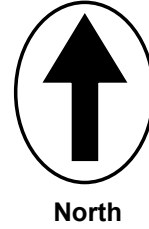


Date : 10/07/21

Count Number : TMC 2117

Location : CSAH 51 (University Ave.)  
@ 117th Ave.

Collection Period : 24 Hours



117th Ave.

117th Ave.

CSAH 51

CSAH 51

13355

#2

6165			
E	F	G	H
90	5465	603	7

7190

842

#1

525	D	0
	C	226
	B	214
	A	85

317

I	744	2597
J	90	
K	1762	
L	1	

#3

4716

2119

P	O	N	M
41	137	6213	1301
7692			

#4

7353

15045

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

Anoka County Highway Department

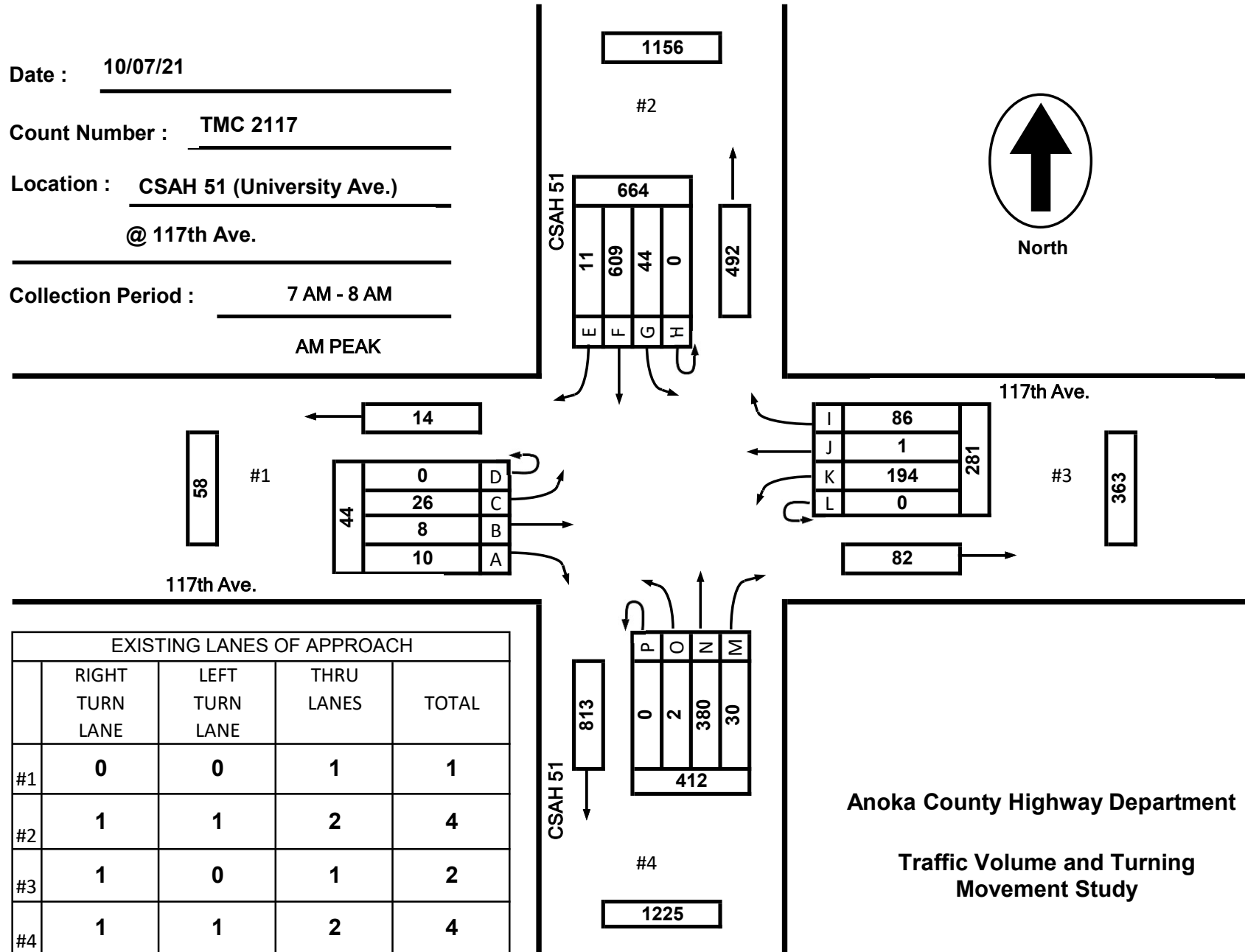
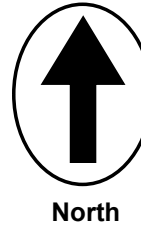
Traffic Volume and Turning Movement Study

