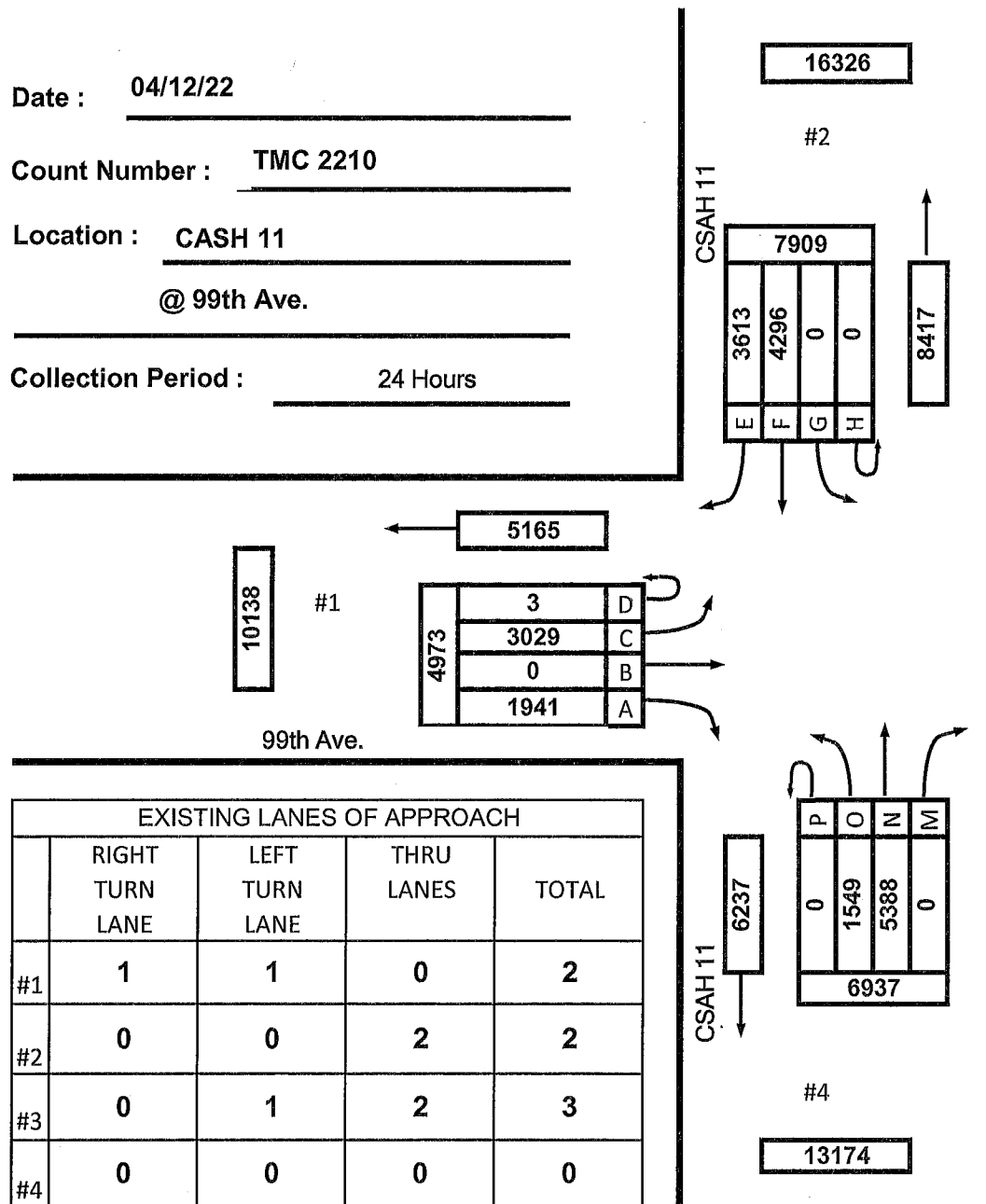


Date : 04/12/22

Count Number : TMC 2210

Location : CASH 11
@ 99th Ave.

Collection Period : 24 Hours



Anoka County Highway Department

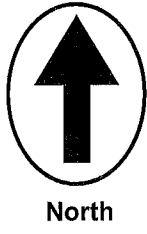
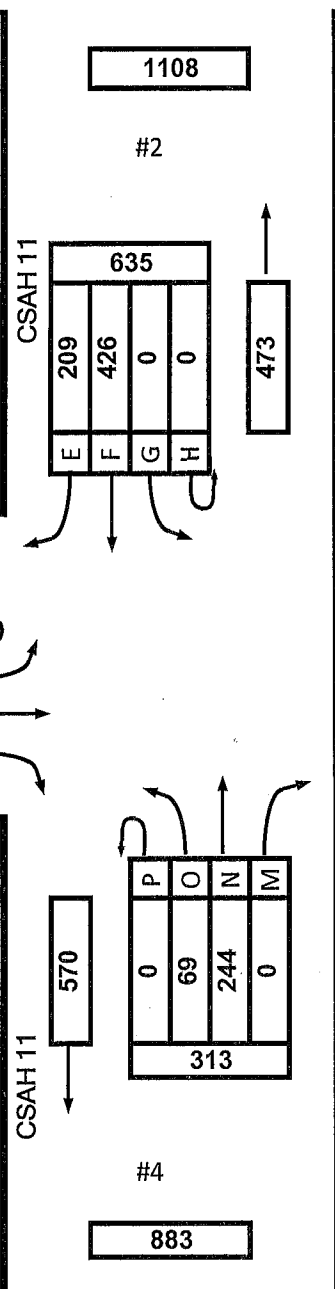
Traffic Volume and Turning
Movement Study

Date : 04/12/22

Count Number : TMC 2210

Location : CASH 11
@ 99th Ave.

