2	0	0	2	0	0	1	0	0	1	6
2:45 AM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	1	0	0	1	0	0	0	0	0	0	3
Hourly Total	0	3	2	0	0	5	0	6	1	6	0	13	0	0	5	0	0	5	0	0	3	0	0	3	26
3:00 AM	0	0	2	0	0	2	0	3	1	1	0	5	0	0	1	0	0	1	0	0	0	0	0	0	8
3:15 AM	0	1	2	0	0	3	0	2	0	1	0	3	0	0	1	1	0	2	0	0	0	0	0	0	8
3:30 AM	0	1	1	0	0	2	0	0	0	1	0	1	1	0	0	0	0	1	0	0	0	0	0	0	4
3:45 AM	0	2	3	0	0	5	0	3	0	1	0	4	0	0	4	2	0	6	0	0	0	0	0	0	15
Hourly Total	0	4	8	0	0	12	0	8	1	4	0	13	1	0	6	3	0	10	0	0	0	0	0	0	35
4:00 AM	0	3	2	0	0	5	0	5	0	1	0	6	0	0	1	0	0	1	0	0	1	0	0	1	13
4:15 AM	0	2	3	0	0	5	1	3	0	3	0	7	0	0	0	0	0	0	0	0	3	0	0	3	15
4:30 AM	0	1	4	0	0	5	0	6	2	1	0	9	0	0	1	1	0	2	0	0	4	0	0	4	20
4:45 AM	0	6	3	1	0	10	0	6	4	2	0	12	0	0	7	5	0	12	0	2	7	0	0	9	43
Hourly Total	0	12	12	1	0	25	1	20	6	7	0	34	0	0	9	6	0	15	0	2	15	0	0	17	91
5:00 AM	0	9	7	0	0	16	0	7	4	4	0	15	1	0	2	2	0	5	0	0	8	0	0	8	44
5:15 AM	0	8	6	1	0	15	0	20	5	9	0	34	0	1	2	3	0	6	0	1	2	0	0	3	58
5:30 AM	0	11	11	1	0	23	0	28	7	2	0	37	0	0	12	6	0	18	0	2	10	0	0	12	90
5:45 AM	0	8	16	1	0	25	0	23	14	8	0	45	0	0	6	8	0	14	0	0	7	0	0	7	91
Hourly Total	0	36	40	3	0	79	0	78	30	23	0	131	1	1	22	19	0	43	0	3	27	0	0	30	283
6:00 AM	0	17	13	1	0	31	0	23	6	7	0	36	0	1	4	15	0	20	0	1	13	1	0	15	102
6:15 AM	0	18	32	0	0	50	0	33	11	14	0	58	0	2	8	14	0	24	0	0	17	0	0	17	149
6:30 AM	0	25	28	1	0	54	0	36	12	4	0	52	0	0	10	20	0	30	0	0	29	2	0	31	167
6:45 AM	0	20	26	3	0	49	0	50	19	21	0	90	0	0	15	23	0	38	0	2	24	1	0	27	204
Hourly Total	0	80	99	5	0	184	0	142	48	46	0	236	0	3	37	72	0	112	0	3	83	4	0	90	622
7:00 AM	0	31	21	1	0	53	0	37	13	23	0	73	1	1	10	18	1	30	0	1	26	0	0	27	183
7:15 AM	0	39	27	2	0	68	0	41	24	29	0	94	0	1	21	21	0	43	0	3	32	0	0	35	240
7:30 AM	0	42	24	1	0	67	0	59	29	28	0	116	0	1	22	30	0	53	0	4	22	0	0	26	262
7:45 AM	0	34	31	1	0	66	0	41	36	39	0	116	1	8	36	27	0	72	0	4	35	0	0	39	293
Hourly Total	0	146	103	5	0	254	0	178	102	119	0	399	2	11	89	96	1	198	0	12	115	0	0	127	978