Date : 10/07/21

Count Number : TMC 2117

Location : CSAH 51 (University Ave.)  
@ 117th Ave.

Collection Period : 7 AM - 8 AM  
AM PEAK



EXISTING LANES OF APPROACH

	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	TOTAL
#1	0	0	1	1
#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

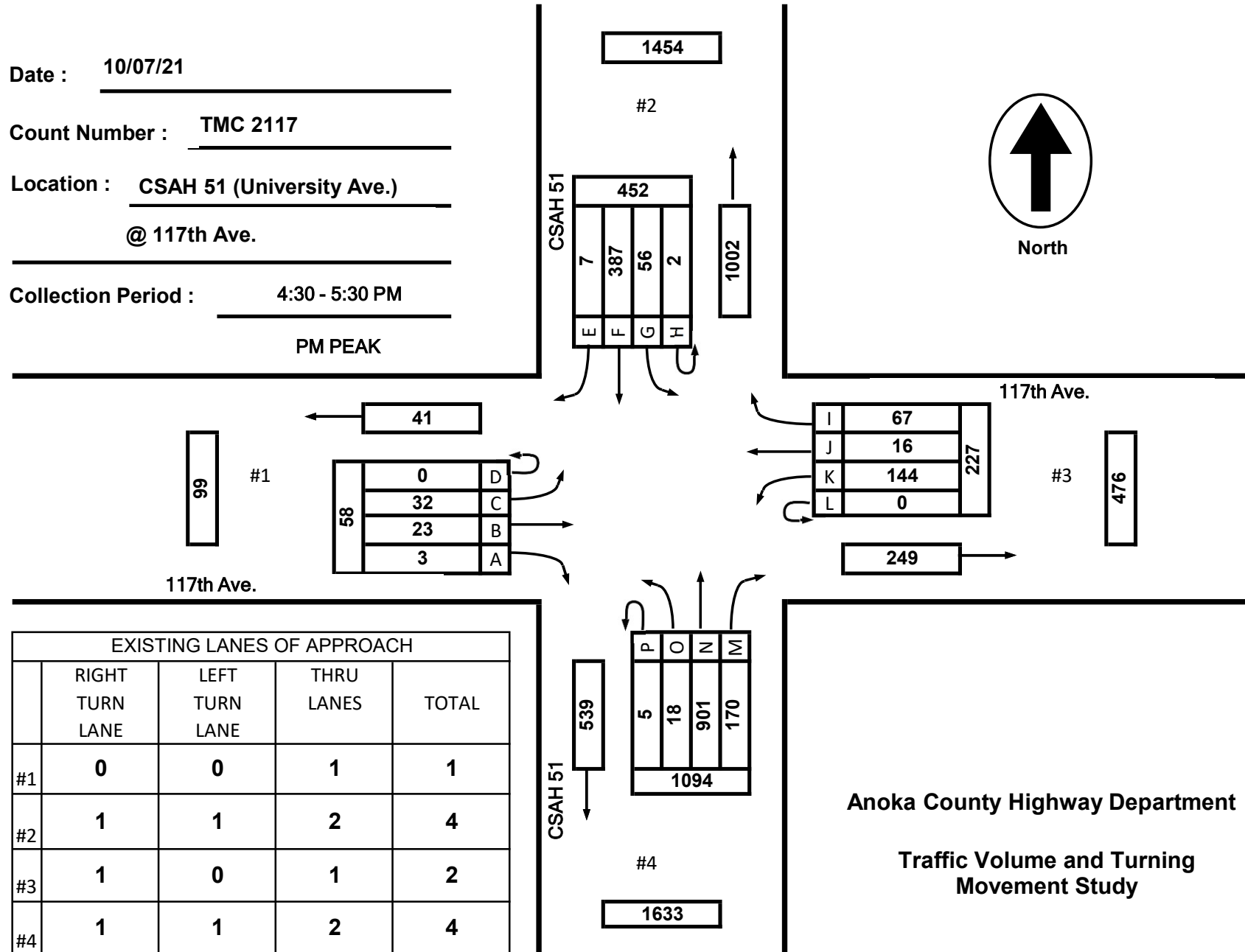
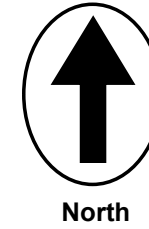
Date : 10/07/21

