

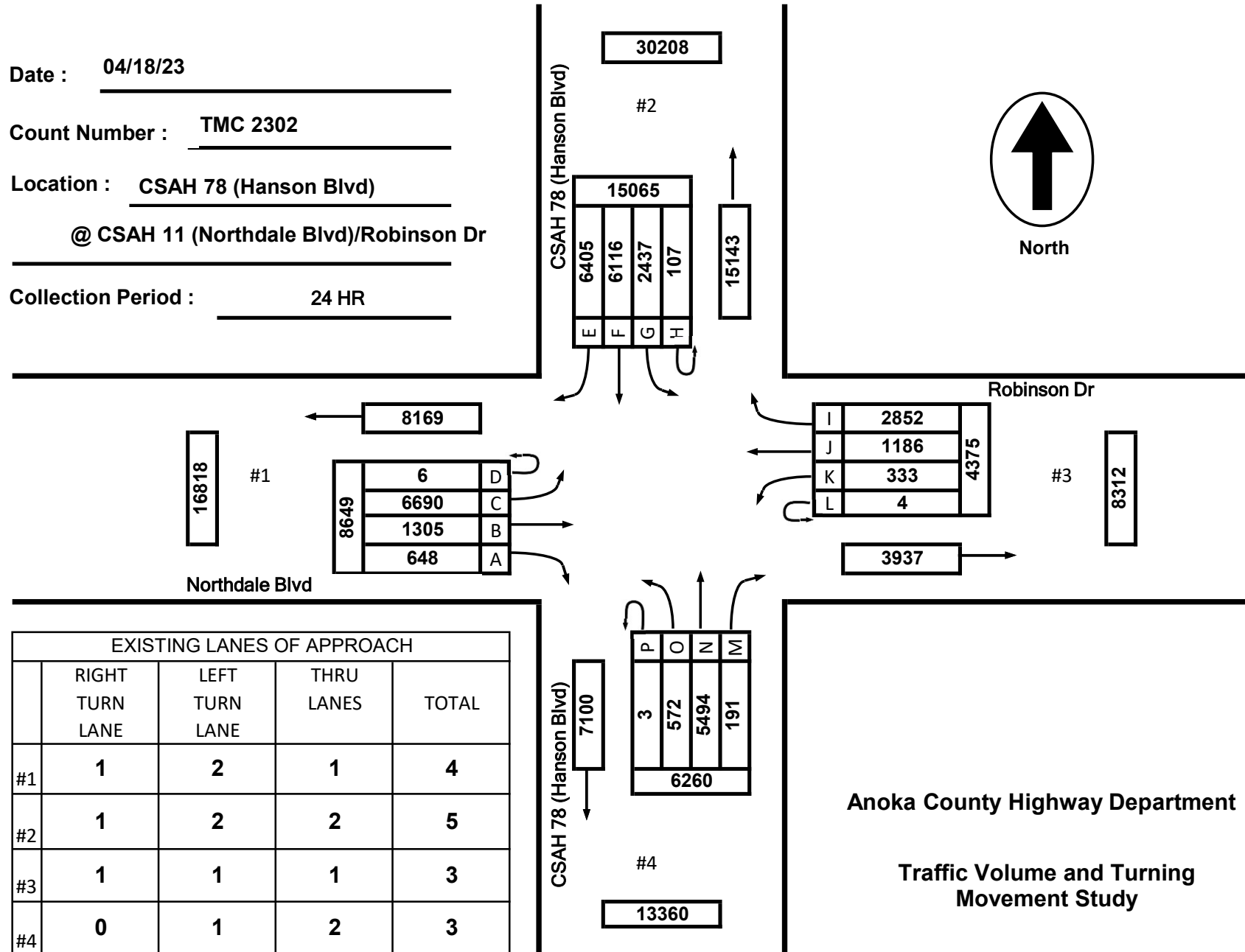
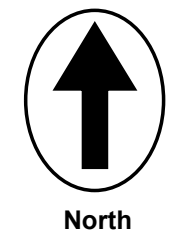
Date : 04/18/23

Count Number : TMC 2302

Location : CSAH 78 (Hanson Blvd)

@ CSAH 11 (Northdale Blvd)/Robinson Dr

Collection Period : 24 HR



EXISTING LANES OF APPROACH				
	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	TOTAL
#1	1	2	1	4
#2	1	2	2	5
#3	1	1	1	3
#4	0	1	2	3

