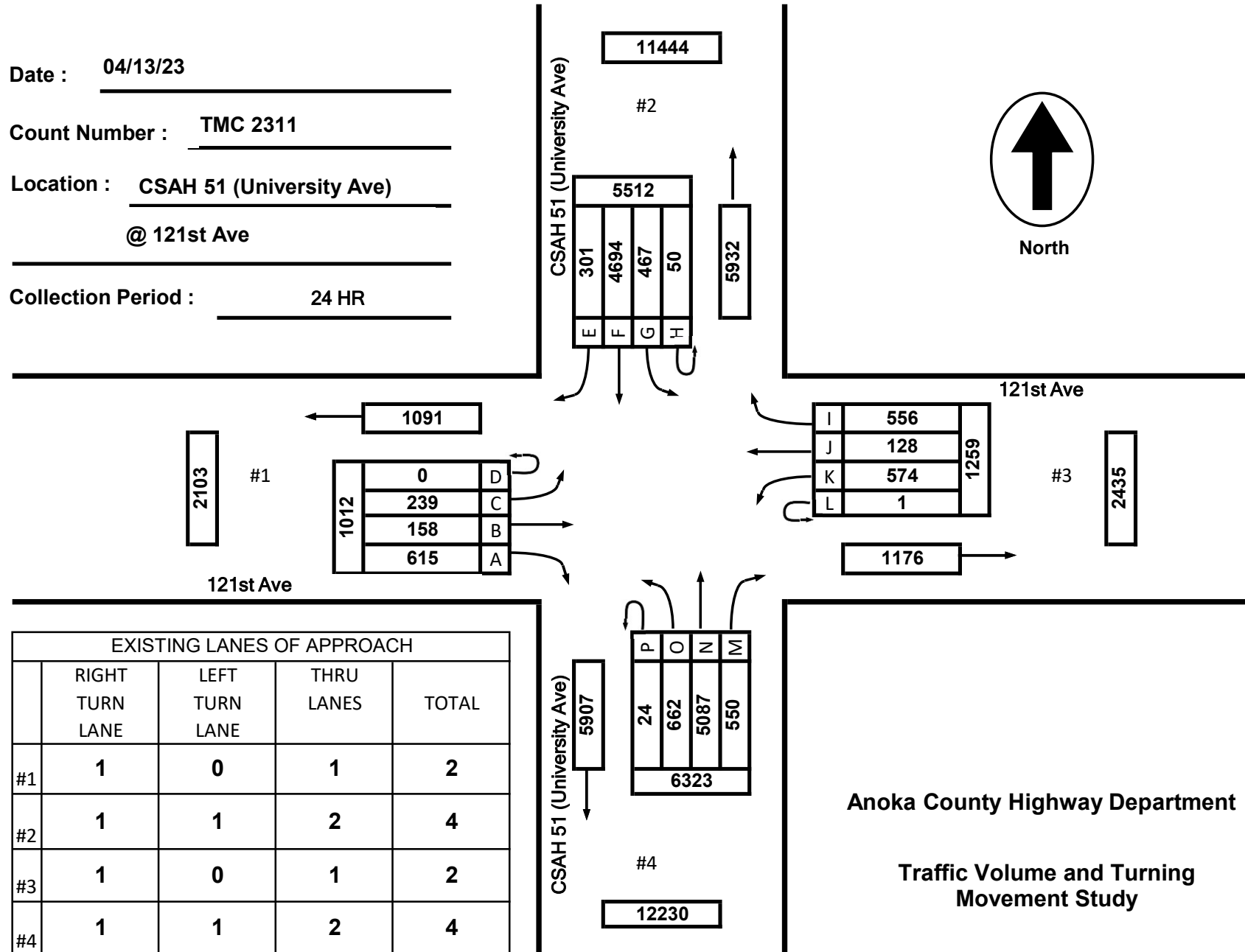


Date : 04/13/23

Count Number : TMC 2311

Location : CSAH 51 (University Ave)
@ 121st Ave

Collection Period : 24 HR



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

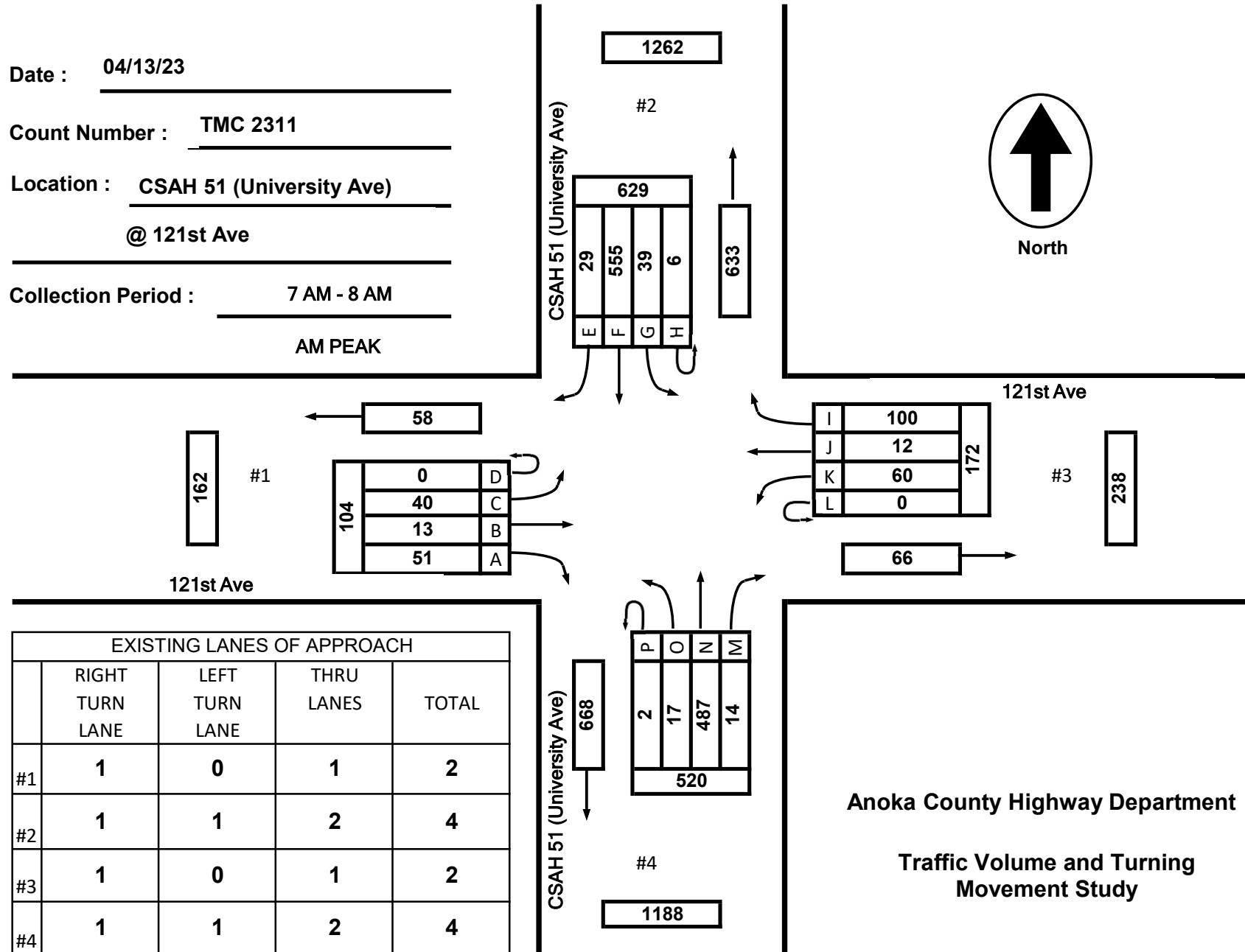
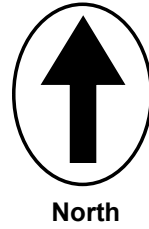
Anoka County Highway Department
 Traffic Volume and Turning Movement Study