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



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

Anoka County Highway Department

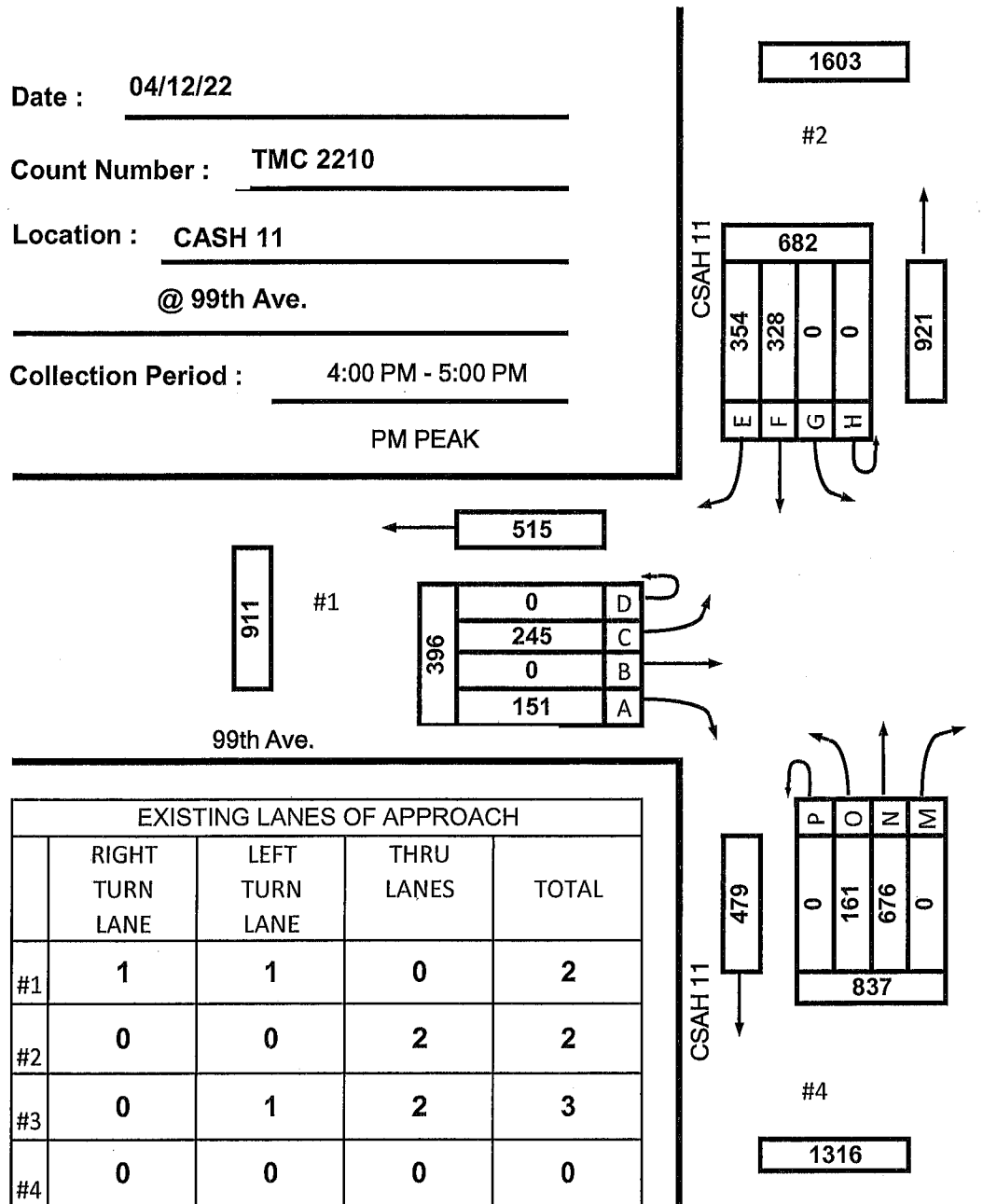
Traffic Volume and Turning Movement Study

Date : 04/12/22

Count Number : TMC 2210

Location : CASH 11
@ 99th Ave.

