

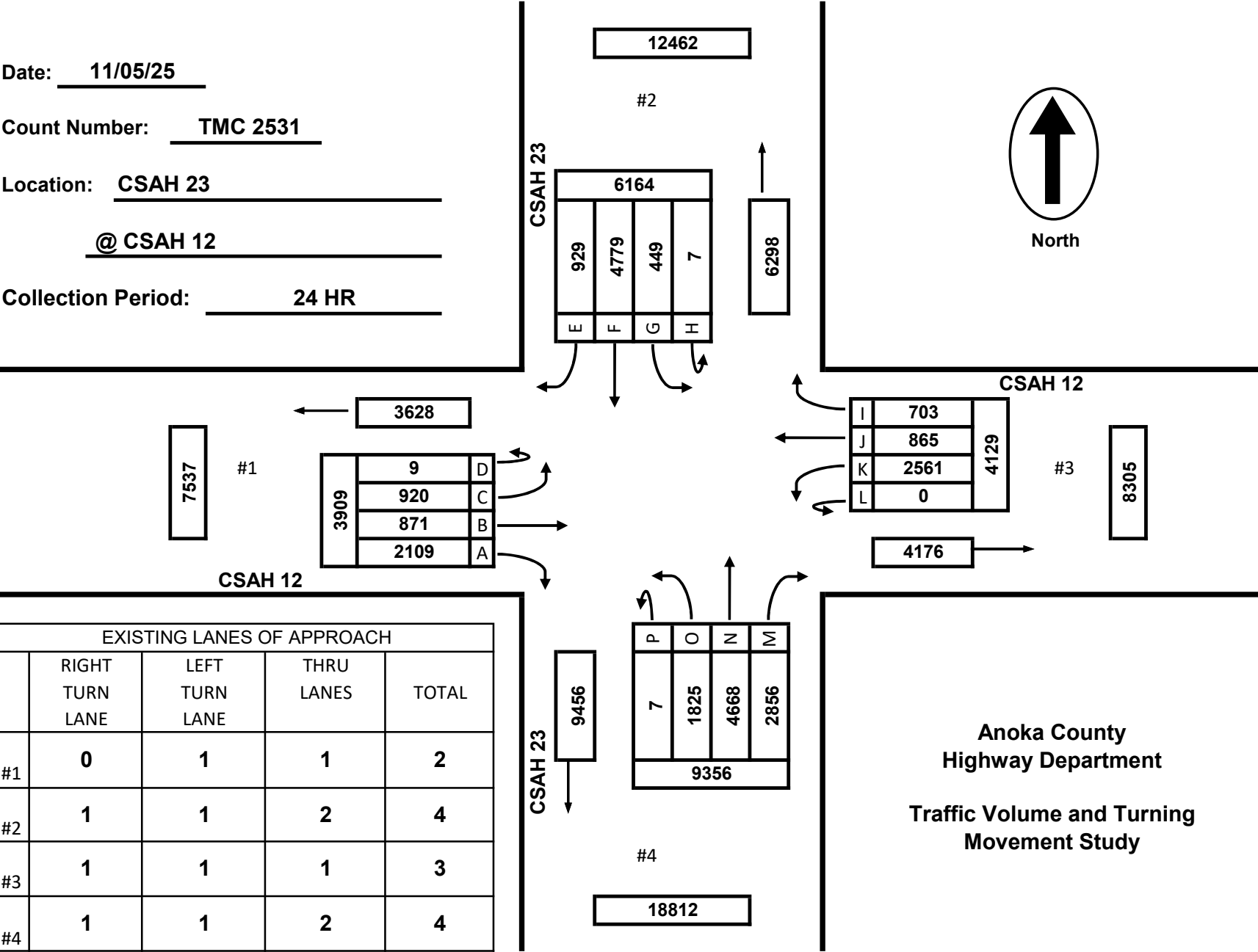
Date: 11/05/25

Count Number: TMC 2531

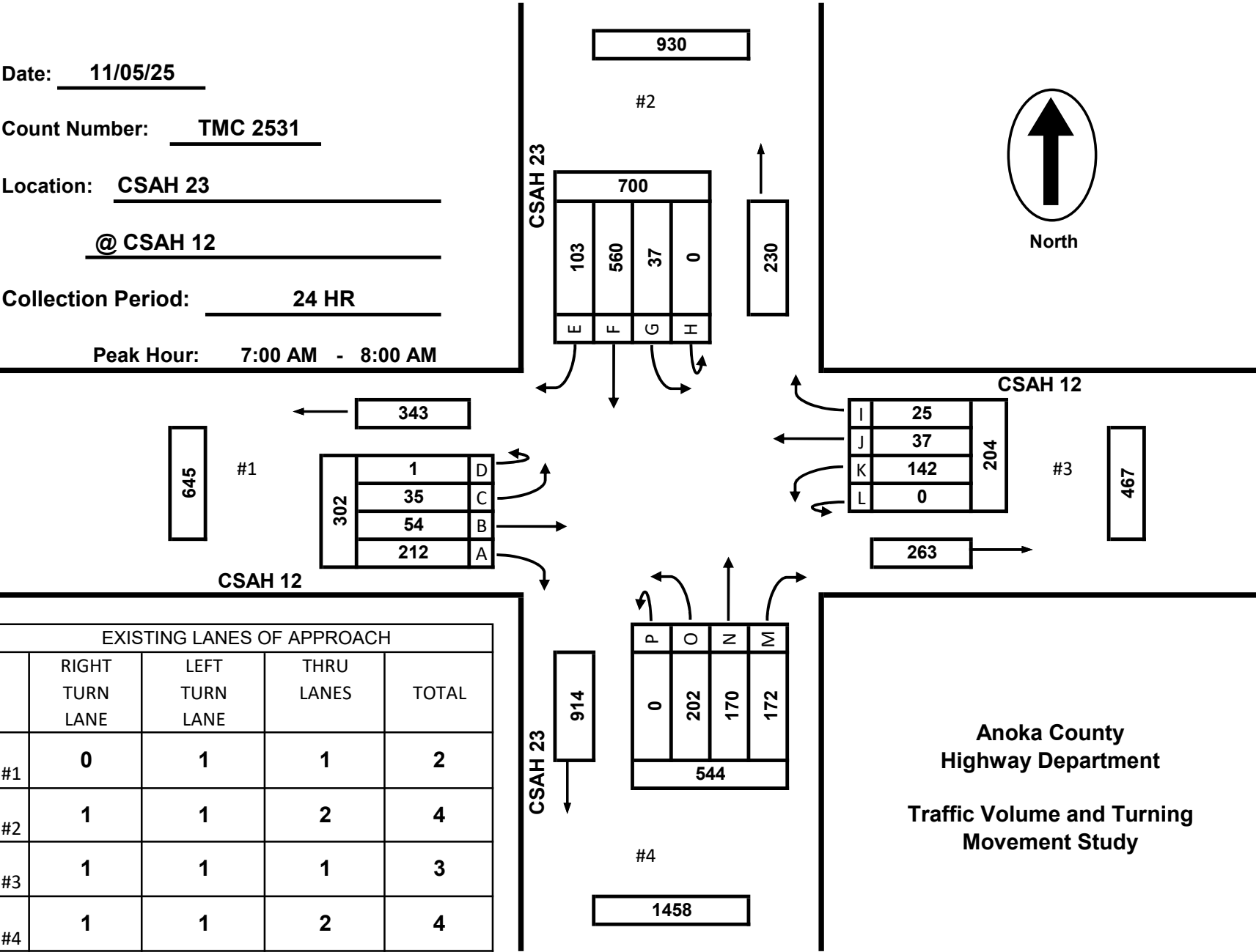
Location: CSAH 23

@ CSAH 12

Collection Period: 24 HR



Date: 11/05/25
 Count Number: TMC 2531
 Location: CSAH 23
@ CSAH 12
 Collection Period: 24 HR
 Peak Hour: 7:00 AM - 8:00 AM



EXISTING LANES OF APPROACH				
	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	TOTAL
#1	0	1	1	2
#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: 11/05/25