Date : 04/13/23

Count Number : TMC 2311

Location : CSAH 51 (University Ave)
@ 121st Ave

Collection Period : 7 AM - 8 AM
AM PEAK



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

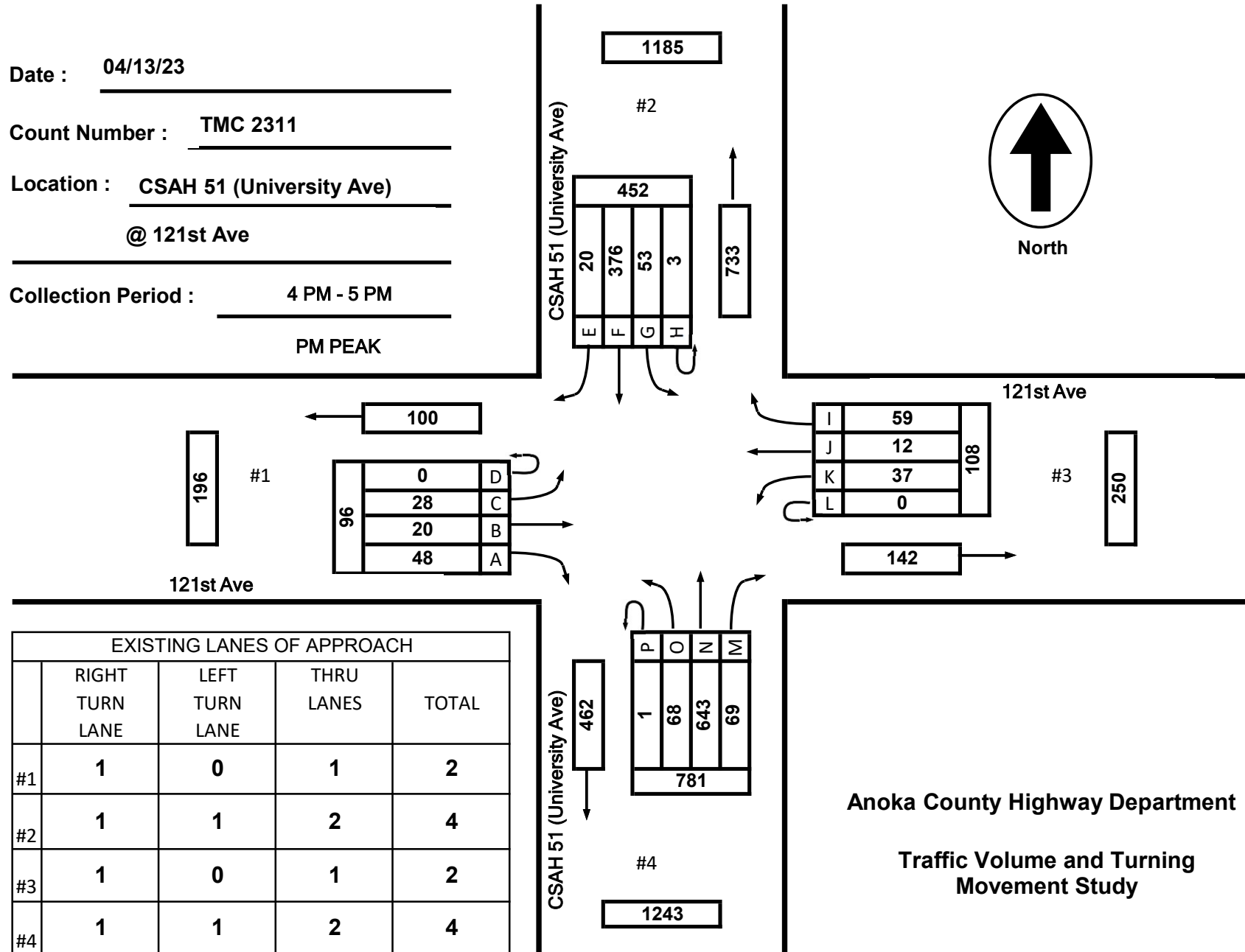
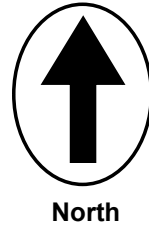
Anoka County Highway Department
 Traffic Volume and Turning Movement Study

