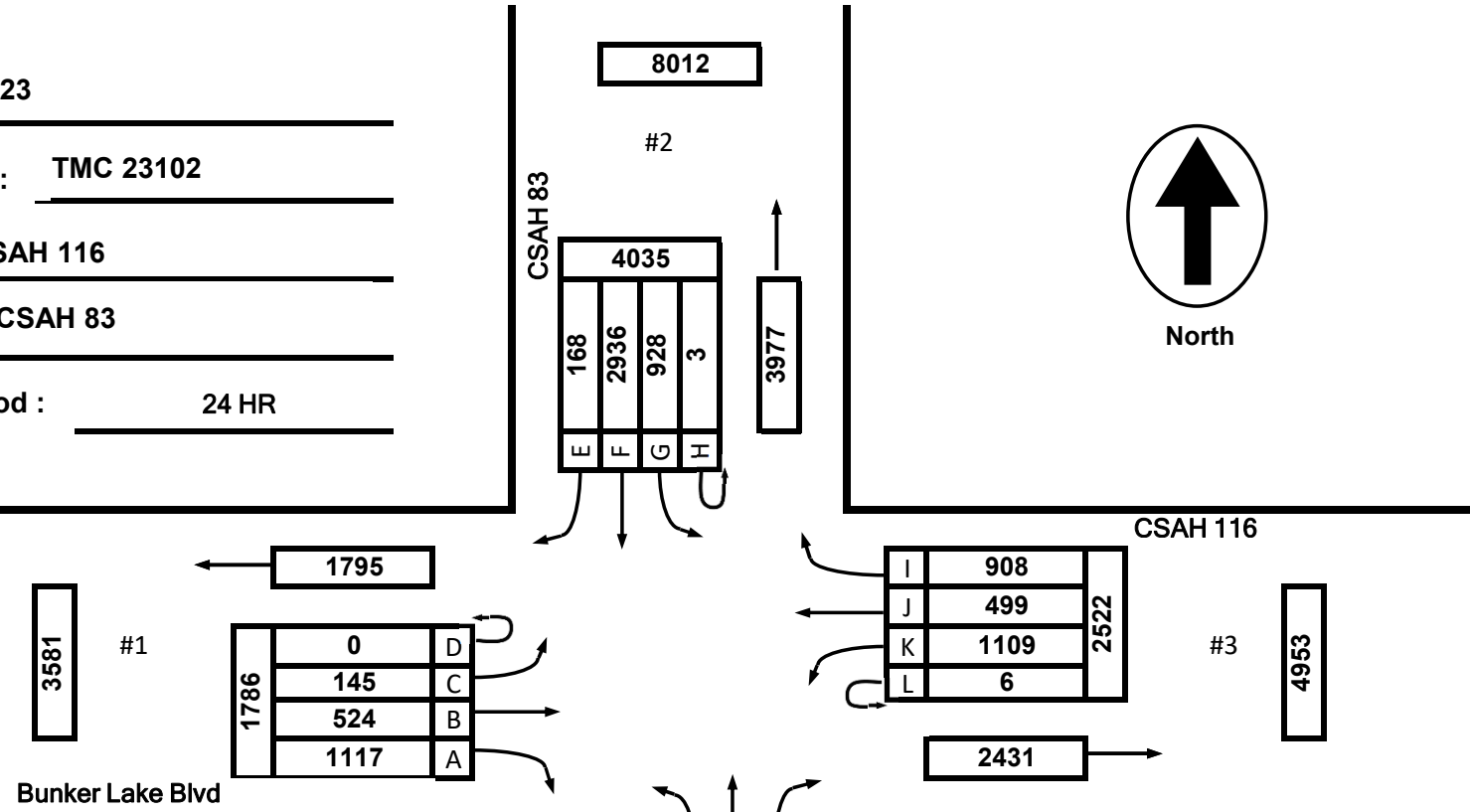
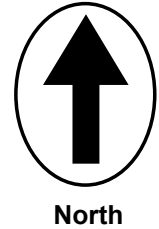


Date : 12/07/23

Count Number : TMC 23102

Location : CSAH 116
@ CSAH 83

Collection Period : 24 HR



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

Anoka County Highway Department
 Traffic Volume and Turning Movement Study

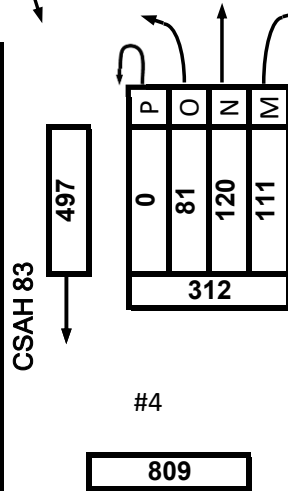
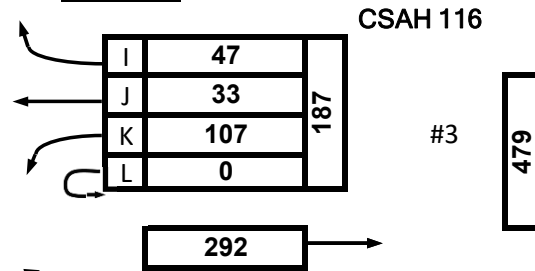
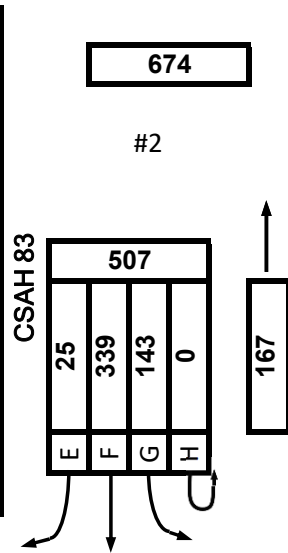
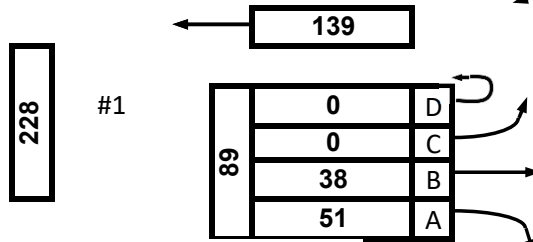
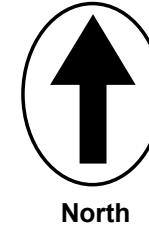
Date : 12/07/23