TMC 2545 - CSAH 23 @ CSAH 49
Lino Lakes MN
Wednesday, July 2, 2025

Time	Southbound CSAH 23						Westbound CSAH 49						Northbound CSAH 23						Eastbound CSAH 49						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	23	22	3	0	48	0	52	24	39	0	115	1	2	27	22	1	52	0	4	15	0	0	19	234
8:15 AM	0	35	31	3	1	69	0	36	37	44	0	117	0	4	30	30	0	64	0	1	27	0	0	28	278
8:30 AM	0	45	35	3	0	83	0	54	45	32	0	131	1	3	28	30	0	62	0	3	35	1	0	39	315
8:45 AM	0	34	30	7	0	71	0	49	38	32	0	119	0	3	34	30	0	67	0	8	32	0	0	40	297
Hourly Total	0	137	118	16	1	271	0	191	144	147	0	482	2	12	119	112	1	245	0	16	109	1	0	126	1124
9:00 AM	0	26	22	5	0	53	0	39	31	37	0	107	0	7	37	27	0	71	0	5	56	1	0	62	293
9:15 AM	0	25	39	3	0	67	0	31	31	33	0	95	0	3	27	27	0	57	0	4	35	0	0	39	258
9:30 AM	0	22	31	4	0	57	0	33	46	31	0	110	1	3	22	29	1	55	0	5	21	3	0	29	251
9:45 AM	0	36	30	4	0	70	0	44	33	42	0	119	1	3	32	23	0	59	0	3	26	0	0	29	277
Hourly Total	0	109	122	16	0	247	0	147	141	143	0	431	2	16	118	106	1	242	0	17	138	4	0	159	1079
10:00 AM	0	36	20	9	0	65	0	42	29	33	0	104	0	1	20	33	0	54	0	6	28	1	0	35	258
10:15 AM	0	32	33	9	0	74	0	39	40	38	0	117	1	1	33	31	0	66	0	4	36	0	0	40	297
10:30 AM	0	36	31	4	0	71	0	40	32	23	0	95	0	8	21	30	0	59	0	4	32	1	0	37	262
10:45 AM	0	30	25	7	0	62	0	65	33	32	0	130	0	1	34	23	0	58	0	4	34	1	0	39	289
Hourly Total	0	134	109	29	0	272	0	186	134	126	0	446	1	11	108	117	0	237	0	18	130	3	0	151	1106
11:00 AM	0	38	33	7	0	78	0	48	36	47	0	131	0	1	29	36	0	66	0	5	27	1	0	33	308
11:15 AM	1	24	28	4	0	57	0	53	35	37	0	125	0	2	40	41	0	83	0	9	46	0	0	55	320
11:30 AM	0	33	20	4	0	57	0	39	30	44	0	113	0	2	24	39	0	65	0	5	34	2	0	41	276
11:45 AM	0	45	37	4	0	86	0	52	31	50	0	133	1	3	36	53	0	93	0	7	39	1	0	47	359
Hourly Total	1	140	118	19	0	278	0	192	132	178	0	502	1	8	129	169	0	307	0	26	146	4	0	176	1263
12:00 PM	0	47	53	6	0	106	0	47	42	49	0	138	2	3	28	51	0	84	0	3	52	1	0	56	384
12:15 PM	0	42	36	8	0	86	0	41	40	43	0	124	2	1	41	34	0	78	0	1	46	2	0	49	337
12:30 PM	0	30	35	6	0	71	0	51	46	43	0	140	1	5	37	36	0	79	0	5	36	1	0	42	332
12:45 PM	0	32	39	5	0	76	1	42	48	51	0	142	0	2	34	30	0	66	0	1	42	0	0	43	327
Hourly Total	0	151	163	25	0	339	1	181	176	186	0	544	5	11	140	151	0	307	0	10	176	4	0	190	1380
1:00 PM	0	36	32	5	0	73	0	47	38	29	0	114	0	5	40	47	0	92	0	10	40	0	0	50	329
1:15 PM	0	36	41	5	0	82	0	41	43	40	0	124	1	2	43	29	1	75	1	5	31	0	0	37	318
1:30 PM	0	43	37	5	0	85	0	38	36	30	0	104	0	3	31	53	0	87	0	3	42	0	0	45	321
1:45 PM	0	29	30	1	0	60	0	52	37	46	0	135	1	2	46	34	0	83	0	9	39	2	0	50	328
Hourly Total	0	144	140	16	0	300	0	178	154	145	0	477	2	12	160	163	1	337	1	27	152	2	0	182	1296
2:00 PM	0	42	41	3	0	86	0	45	42	44	0	131	0	1	40	38	0	79	0	3	39	1	0	43	339
2:15 PM	0	38	38	7	2	83	0	45	49	45	0	139	1	4	36	45	0	86	0	9	38	2	0	49	357
2:30 PM	0	34	42	6	2	82	0	49	34	32	0	115	0	4	52	42	0	98	0	4	23	1	0	28	323
2:45 PM	0	31	30	8	0	69	0	55	47	41	0	143	0	5	43	30	0	78	0	10	46	1	0	57	347
Hourly Total	0	145	151	24	4	320	0	194	172	162	0	528	1	14	171	155	0	341	0	26	146	5	0	177	1366
3:00 PM	0	33	38	4	0	75	0	45	50	38	1	133	0	6	38	29	0	73	0	5	33	1	0	39	320
3:15 PM	0	40	40	5	0	85	0	60	51	51	3	162	0	7	51	48	0	106	0	7	36	1	0	44	397
3:30 PM	0	48	40	4	0	92	0	51	57	57	0	165	0	5	65	42	0	112	0	5	37	2	0	44	413
3:45 PM	0	48	35	5	0	88	0	57	75	60	1	192	0	5	62	36	0	103	0	3	42	0	0	45	428
Hourly Total	0	169	153	18	0	340	0	213	233	206	5	652	0	23	216	155	0	394	0	20	148	4	0	172	1558