Date : 04/13/23

Count Number : TMC 2311

Location : CSAH 51 (University Ave)
@ 121st Ave

Collection Period : 4 PM - 5 PM
PM PEAK



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

Anoka County Highway Department
 Traffic Volume and Turning Movement Study

TMC 2311 - CSAH 51 @ 121st Ave

0 0

Thursday, April 13, 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	0	1	3	0	0	4	0	1	0	1	0	2	0	1	8	3	0	12	0	0	0	2	0	2	0	0	0	2	0	2	20
12:15 AM	0	0	1	1	0	2	0	1	0	1	0	2	0	2	6	2	0	10	0	0	1	0	0	1	0	0	1	0	0	1	15
12:30 AM	0	1	4	0	0	5	0	0	0	0	0	0	0	0	6	3	0	9	0	0	1	3	0	4	0	0	1	3	0	4	18
12:45 AM	0	0	2	0	0	2	0	1	0	0	0	1	0	0	3	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	7
Hourly Total	0	2	10	1	0	13	0	3	0	2	0	5	0	3	23	9	0	35	0	0	2	5	0	7	0	0	2	5	0	7	60
1:00 AM	0	0	2	0	0	2	0	2	0	0	0	2	0	0	3	2	0	5	0	0	0	0	0	0	0	0	0	0	0	0	9
1:15 AM	0	1	0	0	0	1	0	1	0	0	0	1	0	2	2	1	0	5	0	0	0	0	0	0	0	0	0	0	0	0	7
1:30 AM	0	0	2	0	0	2	0	0	0	0	0	0	0	4	5	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	11
1:45 AM	0	0	4	0	0	4	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	7
Hourly Total	0	1	8	0	0	9	0	3	0	0	0	3	0	6	13	3	0	22	0	0	0	0	0	0	0	0	0	0	0	0	34
2:00 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	1	0	0	0	1	0	1	3
2:15 AM	0	0	4	0	0	4	0	0	0	0	0	0	0	0	7	1	0	8	0	0	1	0	0	1	0	0	1	0	0	1	13
2:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	4
2:45 AM	0	0	1	0	0	1	0	1	0	1	0	2	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	6
Hourly Total	0	0	6	0	0	6	0	1	0	2	0	3	0	0	13	2	0	15	0	0	1	1	0	2	0	0	1	1	0	2	26
3:00 AM	0	0	2	0	0	2	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	5
3:15 AM	1	1	7	1	0	10	0	0	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	14
3:30 AM	0	0	4	0	0	4	0	1	0	0	0	1	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	9
3:45 AM	0	0	3	1	0	4	0	0	0	0	0	0	0	0	8	0	0	8	0	1	1	0	0	2	0	1	1	0	0	2	14
Hourly Total	1	1	16	2	0	20	0	1	0	0	0	1	0	1	18	0	0	19	0	1	1	0	0	2	0	1	1	0	0	2	42
4:00 AM	0	2	10	0	0	12	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	2	0	2	0	0	0	2	0	2	17
4:15 AM	0	0	13	0	0	13	0	1	0	0	0	1	0	1	2	0	0	3	0	0	0	2	0	2	0	0	0	2	0	2	19
4:30 AM	0	0	14	1	0	15	0	2	0	0	0	2	0	0	10	1	0	11	0	0	0	3	0	3	0	0	0	3	0	3	31
4:45 AM	0	0	10	1	0	11	0	4	1	2	0	7	0	0	10	0	0	10	0	1	0	3	0	4	0	1	0	3	0	4	32
Hourly Total	0	2	47	2	0	51	0	7	1	2	0	10	0	1	25	1	0	27	0	1	0	10	0	11	0	1	0	10	0	11	99
5:00 AM	0	0	15	0	0	15	0	4	1	3	0	8	1	0	7	1	0	9	0	1	0	3	0	4	0	1	0	3	0	4	36
5:15 AM	0	0	23	0	0	23	0	3	0	2	0	5	1	1	12	0	0	14	0	0	0	7	0	7	0	0	0	7	0	7	49
5:30 AM	0	2	25	1	0	28	0	4	2	3	0	9	0	1	23	0	0	24	0	0	0	4	0	4	0	0	0	4	0	4	65
5:45 AM	0	2	28	1	0	31	0	6	2	2	0	10	0	2	19	1	0	22	0	1	1	4	0	6	0	1	1	4	0	6	69
Hourly Total	0	4	91	2	0	97	0	17	5	10	0	32	2	4	61	2	0	69	0	2	1	18	0	21	0	2	1	18	0	21	219
6:00 AM	0	3	40	0	0	43	0	8	0	4	0	12	1	3	26	0	0	30	0	0	0	4	0	4	0	0	0	4	0	4	89
6:15 AM	0	1	61	3	0	65	0	11	2	2	0	15	0	3	24	1	0	28	0	1	1	7	0	9	0	1	1	7	0	9	117
6:30 AM	0	1	61	0	0	62	0	19	0	11	0	30	0	3	51	1	0	55	0	4	0	12	0	16	0	4	0	12	0	16	163
6:45 AM	0	2	67	3	0	72	0	12	1	4	1	17	0	2	65	5	0	72	0	1	0	6	0	7	0	1	0	6	0	7	168
Hourly Total	0	7	229	6	0	242	0	50	3	21	1	74	1	11	166	7	0	185	0	6	1	29	0	36	0	6	1	29	0	36	537
7:00 AM	3	0	91	3	0	97	0	12	3	16	1	31	0	6	121	4	0	131	0	8	1	9	0	18	0	8	1	9	0	18	277
7:15 AM	1	5	143	12	1	161	0	20	7	33	2	60	1	5	159	3	0	168	0	11	6	13	0	30	0	11	6	13	0	30	419
7:30 AM	2	19	185	10	0	216	0	15	1	32	0	48	0	5	134	4	0	143	0	14	0	13	0	27	0	14	0	13	0	27	434
7:45 AM	0	15	136	4	11	155	0	13	1	19	0	33	1	1	73	3	0	78	0	7	6	16	0	29	0	7	6	16	0	29	295
Hourly Total	6	39	555	29	12	629	0	60	12	100	3	172	2	17	487	14	0	520	0	40	13	51	0	104	0	40	13	51	0	104	1425