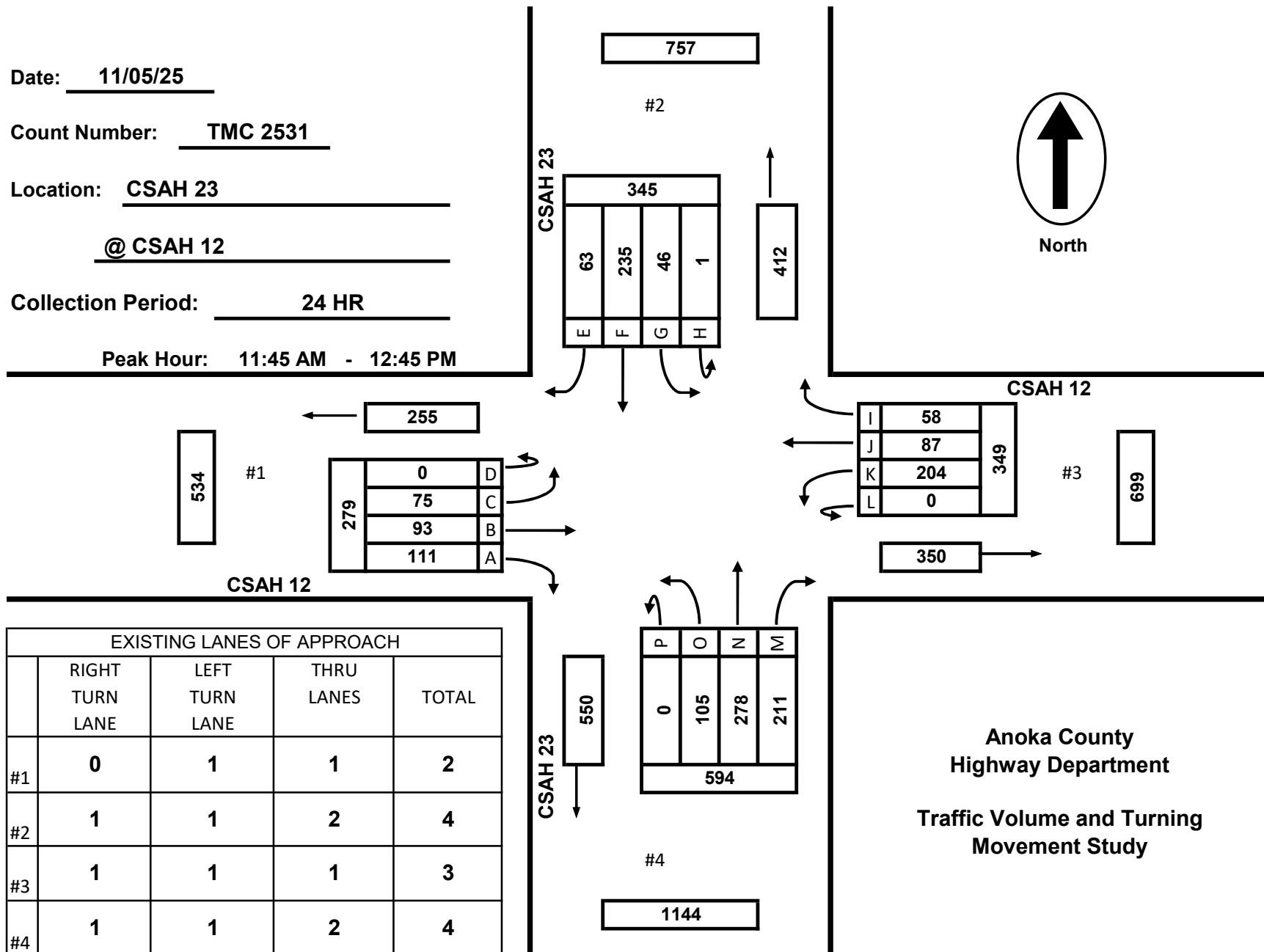
Count Number: TMC 2531

Location: CSAH 23

@ CSAH 12

Collection Period: 24 HR

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



Date: 11/05/25

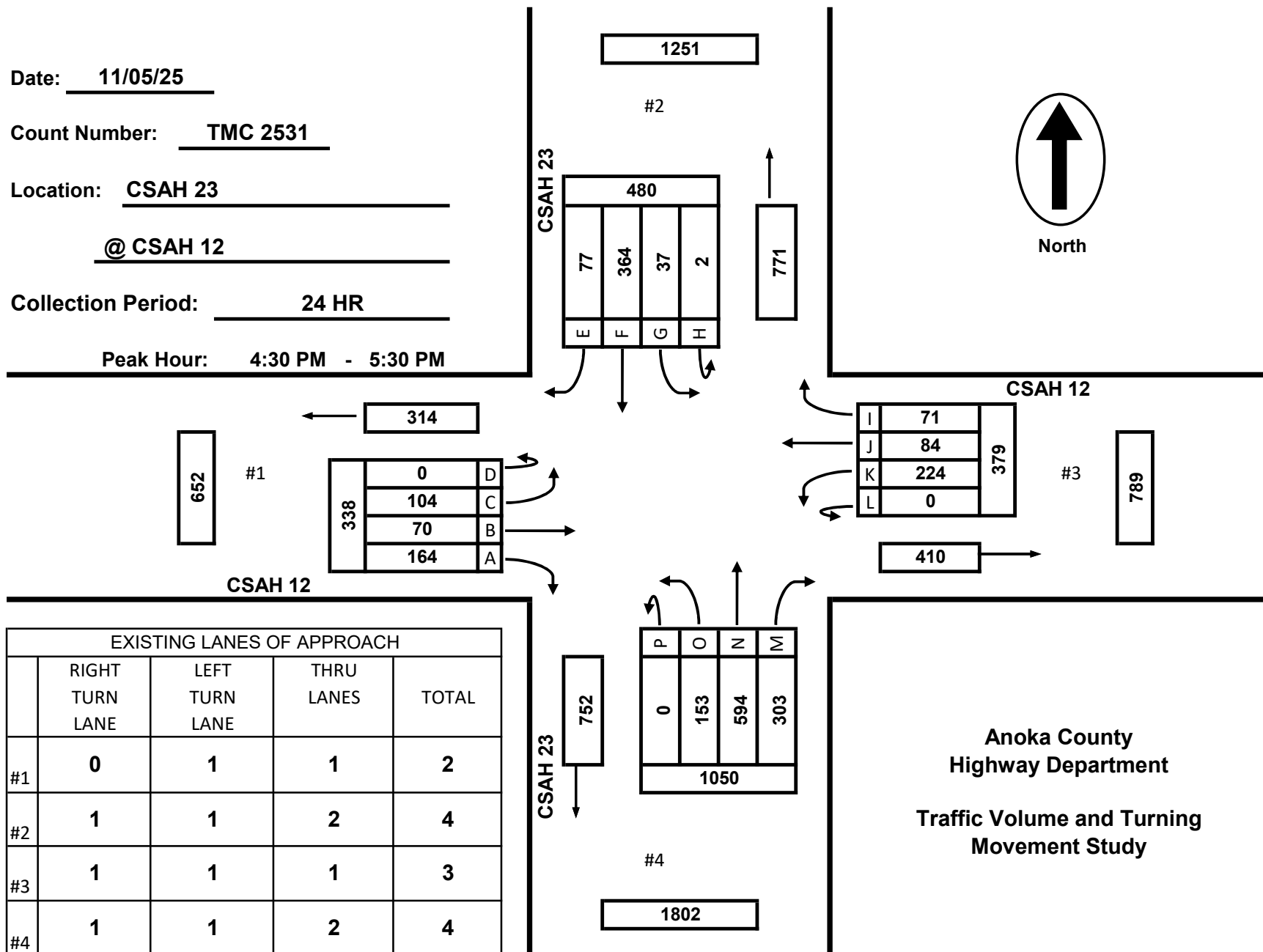
Count Number: TMC 2531

Location: CSAH 23

@ CSAH 12

Collection Period: 24 HR

Peak Hour: 4:30 PM - 5:30 PM



TMC 2531 - CSAH 23 @ CSAH 12
Lino Lakes MN
Wednesday, November 5, 2025

Time	Southbound CSAH 23						Westbound CSAH 12						Northbound CSAH 23						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	1	3	0	0	4	0	0	0	0	0	0	0	0	6	0	0	6	0	0	0	4	0	4	14
12:15 AM	0	0	1	0	0	1	0	1	0	0	0	1	0	2	5	0	0	7	0	1	0	1	0	2	11
12:30 AM	0	0	4	0	0	4	0	0	0	0	0	0	1	0	3	0	0	4	0	0	0	1	0	1	9
12:45 AM	0	0	4	1	0	5	0	2	0	0	0	2	0	0	3	0	0	3	0	0	0	1	0	1	11
Hourly Total	0	1	12	1	0	14	0	3	0	0	0	3	1	2	17	0	0	20	0	1	0	7	0	8	45
1:00 AM	0	0	4	0	0	4	0	0	0	0	0	0	0	1	6	0	0	7	0	0	0	0	0	0	11
1:15 AM	0	0	1	0	0	1	0	1	0	0	0	1	0	1	4	1	0	6	0	1	0	1	0	2	10
1:30 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	1	6	0	0	7	0	0	0	1	0	1	9
1:45 AM	0	0	3	0	0	3	0	0	0	0	0	0	0	1	3	0	0	4	0	2	0	3	0	5	12
Hourly Total	0	0	9	0	0	9	0	1	0	0	0	1	0	4	19	1	0	24	0	3	0	5	0	8	42
2:00 AM	1	0	1	0	0	2	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	5
2:15 AM	0	0	1	1	0	2	0	1	0	0	0	1	0	1	2	3	0	6	0	2	0	1	0	3	12
2:30 AM	0	0	2	0	0	2	0	0	0	0	0	0	0	1	2	2	0	5	0	0	0	1	0	1	8
2:45 AM	0	1	4	1	0	6	0	0	0	0	0	0	0	1	10	4	0	15	0	1	0	4	0	5	26
Hourly Total	1	1	8	2	0	12	0	1	0	0	0	1	0	3	17	9	0	29	0	3	0	6	0	9	51
3:00 AM	0	0	2	0	0	2	0	0	0	0	0	0	0	1	0	1	0	2	0	0	0	2	0	2	6
3:15 AM	0	0	4	1	0	5	0	1	0	0	0	1	0	3	2	0	0	5	0	1	0	0	0	1	12