TMC 2545 - CSAH 23 @ CSAH 49
Lino Lakes MN
Wednesday, July 2, 2025

Time	Southbound CSAH 23						Westbound CSAH 49						Northbound CSAH 23						Eastbound CSAH 49						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	57	44	6	0	107	0	50	55	57	0	162	0	10	61	49	0	120	0	9	54	1	0	64	453
4:15 PM	0	48	42	8	0	98	0	59	75	74	0	208	0	6	67	46	0	119	0	10	53	0	0	63	488
4:30 PM	0	67	50	6	0	123	0	61	64	54	0	179	1	11	48	59	0	119	0	6	54	0	0	60	481
4:45 PM	0	70	39	7	0	116	0	67	82	59	0	208	0	5	62	66	0	133	0	8	52	1	0	61	518
Hourly Total	0	242	175	27	0	444	0	237	276	244	0	757	1	32	238	220	0	491	0	33	213	2	0	248	1940
5:00 PM	0	67	43	7	0	117	0	55	82	71	0	208	1	6	76	52	0	135	0	14	61	1	0	76	536
5:15 PM	0	39	45	5	0	89	0	54	73	56	0	183	2	5	49	59	1	115	0	7	57	0	0	64	451
5:30 PM	0	31	45	11	0	87	0	46	59	50	0	155	0	5	37	55	0	97	0	7	56	2	0	65	404
5:45 PM	0	42	32	4	0	78	0	52	55	49	0	156	0	5	39	38	0	82	0	5	54	1	0	60	376
Hourly Total	0	179	165	27	0	371	0	207	269	226	0	702	3	21	201	204	1	429	0	33	228	4	0	265	1767
6:00 PM	0	36	38	5	0	79	0	44	39	43	0	126	0	1	37	29	0	67	0	7	46	2	0	55	327
6:15 PM	0	35	23	14	0	72	0	38	45	42	0	125	1	3	48	48	0	100	0	7	37	1	0	45	342
6:30 PM	0	41	34	4	0	79	0	31	27	30	0	88	0	4	36	29	0	69	0	7	32	0	0	39	275
6:45 PM	0	30	20	10	0	60	0	23	40	33	0	96	0	5	35	29	0	69	0	6	29	0	0	35	260
Hourly Total	0	142	115	33	0	290	0	136	151	148	0	435	1	13	156	135	0	305	0	27	144	3	0	174	1204
7:00 PM	0	30	29	4	0	63	0	33	32	25	0	90	0	2	26	34	0	62	0	6	37	0	2	43	258
7:15 PM	0	31	19	3	0	53	0	23	35	22	0	80	0	3	26	27	0	56	0	3	41	0	0	44	233
7:30 PM	0	26	24	2	0	52	0	32	36	29	0	97	0	1	30	29	0	60	0	7	36	0	0	43	252
7:45 PM	0	34	21	3	0	58	0	20	32	20	0	72	0	1	29	22	0	52	0	3	24	0	1	27	209
Hourly Total	0	121	93	12	0	226	0	108	135	96	0	339	0	7	111	112	0	230	0	19	138	0	3	157	952
8:00 PM	0	40	31	5	0	76	0	21	22	25	0	68	1	3	15	32	0	51	0	2	35	1	0	38	233
8:15 PM	0	25	26	1	0	52	0	32	10	15	0	57	0	4	26	25	0	55	0	4	27	1	0	32	196
8:30 PM	1	20	24	3	0	48	0	20	19	21	0	60	1	0	22	24	0	47	0	5	12	0	0	17	172
8:45 PM	0	26	23	10	0	59	0	10	17	13	0	40	0	2	24	28	0	54	0	1	22	0	0	23	177
Hourly Total	1	111	104	19	0	235	0	83	68	74	0	225	2	9	87	109	0	207	0	12	96	2	0	110	777
9:00 PM	0	27	19	4	0	50	0	17	24	14	0	55	0	2	14	16	0	32	0	3	23	1	0	27	164
9:15 PM	0	20	18	4	0	42	0	12	8	18	0	38	0	1	9	25	1	35	0	2	16	0	0	18	133
9:30 PM	0	21	12	4	0	37	0	13	14	10	0	37	0	1	7	19	1	27	0	1	12	1	0	14	115
9:45 PM	0	6	13	5	0	24	0	8	12	7	0	27	0	0	10	17	0	27	0	0	19	0	0	19	97
Hourly Total	0	74	62	17	0	153	0	50	58	49	0	157	0	4	40	77	2	121	0	6	70	2	0	78	509
10:00 PM	0	10	9	0	0	19	0	10	7	11	0	28	0	2	11	11	0	24	0	2	14	0	0	16	87
10:15 PM	0	10	11	1	0	22	0	15	9	10	0	34	0	0	11	15	0	26	0	0	15	0	0	15	97
10:30 PM	0	7	19	1	0	27	0	7	7	6	0	20	0	0	4	13	0	17	0	1	7	0	0	8	72
10:45 PM	0	8	6	2	0	16	0	7	11	7	0	25	0	0	8	4	0	12	0	0	7	0	0	7	60
Hourly Total	0	35	45	4	0	84	0	39	34	34	0	107	0	2	34	43	0	79	0	3	43	0	0	46	316
11:00 PM	0	2	6	0	0	8	0	5	3	11	0	19	0	1	4	5	0	10	0	1	8	0	0	9	46
11:15 PM	0	5	1	0	0	6	0	3	9	6	0	18	0	0	2	5	0	7	0	1	5	0	0	6	37
11:30 PM	0	4	1	1	0	6	0	2	4	4	0	10	0	0	3	1	0	4	0	0	3	0	0	3	23
11:45 PM	0	4	0	1	0	5	0	5	7	5	0	17	0	0	4	2	0	6	0	0	1	0	0	1	29
Hourly Total	0	15	8	2	0	25	0	15	23	26	0	64	0	1	13	13	0	27	0	2	17	0	0	19	135
DAILY TOTAL	2	2343	2114	320	5	4779	2	2809	2504	2412	5	7727	25	214	2222	2247	7	4708	1	318	2349	44	3	2712	19926
Cars	2	2266	2090	316	4	4674	2	2754	2480	2345	2	7581	25	206	2195	2197	2	4623	1	314	2322	40	0	2677	19555
Heavy Vehicles	0	77	24	4	1	105	0	55	24	67	3	146	0	8	27	50	5	85	0	4	27	4	3	35	371
Heavy Vehicle %	0.00%	3.29%	1.14%	1.25%	20.00%	2.20%	0.00%	1.96%	0.96%	2.78%	60.00%	1.89%	0.00%	3.74%	1.22%	2.23%	71.43%	1.81%	0.00%	1.26%	1.15%	9.09%	100.00%	1.29%	1.86%

TMC 2545 - CSAH 23 @ CSAH 49
Lino Lakes MN
Wednesday, July 2, 2025
AM Peak Hour (00:00 to 10:00)

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	
8:15 AM	0	35	31	3	1	69	0	36	37	44	0	117	0	4	30	30	0	64	0	1	27	0	0	28	278
8:30 AM	0	45	35	3	0	83	0	54	45	32	0	131	1	3	28	30	0	62	0	3	35	1	0	39	315
8:45 AM	0	34	30	7	0	71	0	49	38	32	0	119	0	3	34	30	0	67	0	8	32	0	0	40	297
9:00 AM	0	26	22	5	0	53	0	39	31	37	0	107	0	7	37	27	0	71	0	5	56	1	0	62	293
Peak Hour Total	0	140	118	18	1	276	0	178	151	145	0	474	1	17	129	117	0	264	0	17	150	2	0	169	1183
Peak Hour Heavy Vehicles	0	15	0	1	1	16	0	2	4	5	0	11	0	2	7	5	1	14	0	0	4	2	0	6	47
Peak Hour Heavy Vehicles %	0.00%	10.71%	0.00%	5.56%	100.00%	5.80%	0.00%	1.12%	2.65%	3.45%	0.00%	2.32%	0.00%	11.76%	5.43%	4.27%	0.00%	5.30%	0.00%	0.00%	2.67%	100.00%	0.00%	3.55%	3.97%
PHF	0.000	0.778	0.843	0.643	0.250	0.831	0.000	0.824	0.839	0.824	0.000	0.905	0.250	0.607	0.872	0.975	0.000	0.930	0.000	0.531	0.670	0.500	0.000	0.681	0.939