TMC 2311 - CSAH 51 @ 121st Ave

0 0

Thursday, April 13, 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	15	99	7	0	122	0	17	0	17	0	34	0	9	67	5	0	81	0	2	1	9	0	12	249
8:15 AM	0	8	75	1	0	84	0	15	2	12	0	29	0	1	54	7	0	62	0	3	3	4	3	10	185
8:30 AM	0	6	60	2	3	68	0	16	3	6	1	25	1	5	44	7	0	57	0	6	0	7	3	13	163
8:45 AM	1	2	56	3	1	62	0	9	2	4	1	15	0	6	61	5	0	72	0	1	0	9	2	10	159
Hourly Total	2	31	290	13	4	336	0	57	7	39	2	103	1	21	226	24	0	272	0	12	4	29	8	45	756
9:00 AM	2	2	54	4	5	62	0	15	5	8	0	28	1	5	55	0	0	61	0	3	4	18	2	25	176
9:15 AM	1	2	59	2	0	64	0	10	0	3	0	13	0	4	56	5	0	65	0	2	2	5	0	9	151
9:30 AM	1	5	56	0	0	62	0	6	0	5	0	11	0	6	46	3	0	55	0	1	1	8	1	10	138
9:45 AM	1	1	48	7	4	57	0	9	0	2	0	11	0	6	48	4	0	58	0	1	3	8	0	12	138
Hourly Total	5	10	217	13	9	245	0	40	5	18	0	63	1	21	205	12	0	239	0	7	10	39	3	56	603
10:00 AM	0	1	52	2	0	55	0	8	1	2	0	11	3	13	49	6	0	71	0	3	1	8	0	12	149
10:15 AM	0	2	38	3	1	43	0	7	0	5	1	12	0	5	39	4	0	48	0	3	2	8	0	13	116
10:30 AM	0	3	35	3	0	41	0	8	2	2	0	12	0	3	26	4	0	33	0	1	2	2	0	5	91
10:45 AM	1	3	43	2	0	49	0	4	1	2	0	7	0	7	37	0	0	44	0	1	1	5	0	7	107
Hourly Total	1	9	168	10	1	188	0	27	4	11	1	42	3	28	151	14	0	196	0	8	6	23	0	37	463
11:00 AM	1	5	47	0	2	53	0	8	2	8	1	18	1	8	54	6	0	69	0	6	3	7	2	16	156
11:15 AM	0	6	60	5	0	71	0	9	1	9	2	19	0	13	34	4	0	51	0	4	6	4	0	14	155
11:30 AM	0	2	52	5	15	59	0	5	3	5	0	13	0	6	63	4	0	73	0	5	2	6	1	13	158
11:45 AM	1	5	65	2	0	73	0	6	1	6	0	13	1	3	37	5	0	46	0	1	0	12	0	13	145
Hourly Total	2	18	224	12	17	256	0	28	7	28	3	63	2	30	188	19	0	239	0	16	11	29	3	56	614
12:00 PM	0	2	54	0	1	56	0	3	0	4	0	7	0	8	57	7	0	72	0	1	2	13	1	16	151
12:15 PM	2	3	48	3	0	56	0	9	1	6	1	16	1	8	63	5	0	77	0	1	2	8	3	11	160
12:30 PM	1	0	51	2	3	54	0	5	3	3	0	11	0	6	69	6	0	81	0	2	1	7	0	10	156
12:45 PM	0	3	52	2	0	57	0	4	0	1	1	5	1	7	58	6	0	72	0	4	2	4	0	10	144
Hourly Total	3	8	205	7	4	223	0	21	4	14	2	39	2	29	247	24	0	302	0	8	7	32	4	47	611
1:00 PM	1	6	59	4	0	70	0	4	1	3	0	8	0	8	54	6	0	68	0	3	1	13	0	17	163
1:15 PM	0	4	61	3	2	68	0	5	1	0	0	6	0	3	54	4	0	61	0	3	2	9	2	14	149
1:30 PM	0	1	61	0	1	62	1	5	2	6	0	14	0	7	75	6	0	88	0	1	0	7	0	8	172
1:45 PM	0	4	79	3	0	86	0	5	2	9	0	16	0	8	67	3	0	78	0	3	2	5	0	10	190
Hourly Total	1	15	260	10	3	286	1	19	6	18	0	44	0	26	250	19	0	295	0	10	5	34	2	49	674
2:00 PM	1	10	58	4	1	73	0	6	1	9	1	16	0	11	71	8	0	90	0	4	2	12	3	18	197
2:15 PM	2	13	119	12	1	146	0	8	1	7	4	16	0	11	75	7	1	93	0	6	2	10	1	18	273
2:30 PM	1	19	152	14	3	186	0	7	1	16	2	24	0	11	102	4	0	117	0	9	4	15	1	28	355
2:45 PM	0	5	93	9	0	107	0	10	0	10	1	20	1	14	105	6	0	126	0	2	1	13	1	16	269
Hourly Total	4	47	422	39	5	512	0	31	3	42	8	76	1	47	353	25	1	426	0	21	9	50	6	80	1094
3:00 PM	0	9	87	10	0	106	0	5	0	8	0	13	0	20	101	13	0	134	0	4	1	9	1	14	267
3:15 PM	0	13	88	7	0	108	0	10	4	11	0	25	0	24	150	14	0	188	0	7	3	9	2	19	340
3:30 PM	0	7	110	5	0	122	0	6	3	9	0	18	0	20	150	11	0	181	0	4	4	15	0	23	344
3:45 PM	0	14	82	3	0	99	0	7	3	9	0	19	0	13	152	14	0	179	0	7	10	20	0	37	334
Hourly Total	0	43	367	25	0	435	0	28	10	37	0	75	0	77	553	52	0	682	0	22	18	53	3	93	1285