Count Number : TMC 23102

Location : CSAH 116
@ CSAH 83

Collection Period : 7:00 AM - 8:00 AM

AM PEAK



Bunker Lake Blvd

CSAH 116

CSAH 83

EXISTING LANES OF APPROACH

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

Anoka County Highway Department

Traffic Volume and Turning Movement Study

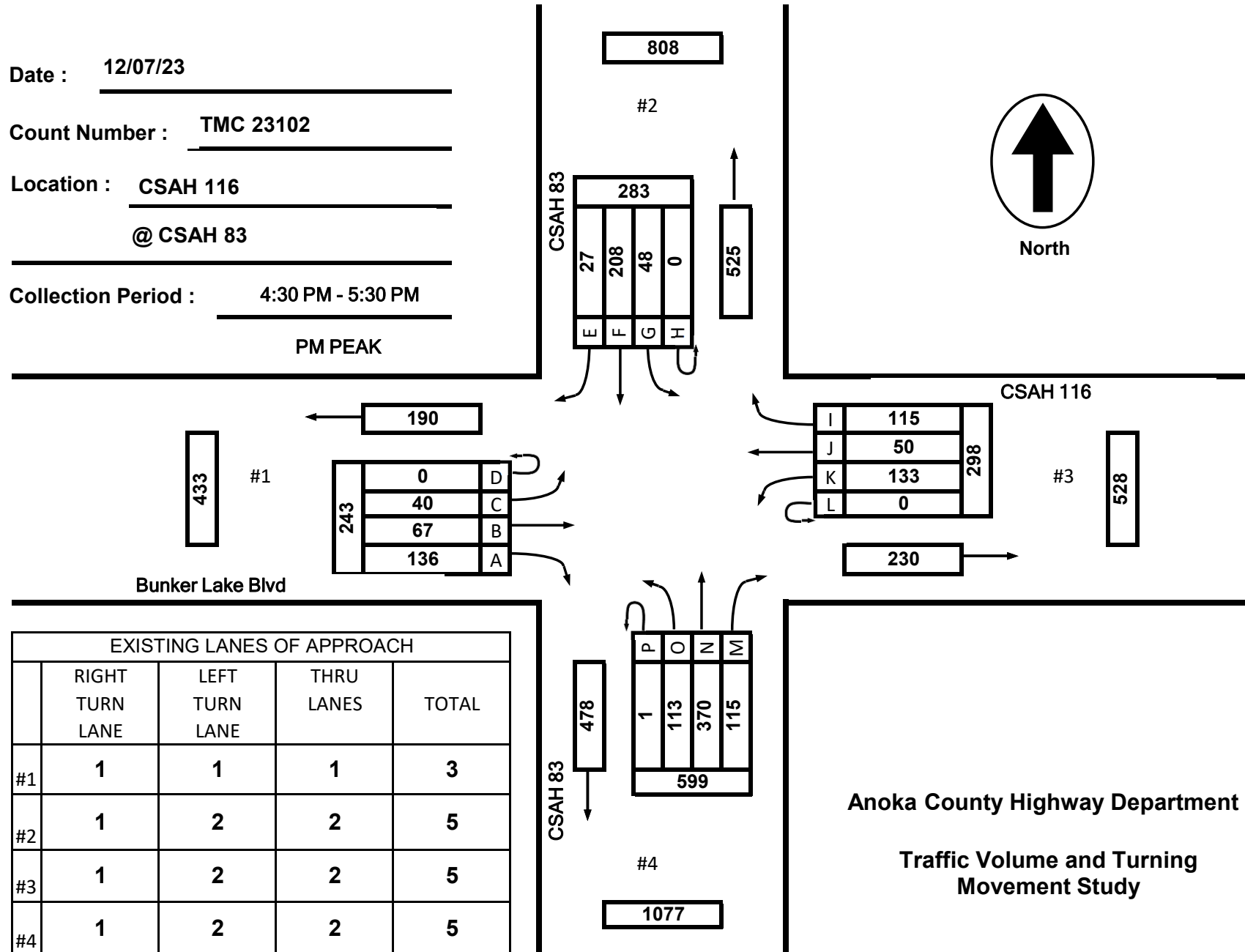
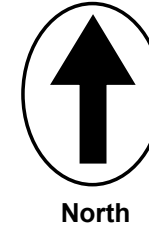
Date : 12/07/23