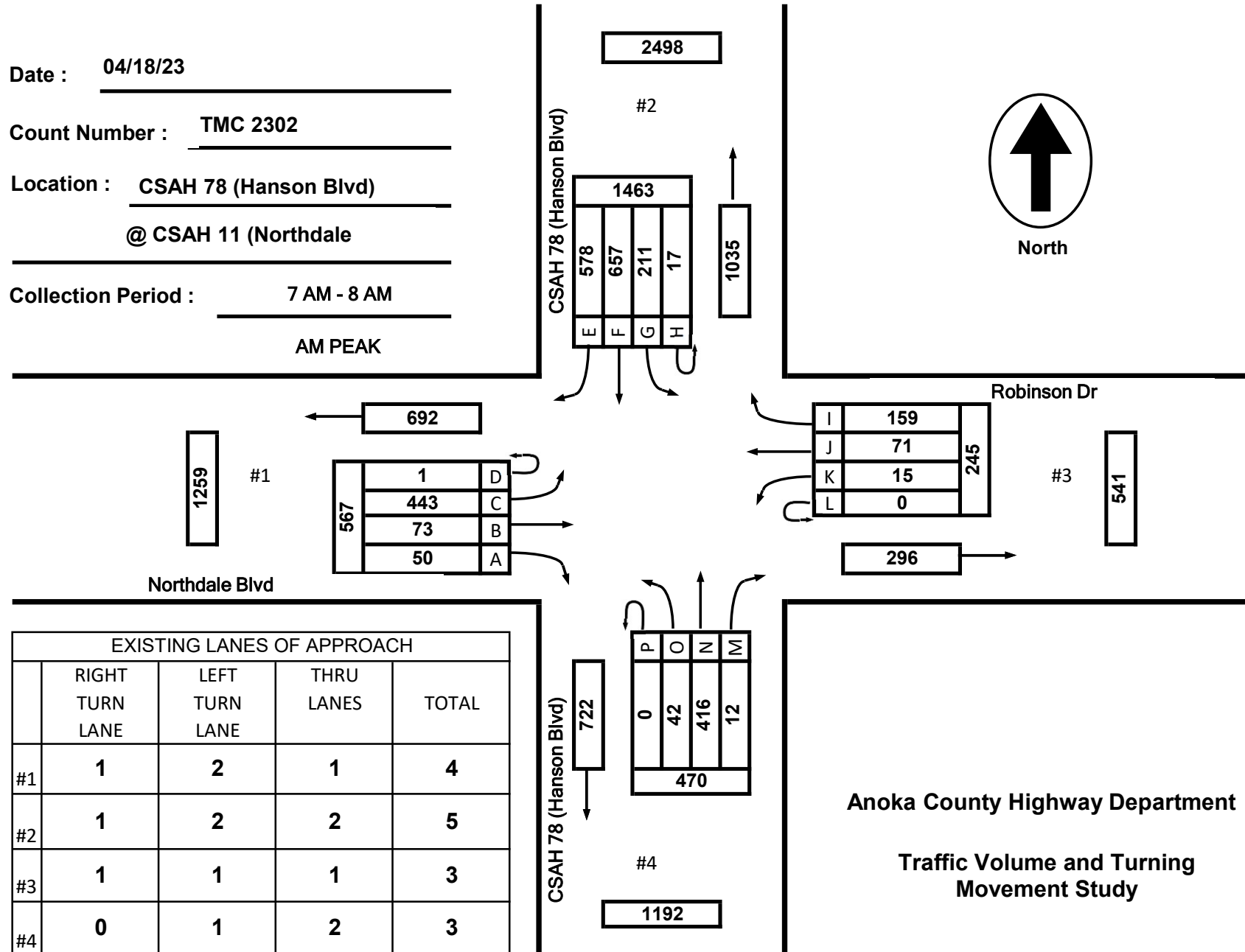
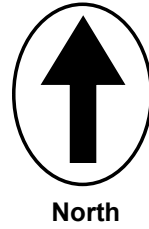
Anoka County Highway Department  
 Traffic Volume and Turning Movement Study

Date : 04/18/23

Count Number : TMC 2302

Location : CSAH 78 (Hanson Blvd)  
@ CSAH 11 (Northdale)

Collection Period : 7 AM - 8 AM  
AM PEAK



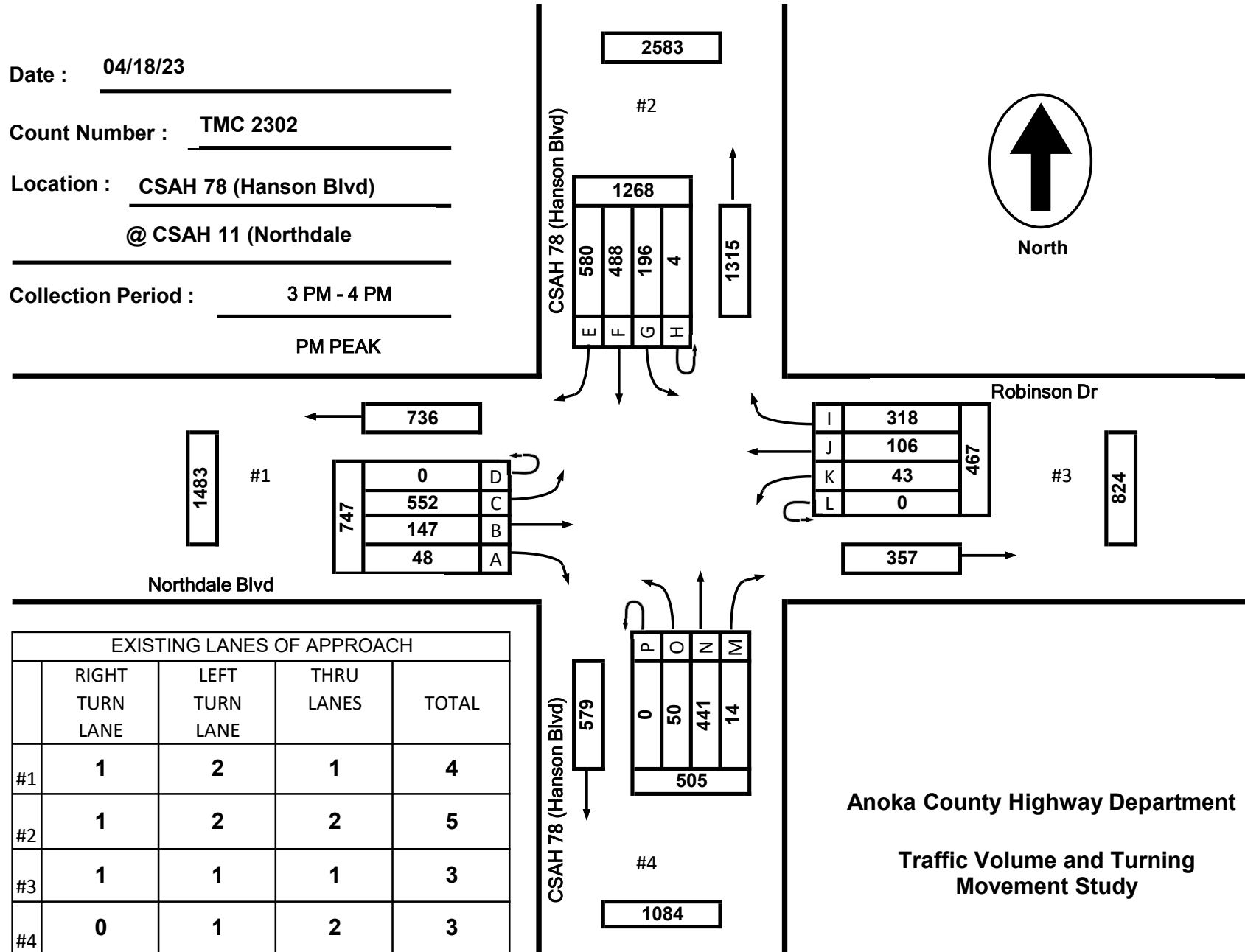
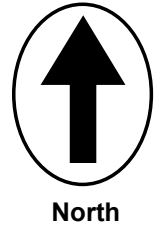
Anoka County Highway Department  
 Traffic Volume and Turning  
 Movement Study