TMC 2311 - CSAH 51 @ 121st Ave

0 0

Thursday, April 13, 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	2	13	98	9	0	122	0	11	3	12	0	26	0	23	144	15	0	182	0	10	4	11	0	25	355
4:15 PM	0	14	86	4	0	104	0	9	4	18	1	31	1	10	165	17	0	193	0	8	10	16	3	34	362
4:30 PM	1	16	105	5	0	127	0	7	3	12	0	22	0	18	159	18	0	195	0	7	3	10	1	20	364
4:45 PM	0	10	87	2	0	99	0	10	2	17	2	29	0	17	175	19	0	211	0	3	3	11	1	17	356
Hourly Total	3	53	376	20	0	452	0	37	12	59	3	108	1	68	643	69	0	781	0	28	20	48	5	96	1437
5:00 PM	2	11	76	7	0	96	0	9	4	11	0	24	0	21	156	12	0	189	0	5	1	9	0	15	324
5:15 PM	2	13	85	8	0	108	0	6	4	10	1	20	0	17	131	17	1	165	0	5	7	12	0	24	317
5:30 PM	3	8	82	7	0	100	0	8	2	6	2	16	1	18	126	18	0	163	0	4	3	14	2	21	300
5:45 PM	3	8	73	7	0	91	0	10	8	11	1	29	0	13	116	20	1	149	0	2	1	18	1	21	290
Hourly Total	10	40	316	29	0	395	0	33	18	38	4	89	1	69	529	67	2	666	0	16	12	53	3	81	1231
6:00 PM	1	6	73	8	2	88	0	11	5	10	0	26	0	15	89	9	2	113	0	2	3	13	2	18	245
6:15 PM	1	14	74	7	0	96	0	10	1	12	6	23	0	11	85	17	0	113	0	8	2	13	0	23	255
6:30 PM	0	10	57	5	0	72	0	9	0	3	0	12	1	9	65	9	0	84	0	4	0	11	0	15	183
6:45 PM	1	7	44	3	0	55	0	1	1	9	2	11	0	12	68	7	0	87	0	2	1	7	1	10	163
Hourly Total	3	37	248	23	2	311	0	31	7	34	8	72	1	47	307	42	2	397	0	16	6	44	3	66	846
7:00 PM	1	5	52	4	0	62	0	11	3	4	1	18	0	12	41	10	1	63	0	3	4	8	0	15	158
7:15 PM	0	8	53	4	0	65	0	4	1	6	0	11	0	14	56	9	0	79	0	3	3	6	0	12	167
7:30 PM	0	9	42	4	0	55	0	8	2	13	0	23	1	14	56	15	0	86	0	2	4	9	0	15	179
7:45 PM	1	10	44	6	0	61	0	8	4	5	0	17	0	11	48	6	0	65	0	1	2	6	0	9	152
Hourly Total	2	32	191	18	0	243	0	31	10	28	1	69	1	51	201	40	1	293	0	9	13	29	0	51	656
8:00 PM	0	9	38	4	2	51	0	7	1	4	0	12	1	14	42	9	0	66	0	1	5	5	0	11	140
8:15 PM	0	15	44	4	0	63	0	8	2	3	0	13	1	9	45	12	0	67	0	5	3	4	0	12	155
8:30 PM	0	6	55	4	0	65	0	2	1	8	0	11	0	10	50	8	0	68	0	1	2	2	0	5	149
8:45 PM	0	7	48	6	0	61	0	5	1	3	0	9	0	8	32	6	0	46	0	3	1	5	0	9	125
Hourly Total	0	37	185	18	2	240	0	22	5	18	0	45	2	41	169	35	0	247	0	10	11	16	0	37	569
9:00 PM	0	3	51	4	0	58	0	5	1	9	0	15	0	13	38	4	2	55	0	0	1	2	0	3	131
9:15 PM	0	5	43	6	0	54	0	5	0	5	0	10	1	8	36	7	0	52	0	3	2	5	0	10	126
9:30 PM	0	2	34	3	0	39	0	3	1	5	0	9	0	8	34	6	0	48	0	0	2	2	0	4	100
9:45 PM	0	3	28	1	0	32	0	2	1	4	0	7	0	5	25	9	0	39	0	0	0	3	0	3	81
Hourly Total	0	13	156	14	0	183	0	15	3	23	0	41	1	34	133	26	2	194	0	3	5	12	0	20	438
10:00 PM	2	1	16	1	0	20	0	2	0	3	0	5	1	5	31	8	0	45	0	0	1	0	0	1	71
10:15 PM	2	1	24	3	0	30	0	3	2	1	0	6	0	4	17	12	0	33	0	1	0	3	0	4	73
10:30 PM	3	0	17	1	0	21	0	2	2	2	0	6	0	5	11	2	0	18	0	0	0	0	0	0	45
10:45 PM	0	4	10	2	0	16	0	0	0	3	0	3	0	4	15	5	0	24	0	0	0	5	0	5	48
Hourly Total	7	6	67	7	0	87	0	7	4	9	0	20	1	18	74	27	0	120	0	1	1	8	0	10	237
11:00 PM	0	6	11	1	0	18	0	2	1	0	0	3	0	4	15	6	0	25	0	1	0	0	0	1	47
11:15 PM	0	1	19	0	0	20	0	2	0	2	0	4	0	1	16	4	0	21	0	0	0	1	0	1	46
11:30 PM	0	3	6	0	0	9	0	1	0	1	0	2	0	3	13	1	0	17	0	0	0	0	0	0	28
11:45 PM	0	2	4	0	0	6	0	0	1	0	0	1	1	4	8	6	0	19	0	1	1	1	0	3	29
Hourly Total	0	12	40	1	0	53	0	5	2	3	0	10	1	12	52	17	0	82	0	2	1	2	0	5	150
DAILY TOTAL	50	467	4694	301	59	5512	1	574	128	556	36	1259	24	662	5087	550	8	6323	0	239	158	615	40	1012	14106
Cars	50	460	4575	294	8	5379	1	569	128	539	18	1237	24	654	4971	540	2	6189	0	236	153	601	16	990	13795
Heavy Vehicles	0	7	119	7	51	133	0	5	0	17	18	22	0	8	116	10	6	134	0	3	5	14	24	22	311
Heavy Vehicle %	0.00%	1.50%	2.54%	2.33%	86.44%	2.41%	0.00%	0.87%	0.00%	3.06%	50.00%	1.75%	0.00%	1.21%	2.28%	1.82%	75.00%	2.12%	0.00%	1.26%	3.16%	2.28%	60.00%	2.17%	2.20%