Collection Period : 4:00 PM - 5:00 PM
PM PEAK



North

Anoka County Highway Department

Traffic Volume and Turning
Movement Study

**CSAH 11 @ 99th Ave.
Coon Rapids Minnesota
Tuesday, April 12, 2022**

Time	Southbound CSAH 11						Westbound 0						Northbound CSAH 11						Eastbound 99th Ave.						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	3	4	0	7	0	0	0	0	0	0	0	1	10	0	0	11	0	5	0	1	0	6	24
12:15 AM	0	0	6	6	0	12	0	0	0	0	0	0	0	3	8	0	0	11	0	3	0	1	0	4	27
12:30 AM	0	0	4	2	0	6	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	11
12:45 AM	0	0	4	3	0	7	0	0	0	0	0	0	0	2	4	0	0	6	0	0	0	2	0	2	15
Hourly Total	0	0	17	15	0	32	0	0	0	0	0	0	0	6	27	0	0	33	0	8	0	4	0	12	77
1:00 AM	0	0	4	5	0	9	0	0	0	0	0	0	0	0	9	0	0	9	0	1	0	0	0	1	19
1:15 AM	0	0	0	3	0	3	0	0	0	0	0	0	0	0	3	0	0	3	0	1	0	0	0	1	7
1:30 AM	0	0	3	3	0	6	0	0	0	0	0	0	0	1	1	0	0	2	0	1	0	1	0	2	10
1:45 AM	0	0	3	3	0	6	0	0	0	0	0	0	0	0	6	0	0	6	0	2	0	0	0	2	14
Hourly Total	0	0	10	14	0	24	0	0	0	0	0	0	0	1	19	0	0	20	0	5	0	1	0	6	50
2:00 AM	0	0	4	1	0	5	0	0	0	0	0	0	0	0	1	0	0	1	0	2	0	0	0	2	8
2:15 AM	0	0	3	1	0	4	0	0	0	0	0	0	0	1	6	0	0	7	0	1	0	0	0	1	12
2:30 AM	0	0	2	0	0	2	0	0	0	0	0	0	0	0	3	0	0	3	0	3	0	0	0	3	8
2:45 AM	0	0	2	0	0	2	0	0	0	0	0	0	0	1	5	0	0	6	0	3	0	4	0	7	15
Hourly Total	0	0	11	2	0	13	0	0	0	0	0	0	0	2	15	0	0	17	0	9	0	4	0	13	43
3:00 AM	0	0	2	3	0	5	0	0	0	0	0	0	0	1	6	0	0	7	0	2	0	0	0	2	14
3:15 AM	0	0	4	1	0	5	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	9
3:30 AM	0	0	13	0	0	13	0	0	0	0	0	0	0	1	6	0	0	7	0	1	0	1	0	2	22
3:45 AM	0	0	5	1	0	6	0	0	0	0	0	0	0	1	3	0	0	4	0	4	0	3	0	7	17
Hourly Total	0	0	24	5	0	29	0	0	0	0	0	0	0	3	19	0	0	22	0	7	0	4	0	11	62
4:00 AM	0	0	6	0	0	6	0	0	0	0	0	0	0	1	9	0	0	10	0	9	0	2	0	11	27
4:15 AM	0	0	11	0	1	11	0	0	0	0	0	0	0	1	11	0	0	12	0	4	0	3	0	7	30
4:30 AM	0	0	27	3	0	30	0	0	0	0	0	0	0	2	6	0	0	8	0	5	0	4	0	9	47
4:45 AM	0	0	23	2	0	25	0	0	0	0	0	0	0	1	12	0	0	13	0	12	0	8	0	20	58
Hourly Total	0	0	67	5	1	72	0	0	0	0	0	0	0	5	38	0	0	43	0	30	0	17	0	47	162
5:00 AM	0	0	34	8	0	42	0	0	0	0	0	0	0	1	11	0	0	12	0	7	0	8	0	15	69
5:15 AM	0	0	29	9	0	38	0	0	0	0	0	0	0	6	18	0	0	24	0	17	0	12	0	29	91
5:30 AM	0	0	62	21	0	83	0	0	0	0	0	0	0	6	18	0	0	24	0	30	0	17	0	47	154
5:45 AM	0	0	41	21	0	62	0	0	0	0	0	0	0	15	18	0	0	33	0	23	0	16	0	39	134
Hourly Total	0	0	166	59	0	225	0	0	0	0	0	0	0	28	65	0	0	93	0	77	0	53	0	130	448
6:00 AM	0	0	56	26	0	82	0	0	0	0	0	0	0	18	31	0	0	49	0	20	0	12	0	32	163
6:15 AM	0	0	56	26	0	82	0	0	0	0	0	0	0	10	31	0	0	41	0	36	0	24	0	60	183
6:30 AM	0	0	82	32	1	114	0	0	0	0	0	0	0	8	41	0	0	49	0	51	0	40	0	91	254
6:45 AM	0	0	108	48	0	156	0	0	0	0	0	0	0	19	42	0	0	61	0	50	0	32	0	82	299
Hourly Total	0	0	302	132	1	434	0	0	0	0	0	0	0	55	145	0	0	200	0	167	0	108	0	265	899
7:00 AM	0	0	96	49	0	145	0	0	0	0	0	0	0	13	49	0	2	62	0	54	0	27	0	81	288
7:15 AM	0	0	108	58	0	164	0	0	0	0	0	0	0	17	64	0	0	81	1	54	0	36	0	91	336
7:30 AM	0	0	103	47	0	150	0	0	0	0	0	0	0	18	63	0	0	81	0	59	0	42	0	101	332
7:45 AM	0	0	119	57	0	176	0	0	0	0	0	0	0	21	68	0	1	89	0	62	0	39	0	101	366
Hourly Total	0	0	428	209	0	636	0	0	0	0	0	0	0	69	244	0	3	313	1	229	0	144	0	374	1322