Mid Peak Hour (10:00 - 14:00)

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	
11:45 AM	0	45	37	4	0	86	0	52	31	50	0	133	1	3	36	53	0	93	0	7	39	1	0	47	359
12:00 PM	0	47	53	6	0	106	0	47	42	49	0	138	2	3	28	51	0	84	0	3	52	1	0	56	384
12:15 PM	0	42	36	8	0	86	0	41	40	43	0	124	2	1	41	34	0	78	0	1	46	2	0	49	337
12:30 PM	0	30	35	6	0	71	0	51	46	43	0	140	1	5	37	36	0	79	0	5	36	1	0	42	332
Peak Hour Total	0	164	161	24	0	349	0	191	159	185	0	535	6	12	142	174	0	334	0	16	173	5	0	194	1412
Peak Hour Heavy Vehicles	0	12	6	0	0	18	0	3	13	0	0	19	0	0	1	7	0	8	0	2	3	1	0	6	51
Peak Hour Heavy Vehicles %	0.00%	7.32%	3.73%	0.00%	0.00%	5.16%	0.00%	1.57%	1.89%	7.03%	0.00%	3.55%	0.00%	0.00%	0.70%	4.02%	0.00%	2.40%	0.00%	12.50%	1.73%	20.00%	0.00%	3.09%	3.61%
PHF	0.000	0.872	0.759	0.750	0.000	0.823	0.000	0.918	0.864	0.925	0.000	0.955	0.750	0.600	0.866	0.821	0.000	0.898	0.000	0.571	0.832	0.625	0.000	0.866	0.919

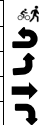
PM Peak Hour (14:00 - 24:00)

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	48	42	8	0	98	0	59	75	74	0	208	0	6	67	46	0	119	0	10	53	0	0	63	488
4:30 PM	0	67	50	6	0	123	0	61	64	54	0	179	1	11	48	59	0	119	0	6	54	0	0	60	481
4:45 PM	0	70	39	7	0	116	0	67	82	59	0	208	0	5	62	66	0	133	0	8	52	1	0	61	518
5:00 PM	0	67	43	7	0	117	0	55	82	71	0	208	1	6	76	52	0	135	0	14	61	1	0	76	536
Peak Hour Total	0	252	174	28	0	454	0	242	303	258	0	803	2	28	253	223	0	506	0	38	220	2	0	260	2023
Peak Hour Heavy Vehicles	0	5	1	0	0	6	0	3	1	4	0	8	0	0	2	3	0	5	0	0	0	0	0	0	19
Peak Hour Heavy Vehicles %	0.00%	1.98%	0.57%	0.00%	0.00%	1.32%	0.00%	1.24%	0.33%	1.55%	0.00%	1.00%	0.00%	0.00%	0.79%	1.35%	0.00%	0.99%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.94%
PHF	0.000	0.900	0.870	0.875	0.000	0.923	0.000	0.903	0.924	0.872	0.000	0.965	0.500	0.636	0.832	0.845	0.000	0.937	0.000	0.679	0.902	0.500	0.000	0.855	0.944

Total Vehicles On Leg				9733			
Vehicles Entering Intersection				Vehicles Exiting Intersection			
Southbound				4954			
Cars	316	2090	2266	2	4		
Heavy	4	24	77	0	1		
Total	320	2114	2343	2	5		



Total Vehicles on Leg 5751	Vehicles Entering Intersection 2712	Eastbound	Cars	Heavy	Total
	Vehicles Exiting Intersection 3039		0	3	3
			1	0	1
			314	4	318
			2322	27	2349
			40	4	44



Daily Volumes

Cars	Heavy	Total	Westbound	Vehicles Entering Intersection 7727	Total Vehicles on Leg 14668
2345	67	2412			
2480	24	2504			
2754	55	2809			
2	0	2			
2	3	5			

Cars	2	25	206	2195	2197
Heavy	5	0	8	27	50
Total	7	25	214	2222	2247
Northbound					
Vehicles Entering Intersection			Vehicles Exiting Intersection		
4708			4992		
Total Vehicles On Leg			9700		

TMC 2545 - CSAH 23 @ CSAH 49
Lino Lakes MN
Wednesday, July 2, 2025

Time	Southbound Heavy CSAH 23						Westbound Heavy CSAH 49						Northbound Heavy CSAH 23						Eastbound Heavy CSAH 49						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	1	0	0	0	1	0	0	0	0	0	0	1
12:15 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
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 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 'Heavy Vehicles'	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 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
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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 'Heavy Vehicles'	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
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 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
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
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly 'Heavy Vehicles'	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
3:00 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3:15 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
3:30 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
3:45 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 'Heavy Vehicles'	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 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
4:30 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
4:45 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 'Heavy Vehicles'	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
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 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
5:30 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	1
5:45 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Hourly 'Heavy Vehicles'	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	2
6:00 AM	0	1	0	0	0	1	0	1	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	3
6:15 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	1
6:30 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:45 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 'Heavy Vehicles'	0	1	0	0	0	1	0	2	0	0	0	2	0	0	0	2	0	2	0	0	0	0	0	0	0	5
7:00 AM	0	2	1	0	0	3	0	0	1	0	0	1	0	1	0	1	0	2	0	0	0	0	0	0	0	6
7:15 AM	0	2	0	0	0	2	0	2	0	0	0	2	0	0	2	1	0	3	0	0	0	0	0	0	0	7
7:30 AM	0	1	0	0	0	1	0	2	2	2	0	6	0	0	0	2	0	2	0	0	0	0	0	0	0	9
7:45 AM	0	2	1	0	0	3	0	5	2	0	0	7	0	0	0	2	0	2	0	0	1	0	0	1	1	13
Hourly 'Heavy Vehicles'	0	7	2	0	0	9	0	9	5	2	0	16	0	1	2	6	0	9	0	0	1	0	0	1	1	35