Date : 04/18/23

Count Number : TMC 2302

Location : CSAH 78 (Hanson Blvd)  
@ CSAH 11 (Northdale)

Collection Period : 3 PM - 4 PM  
PM PEAK



EXISTING LANES OF APPROACH				
	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	TOTAL
#1	1	2	1	4
#2	1	2	2	5
#3	1	1	1	3
#4	0	1	2	3

Anoka County Highway Department  
 Traffic Volume and Turning Movement Study

TMC 2302 - CSAH 78 @ CSAH 11Robinson Dr

0 0

Tuesday, April 18, 2023

Time	Southbound 0						Westbound 0						Northbound 0						Eastbound 0						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	2	1	9	8	0	20	0	1	2	3	0	6	0	1	9	0	0	10	0	2	0	1	0	3	39
12:15 AM	0	3	14	6	0	23	0	0	1	7	0	8	0	0	10	0	0	10	0	6	1	0	0	7	48
12:30 AM	0	11	10	7	0	28	0	0	0	4	0	4	0	1	4	0	0	5	0	4	3	0	0	7	44
12:45 AM	0	3	9	7	0	19	1	0	2	2	0	5	0	0	6	0	0	6	0	2	0	1	0	3	33
Hourly Total	2	18	42	28	0	90	1	1	5	16	0	23	0	2	29	0	0	31	0	14	4	2	0	20	164
1:00 AM	0	5	8	5	0	18	0	0	1	5	0	6	0	3	7	0	0	10	0	5	1	0	0	6	40
1:15 AM	1	3	5	10	0	19	0	0	0	3	0	3	0	0	4	0	0	4	0	3	0	1	0	4	30
1:30 AM	0	5	8	3	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	1	0	5	21
1:45 AM	1	1	6	6	0	14	0	0	0	1	0	1	0	0	7	0	0	7	0	4	0	0	0	4	26
Hourly Total	2	14	27	24	0	67	0	0	1	9	0	10	0	3	18	0	0	21	0	15	2	2	0	19	117
2:00 AM	0	2	9	9	0	20	0	0	0	3	0	3	0	0	3	0	0	3	0	4	0	1	0	5	31
2:15 AM	2	1	3	5	0	11	0	0	0	1	0	1	0	0	7	0	0	7	0	8	1	1	0	10	29
2:30 AM	0	1	2	3	0	6	0	0	0	3	0	3	0	0	0	0	0	0	0	3	0	0	0	3	12
2:45 AM	1	1	6	3	0	11	0	0	1	2	0	3	0	0	1	0	0	1	0	3	1	0	0	4	19
Hourly Total	3	5	20	20	0	48	0	0	1	9	0	10	0	0	11	0	0	11	0	18	2	2	0	22	91
3:00 AM	0	1	4	1	0	6	0	0	0	2	0	2	0	0	7	0	0	7	0	5	0	0	0	5	20
3:15 AM	0	4	2	5	0	11	0	0	0	0	0	0	0	0	7	0	0	7	0	3	0	0	0	3	21
3:30 AM	0	1	3	4	0	8	0	0	0	2	0	2	0	0	10	0	0	10	0	5	0	0	0	5	25
3:45 AM	0	1	2	4	0	7	0	1	0	5	0	6	0	1	6	0	0	7	0	7	0	0	0	7	27
Hourly Total	0	7	11	14	0	32	0	1	0	9	0	10	0	1	30	0	0	31	0	20	0	0	0	20	93
4:00 AM	0	2	4	5	0	11	0	0	0	5	0	5	0	0	7	0	0	7	0	10	0	0	0	10	33
4:15 AM	0	1	11	6	0	18	0	0	1	7	0	8	0	1	8	0	0	9	0	12	0	2	0	14	49
4:30 AM	0	3	5	7	0	15	0	0	1	8	0	9	0	0	14	0	0	14	0	21	0	0	0	21	59
4:45 AM	0	0	11	23	0	34	0	0	3	9	0	12	0	0	17	1	0	18	0	14	4	2	0	20	84
Hourly Total	0	6	31	41	0	78	0	0	5	29	0	34	0	1	46	1	0	48	0	57	4	4	0	65	225
5:00 AM	0	0	7	21	0	28	0	1	2	13	0	16	0	0	20	0	0	20	0	26	1	0	0	27	91
5:15 AM	1	1	7	27	0	36	0	0	3	12	0	15	0	0	18	0	0	18	0	31	1	1	0	33	102
5:30 AM	0	5	25	16	0	46	0	0	3	20	0	23	0	2	36	0	0	38	0	48	0	3	0	51	158
5:45 AM	1	5	33	26	0	65	0	0	3	22	0	25	0	1	47	0	0	48	0	34	5	1	0	40	178
Hourly Total	2	11	72	90	0	175	0	1	11	67	0	79	0	3	121	0	0	124	0	139	7	5	0	151	529
6:00 AM	0	8	49	29	0	86	0	1	3	23	0	27	0	4	45	0	1	49	0	51	3	1	0	55	217
6:15 AM	5	14	64	39	0	122	0	4	7	27	0	38	0	2	56	1	1	59	0	67	5	4	0	76	295
6:30 AM	1	15	51	65	0	132	0	2	7	42	0	51	0	4	73	1	0	78	0	79	10	5	0	94	355
6:45 AM	1	24	74	102	0	201	0	2	10	32	1	44	0	3	67	0	0	70	0	74	5	8	0	87	402
Hourly Total	7	61	238	235	0	541	0	9	27	124	1	160	0	13	241	2	2	256	0	271	23	18	0	312	1269
7:00 AM	0	35	117	137	0	289	0	3	19	32	0	54	0	11	79	1	0	91	1	94	14	6	0	115	549
7:15 AM	7	49	200	202	0	458	0	4	24	42	0	70	0	11	134	3	1	148	0	111	14	13	0	138	814
7:30 AM	5	47	169	134	0	355	0	3	16	40	0	59	0	10	115	6	0	131	0	142	24	19	0	185	730
7:45 AM	5	80	171	105	0	361	0	5	12	45	0	62	0	10	88	2	0	100	0	96	21	12	0	129	652
Hourly Total	17	211	657	578	0	1463	0	15	71	159	0	245	0	42	416	12	1	470	1	443	73	50	0	567	2745