**CSAH 11 @ 99th Ave.
Coon Rapids Minnesota
Tuesday, April 12, 2022**

Time	Southbound CSAH 11						Westbound 0						Northbound CSAH 11						Eastbound 99th Ave.						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	86	47	0	133	0	0	0	0	0	0	0	21	74	0	0	95	0	38	0	22	0	60	288
8:15 AM	0	0	83	54	0	137	0	0	0	0	0	0	0	24	57	0	0	81	0	40	0	28	0	68	286
8:30 AM	0	0	95	62	0	157	0	0	0	0	0	0	0	21	86	0	0	107	0	41	0	22	0	63	327
8:45 AM	0	0	69	47	0	116	0	0	0	0	0	0	0	24	55	0	0	79	0	43	0	29	0	72	267
Hourly Total	0	0	333	210	0	543	0	0	0	0	0	0	0	90	272	0	0	362	0	162	0	101	0	263	1168
9:00 AM	0	0	61	50	0	111	0	0	0	0	0	0	0	19	71	0	0	90	0	38	0	40	0	78	279
9:15 AM	0	0	81	44	0	125	0	0	0	0	0	0	0	28	63	0	0	91	0	34	0	29	0	63	279
9:30 AM	0	0	50	54	0	104	0	0	0	0	0	0	0	22	74	0	0	96	0	42	0	27	0	69	269
9:45 AM	0	0	67	43	0	100	0	0	0	0	0	0	0	21	48	0	0	69	0	35	0	26	0	61	230
Hourly Total	0	0	249	191	0	440	0	0	0	0	0	0	0	90	256	0	0	346	0	149	0	122	0	271	1057
10:00 AM	0	0	47	41	0	88	0	0	0	0	0	0	0	23	54	0	0	77	0	42	0	15	0	57	222
10:15 AM	0	0	55	56	0	111	0	0	0	0	0	0	0	20	63	0	0	83	0	38	0	34	0	72	266
10:30 AM	0	0	64	68	0	132	0	0	0	0	0	0	0	22	64	0	1	86	0	42	0	25	1	67	285
10:45 AM	0	0	52	53	0	105	0	0	0	0	0	0	0	23	73	0	0	96	0	36	0	32	0	68	269
Hourly Total	0	0	218	218	0	436	0	0	0	0	0	0	0	88	254	0	1	342	0	158	0	106	1	264	1042
11:00 AM	0	0	56	54	1	110	0	0	0	0	0	0	0	23	70	0	0	93	0	53	0	17	0	70	273
11:15 AM	0	0	63	35	0	98	0	0	0	0	0	0	0	19	69	0	1	88	0	46	0	33	0	79	265
11:30 AM	0	0	46	47	0	93	0	0	0	0	0	0	0	25	86	0	0	111	0	43	0	21	0	64	268
11:45 AM	0	0	49	57	0	106	0	0	0	0	0	0	0	29	78	0	0	107	0	43	0	30	0	73	286
Hourly Total	0	0	214	193	1	407	0	0	0	0	0	0	0	96	303	0	1	399	0	185	0	101	0	286	1092
12:00 PM	0	0	54	50	0	104	0	0	0	0	0	0	0	18	98	0	0	116	0	42	0	20	0	62	282
12:15 PM	0	0	67	49	0	116	0	0	0	0	0	0	0	28	71	0	0	99	0	46	0	33	0	79	294
12:30 PM	0	0	58	61	1	117	0	0	0	0	0	0	0	25	67	0	0	92	0	42	0	32	0	74	283
12:45 PM	0	0	58	60	0	118	0	0	0	0	0	0	0	29	66	0	0	95	0	49	0	46	0	95	308
Hourly Total	0	0	235	220	1	455	0	0	0	0	0	0	0	100	302	0	0	402	0	179	0	131	0	310	1167
1:00 PM	0	0	56	62	0	118	0	0	0	0	0	0	0	29	64	0	0	93	0	53	0	25	0	78	289
1:15 PM	0	0	58	66	0	124	0	0	0	0	0	0	0	28	76	0	0	104	1	37	0	27	0	65	293
1:30 PM	0	0	59	64	0	123	0	0	0	0	0	0	0	25	76	0	0	101	0	52	0	25	0	77	301
1:45 PM	0	0	57	57	0	114	0	0	0	0	0	0	0	23	81	0	0	104	0	48	0	34	0	82	300
Hourly Total	0	0	230	249	0	479	0	0	0	0	0	0	0	105	297	0	0	402	1	190	0	111	0	302	1183
2:00 PM	0	0	55	50	0	105	0	0	0	0	0	0	0	35	96	0	0	131	0	45	0	35	0	80	316
2:15 PM	0	0	57	64	0	121	0	0	0	0	0	0	0	25	92	0	2	117	0	51	0	31	0	82	320
2:30 PM	0	0	78	56	0	134	0	0	0	0	0	0	0	28	110	0	0	138	0	61	0	41	0	102	374
2:45 PM	0	0	71	71	0	142	0	0	0	0	0	0	0	27	110	0	0	137	1	47	0	32	0	80	359
Hourly Total	0	0	261	241	0	502	0	0	0	0	0	0	0	115	408	0	2	523	1	204	0	139	0	344	1369
3:00 PM	0	0	55	55	0	110	0	0	0	0	0	0	0	33	129	0	0	162	0	64	0	21	0	85	357
3:15 PM	0	0	90	78	0	168	0	0	0	0	0	0	0	31	128	0	0	159	0	40	0	37	1	77	404
3:30 PM	0	0	72	80	0	152	0	0	0	0	0	0	0	31	145	0	0	176	0	53	0	33	0	86	414
3:45 PM	0	0	95	80	0	175	0	0	0	0	0	0	0	34	153	0	0	187	0	45	0	34	0	79	441
Hourly Total	0	0	312	293	0	605	0	0	0	0	0	0	0	129	555	0	0	684	0	202	0	125	1	327	1616