3:30 AM	0	0	2	0	0	2	0	0	0	0	0	0	0	6	1	2	0	9	0	0	0	2	0	2	13
3:45 AM	0	0	5	1	0	6	0	2	0	0	0	2	0	6	2	5	0	13	0	1	2	1	0	4	25
Hourly Total	0	0	13	2	0	15	0	3	0	0	0	3	0	16	5	8	0	29	0	2	2	5	0	9	56
4:00 AM	0	0	14	0	0	14	0	1	0	0	0	1	0	3	6	4	0	13	0	0	0	3	0	3	31
4:15 AM	0	0	17	2	0	19	0	0	0	0	0	0	0	9	6	0	0	15	0	0	0	2	0	2	36
4:30 AM	0	1	24	3	0	28	0	0	0	0	0	0	0	14	5	2	0	21	0	0	0	3	0	3	52
4:45 AM	0	3	21	5	0	29	0	2	0	0	0	2	0	16	9	5	0	30	0	0	1	6	0	7	68
Hourly Total	0	4	76	10	0	90	0	3	0	0	0	3	0	42	26	11	0	79	0	0	1	14	0	15	187
5:00 AM	0	0	49	6	0	55	0	4	1	0	0	5	0	15	12	7	0	34	0	0	1	10	0	11	105
5:15 AM	0	2	37	9	0	48	0	6	0	2	0	8	0	18	9	9	0	36	0	2	0	16	0	18	110
5:30 AM	0	2	61	19	0	82	0	4	4	0	0	8	0	28	14	9	0	51	0	2	3	23	0	28	169
5:45 AM	0	6	72	10	0	88	0	9	5	0	0	14	0	21	23	16	0	60	0	1	5	29	0	35	197
Hourly Total	0	10	219	44	0	273	0	23	10	2	0	35	0	82	58	41	0	181	0	5	9	78	0	92	581
6:00 AM	0	4	78	17	0	99	0	20	5	2	0	27	0	25	19	20	0	64	0	3	3	21	0	27	217
6:15 AM	0	6	84	18	0	108	0	18	1	1	0	20	0	48	17	20	0	85	0	2	4	28	0	34	247
6:30 AM	0	6	107	16	0	129	0	15	9	4	0	28	0	36	40	17	0	93	0	2	7	39	0	48	298
6:45 AM	0	7	112	31	0	150	0	20	7	2	0	29	0	53	44	24	0	121	0	8	7	59	0	74	374
Hourly Total	0	23	381	82	0	486	0	73	22	9	0	104	0	162	120	81	0	363	0	15	21	147	0	183	1136
7:00 AM	0	9	150	21	0	180	0	27	12	5	0	44	0	48	37	34	0	119	0	7	14	59	0	80	423
7:15 AM	0	9	142	27	0	178	0	36	6	7	0	49	0	56	34	38	0	128	0	9	12	61	0	82	437
7:30 AM	0	10	157	33	0	200	0	47	11	6	0	64	0	43	49	46	0	138	0	5	15	45	0	65	467
7:45 AM	0	9	111	22	0	142	0	32	8	7	0	47	0	55	50	54	0	159	1	14	13	47	0	75	423
Hourly Total	0	37	560	103	0	700	0	142	37	25	0	204	0	202	170	172	0	544	1	35	54	212	0	302	1750