TMC 2302 - CSAH 78 @ CSAH 11Robinson Dr

0 0

Tuesday, April 18, 2023

Time	Southbound 0						Westbound 0						Northbound 0						Eastbound 0						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	1	34	114	119	0	268	0	6	15	22	0	43	0	7	74	2	0	83	0	109	13	11	0	133	527
8:15 AM	2	47	81	91	0	221	0	3	14	32	0	49	0	6	76	5	0	87	0	101	17	7	0	125	482
8:30 AM	0	59	78	76	0	213	0	2	9	31	0	42	0	6	60	5	0	71	0	75	10	13	0	98	424
8:45 AM	0	33	96	81	0	210	0	3	23	51	0	77	0	3	79	7	1	89	0	94	10	7	0	111	487
Hourly Total	3	173	369	367	0	912	0	14	61	136	0	211	0	22	289	19	1	330	0	379	50	38	0	467	1920
9:00 AM	1	26	77	86	0	190	0	3	19	48	0	70	0	2	81	6	0	89	0	70	9	6	0	85	434
9:15 AM	2	41	64	96	0	203	0	3	16	41	1	60	0	4	77	0	1	81	0	69	14	10	0	93	437
9:30 AM	1	36	81	88	0	206	0	2	16	45	0	63	0	4	93	3	1	100	0	90	13	11	0	114	483
9:45 AM	2	45	73	81	0	201	0	5	12	40	0	57	0	7	48	5	0	60	0	57	14	6	0	77	395
Hourly Total	6	148	295	351	0	800	0	13	63	174	1	250	0	17	299	14	2	330	0	286	50	33	0	369	1749
10:00 AM	1	32	59	65	0	157	0	4	10	34	0	48	0	9	53	11	0	73	0	84	13	9	0	106	384
10:15 AM	0	42	71	79	0	192	0	6	14	37	1	57	0	9	58	3	1	70	1	59	17	8	0	85	404
10:30 AM	0	34	70	71	0	175	0	6	18	38	0	62	0	10	64	2	0	76	0	84	11	5	0	100	413
10:45 AM	2	44	77	74	0	197	0	5	18	43	0	66	0	10	57	10	0	77	0	81	18	8	0	107	447
Hourly Total	3	152	277	289	0	721	0	21	60	152	1	233	0	38	232	26	1	296	1	308	59	30	0	398	1648
11:00 AM	2	31	62	67	0	162	1	6	25	52	0	84	0	11	79	5	0	95	1	90	24	9	0	124	465
11:15 AM	0	36	72	73	0	181	0	2	15	49	2	66	0	14	73	5	1	92	0	85	17	10	0	112	451
11:30 AM	1	33	74	63	0	171	0	5	32	58	0	95	0	6	68	3	1	77	0	79	19	8	0	106	449
11:45 AM	2	49	67	63	0	181	0	4	21	49	1	74	0	6	92	2	0	100	0	88	22	10	0	120	475
Hourly Total	5	149	275	266	0	695	1	17	93	208	3	319	0	37	312	15	2	364	1	342	82	37	0	462	1840
12:00 PM	1	53	58	88	1	200	0	10	35	28	0	73	0	11	74	4	0	89	0	88	22	10	0	120	482
12:15 PM	0	26	64	77	1	167	0	8	19	33	0	60	0	12	58	2	1	72	0	92	23	13	1	128	427
12:30 PM	4	33	74	77	0	188	0	6	20	46	1	72	0	11	77	8	1	96	1	106	25	11	0	143	499
12:45 PM	2	43	80	81	0	206	0	4	24	48	0	76	0	8	62	2	0	72	0	79	28	8	0	115	469
Hourly Total	7	155	276	323	2	761	0	28	98	155	1	281	0	42	271	16	2	329	1	365	98	42	1	506	1877
1:00 PM	2	39	74	63	1	178	0	4	15	42	0	61	0	19	78	3	0	100	0	91	26	5	0	122	461
1:15 PM	1	28	79	83	0	191	0	6	20	36	0	62	0	7	76	3	0	86	0	88	18	11	0	117	456
1:30 PM	1	36	78	75	1	190	0	7	31	33	0	71	0	9	60	5	0	74	1	92	15	15	0	123	458
1:45 PM	1	38	120	104	0	263	0	7	23	32	1	62	0	9	71	4	2	84	0	100	20	8	0	128	537
Hourly Total	5	141	351	325	2	822	0	24	89	143	1	256	0	44	285	15	2	344	1	371	79	39	0	490	1912
2:00 PM	0	45	125	124	0	294	0	8	24	51	0	83	0	15	100	2	2	117	0	105	20	10	0	135	629
2:15 PM	0	38	84	112	0	234	0	8	14	45	2	67	0	8	107	4	2	119	0	151	31	16	0	198	618
2:30 PM	0	39	102	107	0	248	0	7	19	41	0	67	0	16	105	2	0	123	0	162	26	23	1	211	649
2:45 PM	0	64	124	134	1	322	0	6	18	45	0	69	1	14	153	5	0	173	0	100	23	15	0	138	702
Hourly Total	0	186	435	477	1	1098	0	29	75	182	2	286	1	53	465	13	4	532	0	518	100	64	1	682	2598
3:00 PM	1	49	116	131	1	297	0	11	27	78	0	116	0	19	133	3	0	155	0	125	33	12	1	170	738
3:15 PM	2	62	123	152	0	339	0	11	26	70	3	107	0	6	101	5	1	112	0	172	40	16	9	228	786
3:30 PM	0	37	114	157	0	308	0	13	25	90	1	128	0	9	121	4	1	134	0	132	33	14	0	179	749
3:45 PM	1	50	135	140	2	326	0	8	28	80	0	116	0	16	86	2	1	104	0	123	41	6	0	170	716
Hourly Total	4	198	488	580	3	1270	0	43	106	318	4	467	0	50	441	14	3	505	0	552	147	48	10	747	2989