**CSAH 11 @ 99th Ave.
Coon Rapids Minnesota
Tuesday, April 12, 2022**

Time	Southbound CSAH 11						Westbound 0						Northbound CSAH 11						Eastbound 99th Ave.						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	0	69	94	0	163	0	0	0	0	0	0	0	43	139	0	0	182	0	65	0	41	0	106	451
4:15 PM	0	0	97	86	0	183	0	0	0	0	0	0	0	39	173	0	0	212	0	66	0	40	0	106	501
4:30 PM	0	0	92	88	0	180	0	0	0	0	0	0	0	41	201	0	0	242	0	64	0	32	0	96	518
4:45 PM	0	0	70	86	0	156	0	0	0	0	0	0	0	38	163	0	0	201	0	50	0	38	0	88	445
Hourly Total	0	0	328	364	0	692	0	0	0	0	0	0	0	161	676	0	0	837	0	245	0	151	0	396	1915
5:00 PM	0	0	65	92	0	157	0	0	0	0	0	0	0	37	141	0	0	178	0	74	0	42	0	116	451
5:15 PM	0	0	76	92	0	168	0	0	0	0	0	0	0	45	157	0	0	202	0	58	0	33	0	91	481
5:30 PM	0	0	74	75	0	149	0	0	0	0	0	0	0	34	142	0	0	176	0	50	0	40	0	90	415
5:45 PM	0	0	68	73	0	141	0	0	0	0	0	0	0	23	105	0	0	128	0	50	0	24	0	74	343
Hourly Total	0	0	283	332	0	615	0	0	0	0	0	0	0	139	545	0	0	684	0	232	0	139	0	371	1670
6:00 PM	0	0	61	60	0	121	0	0	0	0	0	0	0	24	96	0	0	120	0	44	0	26	0	70	311
6:15 PM	0	0	62	54	0	116	0	0	0	0	0	0	0	30	80	0	0	110	0	50	0	37	0	87	313
6:30 PM	0	0	40	68	0	98	0	0	0	0	0	0	0	20	75	0	0	95	0	37	0	35	0	72	265
6:45 PM	0	0	37	49	0	86	0	0	0	0	0	0	0	27	60	0	0	87	0	36	0	25	0	61	234
Hourly Total	0	0	200	221	0	421	0	0	0	0	0	0	0	101	311	0	0	412	0	167	0	123	0	290	1123
7:00 PM	0	0	46	58	0	104	0	0	0	0	0	0	0	15	57	0	1	72	0	36	0	27	0	63	239
7:15 PM	0	0	32	52	0	84	0	0	0	0	0	0	0	23	50	0	0	73	0	37	0	23	0	60	217
7:30 PM	0	0	40	25	0	65	0	0	0	0	0	0	0	16	58	0	0	74	0	29	0	13	0	42	181
7:45 PM	0	0	31	27	0	58	0	0	0	0	0	0	0	23	50	0	0	73	0	54	0	20	0	74	205
Hourly Total	0	0	149	162	0	311	0	0	0	0	0	0	0	77	215	0	1	292	0	156	0	83	0	239	842
8:00 PM	0	0	32	31	0	63	0	0	0	0	0	0	0	14	46	0	0	60	0	31	0	23	0	54	177
8:15 PM	0	0	32	30	0	62	0	0	0	0	0	0	0	7	48	0	0	55	0	20	0	20	0	40	157
8:30 PM	0	0	20	29	0	49	0	0	0	0	0	0	0	12	37	0	0	49	0	13	0	12	0	25	123
8:45 PM	0	0	19	22	0	41	0	0	0	0	0	0	0	10	37	0	0	47	0	30	0	16	0	46	134
Hourly Total	0	0	103	112	0	215	0	0	0	0	0	0	0	43	168	0	0	211	0	94	0	71	0	165	591
9:00 PM	0	0	26	20	0	46	0	0	0	0	0	0	0	7	35	0	0	42	0	16	0	9	0	25	113
9:15 PM	0	0	17	15	0	32	0	0	0	0	0	0	0	4	25	0	1	29	0	21	0	16	0	37	98
9:30 PM	0	0	14	24	0	38	0	0	0	0	0	0	0	6	33	0	0	39	0	45	0	27	0	72	149
9:45 PM	0	0	16	19	0	35	0	0	0	0	0	0	0	3	18	0	0	21	0	17	0	11	0	28	84
Hourly Total	0	0	73	78	0	151	0	0	0	0	0	0	0	20	111	0	1	131	0	99	0	63	0	162	444
10:00 PM	0	0	19	20	0	39	0	0	0	0	0	0	0	6	29	0	0	35	0	21	0	13	0	34	108
10:15 PM	0	0	13	19	0	32	0	0	0	0	0	0	0	2	23	0	0	25	0	16	0	11	0	27	84
10:30 PM	0	0	10	17	0	27	0	0	0	0	0	0	0	6	22	0	0	28	0	14	0	7	0	21	76
10:45 PM	0	0	12	10	0	22	0	0	0	0	0	0	0	3	16	0	0	19	0	5	0	3	0	8	49
Hourly Total	0	0	54	66	0	120	0	0	0	0	0	0	0	17	90	0	0	107	0	56	0	34	0	90	317
11:00 PM	0	0	12	13	0	25	0	0	0	0	0	0	0	3	23	0	0	26	0	5	0	2	0	7	58
11:15 PM	0	0	7	8	0	15	0	0	0	0	0	0	0	2	10	0	0	12	0	8	0	1	0	9	36
11:30 PM	0	0	4	3	0	7	0	0	0	0	0	0	0	2	11	0	0	13	0	5	0	3	0	8	28
11:45 PM	0	0	8	8	1	16	0	0	0	0	0	0	0	2	9	0	0	11	0	11	0	0	0	11	38
Hourly Total	0	0	31	32	1	63	0	0	0	0	0	0	0	9	53	0	0	62	0	29	0	6	0	35	160
DAILY TOTAL	0	0	4296	3613	5	7909	0	0	0	0	0	0	0	1549	5388	0	9	6937	3	3029	0	1941	2	4973	19819
Cars	0	0	4182	3495	2	7677	0	0	0	0	0	0	0	1498	5235	0	7	6733	3	2920	0	1877	2	4800	19210
Heavy Vehicles	0	0	114	118	3	232	0	0	0	0	0	0	0	51	153	0	2	204	0	109	0	64	0	173	609
Heavy Vehicle %	0.00%	0.00%	2.65%	3.27%	60.00%	2.93%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.29%	2.84%	0.00%	22.22%	2.94%	0.00%	3.60%	0.00%	3.30%	0.00%	3.48%	3.07%

**CSAH 11 @ 99th Ave.
Coon Rapids Minnesota
Tuesday, April 12, 2022**

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	0	96	49	0	145	0	0	0	0	0	0	0	13	49	0	2	62	0	54	0	27	0	81	288
7:15 AM	0	0	108	56	0	164	0	0	0	0	0	0	0	17	64	0	0	81	1	54	0	36	0	91	336
7:30 AM	0	0	103	47	0	150	0	0	0	0	0	0	0	18	63	0	0	81	0	59	0	42	0	101	332
7:45 AM	0	0	119	57	0	176	0	0	0	0	0	0	0	21	68	0	1	89	0	62	0	39	0	101	366
Peak Hour Total	0	0	426	209	0	635	0	0	0	0	0	0	0	69	244	0	3	313	1	229	0	144	0	374	1322
PHF	0.000	0.000	0.895	0.917	0.000	0.902	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.821	0.897	0.000	0.375	0.879	0.250	0.923	0.000	0.857	0.000	0.926	0.903