TMC 2311 - CSAH 51 @ 121st Ave

0 0

Thursday, April 13, 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	3	0	91	3	0	97	0	12	3	16	1	31	0	6	121	4	0	131	0	8	1	9	0	18	
7:15 AM	1	5	143	12	1	161	0	20	7	33	2	60	1	5	159	3	0	168	0	11	6	13	0	30	
7:30 AM	2	19	185	10	0	216	0	15	1	32	0	48	0	5	134	4	0	143	0	14	0	13	0	27	
7:45 AM	0	15	136	4	11	155	0	13	1	19	0	33	1	1	73	3	0	78	0	7	6	16	0	29	
Peak Hour Total	6	39	555	29	12	629	0	60	12	100	3	172	2	17	487	14	0	520	0	40	13	51	0	104	
PHF	0.500	0.513	0.750	0.604	0.273	0.728	0.000	0.750	0.429	0.758	0.375	0.717	0.500	0.708	0.766	0.875	0.000	0.774	0.000	0.714	0.542	0.797	0.000	0.867	

PM Peak Hour

Time	Southbound						Westbound						Northbound						Eastbound						VEHICLE TOTAL
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	
4:00 PM	2	13	98	9	0	122	0	11	3	12	0	26	0	23	144	15	0	182	0	10	4	11	0	25	
4:15 PM	0	14	86	4	0	104	0	9	4	18	1	31	1	10	165	17	0	193	0	8	10	16	3	34	
4:30 PM	1	16	105	5	0	127	0	7	3	12	0	22	0	18	159	18	0	195	0	7	3	10	1	20	
4:45 PM	0	10	87	2	0	99	0	10	2	17	2	29	0	17	175	19	0	211	0	3	3	11	1	17	
Peak Hour Total	3	53	376	20	0	452	0	37	12	59	3	108	1	68	643	69	0	781	0	28	20	48	5	96	
PHF	0.375	0.828	0.895	0.556	0.000	0.890	0.000	0.841	0.750	0.819	0.375	0.871	0.250	0.739	0.919	0.908	0.000	0.925	0.000	0.700	0.500	0.750	0.417	0.706	

Total Vehicles On Leg				11444			
Vehicles Entering Intersection		5512		Vehicles Exiting Intersection		5932	
Southbound							
Cars	294	4575	460	50	8		
Heavy	7	119	7	0	51		
Total	301	4694	467	50	59		



Total Vehicles on Leg 2103	Vehicles Entering Intersection 1012	Eastbound	Cars	16	24	40
			Heavy	0	0	0
			Total	236	3	239
	Vehicles Exiting Intersection 1091		Cars	153	5	158
			Total	601	14	615



Daily Volumes

Cars	Heavy	Total	Westbound	Vehicles Entering Intersection 1259	Total Vehicles on Leg 2435
539	17	556			
128	0	128			
569	5	574			
1	0	1			
18	18	36	Vehicles Exiting Intersection 1176		