TMC 2531 - CSAH 23 @ CSAH 12
Lino Lakes MN
Wednesday, November 5, 2025

Time	Southbound CSAH 23						Westbound CSAH 12						Northbound CSAH 23						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	0	104	19	0	123	0	41	7	4	0	52	0	29	52	45	0	126	4	7	6	54	0	71	372
8:15 AM	0	1	90	13	0	104	0	43	11	6	1	60	0	30	41	42	0	113	0	11	11	28	0	50	327
8:30 AM	0	0	113	14	0	127	0	28	11	10	0	49	1	29	49	41	0	120	1	11	10	30	0	52	348
8:45 AM	0	2	88	8	0	98	0	38	5	6	0	49	0	35	50	36	0	121	2	9	8	45	0	64	332
Hourly Total	0	3	395	54	0	452	0	150	34	26	1	210	1	123	192	164	0	480	7	38	35	157	0	237	1379
9:00 AM	0	9	108	17	0	134	0	28	7	9	2	44	0	27	41	40	0	108	0	11	11	33	0	55	341
9:15 AM	0	9	70	10	0	89	0	44	12	9	1	65	0	20	70	58	0	148	0	13	18	36	0	67	369
9:30 AM	0	10	66	10	0	86	0	37	12	12	0	61	0	23	52	51	0	126	0	8	16	34	0	58	331
9:45 AM	0	10	62	11	0	83	0	39	17	12	0	68	0	38	54	48	0	140	0	10	22	30	0	62	353
Hourly Total	0	38	306	48	0	392	0	148	48	42	3	238	0	108	217	197	0	522	0	42	67	133	0	242	1394
10:00 AM	0	1	50	9	0	60	0	44	21	12	0	77	0	26	49	40	0	115	0	12	21	32	0	65	317
10:15 AM	0	7	63	10	0	80	0	30	10	7	0	47	0	17	42	37	0	96	0	11	11	22	0	44	267
10:30 AM	0	16	55	9	0	80	0	27	12	8	0	47	0	30	66	34	0	130	0	9	15	27	0	51	308
10:45 AM	0	9	57	11	0	77	0	37	13	12	0	62	1	22	63	52	0	138	0	14	14	27	0	55	332
Hourly Total	0	33	225	39	0	297	0	138	56	39	0	233	1	95	220	163	0	479	0	46	61	108	0	215	1224
11:00 AM	0	8	57	9	0	74	0	43	21	19	1	83	1	26	49	41	0	117	0	19	21	17	0	57	331
11:15 AM	0	6	71	12	0	89	0	47	8	16	0	71	0	27	65	60	0	152	0	10	13	21	0	44	356
11:30 AM	0	11	64	17	0	92	0	50	20	13	0	83	0	9	58	57	0	124	0	14	26	28	0	68	367
11:45 AM	0	11	63	9	0	83	0	40	17	14	0	71	0	33	67	59	1	159	0	17	21	22	0	60	373
Hourly Total	0	36	255	47	0	338	0	180	66	62	1	308	1	95	239	217	1	552	0	60	81	88	0	229	1427
12:00 PM	1	15	54	21	0	91	0	58	28	15	0	101	0	25	67	57	0	149	0	21	23	34	0	78	419
12:15 PM	0	7	60	17	0	84	0	56	21	14	0	91	0	24	78	47	0	149	0	19	22	23	0	64	388
12:30 PM	0	13	58	16	0	87	0	50	21	15	0	86	0	23	66	48	0	137	0	18	27	32	0	77	387
12:45 PM	0	8	62	8	0	78	0	47	20	13	0	80	1	35	62	53	0	151	0	20	10	24	0	54	363
Hourly Total	1	43	234	62	0	340	0	211	90	57	0	358	1	107	273	205	0	586	0	78	82	113	0	273	1557
1:00 PM	0	10	52	11	0	73	0	47	7	15	0	69	0	20	48	49	2	117	0	11	16	31	0	58	317
1:15 PM	0	10	49	10	0	69	0	38	19	12	2	69	0	11	71	41	1	123	1	14	5	26	0	46	307
1:30 PM	0	14	62	19	0	95	0	32	20	11	0	63	0	18	56	43	0	117	0	10	19	24	0	53	328
1:45 PM	1	9	64	9	0	83	0	48	14	11	0	73	0	18	80	55	0	153	0	19	18	20	0	57	366
Hourly Total	1	43	227	49	0	320	0	165	60	49	2	274	0	67	255	188	3	510	1	54	58	101	0	214	1318
2:00 PM	0	5	49	12	0	66	0	55	19	17	0	91	0	23	80	56	0	159	0	8	9	39	0	56	372
2:15 PM	0	4	86	16	0	106	0	50	11	12	0	73	0	30	90	48	0	168	0	15	17	27	0	59	406
2:30 PM	0	13	65	23	0	101	0	45	14	16	0	75	0	21	73	63	0	157	0	30	12	37	0	79	412
2:45 PM	0	6	60	13	0	79	0	48	12	17	0	77	0	30	104	42	0	176	0	30	13	48	0	91	423
Hourly Total	0	28	260	64	0	352	0	198	56	62	0	316	0	104	347	209	0	660	0	83	51	151	0	285	1613
3:00 PM	0	6	48	5	0	59	0	43	12	14	2	69	0	26	101	48	0	175	0	14	23	57	0	94	397
3:15 PM	0	4	74	14	0	92	0	64	19	17	1	100	0	28	126	54	0	208	0	18	20	37	0	75	475
3:30 PM	0	6	90	12	0	108	0	36	24	15	1	75	0	22	141	56	0	219	0	43	28	65	0	136	538
3:45 PM	0	4	91	11	0	106	0	47	7	20	1	74	0	34	172	67	0	273	0	17	16	38	0	71	524
Hourly Total	0	20	303	42	0	365	0	190	62	66	5	318	0	110	540	225	0	875	0	92	87	197	0	376	1934