# TMC 2302 - CSAH 78 @ CSAH 11Robinson Dr

0 0

Tuesday, April 18, 2023

Time	Southbound 0						Westbound 0						Northbound 0						Eastbound 0						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	3	48	131	163	0	345	0	5	36	66	3	107	0	12	121	1	2	134	0	113	27	9	0	149	735
4:15 PM	0	51	124	165	0	340	0	7	25	65	0	97	0	14	153	3	1	170	0	125	20	4	0	149	756
4:30 PM	3	33	118	146	0	300	1	6	45	77	1	129	0	13	108	0	1	121	0	131	28	10	0	169	719
4:45 PM	0	41	142	161	0	344	0	4	38	57	1	99	0	13	123	4	2	140	0	124	30	13	0	167	750
Hourly Total	6	173	515	635	0	1329	1	22	144	265	5	432	0	52	505	8	6	565	0	493	105	36	0	634	2960
5:00 PM	4	35	125	141	1	305	0	11	23	75	0	109	0	11	123	1	0	135	0	162	34	17	0	213	762
5:15 PM	3	39	126	126	0	294	0	4	20	47	0	71	0	10	93	7	2	110	0	138	32	11	2	181	656
5:30 PM	4	49	136	122	1	311	0	6	33	51	0	90	0	14	107	5	2	126	0	120	24	13	0	157	684
5:45 PM	2	37	117	119	2	275	0	4	22	44	2	70	0	14	84	2	1	100	0	121	23	21	0	165	610
Hourly Total	13	160	504	508	4	1185	0	25	98	217	2	340	0	49	407	15	5	471	0	541	113	62	2	716	2712
6:00 PM	3	39	112	122	0	276	0	7	14	37	0	58	0	16	83	3	1	102	0	146	38	17	0	201	637
6:15 PM	1	41	96	114	0	252	0	6	17	38	0	61	0	5	109	0	5	114	0	138	34	11	1	183	610
6:30 PM	1	44	99	86	0	230	0	3	22	37	0	62	0	9	64	0	1	73	0	131	28	6	0	165	530
6:45 PM	0	35	93	87	0	215	1	10	13	31	0	55	0	7	69	2	0	78	0	109	23	8	0	140	488
Hourly Total	5	159	400	409	0	973	1	26	66	143	0	236	0	37	325	5	7	367	0	524	123	42	1	689	2265
7:00 PM	4	22	65	76	1	167	0	6	13	34	0	53	2	8	64	1	0	75	0	105	18	11	3	134	429
7:15 PM	0	19	89	72	1	180	0	3	11	32	0	46	0	9	63	1	0	73	0	95	16	6	0	117	416
7:30 PM	2	19	66	62	0	149	0	4	19	35	2	58	0	6	42	0	0	48	0	116	13	13	0	142	397
7:45 PM	0	18	65	60	0	143	0	5	15	22	0	42	0	5	47	0	0	52	0	81	16	8	0	105	342
Hourly Total	6	78	285	270	2	639	0	18	58	123	2	199	2	28	216	2	0	248	0	397	63	38	3	498	1584
8:00 PM	0	20	57	69	0	146	0	3	11	26	1	40	0	4	63	2	2	69	0	85	24	6	0	115	370
8:15 PM	0	22	64	73	0	159	0	1	12	20	0	33	0	3	55	2	0	60	0	59	13	4	0	76	328
8:30 PM	1	24	43	53	1	121	0	2	6	29	0	37	0	9	80	1	0	90	0	78	10	11	0	99	347
8:45 PM	2	23	60	42	0	127	0	1	3	22	0	26	0	2	60	1	0	63	0	65	17	9	0	91	307
Hourly Total	3	89	224	237	1	553	0	7	32	97	1	136	0	18	258	6	2	282	0	287	64	30	0	381	1352
9:00 PM	0	19	42	50	0	111	0	2	5	10	0	17	0	3	50	1	0	54	0	63	6	2	0	71	253
9:15 PM	2	12	38	51	0	103	0	2	1	13	0	16	0	4	42	1	0	47	0	51	5	4	0	60	226
9:30 PM	0	19	34	39	0	92	0	3	2	9	0	14	0	0	32	0	0	32	0	39	7	3	0	49	187
9:45 PM	1	10	26	36	0	73	0	2	1	14	0	17	0	1	26	1	0	28	0	36	5	4	0	45	163
Hourly Total	3	60	140	176	0	379	0	9	9	46	0	64	0	8	150	3	0	161	0	189	23	13	0	225	829
10:00 PM	1	7	27	19	0	54	0	2	2	11	0	15	0	2	23	1	0	26	0	30	8	4	0	42	137
10:15 PM	0	13	31	30	0	74	0	2	1	11	0	14	0	0	15	0	0	15	0	28	9	4	1	41	144
10:30 PM	1	13	34	22	0	70	0	1	0	17	0	18	0	0	23	2	0	25	1	22	4	1	0	28	141
10:45 PM	0	14	15	17	0	46	0	2	0	13	0	15	0	2	18	0	0	20	0	29	4	1	0	34	115
Hourly Total	2	47	107	88	0	244	0	7	3	52	0	62	0	4	79	3	0	86	1	109	25	10	1	145	537
11:00 PM	1	14	21	30	0	66	0	0	2	10	0	12	0	2	11	1	0	14	0	21	2	0	0	23	115
11:15 PM	1	11	22	10	0	44	0	1	6	2	0	9	0	2	13	1	1	16	0	10	3	1	0	14	83
11:30 PM	0	4	18	21	0	43	0	2	1	4	0	7	0	1	14	0	0	15	0	9	4	2	0	15	80
11:45 PM	1	7	16	13	0	37	0	0	1	3	0	4	0	3	10	0	0	13	0	12	0	0	0	12	66
Hourly Total	3	36	77	74	0	190	0	3	10	19	0	32	0	8	48	2	1	58	0	52	9	3	0	64	344
<b>DAILY TOTAL</b>	<b>107</b>	<b>2437</b>	<b>6116</b>	<b>6405</b>	<b>15</b>	<b>15065</b>	<b>4</b>	<b>333</b>	<b>1186</b>	<b>2852</b>	<b>24</b>	<b>4375</b>	<b>3</b>	<b>572</b>	<b>5494</b>	<b>191</b>	<b>41</b>	<b>6260</b>	<b>6</b>	<b>6690</b>	<b>1305</b>	<b>648</b>	<b>19</b>	<b>8649</b>	<b>34349</b>
<b>Cars</b>	107	2406	5978	6256	13	14747	4	328	1153	2768	23	4253	3	556	5374	185	33	6118	6	6548	1265	617	17	8436	33554
<b>Heavy Vehicles</b>	0	31	138	149	2	318	0	5	33	84	1	122	0	16	120	6	8	142	0	142	40	31	2	213	795
<b>Heavy Vehicle %</b>	0.00%	1.27%	2.26%	2.33%	13.33%	2.11%	0.00%	1.50%	2.78%	2.95%	4.17%	2.79%	0.00%	2.80%	2.18%	3.14%	19.51%	2.27%	0.00%	2.12%	3.07%	4.78%	10.53%	2.46%	2.31%