Count Number : TMC 23102

Location : CSAH 116
@ CSAH 83

Collection Period : 4:30 PM - 5:30 PM

PM PEAK



Bunker Lake Blvd

CSAH 116

CSAH 83

CSAH 83

EXISTING LANES OF APPROACH

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

Anoka County Highway Department

Traffic Volume and Turning Movement Study

TMC 23102 - CSAH 116 @ CSAH 83
 Ramsey MN

Thursday, December 7, 2023

Time	Southbound CSAH 83						Westbound CSAH 116						Northbound CSAH 83						Eastbound Bunker Lake Blvd						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	2	0	0	0	4	5	1	0	0	0	0	1	1	0	0	14
12:15 AM	0	0	0	0	0	0	0	1	1	1	0	3	0	4	3	0	0	7	0	0	0	2	0	2	12
12:30 AM	0	0	2	0	0	2	0	0	0	1	0	1	0	1	3	4	0	8	0	0	0	0	0	0	11
12:45 AM	0	0	2	0	0	2	0	0	0	0	0	0	0	1	2	1	0	4	0	0	0	0	0	0	6
Hourly Total	0	0	4	0	0	4	0	1	1	4	0	6	0	10	13	6	0	29	0	0	1	3	0	4	43
1:00 AM	0	0	2	0	0	2	0	0	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	0	5
1:15 AM	0	0	1	0	0	1	0	0	0	1	0	1	0	0	2	1	0	3	0	0	0	0	0	0	5
1:30 AM	0	0	1	0	0	1	0	0	0	1	0	1	0	0	6	0	0	6	0	0	0	0	0	0	8
1:45 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 Total	0	0	4	0	0	4	0	0	0	2	0	2	0	0	11	2	0	13	0	0	0	0	0	0	19
2:00 AM	0	0	1	0	0	1	0	0	0	2	0	2	0	1	0	1	0	2	0	0	0	0	0	0	5
2:15 AM	0	0	2	0	0	2	0	0	0	0	0	0	0	1	1	0	0	2	0	0	0	1	0	1	5
2:30 AM	0	0	2	0	0	2	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	1	4
2:45 AM	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	4
Hourly Total	0	0	8	0	0	8	0	0	0	2	0	2	0	3	1	1	0	5	0	0	1	2	0	3	18
3:00 AM	0	0	3	0	0	3	0	0	0	0	0	0	0	0	2	0	0	2	0	1	0	2	0	3	8
3:15 AM	0	2	6	0	0	8	0	0	0	1	0	1	0	1	2	0	0	3	0	1	0	1	0	2	14
3:30 AM	0	0	5	0	0	5	0	0	0	0	0	0	0	1	4	0	0	5	0	0	0	1	0	1	11
3:45 AM	0	3	10	0	0	13	0	1	1	0	0	2	0	0	2	1	0	3	0	0	0	2	0	2	20
Hourly Total	0	5	24	0	0	29	0	1	1	1	0	3	0	2	10	1	0	13	0	2	0	6	0	8	53
4:00 AM	0	2	7	0	0	9	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	2	0	2	12
4:15 AM	0	2	21	0	0	23	0	0	0	2	0	2	0	2	2	1	0	5	0	0	0	1	0	1	31
4:30 AM	0	1	18	0	0	19	0	0	0	1	0	1	0	4	2	3	0	9	0	0	1	5	0	6	35
4:45 AM	0	4	14	0	0	18	0	2	2	1	0	5	0	5	0	4	0	9	0	0	0	2	0	2	34
Hourly Total	0	9	60	0	0	69	0	2	2	4	0	8	0	12	4	8	0	24	0	0	1	10	0	11	112
5:00 AM	0	5	30	2	0	37	0	0	0	0	0	0	0	3	3	4	0	10	0	0	2	3	0	5	52
5:15 AM	0	11	47	1	0	59	0	1	0	1	0	2	0	4	4	17	0	25	0	0	1	6	0	7	93
5:30 AM	0	17	42	1	0	60	0	5	5	1	0	11	0	6	3	13	0	22	0	0	3	8	0	11	104
5:45 AM	0	9	43	2	0	54	0	7	7	1	0	15	0	11	6	14	0	31	0	0	6	5	0	11	111
Hourly Total	0	42	162	6	0	210	0	13	12	3	0	28	0	24	16	48	0	88	0	0	12	22	0	34	360
6:00 AM	1	8	57	0	0	66	0	5	5	0	0	10	0	9	8	10	0	27	0	0	1	11	0	12	115
6:15 AM	0	13	63	3	0	79	0	5	5	6	0	16	0	10	10	12	0	32	0	0	1	14	0	15	142
6:30 AM	0	26	64	1	0	91	0	8	7	6	0	21	0	7	12	23	0	42	0	0	8	15	0	23	177
6:45 AM	0	46	85	4	0	135	0	5	5	8	0	18	0	17	24	36	0	77	0	0	5	8	0	13	243
Hourly Total	1	93	269	8	0	371	0	23	22	20	0	65	0	43	54	81	0	178	0	0	15	48	0	63	677
7:00 AM	0	37	90	3	0	130	0	25	9	1	0	35	0	6	27	20	0	53	0	0	6	17	0	23	241
7:15 AM	0	32	87	1	0	120	0	30	5	4	0	39	0	21	26	33	0	80	0	0	9	12	0	21	260
7:30 AM	0	32	78	8	0	118	0	23	5	22	0	50	0	16	31	29	0	76	0	0	11	11	0	22	266
7:45 AM	0	42	84	13	0	139	0	29	14	20	0	63	0	38	36	29	0	103	0	0	12	11	0	23	328
Hourly Total	0	143	339	25	0	507	0	107	33	47	0	187	0	81	120	111	0	312	0	0	38	51	0	89	1095