TMC 2545 - CSAH 23 @ CSAH 49
Lino Lakes MN
Wednesday, July 2, 2025

Time	Southbound Heavy CSAH 23						Westbound Heavy CSAH 49						Northbound Heavy CSAH 23						Eastbound Heavy CSAH 49						VEHICLE 'Heavy Vehicles'
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	<i>Vehcle Approach 'Heavy Vehicles'</i>	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	<i>Vehcle Approach 'Heavy Vehicles'</i>	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	<i>Vehcle Approach 'Heavy Vehicles'</i>	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	<i>Vehcle Approach 'Heavy Vehicles'</i>	
8:00 AM	0	0	0	1	0	1	0	1	0	5	0	6	0	0	1	0	0	1	0	0	0	0	0	0	8
8:15 AM	0	0	0	0	1	0	0	0	2	2	0	4	0	1	5	2	0	8	0	0	0	0	0	0	12
8:30 AM	0	14	0	1	0	15	0	0	0	1	0	1	0	0	0	1	0	1	0	0	2	1	0	3	20
8:45 AM	0	1	0	0	0	1	0	0	1	1	0	2	0	1	0	1	0	2	0	0	1	0	0	1	6
Hourly 'Heavy Vehicles'	0	15	0	2	1	17	0	1	3	9	0	13	0	2	6	4	0	12	0	0	3	1	0	4	46
9:00 AM	0	0	0	0	0	0	0	2	1	1	0	4	0	0	2	1	0	3	0	0	1	1	0	2	9
9:15 AM	0	1	1	1	0	3	0	0	0	1	0	1	0	0	2	0	0	2	0	0	1	0	0	1	7
9:30 AM	0	1	1	0	0	2	0	1	0	0	0	1	0	0	0	2	1	2	0	0	0	0	0	0	5
9:45 AM	0	1	0	0	0	1	0	0	0	1	0	1	0	0	1	1	0	2	0	0	1	0	0	1	5
Hourly 'Heavy Vehicles'	0	3	2	1	0	6	0	3	1	3	0	7	0	0	5	4	1	9	0	0	3	1	0	4	26
10:00 AM	0	3	1	0	0	4	0	1	0	2	0	3	0	0	1	0	0	1	0	0	1	0	0	1	9
10:15 AM	0	1	1	0	0	2	0	2	0	2	0	4	0	0	0	1	0	1	0	0	0	0	0	0	7
10:30 AM	0	0	0	0	0	0	0	1	0	1	0	2	0	1	0	1	0	2	0	0	0	0	0	0	4
10:45 AM	0	3	0	0	0	3	0	0	0	0	0	0	0	0	1	0	0	1	0	1	1	0	0	2	6
Hourly 'Heavy Vehicles'	0	7	2	0	0	9	0	4	0	5	0	9	0	1	2	2	0	5	0	1	2	0	0	3	26
11:00 AM	0	3	0	0	0	3	0	3	1	2	0	6	0	0	0	1	0	1	0	0	2	1	0	3	13
11:15 AM	0	2	1	0	0	3	0	4	0	0	0	4	0	0	1	0	0	1	0	0	0	0	0	0	8
11:30 AM	0	0	0	0	0	0	0	1	2	6	0	9	0	0	0	2	0	2	0	0	0	0	0	0	11
11:45 AM	0	1	0	0	0	1	0	0	2	7	0	9	0	0	0	2	0	2	0	1	0	0	0	1	13
Hourly 'Heavy Vehicles'	0	6	1	0	0	7	0	8	5	15	0	28	0	0	1	5	0	6	0	1	2	1	0	4	45
12:00 PM	0	5	5	0	0	10	0	0	0	4	0	4	0	0	0	1	0	1	0	1	1	1	0	3	18
12:15 PM	0	6	0	0	0	6	0	1	0	0	0	1	0	0	0	2	0	2	0	0	1	0	0	1	10
12:30 PM	0	0	1	0	0	1	0	2	1	2	0	5	0	0	1	2	0	3	0	0	1	0	0	1	10
12:45 PM	0	1	2	0	0	3	0	0	0	1	0	1	0	0	0	1	0	1	0	0	2	0	0	2	7
Hourly 'Heavy Vehicles'	0	12	8	0	0	20	0	3	1	7	0	11	0	0	1	6	0	7	0	1	5	1	0	7	45
1:00 PM	0	1	0	0	0	1	0	2	0	1	0	3	0	0	1	2	0	3	0	0	1	0	0	1	8
1:15 PM	0	4	1	0	0	5	0	2	0	1	0	3	0	0	0	1	1	1	0	0	0	0	0	0	9
1:30 PM	0	1	1	0	0	2	0	1	0	2	0	3	0	0	0	2	0	2	0	0	0	0	0	0	7
1:45 PM	0	0	0	1	0	1	0	0	1	3	0	4	0	0	0	0	0	0	0	0	0	0	0	0	5
Hourly 'Heavy Vehicles'	0	6	2	1	0	9	0	5	1	7	0	13	0	0	1	5	1	6	0	0	1	0	0	1	29
2:00 PM	0	2	0	0	0	2	0	1	0	1	0	2	0	0	1	2	0	3	0	0	2	0	0	2	9
2:15 PM	0	2	0	0	0	2	0	2	1	0	0	3	0	1	0	1	0	2	0	0	2	0	0	2	9
2:30 PM	0	2	2	0	0	4	0	1	0	1	0	2	0	1	0	1	0	2	0	0	0	0	0	0	8
2:45 PM	0	1	1	0	0	2	0	3	0	2	0	5	0	1	1	0	0	2	0	0	0	0	0	0	9
Hourly 'Heavy Vehicles'	0	7	3	0	0	10	0	7	1	4	0	12	0	3	2	4	0	9	0	0	4	0	0	4	35
3:00 PM	0	1	0	0	0	1	0	2	1	1	0	4	0	0	0	1	0	1	0	0	0	0	0	0	6
3:15 PM	0	1	0	0	0	1	0	1	1	0	3	2	0	0	0	3	0	3	0	0	0	0	0	0	6
3:30 PM	0	1	0	0	0	1	0	0	1	1	0	2	0	0	1	1	0	2	0	0	0	0	0	0	5
3:45 PM	0	1	0	0	0	1	0	2	0	1	0	3	0	0	0	2	0	2	0	0	1	0	0	1	7
Hourly 'Heavy Vehicles'	0	4	0	0	0	4	0	5	3	3	3	11	0	0	1	7	0	8	0	0	1	0	0	1	24