### TMC 2302 - CSAH 78 @ CSAH 11 Robinson Dr

0 0

Tuesday, April 18, 2023

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	35	117	137	0	289	0	3	19	32	0	54	0	11	79	1	0	91	1	94	14	6	0	115	
7:15 AM	7	49	200	202	0	458	0	4	24	42	0	70	0	11	134	3	1	148	0	111	14	13	0	138	
7:30 AM	5	47	169	134	0	355	0	3	16	40	0	59	0	10	115	6	0	131	0	142	24	19	0	185	
7:45 AM	5	80	171	105	0	361	0	5	12	45	0	62	0	10	88	2	0	100	0	96	21	12	0	129	
Peak Hour Total	17	211	657	578	0	1463	0	15	71	159	0	245	0	42	416	12	1	470	1	443	73	50	0	567	
PHF	0.607	0.659	0.821	0.715	0.000	0.799	0.000	0.750	0.740	0.883	0.000	0.875	0.000	0.955	0.776	0.500	0.250	0.794	0.250	0.780	0.760	0.658	0.000	0.766	

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	
3:00 PM	1	49	116	131	1	297	0	11	27	78	0	116	0	19	133	3	0	155	0	125	33	12	1	170	
3:15 PM	2	62	123	152	0	339	0	11	26	70	3	107	0	6	101	5	1	112	0	172	40	16	9	228	
3:30 PM	0	37	114	157	0	308	0	13	25	90	1	128	0	9	121	4	1	134	0	132	33	14	0	179	
3:45 PM	1	50	135	140	2	326	0	8	28	80	0	116	0	16	86	2	1	104	0	123	41	6	0	170	
Peak Hour Total	4	198	488	580	3	1270	0	43	106	318	4	467	0	50	441	14	3	505	0	552	147	48	10	747	
PHF	0.500	0.798	0.904	0.924	0.375	0.937	0.000	0.827	0.946	0.883	0.333	0.912	0.000	0.658	0.829	0.700	0.750	0.815	0.000	0.802	0.896	0.750	0.278	0.819	

Total Vehicles On Leg				30208			
Vehicles Entering Intersection		15065		Vehicles Exiting Intersection		15143	
<b>Southbound</b>							
Cars	6256	5978	2406	107	13		
Heavy	149	138	31	0	2		
<b>Total</b>	<b>6405</b>	<b>6116</b>	<b>2437</b>	<b>107</b>	<b>15</b>		



Total Vehicles on Leg 16818	Vehicles Entering Intersection 8649	Eastbound	Cars	Heavy	Total
			17	2	19
			6	0	6
	6548		142	6690	
	Vehicles Exiting Intersection 8169		1265	40	1305
		617	31	648	



Daily Volumes

Cars	Heavy	Total	Westbound	Vehicles Entering Intersection 4375	Total Vehicles on Leg 8312
2768	84	2852			
1153	33	1186			
328	5	333			
4	0	4			
23	1	24		Vehicles Exiting Intersection 3937	



Cars	33	3	556	5374	185
Heavy	8	0	16	120	6
<b>Total</b>	<b>41</b>	<b>3</b>	<b>572</b>	<b>5494</b>	<b>191</b>
<b>Northbound</b>					
Vehicles Entering Intersection			6260		
Vehicles Exiting Intersection			7100		
Total Vehicles On Leg			13360		



# Heavy Vehicles

Date	Time	Southbound						Westbound						Northbound						Eastbound					
		U Turns	Left Turns	Straight Through	Right Turns	EB Bicycles in Crosswalk	WB Bicycles in Crosswalk	U Turns	Left Turns	Straight Through	Right Turns	NB Bicycles in Crosswalk	SB Bicycles in Crosswalk	U Turns	Left Turns	Straight Through	Right Turns	EB Bicycles in Crosswalk	WB Bicycles in Crosswalk	U Turns	Left Turns	Straight Through	Right Turns	NB Bicycles in Crosswalk	SB Bicycles in Crosswalk
04/18/2023	0:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0:15	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0:30	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
	1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
	1:15	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	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	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:00	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	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	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:45	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15	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	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	4:45	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
	5:15	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	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:00	0	0	2	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0
	6:15	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	6:30	0	0	5	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	1	0	0	0	0
	6:45	0	0	7	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:00	0	0	1	5	0	0	0	0	2	0	0	0	0	3	1	0	0	0	2	1	0	0	0	0
	7:15	0	2	3	11	0	0	0	0	3	1	0	0	0	1	5	0	0	0	12	4	6	0	0	0
	7:30	0	1	3	2	0	0	0	0	2	3	0	0	0	0	2	0	0	0	3	0	4	0	0	0
	7:45	0	2	4	4	0	0	0	0	2	0	0	0	0	0	5	1	0	0	6	2	0	0	0	0
	8:00	0	0	4	13	0	0	0	0	3	0	0	0	0	6	0	0	0	10	0	0	0	0	0	0
	8:15	0	0	2	2	0	0	0	0	2	0	0	0	0	1	0	0	0	9	2	2	0	0	0	0
	8:30	0	0	2	4	0	0	0	0	3	0	0	0	0	0	0	0	0	4	2	3	0	0	0	0
	8:45	0	1	1	0	0	0	0	0	4	2	0	0	0	2	0	1	0	4	1	0	0	0	0	0
	9:00	0	0	4	4	0	0	0	0	0	3	0	0	0	0	5	0	0	0	1	0	0	0	0	0
	9:15	0	0	2	4	0	0	0	0	0	1	0	0	0	1	9	0	0	3	0	1	0	0	0	0
	9:30	0	0	1	2	0	0	0	0	1	4	0	0	0	1	7	0	0	1	0	0	0	0	0	0
	9:45	0	3	3	0	0	0	0	0	0	2	0	0	0	1	0	0	0	2	0	0	0	0	0	0
	10:00	0	1	2	2	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0
	10:15	0	0	2	1	0	0	0	0	2	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
	10:30	0	1	1	1	0	0	0	1	1	5	0	0	0	0	1	1	0	5	0	0	0	0	0	0
	10:45	0	0	5	1	0	0	0	0	0	3	0	0	0	0	0	2	0	4	1	0	0	0	0	0
	11:00	0	0	1	3	0	0	0	0	1	5	0	0	0	0	1	0	0	3	1	0	0	0	0	0
	11:15	0	0	3	0	0	0	0	0	0	4	0	0	0	1	1	0	0	0	0	0	0	0	0	0
	11:30	0	0	2	1	0	0	0	0	1	1	0	0	0	0	5	0	0	2	1	1	0	0	0	0
	11:45	0	1	2	1	0	0	0	0	1	2	0	0	0	0	1	0	0	2	0	1	0	0	0	0