Cars	2	24	654	4971	540
Heavy	6	0	8	116	10
Total	8	24	662	5087	550
Northbound					
Vehicles Entering Intersection			6323		
Vehicles Exiting Intersection			5907		
Total Vehicles On Leg			12230		

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2311

Study Date : 05/02/2023

Signal Warrants - Summary

Major Street Approaches

Northbound: CSAH 51

Number of Lanes : 2+

Total Approach Volume: 6,323

Southbound: CSAH 51

Number of Lanes :2+

Total Approach Volume: 5,512

Minor Street Approaches

Eastbound: 121st Ave

Number of Lanes :1

Total Approach Volume: 1,012

Westbound: 121st Ave

Number of Lanes :1

Total Approach Volume: 1,259

Warrant Summary (Rural Values Apply)

Warrant 1 - Eight Hour Vehicular Volumes.....**Not Satisfied**

Warrant 1A - Minimum Vehicular Volume.....**Not Satisfied**

Required volumes reached for 3 hours, 8 are needed

Warrant 1B - Interruption of Continuous Traffic.....**Not Satisfied**

Required volumes reached for 7 hours, 8 are needed

Warrant 1C - Combination of Warrants.....**Not Satisfied**

Required 1A volumes reached for 6 hours, 8 are needed

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

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

Number of hours (7) volumes exceed minimum >= minimum required (4).

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

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

Number of one hour periods (11) 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 2311

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

Only 3 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

Volume Requirements

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

Veh/Hr Minor = **105**

Time	Major Road				Total	Minor Road		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
15:30 - 16:30	735	+	447	=	1182	119	94	Yes
07:30 - 08:30	364	+	577	=	941	78	144	Yes
06:30 - 07:30	426	+	392	=	818	71	138	Yes
16:30 - 17:30	760	+	430	=	1190	76	95	No
15:15 - 16:15	730	+	451	=	1181	104	88	No
16:45 - 17:45	728	+	403	=	1131	77	89	No
15:00 - 16:00	682	+	435	=	1117	93	75	No
14:45 - 15:45	629	+	443	=	1072	72	76	No
14:30 - 15:30	565	+	507	=	1072	77	82	No
17:00 - 18:00	666	+	395	=	1061	81	89	No
14:15 - 15:15	470	+	545	=	1015	76	73	No
17:15 - 18:15	590	+	387	=	977	84	91	No
14:00 - 15:00	426	+	512	=	938	80	76	No
17:30 - 18:30	538	+	375	=	913	83	94	No
13:45 - 14:45	378	+	491	=	869	74	72	No
17:45 - 18:45	459	+	347	=	806	77	90	No
13:30 - 14:30	349	+	367	=	716	54	62	No
18:00 - 19:00	397	+	311	=	708	66	72	No
18:15 - 19:15	347	+	285	=	632	63	64	No
13:15 - 14:15	317	+	289	=	606	50	52	No
06:15 - 07:15	286	+	296	=	582	50	93	No
13:00 - 14:00	295	+	286	=	581	49	44	No
18:30 - 19:30	313	+	254	=	567	52	52	No
18:45 - 19:45	315	+	237	=	552	52	63	No
12:45 - 13:45	289		257		546	49	33	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2311

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

Only 7 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

Volume Requirements

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

Veh/Hr Minor = **53**

Time	Major Road				Total	Minor Road		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
	CSAH 51					121st Ave		
16:30 - 17:30	760	+	430	=	1190	76	95	Yes
15:30 - 16:30	735	+	447	=	1182	119	94	Yes
14:30 - 15:30	565	+	507	=	1072	77	82	Yes
07:30 - 08:30	364	+	577	=	941	78	144	Yes
17:30 - 18:30	538	+	375	=	913	83	94	Yes
06:30 - 07:30	426	+	392	=	818	71	138	Yes
13:30 - 14:30	349	+	367	=	716	54	62	Yes
13:15 - 14:15	317	+	289	=	606	50	52	No
06:15 - 07:15	286	+	296	=	582	50	93	No
13:00 - 14:00	295	+	286	=	581	49	44	No
18:30 - 19:30	313	+	254	=	567	52	52	No
18:45 - 19:45	315	+	237	=	552	52	63	No
12:45 - 13:45	289	+	257	=	546	49	33	No
19:00 - 20:00	293	+	243	=	536	51	69	No
12:15 - 13:15	298	+	237	=	535	48	40	No
12:30 - 13:30	282	+	249	=	531	51	30	No
19:15 - 20:15	296	+	232	=	528	47	63	No
12:00 - 13:00	302	+	223	=	525	47	39	No
11:45 - 12:45	276	+	239	=	515	50	47	No
19:30 - 20:30	284	+	230	=	514	47	65	No
11:30 - 12:30	268	+	244	=	512	53	49	No
08:30 - 09:30	255	+	256	=	511	57	81	No
19:45 - 20:45	266	+	240	=	506	37	53	No
08:45 - 09:45	253	+	250	=	503	54	67	No
11:15 - 12:15	242		259		501	56	52	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2311

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

Only 6 hours meet 1A minimums.
12 hours meet 1B minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

Volume Requirements

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

Veh/Hr Minor = **84 42**

Major Road CSAH 51

Minor Road 121st Ave

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1A?
16:00 - 17:00	781	+	452	=	1233	96	108	Yes
07:15 - 08:15	470	+	654	=	1124	98	175	Yes
15:00 - 16:00	682	+	435	=	1117	93	75	Yes
17:00 - 18:00	666	+	395	=	1061	81	89	Yes
06:15 - 07:15	286	+	296	=	582	50	93	Yes
08:15 - 09:15	252	+	276	=	528	58	97	Yes
14:30 - 15:30	565	+	507	=	1072	77	82	No
14:45 - 15:45	629	+	443	=	1072	72	76	No
14:15 - 15:15	470	+	545	=	1015	76	73	No
14:00 - 15:00	426	+	512	=	938	80	76	No
13:45 - 14:45	378	+	491	=	869	74	72	No
13:30 - 14:30	349	+	367	=	716	54	62	No