TMC 2545 - CSAH 23 @ CSAH 49
Lino Lakes MN
Wednesday, July 2, 2025

Time	Southbound Heavy CSAH 23						Westbound Heavy CSAH 49						Northbound Heavy CSAH 23						Eastbound Heavy CSAH 49						VEHICLE 'Heavy Vehicles'
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach 'Heavy Vehicles'	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach 'Heavy Vehicles'	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach 'Heavy Vehicles'	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach 'Heavy Vehicles'	
4:00 PM	0	0	0	0	0	0	0	2	1	2	0	5	0	0	1	0	0	0	1	0	0	0	0	0	6
4:15 PM	0	1	0	0	0	1	0	1	0	2	0	3	0	0	2	1	0	3	0	0	0	0	0	0	7
4:30 PM	0	2	1	0	0	3	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	5
4:45 PM	0	1	0	0	0	1	0	2	1	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	5
Hourly 'Heavy Vehicles'	0	4	1	0	0	5	0	5	2	5	0	12	0	0	3	3	0	6	0	0	0	0	0	0	23
5:00 PM	0	1	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	1	1	1	0	3	0	0	0	1	1	1	0	0	1	0	0	1	5
5:30 PM	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
5:45 PM	0	1	0	0	0	1	0	0	0	1	0	1	0	0	1	0	0	1	0	0	0	0	0	0	3
Hourly 'Heavy Vehicles'	0	2	0	0	0	2	0	1	1	3	0	5	0	0	1	1	1	2	0	0	1	0	0	1	10
6:00 PM	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
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1
6:30 PM	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	4
6:45 PM	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 'Heavy Vehicles'	0	2	1	0	0	3	0	0	0	1	0	1	0	0	0	1	0	1	0	1	2	0	0	3	8
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
7:15 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	1	0	0	1	0	0	1	3
7:30 PM	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
7:45 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Hourly 'Heavy Vehicles'	0	1	0	0	0	1	0	1	0	0	0	1	0	1	0	0	0	1	0	0	1	0	3	1	4
8:00 PM	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
8:15 PM	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
8:30 PM	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
8:45 PM	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 'Heavy Vehicles'	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
9:45 PM	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 'Heavy Vehicles'	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	1	1
10:00 PM	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
10:15 PM	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
10:30 PM	0	0	1	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
10:45 PM	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 'Heavy Vehicles'	0	0	1	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
11:00 PM	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
11:15 PM	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
11:30 PM	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
11:45 PM	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 'Heavy Vehicles'	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
DAILY 'Heavy Vehicles'	0	77	24	4	1	105	0	55	24	67	3	146	0	8	27	50	5	85	0	4	27	4	3	35	371

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2545

Study Date : 08/13/2025

Signal Warrants - Summary

Major Street Approaches

Eastbound: CSAH 49

Number of Lanes : 2+

Total Approach Volume: 2,712

Westbound: CSAH 49

Number of Lanes :2+

Total Approach Volume: 7,727

Minor Street Approaches

Northbound: CSAH 23

Number of Lanes :2+

Total Approach Volume: 2,461

Southbound: CSAH 23

Number of Lanes :2+

Total Approach Volume: 4,459

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 14 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 (50) 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 2545

Study Date : 08/13/2025

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

14 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**

Major Road						Minor Road			
CSAH 49						CSAH 23			
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met?	
16:30 - 17:30	261	+	778	=	1039	266	420	Yes	
15:30 - 16:30	216	+	727	=	943	281	362	Yes	
17:30 - 18:30	225	+	562	=	787	176	282	Yes	
14:30 - 15:30	168	+	553	=	721	206	288	Yes	
11:30 - 12:30	193	+	508	=	701	143	313	Yes	
13:30 - 14:30	187	+	509	=	696	165	298	Yes	
12:30 - 13:30	172	+	520	=	692	170	281	Yes	
10:30 - 11:30	164	+	481	=	645	136	246	Yes	
08:30 - 09:30	180	+	452	=	632	143	256	Yes	
09:30 - 10:30	133	+	450	=	583	118	240	Yes	
07:30 - 08:30	112	+	464	=	576	132	242	Yes	
18:30 - 19:30	161	+	354	=	515	137	234	Yes	
19:30 - 20:30	140	+	294	=	434	110	227	Yes	
06:30 - 07:30	120	+	309	=	429	59	217	Yes	
06:15 - 07:15	102	+	273	=	375	47	201	No	
06:00 - 07:00	90	+	236	=	326	40	179	No	
20:30 - 21:30	85	+	193	=	278	75	178	No	
05:45 - 06:45	70	+	191	=	261	31	157	No	
20:45 - 21:45	82	+	170	=	252	60	166	No	
21:00 - 22:00	78	+	157	=	235	44	136	No	
05:30 - 06:30	51	+	176	=	227	33	126	No	
21:15 - 22:15	67	+	130	=	197	41	109	No	
21:30 - 22:30	64	+	126	=	190	42	92	No	
05:15 - 06:15	37	+	152	=	189	26	90	No	
21:45 - 22:45	58		109		167	38	85	No	