Count Number : TMC 2117

Location : CSAH 51 (University Ave.)  
@ 117th Ave.

Collection Period : 4:30 - 5:30 PM

PM PEAK



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

**CSAH 51 @ 117th Ave  
Blaine MN  
Thursday, October 7, 2021**

Time	Southbound CSAH 51						Westbound 117th Ave.						Northbound CSAH 51						Eastbound 117th 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	5	1	0	6	0	2	0	0	0	2	0	0	9	5	0	14	0	0	0	1	0	1	23
12:15 AM	0	1	5	0	0	6	0	1	0	0	0	1	0	0	12	3	0	15	0	0	0	0	0	0	22
12:30 AM	0	0	7	0	0	7	0	1	0	0	0	1	0	1	10	1	0	12	0	0	0	0	0	0	20
12:45 AM	0	0	2	0	0	2	0	1	0	0	0	1	0	0	5	1	0	6	0	0	0	0	0	0	9
Hourly Total	0	1	19	1	0	21	0	5	0	0	0	5	0	1	36	10	0	47	0	0	0	1	0	1	74
1:00 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	3	2	0	5	0	0	0	0	0	0	6
1:15 AM	0	1	2	0	0	3	0	1	0	1	0	2	1	1	6	3	0	11	0	0	0	0	0	0	16
1:30 AM	0	0	4	0	0	4	0	2	0	0	0	2	0	0	1	0	0	1	0	0	0	0	0	0	7
1:45 AM	0	1	3	0	0	4	0	1	0	0	0	1	0	0	2	0	0	2	0	0	0	0	0	0	7
Hourly Total	0	2	10	0	0	12	0	4	0	1	0	5	1	1	12	5	0	19	0	0	0	0	0	0	36
2:00 AM	0	0	4	0	0	4	0	0	0	0	0	0	1	0	5	2	0	8	0	0	0	0	0	0	12
2:15 AM	0	1	5	0	0	6	0	3	0	0	0	3	0	0	4	0	0	4	0	0	0	0	0	0	13
2:30 AM	0	0	2	0	0	2	0	1	0	1	0	2	0	0	10	1	0	11	0	0	0	0	0	0	15
2:45 AM	0	0	5	0	0	5	0	4	0	0	0	4	0	0	4	0	0	4	0	0	0	0	0	0	13
Hourly Total	0	1	16	0	0	17	0	8	0	1	0	9	1	0	23	3	0	27	0	0	0	0	0	0	53
3:00 AM	0	0	1	0	0	1	0	1	0	0	0	1	0	0	3	0	0	3	0	0	0	0	0	0	5
3:15 AM	0	1	3	0	0	4	0	3	0	0	0	3	0	0	4	1	0	5	0	0	0	0	0	0	12
3:30 AM	0	0	6	0	0	6	0	2	0	1	0	3	0	0	1	2	0	3	0	0	0	0	0	0	12