**TMC 23102 - CSAH 116 @ CSAH 83
Ramsey MN**

Thursday, December 7, 2023

Time	Southbound CSAH 83						Westbound CSAH 116						Northbound CSAH 83						Eastbound Bunker Lake Blvd						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	24	64	1	0	89	0	29	18	14	0	61	0	24	20	10	0	54	0	1	10	15	0	26	230
8:15 AM	0	23	60	1	0	84	0	13	3	6	0	22	0	10	18	13	0	41	0	1	3	13	0	17	164
8:30 AM	0	18	52	1	0	71	0	13	4	8	0	25	0	12	26	14	0	52	0	0	7	14	0	21	169
8:45 AM	0	24	44	1	0	69	0	15	5	9	0	29	0	5	25	16	0	46	0	0	6	9	0	15	159
Hourly Total	0	89	220	4	0	313	0	70	30	37	0	137	0	51	89	53	0	193	0	2	26	51	0	79	722
9:00 AM	0	12	42	0	0	54	0	13	3	5	0	21	0	8	15	12	0	35	0	1	7	11	0	19	129
9:15 AM	0	11	52	2	0	65	0	18	5	8	2	31	0	5	27	11	0	43	0	1	4	7	0	12	151
9:30 AM	0	10	42	0	0	52	0	5	6	8	0	19	0	12	24	4	0	40	0	0	2	11	0	13	124
9:45 AM	0	7	37	0	0	44	0	11	5	14	0	30	0	4	25	7	0	36	0	0	4	7	0	11	121
Hourly Total	0	40	173	2	0	215	0	47	19	35	2	101	0	29	91	34	0	154	0	2	17	36	0	55	525
10:00 AM	0	14	30	0	0	44	0	14	3	7	0	24	0	8	19	6	0	33	0	0	3	12	0	15	116
10:15 AM	0	12	51	0	0	63	0	15	4	3	0	22	0	5	26	8	0	39	0	0	2	11	0	13	137
10:30 AM	0	10	27	0	0	37	1	11	5	11	0	28	0	7	20	7	0	34	0	1	4	8	0	13	112
10:45 AM	0	7	29	1	0	37	1	9	3	7	0	20	0	7	25	8	0	40	0	0	0	12	0	12	109
Hourly Total	0	43	137	1	0	181	2	49	15	28	0	94	0	27	90	29	0	146	0	1	9	43	0	53	474
11:00 AM	0	13	37	0	0	50	0	11	3	12	0	26	0	7	27	11	0	45	0	0	5	15	0	20	141
11:15 AM	0	6	51	2	0	59	0	16	3	10	0	29	0	12	31	11	0	54	0	1	7	12	0	20	162
11:30 AM	0	10	42	2	1	54	0	23	6	13	0	42	0	8	35	11	0	54	0	1	9	18	0	28	178
11:45 AM	0	13	48	0	0	61	0	15	2	7	0	24	0	14	39	11	0	64	0	0	6	15	0	21	170
Hourly Total	0	42	178	4	1	224	0	65	14	42	0	121	0	41	132	44	0	217	0	2	27	60	0	89	651
12:00 PM	0	11	43	1	1	55	0	17	11	10	0	38	0	21	32	6	0	59	0	4	10	30	0	44	196
12:15 PM	0	16	36	0	0	52	0	19	11	8	0	38	0	18	41	7	0	66	0	0	4	11	0	15	171
12:30 PM	0	11	42	2	0	55	0	11	4	15	0	30	0	19	55	6	0	80	0	2	6	11	0	19	184
12:45 PM	0	14	49	2	0	65	0	9	3	9	0	21	0	10	41	9	0	60	0	0	5	4	0	9	155
Hourly Total	0	52	170	5	1	227	0	56	29	42	0	127	0	68	169	28	0	265	0	6	25	56	0	87	706
1:00 PM	0	11	40	1	0	52	1	20	6	14	0	41	0	10	40	10	0	60	0	0	4	10	0	14	167
1:15 PM	0	8	27	0	0	35	0	12	6	2	0	20	0	9	38	11	0	58	0	1	7	16	1	24	137
1:30 PM	0	12	42	1	0	55	0	15	5	11	0	31	0	11	41	13	0	65	0	0	9	9	0	18	169
1:45 PM	0	11	31	1	1	43	0	12	5	15	1	32	0	21	53	12	0	86	0	1	9	11	0	21	182
Hourly Total	0	42	140	3	1	185	1	59	22	42	1	124	0	51	172	46	0	269	0	2	29	46	1	77	655
2:00 PM	0	11	31	0	0	42	0	28	3	10	0	41	0	12	50	11	0	73	0	0	8	13	0	21	177
2:15 PM	0	14	49	4	0	67	0	20	7	24	0	51	1	8	62	23	1	94	0	0	5	11	0	16	228
2:30 PM	0	9	34	5	1	48	0	26	9	29	0	64	0	8	74	13	0	95	0	2	9	13	0	24	231
2:45 PM	0	9	41	2	0	52	1	30	15	17	0	63	0	14	81	16	0	111	0	3	8	11	0	22	248
Hourly Total	0	43	155	11	1	209	1	104	34	80	0	219	1	42	267	63	1	373	0	5	30	48	0	83	884
3:00 PM	0	17	41	3	0	61	0	11	6	27	0	44	0	22	69	13	0	104	0	0	9	14	0	23	232
3:15 PM	0	28	57	4	0	89	0	26	3	29	0	58	1	20	109	15	0	145	0	1	8	11	0	20	312
3:30 PM	0	20	44	2	0	66	0	49	11	44	0	104	0	16	92	20	0	128	0	8	17	37	0	62	360
3:45 PM	0	14	52	3	0	69	0	35	9	33	0	77	0	17	75	14	1	106	0	2	6	15	1	23	275
Hourly Total	0	79	194	12	0	285	0	121	29	133	0	283	1	75	345	62	1	483	0	11	40	77	1	128	1179