TMC 2531 - CSAH 23 @ CSAH 12
Lino Lakes MN
Wednesday, November 5, 2025

Time	Southbound CSAH 23						Westbound CSAH 12						Northbound CSAH 23						Eastbound CSAH 12						VEHICLE TOTAL
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	<i>Vehicle Approach Total</i>	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	<i>Vehicle Approach Total</i>	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	<i>Vehicle Approach Total</i>	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	<i>Vehicle Approach Total</i>	
4:00 PM	0	3	71	18	0	92	0	50	19	12	0	81	0	40	170	74	0	284	0	19	19	74	0	112	569
4:15 PM	0	12	84	14	0	110	0	48	19	9	0	76	0	38	161	60	0	259	0	22	17	41	0	80	525
4:30 PM	0	2	96	17	0	115	0	36	22	15	1	73	0	45	183	67	0	295	0	30	14	52	0	96	579
4:45 PM	1	12	86	22	0	121	0	54	24	14	0	92	0	42	140	78	0	260	0	29	21	31	0	81	554
Hourly Total	1	29	337	71	0	438	0	188	84	50	1	322	0	165	654	279	0	1098	0	100	71	198	0	369	2227
5:00 PM	1	10	94	16	0	121	0	67	11	23	0	101	0	38	132	79	0	249	0	24	20	48	0	92	563
5:15 PM	0	13	88	22	0	123	0	67	27	19	0	113	0	28	139	79	0	246	0	21	15	33	0	69	551
5:30 PM	0	6	85	20	0	111	0	57	25	16	0	98	0	28	129	48	0	205	0	29	22	21	0	72	486
5:45 PM	0	11	71	15	0	97	0	43	25	15	0	83	0	30	101	73	0	204	0	17	11	39	0	67	451
Hourly Total	1	40	338	73	0	452	0	234	88	73	0	395	0	124	501	279	0	904	0	91	68	141	0	300	2051
6:00 PM	1	5	73	17	0	96	0	56	17	17	0	90	0	23	87	57	0	167	0	24	20	26	0	70	423
6:15 PM	0	8	72	22	0	102	0	52	16	10	0	78	0	12	77	44	0	133	0	19	9	26	0	54	367
6:30 PM	0	4	51	11	0	66	0	44	10	8	0	62	0	15	52	32	0	99	0	13	9	16	0	38	265
6:45 PM	1	6	50	11	0	68	0	48	23	13	0	84	0	15	49	44	0	108	0	11	14	10	0	35	295
Hourly Total	2	23	246	61	0	332	0	200	66	48	0	314	0	65	265	177	0	507	0	67	52	78	0	197	1350
7:00 PM	0	3	34	10	0	47	0	35	11	7	0	53	1	12	43	26	0	82	0	12	9	23	0	44	226
7:15 PM	0	6	29	8	0	43	0	32	8	12	0	52	0	12	65	34	0	111	0	10	8	11	0	29	235
7:30 PM	0	4	36	5	0	45	0	28	5	10	0	43	0	12	59	25	0	96	0	13	9	12	0	34	218
7:45 PM	0	7	38	5	0	50	0	29	12	6	0	47	0	12	36	22	0	70	0	8	5	4	0	17	184
Hourly Total	0	20	137	28	0	185	0	124	36	35	0	195	1	48	203	107	0	359	0	43	31	50	0	124	863
8:00 PM	0	2	34	6	0	42	0	23	5	9	0	37	0	9	42	17	0	68	0	11	6	13	0	30	177
8:15 PM	0	2	22	13	0	37	0	18	7	8	0	33	0	7	38	18	0	63	0	3	8	9	0	20	153
8:30 PM	0	0	22	6	0	28	0	25	8	4	0	37	0	12	34	28	0	74	0	5	3	10	0	18	157
8:45 PM	0	3	23	7	0	33	0	20	5	8	0	33	0	6	34	18	0	58	0	4	4	14	0	22	146
Hourly Total	0	7	101	32	0	140	0	86	25	29	0	140	0	34	148	81	0	263	0	23	21	46	0	90	633
9:00 PM	0	3	24	3	0	30	0	23	4	4	0	31	0	10	32	10	0	52	0	7	11	11	0	29	142
9:15 PM	0	3	23	2	0	28	0	11	6	7	0	24	0	8	20	11	0	39	0	8	1	7	0	16	107
9:30 PM	0	1	19	3	0	23	0	17	4	4	0	25	0	9	24	10	0	43	0	2	2	6	0	10	101
9:45 PM	0	1	10	2	0	13	0	11	4	2	0	17	0	8	19	2	0	29	0	1	2	3	0	6	65
Hourly Total	0	8	76	10	0	94	0	62	18	17	0	97	0	35	95	33	0	163	0	18	16	27	0	61	415
10:00 PM	0	0	9	2	0	11	0	18	3	5	0	26	0	10	18	2	0	30	0	0	0	1	0	1	68
10:15 PM	0	2	14	0	0	16	0	6	1	1	0	8	0	4	20	4	0	28	0	6	0	2	0	8	60
10:30 PM	0	0	16	1	0	17	0	8	0	3	0	11	1	6	10	3	0	20	0	3	2	18	0	23	71
10:45 PM	0	0	8	2	0	10	0	1	1	3	0	5	0	6	12	0	0	18	0	3	0	10	0	13	46
Hourly Total	0	2	47	5	0	54	0	33	5	12	0	50	1	26	60	9	0	96	0	12	2	31	0	45	245
11:00 PM	0	0	4	0	0	4	0	1	0	0	0	1	0	2	4	0	0	6	0	3	0	13	0	16	27
11:15 PM	0	0	2	0	0	2	0	3	2	0	0	5	0	2	8	0	0	10	0	2	0	2	0	4	21
11:30 PM	0	0	5	0	0	5	0	0	0	0	0	0	0	1	10	0	0	11	0	3	0	0	0	3	19
11:45 PM	0	0	3	0	0	3	0	1	0	0	0	1	0	1	5	0	0	6	0	1	1	1	0	3	13
Hourly Total	0	0	14	0	0	14	0	5	2	0	0	7	0	6	27	0	0	33	0	9	1	16	0	26	80
DAILY TOTAL	7	449	4779	929	0	6164	0	2561	865	703	13	4129	7	1825	4668	2856	4	9356	9	920	871	2109	0	3909	23558
Cars	7	448	4528	880	0	5863	0	2535	861	701	7	4097	7	1650	4413	2826	2	8896	9	894	868	1927	0	3698	22554
Heavy Vehicles	0	1	251	49	0	301	0	26	4	2	6	32	0	175	255	30	2	460	0	26	3	182	0	211	1004
Heavy Vehicle %	0.00%	0.22%	5.25%	5.27%	0.00%	4.88%	0.00%	1.02%	0.46%	0.28%	46.15%	0.78%	0.00%	9.59%	5.46%	1.05%	50.00%	4.92%	0.00%	2.83%	0.34%	8.63%	0.00%	5.40%	4.26%