3:45 AM	0	0	7	0	0	7	0	3	0	1	0	4	0	1	2	1	0	4	0	0	0	0	0	0	15
Hourly Total	0	1	17	0	0	18	0	9	0	2	0	11	0	1	10	4	0	15	0	0	0	0	0	0	44
4:00 AM	0	0	8	0	0	8	0	2	0	1	0	3	0	0	3	0	0	3	0	0	0	1	0	1	15
4:15 AM	0	1	13	0	0	14	0	10	1	1	0	12	0	0	4	1	0	5	0	0	0	0	0	0	31
4:30 AM	0	1	20	1	0	22	0	8	0	0	0	8	0	0	10	0	0	10	0	0	1	0	0	1	41
4:45 AM	0	0	24	0	0	24	0	7	0	1	0	8	0	0	7	2	0	9	0	0	0	0	0	0	41
Hourly Total	0	2	65	1	0	68	0	27	1	3	0	31	0	0	24	3	0	27	0	0	1	1	0	2	128
5:00 AM	0	0	27	0	0	27	0	14	0	6	0	20	0	1	3	0	0	4	0	0	0	0	0	0	51
5:15 AM	0	2	43	0	0	45	0	21	0	2	0	23	0	0	9	0	0	9	0	0	0	1	0	1	78
5:30 AM	0	0	48	0	0	48	0	24	0	3	0	27	1	0	14	4	0	19	0	0	0	0	0	0	94
5:45 AM	0	0	50	0	0	50	0	29	0	4	0	33	0	0	13	1	0	14	0	0	0	2	0	2	99
Hourly Total	0	2	168	0	0	170	0	88	0	15	0	103	1	1	39	5	0	46	0	0	0	3	0	3	322
6:00 AM	0	2	44	0	0	46	0	40	1	4	0	45	0	0	14	0	0	14	0	1	1	0	0	2	107
6:15 AM	0	2	70	1	0	73	0	35	0	4	0	39	0	0	24	6	0	30	0	1	0	0	0	1	143
6:30 AM	0	3	92	0	0	95	0	44	0	9	0	53	0	0	31	5	0	36	0	0	0	3	0	3	187
6:45 AM	0	0	94	1	0	95	0	37	2	12	0	51	0	0	53	13	0	66	0	1	1	2	0	4	216
Hourly Total	0	7	300	2	0	309	0	156	3	29	0	188	0	0	122	24	0	146	0	3	2	5	0	10	653
7:00 AM	0	9	115	1	0	125	0	48	0	22	0	70	0	1	94	5	0	100	0	3	0	6	0	9	304
7:15 AM	0	10	158	4	0	172	0	49	0	31	0	80	0	0	117	9	0	126	0	10	1	0	0	11	389
7:30 AM	0	18	168	5	0	191	0	50	0	25	0	75	0	1	104	6	0	111	0	10	3	3	0	16	393
7:45 AM	0	7	168	1	0	176	0	47	1	8	1	56	0	0	65	10	0	75	0	3	4	1	0	8	315
Hourly Total	0	44	609	11	0	664	0	194	1	86	1	281	0	2	380	30	0	412	0	26	8	10	0	44	1401