TMC 23102 - CSAH 116 @ CSAH 83

Ramsey MN

Thursday, December 7, 2023

Time	Southbound CSAH 83						Westbound CSAH 116						Northbound CSAH 83						Eastbound Bunker Lake Blvd						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	18	41	1	0	60	0	50	11	36	0	97	0	20	102	18	0	140	0	1	11	13	0	25	322
4:15 PM	0	8	43	2	0	53	0	44	14	40	0	98	1	22	81	26	0	130	0	2	9	15	0	26	307
4:30 PM	0	16	62	5	0	83	0	39	15	28	0	82	0	25	91	25	0	141	0	23	30	47	0	100	406
4:45 PM	0	12	41	12	0	65	0	40	11	37	0	88	0	23	83	29	0	135	0	8	9	20	0	37	325
Hourly Total	0	54	187	20	0	261	0	173	51	141	0	365	1	90	357	98	0	546	0	34	59	95	0	188	1360
5:00 PM	0	6	51	2	0	59	0	24	10	29	0	63	0	27	107	33	0	167	0	5	20	40	0	65	354
5:15 PM	0	14	54	8	0	76	0	30	14	21	0	65	1	38	89	28	0	156	0	4	8	29	0	41	338
5:30 PM	0	11	53	2	0	66	0	26	15	17	0	58	1	19	55	24	0	99	0	4	9	22	0	35	258
5:45 PM	1	10	47	8	0	66	0	15	14	23	0	52	0	34	68	16	0	118	0	4	6	13	0	23	259
Hourly Total	1	41	205	20	0	267	0	95	53	90	0	238	2	118	319	101	0	540	0	17	43	104	0	164	1209
6:00 PM	0	12	26	6	0	44	1	17	5	19	0	42	0	18	61	16	0	95	0	4	4	22	0	30	211
6:15 PM	0	16	42	11	0	69	0	16	21	10	0	47	1	55	58	14	0	128	0	3	10	22	0	35	279
6:30 PM	0	16	34	2	0	52	0	12	5	17	0	34	0	19	42	12	0	73	0	9	29	55	0	93	252
6:45 PM	1	12	23	8	0	44	0	9	5	6	0	20	0	16	41	10	0	67	0	0	8	10	0	18	149
Hourly Total	1	56	125	27	0	209	1	54	36	52	0	143	1	108	202	52	0	363	0	16	51	109	0	176	891
7:00 PM	0	2	33	1	0	36	0	14	9	10	0	33	0	28	34	8	0	70	0	7	6	24	0	37	176
7:15 PM	0	6	15	5	0	26	1	6	20	7	0	34	0	35	34	9	0	78	0	2	5	17	0	24	162
7:30 PM	0	5	21	1	0	27	0	3	11	7	0	21	0	21	51	6	0	78	0	7	19	38	0	64	190
7:45 PM	0	5	14	6	0	25	0	5	9	12	0	26	0	23	34	6	0	63	0	3	4	14	0	21	135
Hourly Total	0	18	83	13	0	114	1	28	49	36	0	114	0	107	153	29	0	289	0	19	34	93	0	146	663
8:00 PM	0	6	21	0	0	27	0	5	4	4	0	13	0	27	33	7	0	67	0	14	8	28	0	50	157
8:15 PM	0	7	6	2	0	15	0	2	4	7	0	13	0	19	38	5	0	62	0	1	3	1	0	5	95
8:30 PM	0	1	10	0	0	11	0	5	4	16	0	25	0	12	29	13	0	54	0	5	15	22	0	42	132
8:45 PM	0	8	20	3	0	31	0	5	1	4	0	10	0	9	21	10	0	40	0	2	4	3	0	9	90
Hourly Total	0	22	57	5	0	84	0	17	13	31	0	61	0	67	121	35	0	223	0	22	30	54	0	106	474
9:00 PM	0	3	13	0	0	16	0	3	5	5	0	13	0	14	26	6	0	46	0	0	1	7	0	8	83
9:15 PM	0	1	7	1	0	9	0	2	8	7	0	17	0	16	34	1	0	51	0	0	1	5	0	6	83
9:30 PM	0	0	5	1	0	6	0	1	3	4	0	8	0	10	28	7	0	45	0	0	10	35	0	45	104
9:45 PM	0	0	4	0	0	4	0	3	7	4	0	14	0	9	21	6	0	36	0	0	1	8	0	9	63
Hourly Total	0	4	29	2	0	35	0	9	23	20	0	52	0	49	109	20	0	178	0	0	13	55	0	68	333
10:00 PM	0	1	3	0	0	4	0	4	1	3	0	8	0	4	11	5	0	20	0	1	11	8	0	20	52
10:15 PM	0	3	3	0	0	6	0	2	2	1	0	5	0	6	15	4	0	25	0	2	5	7	0	14	50
10:30 PM	0	0	1	0	0	1	0	3	1	0	0	4	0	7	14	2	0	23	0	0	3	5	0	8	36
10:45 PM	0	5	2	0	0	7	0	1	3	3	0	7	0	4	9	2	0	15	0	0	1	2	0	3	32
Hourly Total	0	9	9	0	0	18	0	10	7	7	0	24	0	21	49	13	0	83	0	3	20	22	0	45	170
11:00 PM	0	1	0	0	0	1	0	2	0	1	0	3	0	3	8	4	0	15	0	0	1	0	0	1	20
11:15 PM	0	0	2	0	0	2	0	0	0	2	0	2	0	0	6	3	0	9	0	0	1	1	0	2	15
11:30 PM	0	1	0	0	0	1	0	2	3	2	0	7	0	1	5	0	0	6	0	0	0	16	0	16	30
11:45 PM	0	0	2	0	0	2	0	1	1	4	0	6	0	5	8	1	0	14	0	1	1	9	0	11	33
Hourly Total	0	2	4	0	0	6	0	5	4	9	0	18	0	9	27	8	0	44	0	1	3	26	0	30	98
DAILY TOTAL	3	928	2936	168	4	4035	6	1109	499	908	3	2522	6	1128	2921	973	2	5028	0	145	524	1117	2	1786	13371
Cars	3	894	2859	160	3	3916	6	1141	469	869	2	2485	6	1088	2852	956	1	4902	0	141	498	1078	0	1717	13020
Heavy Vehicles	0	34	77	8	1	119	0	34	30	39	1	103	0	40	69	17	1	126	0	4	26	39	2	69	417
Heavy Vehicle %	0.00%	3.66%	2.62%	4.76%	25.00%	2.95%	0.00%	3.07%	6.01%	4.30%	33.33%	4.08%	0.00%	3.55%	2.36%	1.75%	50.00%	2.51%	0.00%	2.76%	4.96%	3.49%	100.00%	3.86%	3.12%