TMC 2531 - CSAH 23 @ CSAH 12
Lino Lakes MN
Wednesday, November 5, 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	
7:00 AM	0	9	150	21	0	180	0	27	12	5	0	44	0	48	37	34	0	119	0	7	14	59	0	80	423
7:15 AM	0	9	142	27	0	178	0	36	6	7	0	49	0	56	34	38	0	128	0	9	12	61	0	82	437
7:30 AM	0	10	157	33	0	200	0	47	11	6	0	64	0	43	49	46	0	138	0	5	15	45	0	65	467
7:45 AM	0	9	111	22	0	142	0	32	8	7	0	47	0	55	50	54	0	159	1	14	13	47	0	75	423
Peak Hour Total	0	37	560	103	0	700	0	142	37	25	0	204	0	202	170	172	0	544	1	35	54	212	0	302	1750
Peak Hour Heavy Vehicles	0	0	35	6	0	41	0	0	0	0	0	0	0	16	11	3	0	30	0	1	0	16	0	17	88
Peak Hour Heavy Vehicles % PHF	0.00%	0.00%	6.25%	5.83%	0.00%	5.86%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.92%	6.47%	1.74%	0.00%	5.51%	0.00%	2.86%	0.00%	7.55%	0.00%	5.63%	5.03%
	0.000	0.925	0.892	0.780	0.000	0.875	0.000	0.755	0.000	0.893	0.000	0.797	0.000	0.902	0.850	0.796	0.000	0.855	0.250	0.625	0.900	0.869	0.000	0.921	0.937

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	11	63	9	0	83	0	40	17	14	0	71	0	33	67	59	1	159	0	17	21	22	0	60	373
12:00 PM	1	15	54	21	0	91	0	58	28	15	0	101	0	25	67	57	0	149	0	21	23	34	0	78	419
12:15 PM	0	7	60	17	0	84	0	56	21	14	0	91	0	24	78	47	0	149	0	19	22	23	0	64	388
12:30 PM	0	13	58	16	0	87	0	50	21	15	0	86	0	23	66	48	0	137	0	18	27	32	0	77	387
Peak Hour Total	1	46	235	63	0	345	0	204	87	58	0	349	0	105	278	211	1	594	0	75	93	111	0	279	1567
Peak Hour Heavy Vehicles	0	0	25	4	0	29	0	2	0	0	0	2	0	24	22	3	0	49	0	3	1	19	0	23	103
Peak Hour Heavy Vehicles % PHF	0.00%	0.00%	10.64%	6.35%	0.00%	8.41%	0.00%	0.98%	0.00%	0.00%	0.00%	0.57%	0.00%	22.86%	7.91%	1.42%	0.00%	8.25%	0.00%	4.00%	1.08%	17.12%	0.00%	8.24%	6.57%
	0.250	0.767	0.933	0.750	0.000	0.948	0.000	0.879	0.777	0.967	0.000	0.864	0.000	0.795	0.891	0.894	0.250	0.934	0.000	0.893	0.861	0.816	0.000	0.894	0.935

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	
4:30 PM	0	2	96	17	0	115	0	36	22	15	1	73	0	45	183	67	0	295	0	30	14	52	0	96	579
4:45 PM	1	12	86	22	0	121	0	54	24	14	0	92	0	42	140	78	0	260	0	29	21	31	0	81	554
5:00 PM	1	10	94	16	0	121	0	67	11	23	0	101	0	38	132	79	0	249	0	24	20	48	0	92	563
5:15 PM	0	13	88	22	0	123	0	67	27	19	0	113	0	28	139	79	0	246	0	21	15	33	0	69	551
Peak Hour Total	2	37	364	77	0	480	0	224	84	71	1	379	0	153	594	303	0	1050	0	104	70	164	0	338	2247
Peak Hour Heavy Vehicles	0	1	9	3	0	13	0	1	0	0	1	1	0	0	19	1	0	20	0	1	0	2	0	3	37
Peak Hour Heavy Vehicles % PHF	0.00%	2.70%	2.47%	3.90%	0.00%	2.71%	0.00%	0.45%	0.00%	0.00%	100.00%	0.26%	0.00%	0.00%	3.20%	0.33%	0.00%	1.90%	0.00%	0.96%	0.00%	1.22%	0.00%	0.89%	1.65%
	0.500	0.712	0.948	0.875	0.000	0.976	0.000	0.836	0.778	0.772	0.250	0.838	0.000	0.850	0.811	0.959	0.000	0.890	0.000	0.867	0.833	0.788	0.000	0.880	0.970

Total Vehicles On Leg			12462		
Vehicles Entering Intersection 6164			Vehicles Exiting Intersection 6298		
Southbound					
Cars	880	4528	448	7	0
Heavy	49	251	1	0	0
Total	929	4779	449	7	0



Total Vehicles on Leg 7537	Vehicles Entering Intersection 3909	Eastbound	Cars	Heavy	Total
	Vehicles Exiting Intersection 3628		0	0	0
			9	0	9
			894	26	920
			868	3	871
			1927	182	2109



Daily Volumes

Cars	Heavy	Total	Westbound	Vehicles Entering Intersection 4129	Total Vehicles on Leg 8305
701	2	703			
861	4	865			
2535	26	2561			
			Eastbound	Vehicles Exiting Intersection 4176	
0	0	0			
7	6	13			



Vehicles Entering Intersection 9356			Vehicles Exiting Intersection 9456		
Total Vehicles On Leg			18812		