**CSAH 51 @ 117th Ave  
Blaine MN  
Thursday, October 7, 2021**

Time	Southbound CSAH 51						Westbound 117th Ave.						Northbound CSAH 51						Eastbound 117th 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	3	138	0	0	141	0	37	0	8	0	45	1	0	60	8	0	69	0	13	6	1	0	20	275
8:15 AM	0	8	88	2	0	98	0	35	0	9	0	44	1	2	50	17	0	70	0	12	8	2	0	22	234
8:30 AM	0	7	63	0	0	70	0	41	0	12	0	53	1	1	49	12	0	63	0	3	2	0	0	5	191
8:45 AM	0	3	72	0	0	75	0	23	2	5	0	30	0	1	41	12	0	54	0	1	0	0	0	1	160
Hourly Total	0	21	361	2	0	384	0	136	2	34	0	172	3	4	200	49	0	256	0	29	16	3	0	48	860
9:00 AM	0	4	78	1	0	83	0	26	1	3	0	30	0	0	49	10	0	59	0	1	1	1	1	3	175
9:15 AM	0	8	74	0	0	82	0	17	0	8	0	25	0	0	61	14	0	75	0	3	2	2	0	7	189
9:30 AM	0	11	82	1	0	94	0	21	1	12	1	34	0	0	47	11	0	58	0	3	2	0	0	5	191
9:45 AM	0	8	61	1	0	70	0	15	0	16	0	31	1	1	61	7	0	70	0	1	1	1	0	3	174
Hourly Total	0	31	295	3	0	329	0	79	2	39	1	120	1	1	218	42	0	262	0	8	6	4	1	18	729
10:00 AM	1	6	42	3	2	52	0	21	0	5	0	26	1	1	53	17	0	72	0	1	1	3	0	5	155
10:15 AM	0	6	65	1	0	72	0	25	1	6	0	32	1	1	58	8	0	68	0	1	0	0	0	1	173
10:30 AM	0	4	44	0	0	48	0	27	0	5	0	32	0	0	45	11	0	56	0	3	3	1	0	7	143
10:45 AM	1	5	53	0	0	59	0	13	1	9	0	23	3	3	57	19	0	82	0	2	2	2	0	6	170
Hourly Total	2	21	204	4	2	231	0	86	2	25	0	113	5	5	213	55	0	278	0	7	6	6	0	19	641
11:00 AM	0	7	63	0	0	70	0	23	0	11	0	34	0	1	57	25	0	83	0	0	1	0	0	1	188
11:15 AM	1	5	58	0	0	64	0	10	2	10	0	22	1	0	61	13	0	75	0	0	2	0	0	2	163
11:30 AM	0	10	52	0	0	62	0	16	1	5	0	22	1	0	62	9	0	72	0	0	1	0	0	1	157
11:45 AM	0	7	53	0	0	60	0	20	1	18	0	39	0	1	52	13	0	66	0	0	5	0	0	5	170
Hourly Total	1	29	226	0	0	256	0	69	4	44	0	117	2	2	232	60	0	296	0	0	9	0	0	9	678
12:00 PM	1	10	47	0	0	58	0	18	5	11	0	34	0	2	71	14	0	87	0	0	0	2	0	2	181
12:15 PM	0	14	63	0	0	77	0	22	1	10	0	33	0	1	59	15	0	75	0	2	0	0	0	2	187
12:30 PM	0	10	53	0	0	63	0	16	0	5	0	21	0	2	54	17	0	73	0	0	0	0	0	0	157
12:45 PM	0	12	52	0	0	64	0	23	0	9	0	32	0	0	87	24	0	111	0	1	0	1	0	2	209
Hourly Total	1	46	215	0	0	262	0	79	6	35	0	120	0	5	271	70	0	346	0	3	0	3	0	6	734
1:00 PM	0	6	66	0	0	72	0	21	0	11	0	32	0	0	66	14	0	80	0	0	2	0	0	2	186
1:15 PM	0	10	79	0	0	89	0	20	3	11	0	34	0	2	104	15	0	121	0	0	1	1	0	2	246
1:30 PM	0	18	112	2	0	132	0	21	2	13	1	36	0	3	97	17	0	117	0	0	6	2	0	8	293
1:45 PM	0	29	143	4	0	176	0	24	2	10	11	36	0	1	95	18	0	114	0	3	4	1	2	8	334
Hourly Total	0	63	400	6	0	469	0	86	7	45	12	138	0	6	362	64	0	432	0	3	13	4	2	20	1059
2:00 PM	0	13	75	2	0	90	0	27	2	8	0	37	0	2	103	25	0	130	0	2	5	1	0	8	265
2:15 PM	0	14	86	2	0	102	0	20	0	22	0	42	0	2	102	15	0	119	0	3	4	0	1	7	270
2:30 PM	0	8	123	1	0	132	0	17	1	17	0	35	0	4	107	24	0	135	0	1	2	2	0	5	307
2:45 PM	0	13	82	1	0	96	0	25	2	10	0	37	0	4	118	28	0	150	0	5	7	1	0	13	296
Hourly Total	0	48	366	6	0	420	0	89	5	57	0	151	0	12	430	92	0	534	0	11	18	4	1	33	1138
3:00 PM	0	21	73	0	0	94	0	21	1	12	0	34	1	5	122	28	0	156	0	10	8	1	0	19	303
3:15 PM	0	14	94	3	0	111	0	36	3	9	0	48	0	3	169	36	0	208	0	12	7	0	1	19	386
3:30 PM	0	16	103	2	0	121	0	34	2	21	0	57	4	5	174	47	0	230	0	3	4	4	0	11	419
3:45 PM	1	16	89	1	0	107	0	36	3	6	0	45	1	3	191	41	0	235	0	9	7	2	0	18	406
Hourly Total	1	67	359	6	0	433	0	127	9	48	0	184	6	16	656	152	0	830	0	34	26	7	1	67	1514