TMC 23102 - CSAH 116 @ CSAH 83

Ramsey MN

Thursday, December 7, 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	37	90	3	0	130	0	25	9	1	0	35	0	6	27	20	0	53	0	0	6	17	0	23	0	0	6	17	0	23	241
7:15 AM	0	32	87	1	0	120	0	30	5	4	0	39	0	21	26	33	0	80	0	0	9	12	0	21	0	0	9	12	0	21	260
7:30 AM	0	32	78	8	0	118	0	23	5	22	0	50	0	16	31	29	0	76	0	0	11	11	0	22	0	0	11	11	0	22	266
7:45 AM	0	42	84	13	0	139	0	29	14	20	0	63	0	38	36	29	0	103	0	0	12	11	0	23	0	0	12	11	0	23	328
Peak Hour Total	0	143	339	25	0	507	0	107	33	47	0	187	0	81	120	111	0	312	0	0	38	51	0	89	0	0	38	51	0	89	1095
PHF	0.000	0.851	0.942	0.481	0.000	0.912	0.000	0.892	0.589	0.534	0.000	0.742	0.000	0.533	0.833	0.841	0.000	0.757	0.000	0.000	0.792	0.750	0.000	0.967	0.000	0.000	0.792	0.750	0.000	0.967	0.835

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							
4:30 PM	0	16	62	5	0	83	0	39	15	28	0	82	0	25	91	25	0	141	0	23	30	47	0	100	0	8	9	20	0	37	406
4:45 PM	0	12	41	12	0	65	0	40	11	37	0	88	0	23	83	29	0	135	0	5	20	40	0	65	0	8	9	20	0	37	325
5:00 PM	0	6	51	2	0	59	0	24	10	29	0	63	0	27	107	33	0	167	0	4	8	29	0	41	0	5	20	40	0	65	354
5:15 PM	0	14	54	8	0	76	0	30	14	21	0	65	1	38	89	28	0	156	0	4	8	29	0	41	0	4	8	29	0	41	338
Peak Hour Total	0	48	208	27	0	283	0	133	50	115	0	298	1	113	370	115	0	599	0	40	67	136	0	243	0	40	67	136	0	243	1423
PHF	0.000	0.750	0.839	0.563	0.000	0.852	0.000	0.831	0.833	0.777	0.000	0.847	0.250	0.743	0.864	0.871	0.000	0.897	0.000	0.435	0.558	0.723	0.000	0.608	0.000	0.435	0.558	0.723	0.000	0.608	0.876

Total Vehicles On Leg		8012			
Vehicles Entering Intersection	4035	Vehicles Exiting Intersection		3977	
Southbound					
Cars	160	2859	894	3	3
Heavy	8	77	34	0	1
Total	168	2936	928	3	4

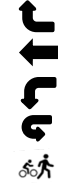


Total Vehicles on Leg 3581	Vehicles Entering Intersection 1786	Eastbound	Cars	Heavy	Total
			0	2	2
			0	0	0
	Vehicles Exiting Intersection 1795		141	4	145
	498		26	524	
		1078	39	1117	



Daily Volumes

Cars	Heavy	Total	Westbound	Vehicles Entering Intersection 2588	Total Vehicles on Leg 5019
869	39	908			
469	30	499			
1141	34	1175			
6	0	6			
2	1	3	Vehicles Exiting Intersection 2431		



Cars	1	6	1088	2852	956
Heavy	1	0	40	69	17
Total	2	6	1128	2921	973
Northbound					
Vehicles Entering Intersection	5028	Vehicles Exiting Intersection		5234	
Total Vehicles On Leg		10262			



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
12/7/2023	0:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	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	1	0	0	0	0	0	0	0	0
	1:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	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	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	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15	0	0	2	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	0	0	0	0	0	1	0
	5:45	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0
	6:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:30	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:45	0	1	0	1	0	0	0	0	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0
	7:00	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
	7:15	0	0	6	0	0	0	0	0	0	1	0	0	0	0	2	1	0	0	0	0	0	0	0	0
7:30	0	0	1	0	0	0	0	0	3	0	2	0	0	0	0	4	2	0	0	0	0	2	1	0	
7:45	0	0	2	0	0	0	0	0	1	0	1	0	0	0	2	2	0	0	0	0	0	1	1	0	
8:00	0	1	0	0	0	0	0	0	3	2	3	0	0	0	3	3	0	0	0	0	0	0	0	0	
8:15	0	2	2	0	0	0	0	0	2	0	0	0	0	1	1	0	0	0	0	0	0	1	3	0	
8:30	0	1	2	0	0	0	0	0	1	2	1	0	0	0	1	1	0	0	0	0	0	2	0	0	
8:45	0	2	2	0	0	0	0	0	1	1	2	0	0	0	0	2	1	0	0	0	0	1	1	0	
9:00	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	1	0	
9:15	0	0	1	0	0	0	0	0	0	2	1	0	0	0	1	1	0	0	0	0	1	0	0	0	
9:30	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	
9:45	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	2	1	0	0	0	0	1	0	0	
10:00	0	2	2	0	0	0	0	0	2	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	
10:15	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	1	0	
10:30	0	0	1	0	0	0	0	0	1	0	2	0	0	0	1	2	0	0	0	0	0	1	0	0	
10:45	0	0	2	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	1	0	
11:00	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2	2	0	
11:15	0	0	1	1	0	0	0	0	0	0	2	0	0	0	0	2	1	0	0	0	0	0	0	0	
11:30	0	0	2	0	0	0	0	0	2	2	1	0	0	0	1	1	1	0	0	0	0	1	1	0	
11:45	0	3	0	0	0	0	0	0	1	0	1	0	0	0	3	2	2	0	0	0	0	1	1	0	