TMC 2531 - CSAH 23 @ CSAH 12
Lino Lakes MN
Wednesday, November 5, 2025

Time	Southbound Heavy CSAH 23						Westbound Heavy CSAH 12						Northbound Heavy CSAH 23						Eastbound Heavy CSAH 12						VEHICLE TOTAL
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	<i>Vehicle Approach Total</i>	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	<i>Vehicle Approach Total</i>	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	<i>Vehicle Approach Total</i>	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	<i>Vehicle Approach Total</i>	
12:00 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
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	2
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
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
Hourly 'Heavy Vehicles'	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	2
1:00 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	1
1:15 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	1
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
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
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	2
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
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
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
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1
Hourly 'Heavy Vehicles'	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1
3:15 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	1
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
3:45 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	1
Hourly 'Heavy Vehicles'	0	0	1	0	0	1	0	1	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	3
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	2	0	0	2	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4
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
4:45 AM	0	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Hourly 'Heavy Vehicles'	0	0	4	1	0	5	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	1	0	1	8
5:00 AM	0	0	4	2	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	8
5:15 AM	0	0	3	2	0	5	0	0	0	0	0	0	0	1	1	2	0	4	0	0	0	1	0	1	10
5:30 AM	0	0	3	1	0	4	0	1	0	0	0	1	0	3	0	2	0	5	0	0	0	2	0	2	12
5:45 AM	0	0	7	2	0	9	0	1	0	0	0	1	0	0	1	2	0	3	0	0	0	2	0	2	15
Hourly 'Heavy Vehicles'	0	0	17	7	0	24	0	2	0	0	0	2	0	4	2	6	0	12	0	0	0	7	0	7	45
6:00 AM	0	0	4	0	0	4	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	3	0	3	10
6:15 AM	0	0	10	4	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
6:30 AM	0	0	7	2	0	9	0	0	0	0	0	0	0	2	2	0	0	4	0	0	0	6	0	6	19
6:45 AM	0	0	0	1	0	1	0	0	0	0	0	0	0	2	3	0	0	5	0	0	0	5	0	5	11
Hourly 'Heavy Vehicles'	0	0	21	7	0	28	0	3	0	0	0	3	0	4	5	0	0	9	0	0	0	14	0	14	54
7:00 AM	0	0	8	1	0	9	0	0	0	0	0	0	0	7	4	0	0	11	0	0	0	8	0	8	28
7:15 AM	0	0	6	2	0	8	0	0	0	0	0	0	0	1	2	1	0	4	0	0	0	7	0	7	19
7:30 AM	0	0	9	0	0	9	0	0	0	0	0	0	0	4	4	0	0	8	0	1	0	0	0	1	18
7:45 AM	0	0	12	3	0	15	0	0	0	0	0	0	0	4	1	2	0	7	0	0	0	1	0	1	23
Hourly 'Heavy Vehicles'	0	0	35	6	0	41	0	0	0	0	0	0	0	16	11	3	0	30	0	1	0	16	0	17	88

TMC 2531 - CSAH 23 @ CSAH 12
Lino Lakes MN
Wednesday, November 5, 2025

Time	Southbound Heavy CSAH 23						Westbound Heavy CSAH 12						Northbound Heavy CSAH 23						Eastbound Heavy CSAH 12						VEHICLE 'Heavy Vehicles'
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	<i>Vehicle Approach 'Heavy Vehicles'</i>	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	<i>Vehicle Approach 'Heavy Vehicles'</i>	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	<i>Vehicle Approach 'Heavy Vehicles'</i>	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	<i>Vehicle Approach 'Heavy Vehicles'</i>	
8:00 AM	0	0	7	2	0	9	0	1	0	0	0	1	0	6	6	1	0	13	0	0	0	4	0	4	27
8:15 AM	0	0	3	2	0	5	0	1	0	0	0	1	0	4	5	0	0	9	0	0	1	7	0	8	23
8:30 AM	0	0	8	0	0	8	0	2	2	1	0	5	0	8	5	1	0	14	0	1	0	5	0	6	33
8:45 AM	0	0	9	0	0	9	0	0	0	0	0	0	0	6	4	0	0	10	0	0	0	7	0	7	26
Hourly 'Heavy Vehicles'	0	0	27	4	0	31	0	4	2	1	0	7	0	24	20	2	0	46	0	1	1	23	0	25	109
9:00 AM	0	0	5	2	0	7	0	0	0	0	0	0	0	5	3	1	0	9	0	0	0	3	0	3	19
9:15 AM	0	0	5	0	0	5	0	1	0	0	0	1	0	4	5	0	0	9	0	0	0	6	0	6	21
9:30 AM	0	0	5	0	0	5	0	0	0	0	0	0	0	5	5	1	0	11	0	0	0	6	0	6	22
9:45 AM	0	0	3	0	0	3	0	1	0	0	0	1	0	5	3	0	0	8	0	0	0	6	0	6	18
Hourly 'Heavy Vehicles'	0	0	18	2	0	20	0	2	0	0	0	2	0	19	16	2	0	37	0	0	0	21	0	21	80
10:00 AM	0	0	5	0	0	5	0	0	0	0	0	0	0	7	8	0	0	15	0	1	1	6	0	8	28
10:15 AM	0	0	2	0	0	2	0	0	0	0	0	0	0	7	3	0	0	10	0	0	0	4	0	4	16
10:30 AM	0	0	7	1	0	8	0	0	0	0	0	0	0	5	8	1	0	14	0	1	0	8	0	9	31
10:45 AM	0	0	4	0	0	4	0	2	0	0	0	2	0	3	7	1	0	11	0	1	0	7	0	8	25
Hourly 'Heavy Vehicles'	0	0	18	1	0	19	0	2	0	0	0	2	0	22	26	2	0	50	0	3	1	25	0	29	100
11:00 AM	0	0	5	0	0	5	0	1	0	1	1	2	0	7	7	0	0	14	0	2	0	3	0	5	26
11:15 AM	0	0	4	1	0	5	0	0	0	0	0	0	0	8	7	0	0	15	0	0	0	3	0	3	23
11:30 AM	0	0	3	0	0	3	0	0	0	0	0	0	0	3	2	0	0	5	0	1	0	3	0	4	12
11:45 AM	0	0	6	0	0	6	0	0	0	0	0	0	0	8	15	0	0	23	0	1	1	7	0	9	38
Hourly 'Heavy Vehicles'	0	0	18	1	0	19	0	1	0	1	1	2	0	26	31	0	0	57	0	4	1	16	0	21	99
12:00 PM	0	0	8	1	0	9	0	0	0	0	0	0	0	6	2	1	0	9	0	0	0	4	0	4	22
12:15 PM	0	0	9	2	0	11	0	0	0	0	0	0	0	3	1	1	0	5	0	1	0	4	0	5	21
12:30 PM	0	0	2	1	0	3	0	2	0	0	0	2	0	7	4	1	0	12	0	1	0	4	0	5	22
12:45 PM	0	0	5	0	0	5	0	0	0	0	0	0	0	3	4	1	0	8	0	3	0	5	0	8	21
Hourly 'Heavy Vehicles'	0	0	24	4	0	28	0	2	0	0	0	2	0	19	11	4	0	34	0	5	0	17	0	22	86
1:00 PM	0	0	2	2	0	4	0	0	0	0	0	0	0	5	4	1	2	10	0	0	0	7	0	7	21
1:15 PM	0	0	8	0	0	8	0	0	0	0	0	0	0	2	3	1	0	6	0	2	0	6	0	8	22
1:30 PM	0	0	6	2	0	8	0	0	0	0	0	0	0	4	7	1	0	12	0	1	0	3	0	4	24
1:45 PM	0	0	7	0	0	7	0	1	1	0	0	2	0	1	9	0	0	10	0	2	0	2	0	4	23
Hourly 'Heavy Vehicles'	0	0	23	4	0	27	0	1	1	0	0	2	0	12	23	3	2	38	0	5	0	18	0	23	90
2:00 PM	0	0	4	1	0	5	0	0	0	0	0	0	0	2	6	1	0	9	0	0	0	2	0	2	16
2:15 PM	0	0	4	1	0	5	0	1	0	0	0	1	0	3	8	0	0	11	0	2	0	3	0	5	22
2:30 PM	0	0	4	1	0	5	0	0	0	0	0	0	0	0	4	2	0	6	0	0	0	2	0	2	13
2:45 PM	0	0	0	1	0	1	0	0	0	0	0	0	0	4	4	0	0	8	0	1	0	3	0	4	13
Hourly 'Heavy Vehicles'	0	0	12	4	0	16	0	1	0	0	0	1	0	9	22	3	0	34	0	3	0	10	0	13	64
3:00 PM	0	0	2	0	0	2	0	0	0	0	2	0	0	6	7	0	0	13	0	0	0	1	0	1	16
3:15 PM	0	0	2	1	0	3	0	1	0	0	1	1	0	3	7	0	0	10	0	2	0	2	0	4	18
3:30 PM	0	0	3	0	0	3	0	0	0	0	0	0	0	1	6	0	0	7	0	1	0	2	0	3	13
3:45 PM	0	0	3	2	0	5	0	0	0	0	1	0	0	0	12	0	0	12	0	0	0	1	0	1	18
Hourly 'Heavy Vehicles'	0	0	10	3	0	13	0	1	0	0	4	1	0	10	32	0	0	42	0	3	0	6	0	9	65