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2545

Study Date : 08/13/2025

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

9 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**

Major Road						Minor Road			
CSAH 49						CSAH 23			
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met?	
16:30 - 17:30	261	+	778	=	1039	266	420	Yes	
15:30 - 16:30	216	+	727	=	943	281	362	Yes	
17:30 - 18:30	225	+	562	=	787	176	282	Yes	
14:30 - 15:30	168	+	553	=	721	206	288	Yes	
11:30 - 12:30	193	+	508	=	701	143	313	Yes	
13:30 - 14:30	187	+	509	=	696	165	298	Yes	
12:30 - 13:30	172	+	520	=	692	170	281	Yes	
10:30 - 11:30	164	+	481	=	645	136	246	Yes	
08:15 - 09:15	169	+	474	=	643	147	258	Yes	
10:15 - 11:15	149	+	473	=	622	129	258	No	
08:00 - 09:00	126	+	482	=	608	133	255	No	
07:45 - 08:45	125	+	479	=	604	141	256	No	
10:00 - 11:00	151	+	446	=	597	120	243	No	
09:30 - 10:30	133	+	450	=	583	118	240	No	
09:45 - 10:45	141	+	435	=	576	121	254	No	
07:30 - 08:30	112	+	464	=	576	132	242	No	
09:15 - 10:15	132	+	428	=	560	113	239	No	
07:15 - 08:15	119	+	441	=	560	120	242	No	
18:45 - 19:45	165	+	363	=	528	128	209	No	
07:00 - 08:00	127	+	399	=	526	102	249	No	
18:30 - 19:30	161	+	354	=	515	137	234	No	
19:00 - 20:00	157	+	339	=	496	118	214	No	
06:45 - 07:45	115	+	373	=	488	72	230	No	
19:15 - 20:15	152	+	317	=	469	109	226	No	
19:30 - 20:30	140		294		434	110	227	No	

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2545

Study Date : 08/13/2025

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

14 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 49						Minor Road CSAH 23				
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met1A?		
16:15 - 17:15	260	+	803	=	1063	283	426	Yes		
15:15 - 16:15	197	+	681	=	878	266	352	Yes		
17:15 - 18:15	244	+	620	=	864	180	308	Yes		
11:15 - 12:15	199	+	509	=	708	141	288	Yes		
12:15 - 13:15	184	+	520	=	704	168	282	Yes		
14:15 - 15:15	173	+	530	=	703	189	284	Yes		
13:15 - 14:15	175	+	494	=	669	170	299	Yes		
08:15 - 09:15	169	+	474	=	643	147	258	Yes		
10:15 - 11:15	149	+	473	=	622	129	258	Yes		
18:15 - 19:15	162	+	399	=	561	160	242	Yes		
07:15 - 08:15	119	+	441	=	560	120	242	Yes		
09:15 - 10:15	132		428		560	113	239	Yes		

Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met1B?		
16:00 - 17:00	248	+	757	=	1005	271	417	Yes		
17:00 - 18:00	265	+	702	=	967	225	344	Yes		
15:00 - 16:00	172	+	652	=	824	239	322	Yes		
12:00 - 13:00	190	+	544	=	734	156	314	Yes		
14:00 - 15:00	177	+	528	=	705	186	296	Yes		
11:00 - 12:00	176	+	502	=	678	138	259	Yes		
13:00 - 14:00	182	+	477	=	659	174	284	Yes		
18:00 - 19:00	174	+	435	=	609	170	257	Yes		
08:00 - 09:00	126	+	482	=	608	133	255	Yes		
10:00 - 11:00	151	+	446	=	597	120	243	Yes		
09:00 - 10:00	159	+	431	=	590	136	231	Yes		
07:00 - 08:00	127		399		526	102	249	Yes		

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2545

Study Date : 08/13/2025

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.

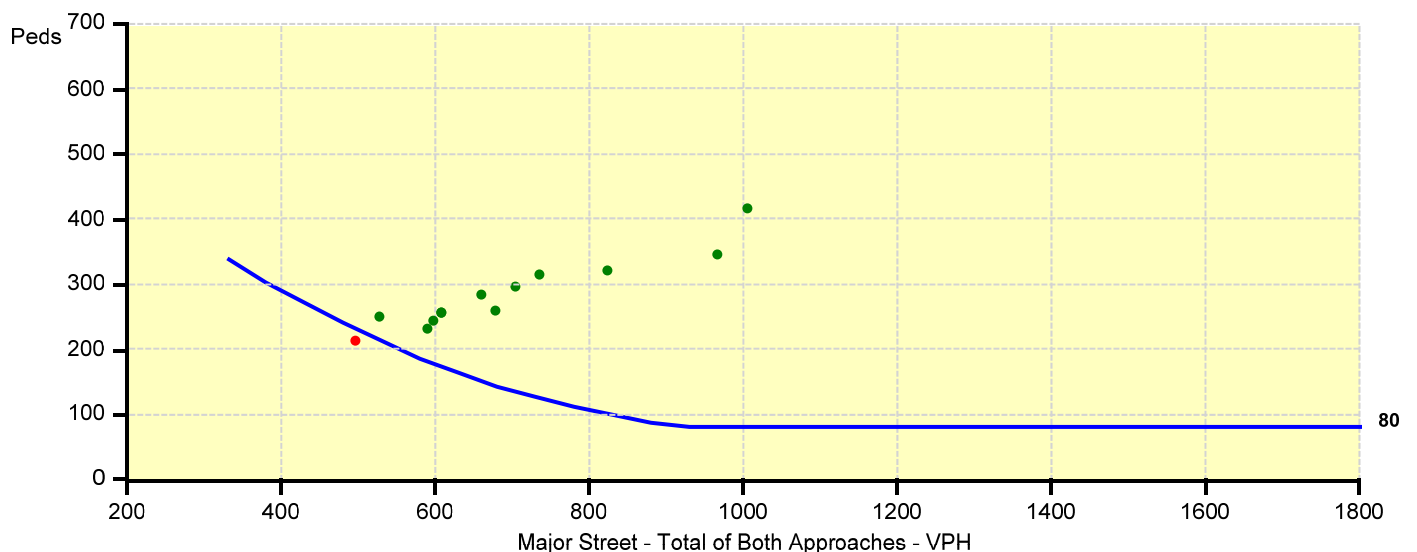
Summary

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**

Major Road CSAH 49						Minor Road CSAH 23		
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met?
16:00 - 17:00	248	+	757	=	1005	271	417	Yes
17:00 - 18:00	265	+	702	=	967	225	344	Yes
15:00 - 16:00	172	+	652	=	824	239	322	Yes
12:00 - 13:00	190	+	544	=	734	156	314	Yes
14:00 - 15:00	177	+	528	=	705	186	296	Yes
11:00 - 12:00	176	+	502	=	678	138	259	Yes
13:00 - 14:00	182	+	477	=	659	174	284	Yes
18:00 - 19:00	174	+	435	=	609	170	257	Yes
08:00 - 09:00	126	+	482	=	608	133	255	Yes
10:00 - 11:00	151	+	446	=	597	120	243	Yes
09:00 - 10:00	159	+	431	=	590	136	231	Yes
07:00 - 08:00	127		399		526	102	249	Yes



ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2545

Study Date : 08/13/2025

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.