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 23102

Study Date : 12/18/2023

Signal Warrants - Summary

Major Street Approaches

Northbound: CSAH 83

Number of Lanes : 2+

Total Approach Volume: 5,028

Southbound: CSAH 83

Number of Lanes :2+

Total Approach Volume: 4,035

Minor Street Approaches

Eastbound: Bunker Lake Blvd

Number of Lanes :1

Total Approach Volume: 1,786

Westbound: CSAH 116

Number of Lanes :2+

Total Approach Volume: 2,588

Warrant Summary (Rural Values Apply)

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

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

Required volumes reached for 9 hours, 8 are needed

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

Required volumes reached for 6 hours, 8 are needed

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

Required 1A volumes reached for 11 hours, 8 are needed

Required 1B volumes reached for 8 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 (26) 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 23102

Study Date : 12/18/2023

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

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 = **Mixed**

Volume Requirements

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

Veh/Hr Minor = **105 140**

Time	Major Road					Minor Road			Met?
	Major NB	+	Major SB	=	Total	Minor EB	Minor WB		
	CSAH 83					Bunker Lake Blvd			
16:30 - 17:30	599	+	283	=	882	243	298	Yes	
15:30 - 16:30	504	+	248	=	752	136	376	Yes	
06:30 - 07:30	252	+	476	=	728	80	144	Yes	
14:30 - 15:30	455	+	250	=	705	89	229	Yes	
07:30 - 08:30	274	+	430	=	704	88	196	Yes	
17:30 - 18:30	440	+	245	=	685	123	199	Yes	
13:30 - 14:30	318	+	207	=	525	76	155	Yes	
11:30 - 12:30	243	+	222	=	465	108	142	Yes	
18:30 - 19:30	288	+	158	=	446	172	121	Yes	
06:15 - 07:15	204	+	435	=	639	74	125	No	
06:00 - 07:00	178	+	371	=	549	63	105	No	
12:30 - 13:30	258	+	207	=	465	66	112	No	
11:15 - 12:15	231	+	229	=	460	113	133	No	
13:15 - 14:15	282	+	175	=	457	84	124	No	
13:00 - 14:00	269	+	185	=	454	77	124	No	
12:45 - 13:45	243	+	207	=	450	65	113	No	
11:00 - 12:00	217	+	224	=	441	89	121	No	
08:30 - 09:30	176	+	259	=	435	67	106	No	
05:45 - 06:45	132	+	290	=	422	61	80	No	
08:45 - 09:45	164	+	240	=	404	59	100	No	
10:45 - 11:45	193	+	200	=	393	80	117	No	
05:30 - 06:30	112	+	259	=	371	49	64	No	
09:00 - 10:00	154	+	215	=	369	55	101	No	
19:30 - 20:30	270	+	94	=	364	140	73	No	
09:15 - 10:15	152		205		357	51	104	No	

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 23102

Study Date : 12/18/2023

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 6 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 = **Mixed**

Volume Requirements

Rural Factor of 70 % applied
 Veh/Hr Major = **630**
 Veh/Hr Minor = **52 70**

Time	Major Road				Total	Minor Road		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
	CSAH 83					Bunker Lake Blvd		
16:15 - 17:15	573	+	260	=	833	228	331	Yes
15:15 - 16:15	519	+	284	=	803	130	336	Yes
07:15 - 08:15	313	+	466	=	779	92	213	Yes
17:15 - 18:15	468	+	252	=	720	129	217	Yes
06:15 - 07:15	204	+	435	=	639	74	125	Yes
14:15 - 15:15	404	+	228	=	632	85	222	Yes
14:00 - 15:00	373	+	209	=	582	83	219	No
06:00 - 07:00	178	+	371	=	549	63	105	No
13:45 - 14:45	348	+	200	=	548	82	188	No
18:15 - 19:15	338	+	201	=	539	183	134	No
13:30 - 14:30	318	+	207	=	525	76	155	No
11:45 - 12:45	269	+	223	=	492	99	130	No
12:00 - 13:00	265	+	227	=	492	87	127	No
12:15 - 13:15	266	+	224	=	490	57	130	No
12:30 - 13:30	258	+	207	=	465	66	112	No
11:30 - 12:30	243	+	222	=	465	108	142	No
11:15 - 12:15	231	+	229	=	460	113	133	No
13:15 - 14:15	282	+	175	=	457	84	124	No
13:00 - 14:00	269	+	185	=	454	77	124	No
08:15 - 09:15	174	+	278	=	452	72	97	No
12:45 - 13:45	243	+	207	=	450	65	113	No
18:30 - 19:30	288	+	158	=	446	172	121	No
11:00 - 12:00	217	+	224	=	441	89	121	No
08:30 - 09:30	176	+	259	=	435	67	106	No
18:45 - 19:45	293		133		426	143	108	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 23102

Study Date : 12/18/2023

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

11 hours meet 1A minimums.
8 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 = **Mixed**

Volume Requirements

Rural Factor of 70% applied
Warrant 1A 1B
Veh/Hr Major = **336 504**
Veh/Hr Minor EB = **84 42**
Veh/Hr Minor WB = **112 56**

Major Road CSAH 83

Minor Road Bunker Lake Blvd

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1A?
16:45 - 17:45	557	+	266	=	823	178	274	Yes
15:45 - 16:45	517	+	265	=	782	174	354	Yes
07:15 - 08:15	313	+	466	=	779	92	213	Yes
14:45 - 15:45	488	+	268	=	756	127	269	Yes
17:45 - 18:45	414	+	231	=	645	181	175	Yes
06:15 - 07:15	204	+	435	=	639	74	125	Yes
13:45 - 14:45	348	+	200	=	548	82	188	Yes
11:45 - 12:45	269	+	223	=	492	99	130	Yes
12:45 - 13:45	243	+	207	=	450	65	113	Yes
18:45 - 19:45	293	+	133	=	426	143	108	Yes
10:45 - 11:45	193	+	200	=	393	80	117	Yes
06:00 - 07:00	178		371		549	63	105	No