**CSAH 51 @ 117th Ave  
Blaine MN  
Thursday, October 7, 2021**

Time	Southbound CSAH 51						Westbound 117th Ave.						Northbound CSAH 51						Eastbound 117th 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	10	94	1	0	105	0	35	3	17	0	55	5	4	183	54	0	246	0	10	6	5	0	21	427
4:15 PM	0	18	88	3	0	109	0	29	1	17	0	47	0	2	222	32	0	256	0	6	5	0	0	11	423
4:30 PM	0	17	93	1	0	111	0	35	7	14	0	56	0	7	261	42	0	310	0	3	8	1	0	12	489
4:45 PM	0	13	96	1	0	110	0	35	2	18	0	55	2	2	216	42	0	262	0	6	6	1	0	13	440
Hourly Total	0	58	371	6	0	435	0	134	13	66	0	213	7	15	882	170	0	1074	0	25	25	7	0	57	1779
5:00 PM	0	6	104	4	0	114	0	31	4	23	0	58	1	4	194	36	0	235	0	14	5	1	0	20	427
5:15 PM	2	20	94	1	0	117	0	43	3	12	0	58	2	5	230	50	0	287	0	9	4	0	0	13	475
5:30 PM	0	11	107	1	0	119	0	32	1	19	0	52	2	3	160	45	0	210	0	4	5	2	0	11	392
5:45 PM	0	8	119	2	0	129	1	30	3	17	0	51	2	3	163	31	0	199	0	3	4	3	0	10	389
Hourly Total	2	45	424	8	0	479	1	136	11	71	0	219	7	15	747	162	0	931	0	30	18	6	0	54	1683
6:00 PM	0	9	106	5	0	120	0	21	1	10	0	32	1	6	112	29	0	148	0	1	4	3	0	8	308
6:15 PM	0	15	81	1	2	97	0	25	4	11	0	40	1	1	105	24	0	131	0	3	4	4	0	11	279
6:30 PM	0	10	81	3	0	94	0	21	2	16	0	39	2	1	93	17	0	113	0	3	5	1	0	9	255
6:45 PM	0	9	90	3	0	102	0	23	2	15	0	40	0	6	124	27	0	157	0	3	5	2	0	10	309
Hourly Total	0	43	358	12	2	413	0	90	9	52	0	151	4	14	434	97	0	549	0	10	18	10	0	38	1151
7:00 PM	0	7	73	5	0	85	0	18	4	10	0	32	0	3	97	18	0	118	0	0	3	2	0	5	240
7:15 PM	0	10	54	1	0	65	0	12	4	13	0	29	0	4	87	14	1	105	0	2	4	1	0	7	206
7:30 PM	0	3	62	2	0	67	0	13	0	10	0	23	0	4	73	14	0	91	0	2	4	1	0	7	188
7:45 PM	0	4	39	3	0	46	0	15	0	6	0	21	0	4	72	19	0	95	0	2	3	1	1	6	168
Hourly Total	0	24	228	11	0	263	0	58	8	39	0	105	0	15	329	65	1	409	0	6	14	5	1	25	602
8:00 PM	0	5	72	0	0	77	0	13	1	9	0	23	0	4	61	14	0	79	0	2	1	1	0	4	183
8:15 PM	0	3	52	2	0	57	0	10	1	7	0	18	1	1	56	13	0	71	0	4	1	1	0	6	152