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1B?
16:30 - 17:30	760	+	430	=	1190	76	95	Yes
15:30 - 16:30	735	+	447	=	1182	119	94	Yes
07:15 - 08:15	470	+	654	=	1124	98	175	Yes
14:30 - 15:30	565	+	507	=	1072	77	82	Yes
17:30 - 18:30	538	+	375	=	913	83	94	Yes
13:30 - 14:30	349	+	367	=	716	54	62	Yes
06:15 - 07:15	286	+	296	=	582	50	93	Yes
18:30 - 19:30	313	+	254	=	567	52	52	Yes
12:30 - 13:30	282	+	249	=	531	51	30	Yes
08:15 - 09:15	252	+	276	=	528	58	97	Yes
19:30 - 20:30	284	+	230	=	514	47	65	Yes
11:30 - 12:30	268	+	244	=	512	53	49	Yes

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2311

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.

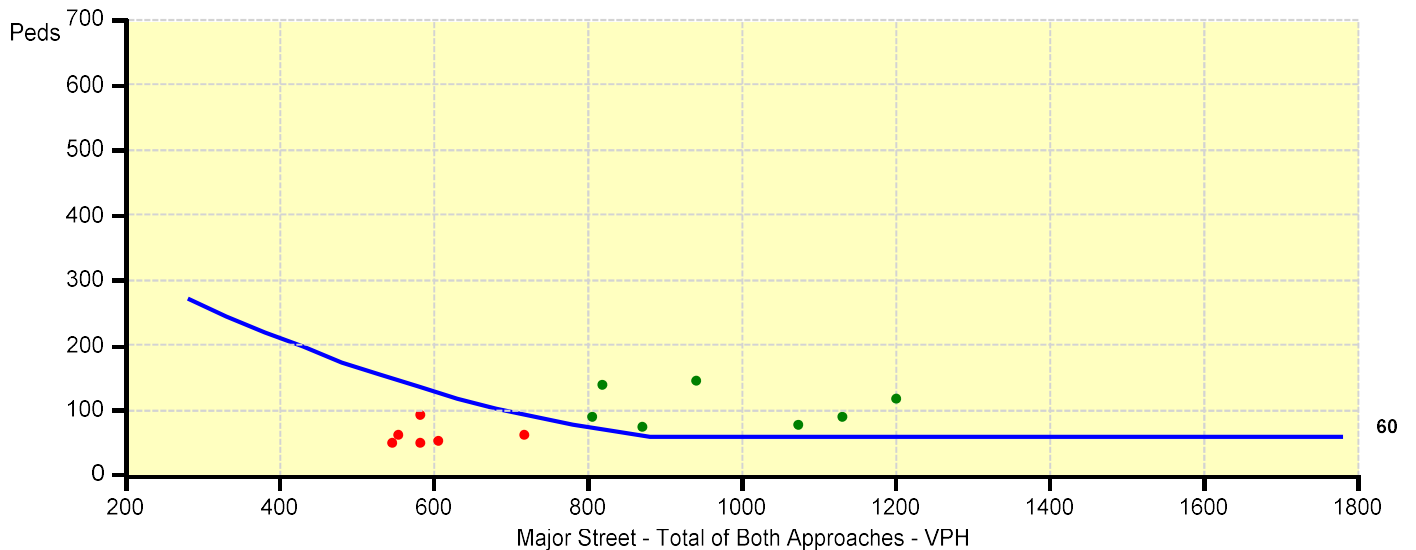
Summary

7 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 = **1**

Time	Major Road CSAH 51				Total	Minor Road 121st Ave		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
15:45 - 16:45	749	+	452	=	1201	116	98	Yes
16:45 - 17:45	728	+	403	=	1131	77	89	Yes
14:45 - 15:45	629	+	443	=	1072	72	76	Yes
07:30 - 08:30	364	+	577	=	941	78	144	Yes
13:45 - 14:45	378	+	491	=	869	74	72	Yes
06:30 - 07:30	426	+	392	=	818	71	138	Yes
17:45 - 18:45	459	+	347	=	806	77	90	Yes
13:30 - 14:30	349	+	367	=	716	54	62	No
13:15 - 14:15	317	+	289	=	606	50	52	No
06:15 - 07:15	286	+	296	=	582	50	93	No
13:00 - 14:00	295	+	286	=	581	49	44	No
18:45 - 19:45	315	+	237	=	552	52	63	No



ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2311

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

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 = **1**

Time	Major Road CSAH 51				Total	Minor Road 121st Ave		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
16:00 - 17:00	781	+	452	=	1233	96	108	Yes
16:15 - 17:15	788	+	426	=	1214	86	106	Yes
15:45 - 16:45	749	+	452	=	1201	116	98	Yes
16:30 - 17:30	760	+	430	=	1190	76	95	Yes
15:30 - 16:30	735	+	447	=	1182	119	94	Yes
15:15 - 16:15	730	+	451	=	1181	104	88	Yes
07:00 - 08:00	520	+	629	=	1149	104	172	Yes
16:45 - 17:45	728	+	403	=	1131	77	89	Yes
07:15 - 08:15	470	+	654	=	1124	98	175	Yes
15:00 - 16:00	682	+	435	=	1117	93	75	Yes
06:45 - 07:45	514	+	546	=	1060	82	156	Yes
07:30 - 08:30	364		577		941	78	144	Yes