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1B?
16:30 - 17:30	599	+	283	=	882	243	298	Yes
07:00 - 08:00	312	+	507	=	819	89	187	Yes
15:30 - 16:30	504	+	248	=	752	136	376	Yes
14:30 - 15:30	455	+	250	=	705	89	229	Yes
17:30 - 18:30	440	+	245	=	685	123	199	Yes
06:00 - 07:00	178	+	371	=	549	63	105	Yes
13:30 - 14:30	318	+	207	=	525	76	155	Yes
08:00 - 09:00	193	+	313	=	506	79	137	Yes
11:45 - 12:45	269	+	223	=	492	99	130	No
12:00 - 13:00	265	+	227	=	492	87	127	No
12:15 - 13:15	266	+	224	=	490	57	130	No
11:30 - 12:30	243		222		465	108	142	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 23102

Study Date : 12/18/2023

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.

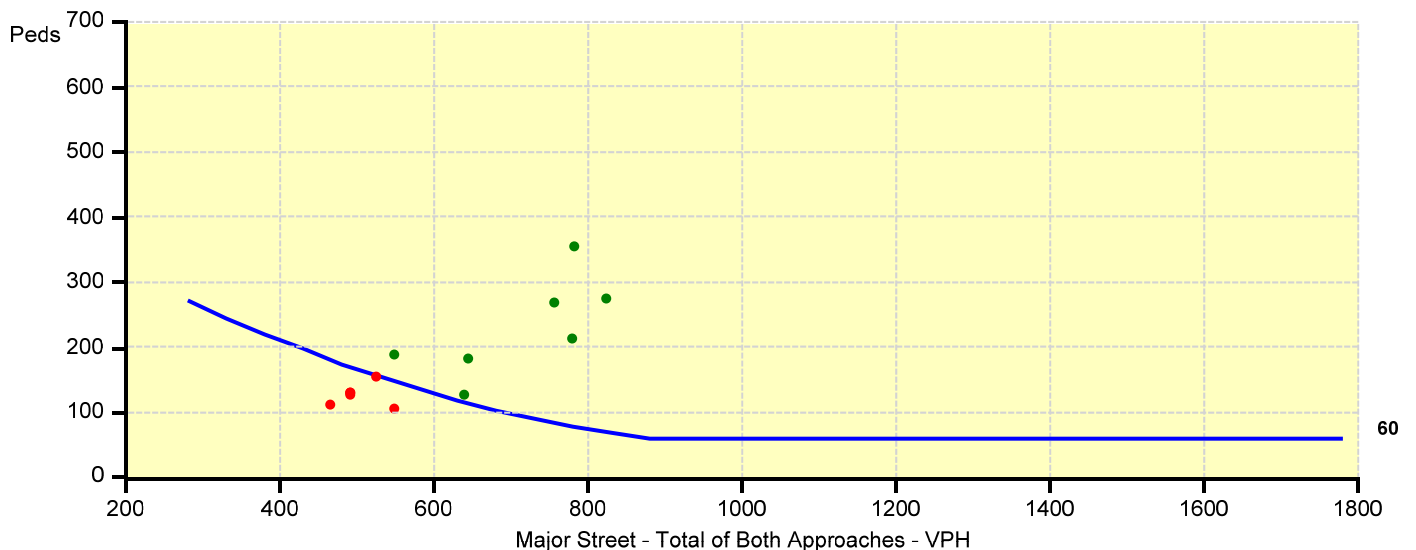
Summary

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 = **Mixed**

Time	Major Road CSAH 83				Total	Minor Road Bunker Lake Blvd		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
16:45 - 17:45	557	+	266	=	823	178	274	Yes
15:45 - 16:45	517	+	265	=	782	174	354	Yes
07:15 - 08:15	313	+	466	=	779	92	213	Yes
14:45 - 15:45	488	+	268	=	756	127	269	Yes
17:45 - 18:45	414	+	231	=	645	181	175	Yes
06:15 - 07:15	204	+	435	=	639	74	125	Yes
13:45 - 14:45	348	+	200	=	548	82	188	Yes
06:00 - 07:00	178	+	371	=	549	63	105	No
13:30 - 14:30	318	+	207	=	525	76	155	No
11:45 - 12:45	269	+	223	=	492	99	130	No
12:00 - 13:00	265	+	227	=	492	87	127	No
12:15 - 13:15	266	+	224	=	490	57	130	No



ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 23102

Study Date : 12/18/2023

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

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 = **Mixed**

Time	Major Road CSAH 83					Minor Road Bunker Lake Blvd		
	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met?
16:30 - 17:30	599	+	283	=	882	243	298	Yes
16:15 - 17:15	573	+	260	=	833	228	331	Yes
16:45 - 17:45	557	+	266	=	823	178	274	Yes
07:00 - 08:00	312	+	507	=	819	89	187	Yes
16:00 - 17:00	546	+	261	=	807	188	365	Yes
17:00 - 18:00	540	+	267	=	807	164	238	Yes
15:15 - 16:15	519	+	284	=	803	130	336	Yes
15:45 - 16:45	517	+	265	=	782	174	354	Yes
07:15 - 08:15	313	+	466	=	779	92	213	Yes
15:00 - 16:00	483	+	285	=	768	128	283	Yes
14:45 - 15:45	488	+	268	=	756	127	269	Yes
15:30 - 16:30	504	+	248	=	752	136	376	Yes