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	0	0	69	94	0	163	0	0	0	0	0	0	0	43	139	0	0	182	0	65	0	41	0	106	451
4:15 PM	0	0	97	86	0	183	0	0	0	0	0	0	0	39	173	0	0	212	0	66	0	40	0	106	501
4:30 PM	0	0	92	88	0	180	0	0	0	0	0	0	0	41	201	0	0	242	0	64	0	32	0	96	518
4:45 PM	0	0	70	86	0	156	0	0	0	0	0	0	0	38	163	0	0	201	0	50	0	38	0	88	445
Peak Hour Total	0	0	328	354	0	682	0	0	0	0	0	0	0	161	676	0	0	837	0	245	0	151	0	396	1915
PHF	0.000	0.000	0.845	0.941	0.000	0.932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.936	0.841	0.000	0.000	0.865	0.000	0.928	0.000	0.921	0.000	0.934	0.924

Total Vehicles On Leg		16326	
Vehicles Entering Intersection		7909	Vehicles Exiting Intersection 8417
Southbound			
Cars	3495	4182	0
Heavy	118	114	0
Total	3613	4296	0



Total Vehicles on Leg 10138	Vehicles Entering Intersection 4973	Eastbound	Cars	Heavy	Total
			2	0	2
			3	0	3
	2920		109	3029	
	Vehicles Exiting Intersection 5165		0	0	0
			1877	64	1941



Daily Volumes

Cars	Heavy	Total	Westbound	Vehicles Entering Intersection	Total Vehicles on Leg 0
0	0	0		0	
0	0	0		0	
0	0	0		0	
0	0	0		0	



Cars	7	0	1498	5235	0	
Heavy	2	0	51	153	0	
Total	9	0	1549	5388	0	
Northbound						
Vehicles Entering Intersection			6937	Vehicles Exiting Intersection 6237		
Total Vehicles On Leg			13174			

Heavy Vehicles

Date	Time	Southbound					Westbound					Northbound					Eastbound				
		U Turns	Left Turns	Straight Through	Right Turns	Bicycles In Crosswalk	U Turns	Left Turns	Straight Through	Right Turns	Bicycles In Crosswalk	U Turns	Left Turns	Straight Through	Right Turns	Bicycles In Crosswalk	U Turns	Left Turns	Straight Through	Right Turns	Bicycles In Crosswalk
04/12/2022	0:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0:15	0	0	1	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
	0:45	0	0	0	1	0	0	0	0	0	0	0	0	1	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
	1:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:30	0	0	1	1	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	0	0	0	1	0	0	0	1	0	0	0
	2:00	0	0	1	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	1	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
	2:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	3:00	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0
	3:15	0	0	0	0	0	0	0	0	0	0	0	0	1	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
	3:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	4:00	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0
	4:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
	4:30	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
	4:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0
	5:00	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0
	5:15	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
	5:30	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
	5:45	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
	6:00	0	0	1	0	0	0	0	0	0	0	0	1	2	0	0	0	2	0	0	0
	6:15	0	0	0	3	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	0
	6:30	0	0	0	3	1	0	0	0	0	0	0	0	3	0	0	0	2	0	5	0
	6:45	0	0	3	3	0	0	0	0	0	0	0	3	2	0	0	0	4	0	2	0
	7:00	0	0	3	3	0	0	0	0	0	0	0	0	5	0	0	0	8	0	4	0
	7:15	0	0	1	3	0	0	0	0	0	0	0	1	4	0	0	0	4	0	2	0
	7:30	0	0	2	4	0	0	0	0	0	0	0	0	2	0	0	0	5	0	7	0
	7:45	0	0	3	4	0	0	0	0	0	0	0	0	3	0	0	0	6	0	5	0
	8:00	0	0	4	1	0	0	0	0	0	0	0	1	4	0	0	0	3	0	0	0
	8:15	0	0	2	2	0	0	0	0	0	0	0	0	3	0	0	0	1	0	1	0
	8:30	0	0	8	2	0	0	0	0	0	0	0	1	6	0	0	0	1	0	3	0
	8:45	0	0	0	3	0	0	0	0	0	0	0	5	4	0	0	0	1	0	0	0
	9:00	0	0	4	0	0	0	0	0	0	0	0	1	5	0	0	0	2	0	3	0
	9:15	0	0	2	1	0	0	0	0	0	0	0	2	4	0	0	0	1	0	2	0
	9:30	0	0	1	2	0	0	0	0	0	0	0	1	2	0	0	0	2	0	2	0
	9:45	0	0	1	2	0	0	0	0	0	0	0	1	2	0	0	0	1	0	2	0
	10:00	0	0	3	2	0	0	0	0	0	0	0	2	2	0	0	0	2	0	1	0
	10:15	0	0	4	4	0	0	0	0	0	0	0	1	3	0	0	0	1	0	1	0
	10:30	0	0	6	1	0	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0
	10:45	0	0	3	0	0	0	0	0	0	0	0	1	4	0	0	0	1	0	1	0
	11:00	0	0	3	0	1	0	0	0	0	0	0	1	8	0	0	0	2	0	0	0
	11:15	0	0	3	2	0	0	0	0	0	0	0	0	2	0	1	0	3	0	1	0
	11:30	0	0	6	2	0	0	0	0	0	0	0	3	4	0	0	0	2	0	1	0
	11:45	0	0	3	1	0	0	0	0	0	0	0	0	2	0	0	0	3	0	1	0