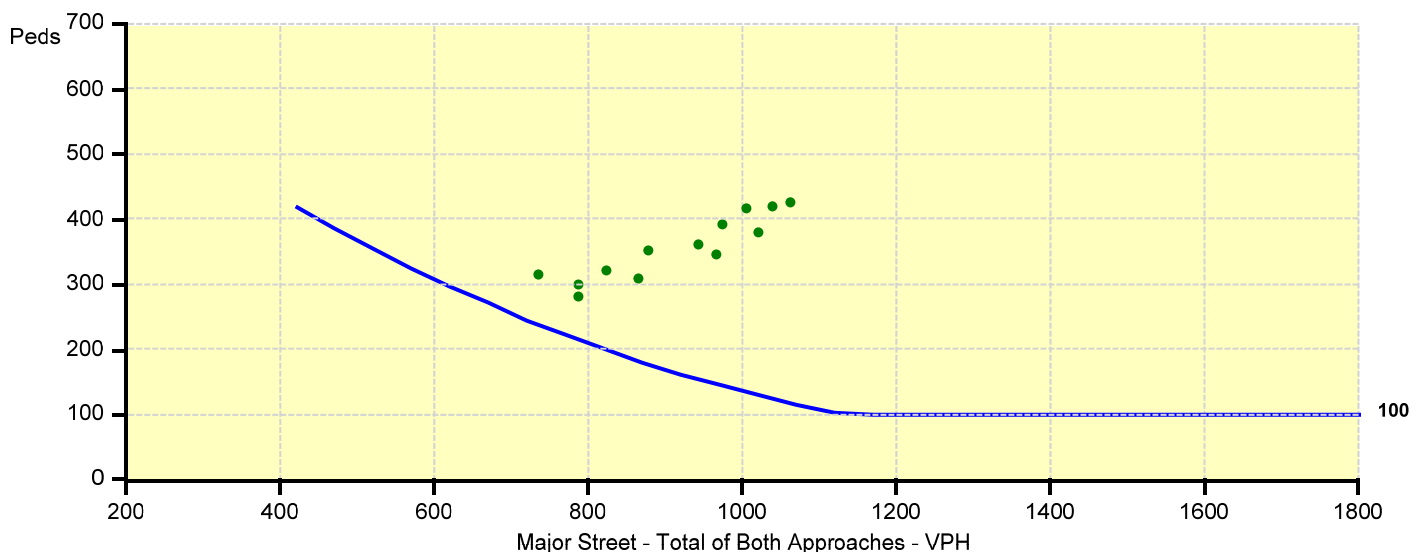
Summary

27 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**

Major Road CSAH 49						Minor Road CSAH 23		
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met?
16:15 - 17:15	260	+	803	=	1063	283	426	Yes
16:30 - 17:30	261	+	778	=	1039	266	420	Yes
16:45 - 17:45	266	+	754	=	1020	248	379	Yes
16:00 - 17:00	248	+	757	=	1005	271	417	Yes
15:45 - 16:45	232	+	741	=	973	271	391	Yes
17:00 - 18:00	265	+	702	=	967	225	344	Yes
15:30 - 16:30	216	+	727	=	943	281	362	Yes
15:15 - 16:15	197	+	681	=	878	266	352	Yes
17:15 - 18:15	244	+	620	=	864	180	308	Yes
15:00 - 16:00	172	+	652	=	824	239	322	Yes
17:30 - 18:30	225	+	562	=	787	176	282	Yes
14:45 - 15:45	184	+	603	=	787	220	300	Yes



ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2545

Study Date : 08/13/2025 10:57:51 AM

Multiway Stop Warrants - Summary

Major Street Approaches

Eastbound: CSAH 23

Number of Lanes : 2+

Total Approach Volume: 2,461

Westbound: CSAH 23

Number of Lanes :2+

Total Approach Volume: 4,459

Minor Street Approaches

Northbound: CSAH 49

Number of Lanes :2+

Total Approach Volume: 2,712

Southbound: CSAH 49

Number of Lanes :2+

Total Approach Volume: 7,727

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..... **Satisfied**
Average of 8 highest hours meets or exceeds 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 meets or exceeds volume criteria.

Criteria C Volume Summary

Time	Major Total	Major Avg	Minor Total	Minor Avg	Major Crit	Minor Crit	Meets?
16:15 - 17:15	709	501.3	1063	778.8	300	200	Yes
15:15 - 16:15	618		881				
17:15 - 18:15	488		864				
11:45 - 12:45	485		729				
14:00 - 15:00	482		718				
13:00 - 14:00	458		665				
08:15 - 09:15	405		643				
10:45 - 11:45	365		667				
18:15 - 19:15	402		561				
09:45 - 10:45	375		576				
07:15 - 08:15	362		560				
19:15 - 20:15	335		469				

Criteria D Volume Summary

Time	Major Total	Major Avg	Minor Total	Minor Avg	Major Crit	Minor Crit	Meets?
16:15 - 17:15	709	501.3	1063	778.8	240	160	Yes
15:15 - 16:15	618		881				
17:15 - 18:15	488		864				
11:45 - 12:45	485		729				
14:00 - 15:00	482		718				
13:00 - 14:00	458		665				
08:15 - 09:15	405		643				
10:45 - 11:45	365		667				
18:15 - 19:15	402		561				
09:45 - 10:45	375		576				
07:15 - 08:15	362		560				
19:15 - 20:15	335		469				