8:30 PM	0	5	33	1	0	39	0	8	0	5	0	13	0	2	47	14	0	63	0	1	5	1	0	7	122
8:45 PM	0	5	47	2	0	54	0	6	1	6	0	13	0	3	73	12	0	88	0	13	9	1	0	23	178
Hourly Total	0	18	204	5	0	227	0	37	3	27	0	67	1	10	237	53	0	301	0	20	16	4	0	40	635
9:00 PM	0	3	54	0	0	57	0	5	1	4	0	10	0	1	51	18	0	70	0	5	7	0	0	12	149
9:15 PM	0	4	34	1	0	39	0	7	0	2	1	9	0	0	34	7	0	41	0	1	5	1	0	7	96
9:30 PM	0	1	20	1	0	22	0	8	1	3	0	12	0	0	28	15	0	43	0	0	3	1	0	4	81
9:45 PM	0	9	23	1	0	33	0	10	1	1	0	12	0	2	34	6	0	42	0	2	0	0	0	2	89
Hourly Total	0	17	131	3	0	151	0	30	3	10	1	43	0	3	147	46	0	196	0	8	15	2	0	25	415
10:00 PM	0	2	30	1	0	33	0	10	0	2	0	12	0	2	36	11	0	49	0	1	0	0	0	1	95
10:15 PM	0	1	16	0	0	17	0	4	0	4	0	8	0	1	46	8	0	55	0	0	1	0	0	1	81
10:30 PM	0	2	14	0	0	16	0	8	1	0	0	9	0	0	26	6	0	32	0	1	0	0	0	1	58
10:45 PM	0	2	16	0	0	18	0	4	0	2	0	6	0	0	19	1	0	20	0	0	1	0	0	1	45
Hourly Total	0	7	76	1	0	84	0	26	1	8	0	35	0	3	127	26	0	156	0	2	2	0	0	4	279
11:00 PM	0	2	11	0	0	13	0	2	0	2	0	4	1	0	23	3	0	27	0	1	0	0	0	1	45
11:15 PM	0	2	10	2	0	14	0	2	0	1	0	3	0	2	20	3	0	25	0	0	0	0	0	0	42
11:30 PM	0	0	15	0	0	15	0	0	0	2	0	2	1	1	25	7	0	34	0	0	1	0	0	1	52
11:45 PM	0	1	7	0	0	8	0	5	0	2	0	7	0	2	14	1	0	17	0	0	0	0	0	0	32
Hourly Total	0	5	43	2	0	50	0	9	0	7	0	16	2	5	82	14	0	103	0	1	1	0	0	2	171
<b>DAILY TOTAL</b>	<b>7</b>	<b>603</b>	<b>5465</b>	<b>90</b>	<b>4</b>	<b>6165</b>	<b>1</b>	<b>1762</b>	<b>90</b>	<b>744</b>	<b>15</b>	<b>2597</b>	<b>41</b>	<b>137</b>	<b>6213</b>	<b>1301</b>	<b>1</b>	<b>7692</b>	<b>0</b>	<b>226</b>	<b>214</b>	<b>85</b>	<b>6</b>	<b>525</b>	<b>16979</b>
<b>Cars</b>	6	590	5335	84	2	6015	1	1729	90	733	9	2553	41	136	6100	1284	1	7561	0	215	211	84	4	510	16639
<b>Heavy Vehicles</b>	1	13	130	6	2	150	0	33	0	11	6	44	0	1	113	17	0	131	0	11	3	1	2	15	340
<b>Heavy Vehicle %</b>	14.29%	2.16%	2.38%	6.67%	50.00%	2.43%	0.00%	1.87%	0.00%	1.48%	40.00%	1.69%	0.00%	0.73%	1.82%	1.31%	0.00%	1.70%	0.00%	4.87%	1.40%	1.18%	33.33%	2.86%	2.00%