ANOKA COUNTY HIGHWAY
PC-WARRANTS
TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2210
 Study Date : 04/12/2022

Signal Warrants - Summary

Major Street Approaches

Northbound: CSAH 11
 Number of Lanes : 2+

Total Approach Volume: 6,937

Southbound: CSAH 11
 Number of Lanes : 2+

Total Approach Volume: 7,909

Minor Street Approaches

Eastbound: 99th Ave.
 Number of Lanes : 1

Total Approach Volume: 4,973

Warrant Summary (Urban Values Apply)

- Warrant 1 - Eight Hour Vehicular Volumes.....**Satisfied**
 - Warrant 1A - Minimum Vehicular Volume.....**Satisfied**
 Required volumes reached for 14 hours, 8 are needed
 - Warrant 1B - Interruption of Continuous Traffic.....**Not Satisfied**
 Required volumes reached for 7 hours, 8 are needed
 - Warrant 1C - Combination of Warrants.....**Satisfied**
 Required 1A volumes reached for 14 hours, 8 are needed
 Required 1B volumes reached for 12 hours, 8 are needed

- Warrant 2 - Four Hour Volumes.....**Satisfied**
 Number of hours (13) volumes exceed minimum >= minimum required (4).

- Warrant 3 - Peak Hour.....**Satisfied**
 - Warrant 3A - Peak Hour Delay.....**Satisfied**
 Number of one hour periods (57) 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 2210

Study Date : 04/12/2022

Warrant 1A - Minimum Volumes

Description

Intended for sites where the volume of intersecting traffic is the principal reason for consideration of a signal installation.

Summary

14 one hour periods meet minimums.
Warrant IS met.

Site Data Required

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

Volume Requirements

Veh/Hr Major = **600**

Veh/Hr Minor = **150**

Time	Major Road CSAH 11				Total	Minor Road 99th Ave.		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
16:00 - 17:00	837	+	682	=	1519	396	0	Yes
17:00 - 18:00	684	+	615	=	1299	371	0	Yes
15:00 - 16:00	684	+	605	=	1289	327	0	Yes
14:00 - 15:00	523	+	502	=	1025	344	0	Yes
07:00 - 08:00	313	+	635	=	948	374	0	Yes
08:00 - 09:00	362	+	543	=	905	263	0	Yes
13:00 - 14:00	402	+	479	=	881	302	0	Yes
12:00 - 13:00	402	+	455	=	857	310	0	Yes
18:00 - 19:00	412	+	421	=	833	290	0	Yes
11:00 - 12:00	399	+	407	=	806	286	0	Yes
09:00 - 10:00	346	+	440	=	786	271	0	Yes
10:00 - 11:00	342	+	436	=	778	264	0	Yes
06:00 - 07:00	200	+	434	=	634	265	0	Yes
19:00 - 20:00	292	+	311	=	603	239	0	Yes
05:45 - 06:45	172	+	340	=	512	222	0	No
05:30 - 06:30	147	+	309	=	456	178	0	No
20:00 - 21:00	211	+	215	=	426	165	0	No
05:15 - 06:15	130	+	265	=	395	147	0	No
20:15 - 21:15	193	+	198	=	391	136	0	No
20:30 - 21:30	167	+	168	=	335	133	0	No
05:00 - 06:00	93	+	225	=	318	130	0	No
20:45 - 21:45	157	+	157	=	314	180	0	No
21:00 - 22:00	131	+	151	=	282	162	0	No
21:15 - 22:15	124	+	144	=	268	171	0	No
21:30 - 22:30	120		144		264	161	0	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2210

Study Date : 04/12/2022

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 = **False**
 Number of Major Lanes = **2 or more**
 Number of Minor Lanes = **1**

Volume Requirements

Veh/Hr Major = 900

Veh/Hr Minor = 75

Time	Major Road CSAH 11				Total	Minor Road 99th Ave.		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
16:15 - 17:15	833	+	676	=	1509	406	0	Yes
15:15 - 16:15	704	+	658	=	1362	348	0	Yes
17:15 - 18:15	626	+	579	=	1205	325	0	Yes
14:15 - 15:15	554	+	507	=	1061	349	0	Yes
07:45 - 08:45	372	+	603	=	975	292	0	Yes
13:15 - 14:15	440	+	466	=	906	304	0	Yes
06:45 - 07:45	285	+	615	=	900	355	0	Yes
13:00 - 14:00	402	+	479	=	881	302	0	No
12:45 - 13:45	393	+	483	=	876	315	0	No
12:30 - 13:30	384	+	477	=	861	312	0	No
11:45 - 12:45	414	+	443	=	857	288	0	No
12:00 - 13:00	402	+	455	=	857	310	0	No
11:30 - 12:30	433	+	419	=	852	278	0	No
12:15 - 13:15	379	+	469	=	848	326	0	No
06:30 - 07:30	253	+	579	=	832	345	0	No
11:15 - 12:15	422	+	401	=	823	278	0	No
10:15 - 11:15	358	+	458	=	816	277	0	No
08:45 - 09:45	356	+	456	=	812	282	0	No
10:30 - 11:30	363	+	445	=	808	284	0	No
11:00 - 12:00	399	+	407	=	806	286	0	No
10:45 - 11:45	388	+	406	=	794	281	0	No
09:00 - 10:00	346	+	440	=	786	271	0	No
10:00 - 11:00	342	+	436	=	778	264	0	No
18:15 - 19:15	364	+	404	=	768	283	0	No
09:15 - 10:15	333		417		750	250	0	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2210

Study Date : 04/12/2022

Warrant 1C Combination of Warrants

Description

Intended for sites where the traffic volumes don't meet individual warrants but where Warrants 1A and 1B are both met to 80% of their stated values.