# ANOKA COUNTY HIGHWAY

## PC-WARRANTS

### TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2302

Study Date : 05/02/2023

## Signal Warrants - Summary

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### Major Street Approaches

**Northbound: CSAH 78**

Number of Lanes : 2+

Total Approach Volume: 6,260

**Southbound: CSAH 78**

Number of Lanes :2+

Total Approach Volume: 15,065

### Minor Street Approaches

**Eastbound: CSAH 11**

Number of Lanes :2+

Total Approach Volume: 8,649

**Westbound: Robinson Dr**

Number of Lanes :2+

Total Approach Volume: 4,375

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### Warrant Summary (Rural Values Apply)

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

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

Required volumes reached for 16 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 17 hours, 8 are needed

Required 1B volumes reached for 16 hours, 8 are needed

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

Number of hours (16) volumes exceed minimum >= minimum required (4).

**Warrant 3 - Peak Hour.....Satisfied**

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

Number of one hour periods (63) 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 2302

Study Date : 05/02/2023

## 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

16 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	
15:30 - 16:30	542	+	1319	=	1861	647	448	Yes
14:30 - 15:30	563	+	1206	=	1769	747	359	Yes
16:30 - 17:30	506	+	1243	=	1749	730	408	Yes
07:30 - 08:30	401	+	1205	=	1606	572	213	Yes
17:30 - 18:30	442	+	1114	=	1556	706	279	Yes
06:30 - 07:30	387	+	1080	=	1467	434	219	Yes
13:30 - 14:30	394	+	981	=	1375	584	283	Yes
08:30 - 09:30	330	+	816	=	1146	387	249	Yes
12:30 - 13:30	354	+	763	=	1117	497	271	Yes
18:30 - 19:30	299	+	792	=	1091	556	216	Yes
09:30 - 10:30	303	+	756	=	1059	382	225	Yes
11:30 - 12:30	338	+	719	=	1057	474	302	Yes
10:30 - 11:30	340	+	715	=	1055	443	278	Yes
19:30 - 20:30	229	+	597	=	826	438	173	Yes
20:30 - 21:30	254	+	462	=	716	321	96	Yes
05:30 - 06:30	194	+	319	=	513	222	113	Yes
21:30 - 22:30	101	+	293	=	394	177	60	No
05:15 - 06:15	153	+	233	=	386	179	90	No
21:45 - 22:45	94	+	271	=	365	156	64	No
22:00 - 23:00	86	+	244	=	330	145	62	No
22:15 - 23:15	74	+	256	=	330	126	59	No
22:30 - 23:30	75	+	226	=	301	99	54	No
05:00 - 06:00	124	+	175	=	299	151	79	No
22:45 - 23:45	65	+	199	=	264	86	43	No
23:00 - 00:00	58		190		248	64	32	No

# ANOKA COUNTY HIGHWAY

## PC-WARRANTS

### TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2302

Study Date : 05/02/2023

## 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 NB	+	Major SB	=		Minor EB	Minor WB	
14:45 - 15:45	574	+	1266	=	1840	715	420	Yes
15:45 - 16:45	529	+	1311	=	1840	637	449	Yes
16:45 - 17:45	511	+	1254	=	1765	718	369	Yes
06:45 - 07:45	440	+	1303	=	1743	525	227	Yes
13:45 - 14:45	443	+	1039	=	1482	672	279	Yes
17:45 - 18:45	389	+	1033	=	1422	714	251	Yes
07:45 - 08:45	341	+	1063	=	1404	485	196	Yes
08:45 - 09:45	359	+	809	=	1168	403	270	Yes
12:45 - 13:45	332	+	765	=	1097	477	270	Yes
11:45 - 12:45	357	+	736	=	1093	511	279	Yes
10:45 - 11:45	341	+	711	=	1052	449	311	Yes
09:45 - 10:45	279	+	725	=	1004	368	224	Yes
18:45 - 19:45	274	+	711	=	985	533	212	Yes
19:45 - 20:45	271	+	569	=	840	395	152	Yes
05:45 - 06:45	234	+	405	=	639	265	141	Yes
20:45 - 21:45	196	+	433	=	629	271	73	No
21:00 - 22:00	161	+	379	=	540	225	64	No
05:30 - 06:30	194	+	319	=	513	222	113	No
21:15 - 22:15	133	+	322	=	455	196	62	No
21:30 - 22:30	101	+	293	=	394	177	60	No
05:15 - 06:15	153	+	233	=	386	179	90	No
21:45 - 22:45	94	+	271	=	365	156	64	No
22:00 - 23:00	86	+	244	=	330	145	62	No
22:15 - 23:15	74	+	256	=	330	126	59	No
22:30 - 23:30	75		226		301	99	54	No