TMC 2531 - CSAH 23 @ CSAH 12
Lino Lakes MN
Wednesday, November 5, 2025

	Southbound Heavy CSAH 23						Westbound Heavy CSAH 12						Northbound Heavy CSAH 23						Eastbound Heavy CSAH 12						VEHICLE 'Heavy Vehicles'	
Time	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	1	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0	0	2	0	2	5
4:15 PM	0	0	4	1	0	5	0	1	0	0	0	1	0	2	4	1	0	7	0	0	0	0	0	0	13	
4:30 PM	0	0	5	0	0	5	0	1	0	0	1	1	0	0	4	0	0	4	0	0	0	2	0	2	12	
4:45 PM	0	0	1	2	0	3	0	0	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	10	
Hourly 'Heavy Vehicles'	0	0	11	3	0	14	0	2	0	0	1	2	0	3	16	1	0	20	0	0	0	4	0	4	40	
5:00 PM	0	0	2	0	0	2	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	6	
5:15 PM	0	1	1	1	0	3	0	0	0	0	0	0	0	0	4	1	0	5	0	1	0	0	0	1	9	
5:30 PM	0	0	3	0	0	3	0	1	1	0	0	2	0	0	2	0	0	2	0	0	0	2	0	2	9	
5:45 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	3	5	0	0	8	0	0	0	2	0	2	11	
Hourly 'Heavy Vehicles'	0	1	6	1	0	8	0	2	1	0	0	3	0	3	15	1	0	19	0	1	0	4	0	5	35	
6:00 PM	0	0	1	0	0	1	0	0	0	0	0	0	0	1	4	0	0	5	0	0	0	0	0	0	6	
6:15 PM	0	0	3	0	0	3	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	6	
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	3	0	0	0	0	0	0	3	
Hourly 'Heavy Vehicles'	0	0	4	0	0	4	0	0	0	0	0	0	0	2	9	1	0	12	0	0	0	0	0	0	16	
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	2	
7:15 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	0	0	2	0	0	0	0	0	0	3	
7:30 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	2	
7:45 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	2	0	0	0	2	0	0	4	1	0	5	0	0	0	0	0	0	7	
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	
8:15 PM	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2	
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	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	1	0	1	0	0	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	4	
9:00 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	
9:15 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	
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	
9:45 PM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	
Hourly 'Heavy Vehicles'	0	0	1	0	0	1	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	4	
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	
10:30 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	
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	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	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	1	251	49	0	301	0	26	4	2	6	32	0	175	255	30	2	460	0	26	3	182	0	211	1004	

Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

TMC	2531
Date	11/05/2025
Intersection Geometrics	Signal

Intersection Information			
Major Street (N/S Road)	CSAH 23	Minor Street (E/W Road)	CSAH 12
Analyzed with	2 or more approach lanes	Analyzed with	2 or more approach lanes
Total Approach Volume	15520 vehicles	Total Approach Volume	7335 vehicles
Total Ped/Bike Volume	4 crossings	Total Ped/Bike Volume	13 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	100% applied for WB

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

Warrant 1, Eight Hour Vehicular Volume			
	Condition A	Condition B	Condition A+B*
Condition Satisfied?	Satisfied	Satisfied	Satisfied
Required values reached for	14 hours	13 hours	14 (Cond. A) & 14 (Cond. B)
Criteria - Major Street (veh/hr)	420	630	336 (Cond. A) & 504 (Cond. B)
Criteria - Minor Street (veh/hr)	140	70	112 (Cond. A) & 56 (Cond. B)

* Should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

Warrant 2, Four Hour Vehicular Volume	
Condition Satisfied?	Satisfied
Required values reached for	13 hours
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	Condition B
Condition Satisfied?	Not Examined	Satisfied
Required values reached for		11 hours
Criteria - Total Approach Volume (veh in one hour)		See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)		
Criteria - Minor Street High Side Delay (veh-hrs)		

Figure 4C-2 (Warrant 2 - 70% Factor) & Figure 4C-4 (Warrant 3 - 70% Factor)