Summary

14 hours meet 1A minimums.
12 hours meet 1B minimums.
Warrant IS met.

Site Data Required

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

Volume Requirements

Warrant 1A 1B
Veh/Hr Major = **480 720**

Veh/Hr Minor = **120 60**

Major Road CSAH 11

Minor Road 99th Ave.

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1A?
15:45 - 16:45	823	+	701	=	1524	387	0	Yes
16:45 - 17:45	757	+	630	=	1387	385	0	Yes
14:45 - 15:45	634	+	572	=	1206	328	0	Yes
07:45 - 08:45	372	+	603	=	975	292	0	Yes
13:45 - 14:45	490	+	474	=	964	346	0	Yes
17:45 - 18:45	453	+	476	=	929	303	0	Yes
06:45 - 07:45	285	+	615	=	900	355	0	Yes
12:45 - 13:45	393	+	483	=	876	315	0	Yes
11:45 - 12:45	414	+	443	=	857	288	0	Yes
08:45 - 09:45	356	+	456	=	812	282	0	Yes
10:45 - 11:45	388	+	406	=	794	281	0	Yes
09:45 - 10:45	315		431		746	257	0	Yes

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1B?
16:30 - 17:30	823	+	661	=	1484	391	0	Yes
15:30 - 16:30	757	+	673	=	1430	377	0	Yes
14:30 - 15:30	596	+	554	=	1150	344	0	Yes
17:30 - 18:30	534	+	527	=	1061	321	0	Yes
07:30 - 08:30	346	+	596	=	942	330	0	Yes
13:30 - 14:30	453	+	463	=	916	321	0	Yes
08:30 - 09:30	367	+	509	=	876	276	0	Yes
12:30 - 13:30	384	+	477	=	861	312	0	Yes
11:30 - 12:30	433	+	419	=	852	278	0	Yes
06:30 - 07:30	253	+	579	=	832	345	0	Yes
10:30 - 11:30	363	+	445	=	808	284	0	Yes
09:30 - 10:30	325		403		728	259	0	Yes

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2210

Study Date : 04/12/2022

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.

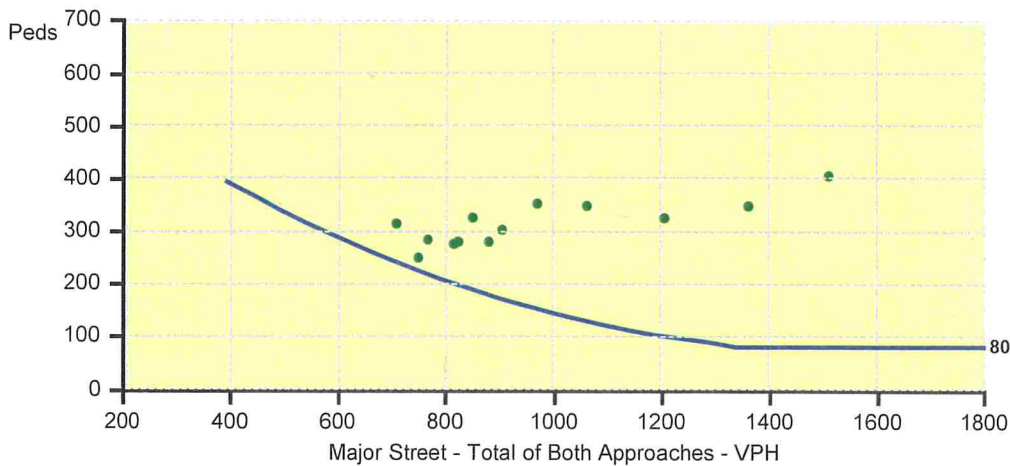
Summary

13 one hour periods meet minimums.
Warrant IS met.

Site Data Required

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

Time	Major Road CSAH 11				Total	Minor Road 99th Ave.		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
16:15 - 17:15	833	+	676	=	1509	406	0	Yes
15:15 - 16:15	704	+	658	=	1362	348	0	Yes
17:15 - 18:15	626	+	579	=	1205	325	0	Yes
14:15 - 15:15	554	+	507	=	1061	349	0	Yes
07:15 - 08:15	346	+	623	=	969	353	0	Yes
13:15 - 14:15	440	+	466	=	906	304	0	Yes
08:15 - 09:15	357	+	521	=	878	281	0	Yes
12:15 - 13:15	379	+	469	=	848	326	0	Yes
11:15 - 12:15	422	+	401	=	823	278	0	Yes
10:15 - 11:15	358	+	458	=	816	277	0	Yes
18:15 - 19:15	364	+	404	=	768	283	0	Yes



ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2210

Study Date : 04/12/2022

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

22 one hour periods meet minimums.
Warrant IS met.

Site Data Required

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

Time	Major Road CSAH 11				=	Total	Minor Road 99th Ave.		Met?
	Major NB	+	Major SB	Minor EB			Minor WB		
15:45 - 16:45	823	+	701	=	1524	387	0	Yes	
16:00 - 17:00	837	+	682	=	1519	396	0	Yes	
16:15 - 17:15	833	+	676	=	1509	406	0	Yes	
16:30 - 17:30	823	+	661	=	1484	391	0	Yes	
15:30 - 16:30	757	+	673	=	1430	377	0	Yes	
16:45 - 17:45	757	+	630	=	1387	385	0	Yes	
15:15 - 16:15	704	+	658	=	1362	348	0	Yes	
17:00 - 18:00	684	+	615	=	1299	371	0	Yes	
15:00 - 16:00	684	+	605	=	1289	327	0	Yes	
14:45 - 15:45	634	+	572	=	1206	328	0	Yes	
17:15 - 18:15	626	+	579	=	1205	325	0	Yes	