# ANOKA COUNTY HIGHWAY

## PC-WARRANTS

### TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2302

Study Date : 05/02/2023

## 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

17 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 78

#### Minor Road CSAH 11

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1A?
07:15 - 08:15	462	+	1442	=	1904	585	234	Yes
16:15 - 17:15	566	+	1289	=	1855	698	434	Yes
15:15 - 16:15	484	+	1318	=	1802	726	458	Yes
14:15 - 15:15	570	+	1101	=	1671	717	319	Yes
17:15 - 18:15	438	+	1156	=	1594	704	289	Yes
13:15 - 14:15	361	+	938	=	1299	503	278	Yes
18:15 - 19:15	340	+	864	=	1204	622	231	Yes
08:15 - 09:15	336	+	834	=	1170	419	238	Yes
11:15 - 12:15	358	+	733	=	1091	458	308	Yes
09:15 - 10:15	314	+	767	=	1081	390	228	Yes
12:15 - 13:15	340	+	739	=	1079	508	269	Yes
10:15 - 11:15	318	+	726	=	1044	416	269	Yes

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1B?
15:30 - 16:30	542	+	1319	=	1861	647	448	Yes
14:30 - 15:30	563	+	1206	=	1769	747	359	Yes
16:30 - 17:30	506	+	1243	=	1749	730	408	Yes
07:30 - 08:30	401	+	1205	=	1606	572	213	Yes
17:30 - 18:30	442	+	1114	=	1556	706	279	Yes
06:30 - 07:30	387	+	1080	=	1467	434	219	Yes
13:30 - 14:30	394	+	981	=	1375	584	283	Yes
08:30 - 09:30	330	+	816	=	1146	387	249	Yes
12:30 - 13:30	354	+	763	=	1117	497	271	Yes
18:30 - 19:30	299	+	792	=	1091	556	216	Yes
09:30 - 10:30	303	+	756	=	1059	382	225	Yes
11:30 - 12:30	338	+	719	=	1057	474	302	Yes

# ANOKA COUNTY HIGHWAY

## PC-WARRANTS

### TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2302  
 Study Date : 05/02/2023

## 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.

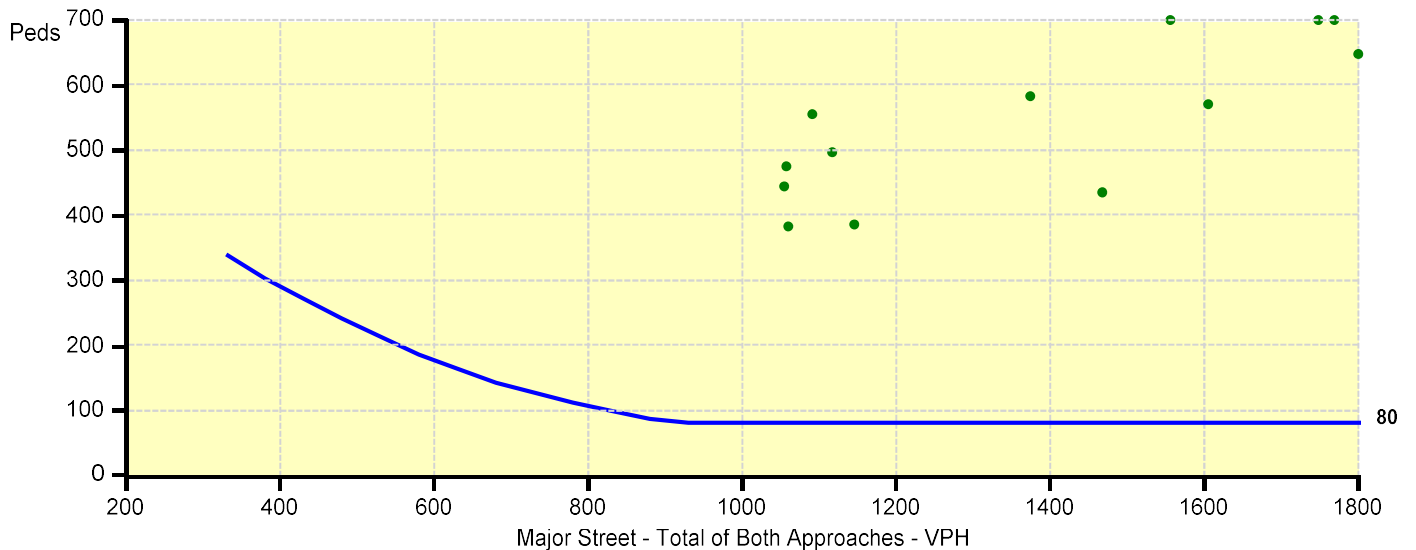
### Summary

16 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 78				Total	Minor Road CSAH 11		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
15:30 - 16:30	542	+	1319	=	1861	647	448	Yes
14:30 - 15:30	563	+	1206	=	1769	747	359	Yes
16:30 - 17:30	506	+	1243	=	1749	730	408	Yes
07:30 - 08:30	401	+	1205	=	1606	572	213	Yes
17:30 - 18:30	442	+	1114	=	1556	706	279	Yes
06:30 - 07:30	387	+	1080	=	1467	434	219	Yes
13:30 - 14:30	394	+	981	=	1375	584	283	Yes
08:30 - 09:30	330	+	816	=	1146	387	249	Yes
12:30 - 13:30	354	+	763	=	1117	497	271	Yes
18:30 - 19:30	299	+	792	=	1091	556	216	Yes
09:30 - 10:30	303	+	756	=	1059	382	225	Yes
11:30 - 12:30	338	+	719	=	1057	474	302	Yes



# ANOKA COUNTY HIGHWAY

## PC-WARRANTS

### TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2302

Study Date : 05/02/2023

## 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

59 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 78				Total	Minor Road CSAH 11		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
07:00 - 08:00	470	+	1463	=	1933	567	245	Yes
07:15 - 08:15	462	+	1442	=	1904	585	234	Yes
16:00 - 17:00	565	+	1329	=	1894	634	432	Yes
15:30 - 16:30	542	+	1319	=	1861	647	448	Yes
16:15 - 17:15	566	+	1289	=	1855	698	434	Yes
14:45 - 15:45	574	+	1266	=	1840	715	420	Yes
15:45 - 16:45	529	+	1311	=	1840	637	449	Yes
15:15 - 16:15	484	+	1318	=	1802	726	458	Yes
15:00 - 16:00	505	+	1270	=	1775	747	467	Yes
14:30 - 15:30	563	+	1206	=	1769	747	359	Yes
16:45 - 17:45	511	+	1254	=	1765	718	369	Yes
16:30 - 17:30	506		1243		1749	730	408	Yes