**CSAH 51 @ 117th Ave  
Blaine MN  
Thursday, October 7, 2021  
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	9	115	1	0	125	0	48	0	22	0	70	0	1	94	5	0	100	0	3	0	6	0	9	0	10	1	0	0	11	304
7:15 AM	0	10	158	4	0	172	0	49	0	31	0	80	0	0	117	9	0	126	0	10	1	0	0	11	0	18	5	0	0	16	389
7:30 AM	0	18	168	5	0	191	0	50	0	25	0	75	0	1	104	6	0	111	0	10	3	3	0	16	0	7	168	1	0	176	393
7:45 AM	0	7	168	1	0	176	0	47	1	8	1	56	0	0	65	10	0	75	0	3	4	1	0	8	0	4	168	1	0	176	315
Peak Hour Total	0	44	609	11	0	664	0	194	1	86	1	281	0	2	380	30	0	412	0	26	8	10	0	44	0	44	609	11	0	664	1401
PHF	0.000	0.611	0.906	0.550	0.000	0.869	0.000	0.970	0.250	0.694	0.250	0.878	0.000	0.500	0.812	0.750	0.000	0.817	0.000	0.650	0.500	0.417	0.000	0.688	0.000	0.688	0.906	0.550	0.000	0.869	0.891

**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	17	93	1	0	111	0	35	7	14	0	56	0	7	261	42	0	310	0	3	8	1	0	12	0	13	96	1	0	110	489
4:45 PM	0	13	96	1	0	110	0	35	2	18	0	55	2	2	216	42	0	262	0	6	6	1	0	13	0	6	104	4	0	114	440
5:00 PM	0	6	104	4	0	114	0	31	4	23	0	58	1	4	194	36	0	235	0	14	5	1	0	20	0	20	94	1	0	117	475
5:15 PM	2	20	94	1	0	117	0	43	3	12	0	58	2	5	230	50	0	287	0	9	4	0	0	13	2	20	94	1	0	117	475
Peak Hour Total	2	56	387	7	0	452	0	144	16	67	0	227	5	18	901	170	0	1094	0	32	23	3	0	58	0	58	387	7	0	452	1831
PHF	0.250	0.700	0.930	0.438	0.000	0.966	0.000	0.837	0.571	0.728	0.000	0.978	0.625	0.643	0.863	0.850	0.000	0.882	0.000	0.571	0.719	0.750	0.000	0.725	0.000	0.725	0.930	0.438	0.000	0.966	0.936

Total Vehicles On Leg				13355		
Vehicles Entering Intersection			6165	Vehicles Exiting Intersection		7190
<b>Southbound</b>						
Cars	84	5335	590	6	2	
Heavy	6	130	13	1	2	
<b>Total</b>	<b>90</b>	<b>5465</b>	<b>603</b>	<b>7</b>	<b>4</b>	

Total Vehicles on Leg 842	Vehicles Entering Intersection 525	<b>Eastbound</b>	Cars	4	2	6
			Heavy	0	0	0
	<b>Total</b>		215	11	226	
	Vehicles Exiting Intersection 317		Cars	211	3	214
			Heavy	84	1	85

Cars	733	11	744	
Heavy	90	0	90	
<b>Total</b>	1729	33	1762	
<b>Westbound</b>	Cars	1	0	1
	Heavy	9	6	15

Daily Volumes

Cars	1	41	136	6100	1284	
Heavy	0	0	1	113	17	
<b>Total</b>	<b>1</b>	<b>41</b>	<b>137</b>	<b>6213</b>	<b>1301</b>	
<b>Northbound</b>						
Vehicles Entering Intersection			7692	Vehicles Exiting Intersection		7353
Total Vehicles On Leg			15045			







# ANOKA COUNTY HIGHWAY

## PC-WARRANTS

### TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2117

Study Date : 11/08/2021

## Signal Warrants - Summary

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### Major Street Approaches

Northbound: CSAH 51 (University Ave.)

Number of Lanes : 2+

Total Approach Volume: 7,692

Southbound: CSAH 51 (University Ave.)

Number of Lanes :2+

Total Approach Volume: 6,165

### Minor Street Approaches

Eastbound: 117th Ave.

Number of Lanes :1

Total Approach Volume: 525

Westbound: 117th Ave.

Number of Lanes :1

Total Approach Volume: 2,597

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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 14 hours, 8 are needed

Warrant 1B - Interruption of Continuous Traffic.....Satisfied

Required volumes reached for 9 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 14 hours, 8 are needed

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

Number of hours (10) volumes exceed minimum >= minimum required (4).

Warrant 3 - Peak Hour.....Satisfied

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

Number of one hour periods (34) 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 2117

Study Date : 11/08/2021

## 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 = **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	
16:00 - 17:00	1074	+	435	=	1509	57	213	Yes
17:00 - 18:00	931	+	479	=	1410	54	219	Yes
15:00 - 16:00	830	+	433	=	1263	67	184	Yes
07:00 - 08:00	412	+	664	=	1076	44	281	Yes
18:00 - 19:00	549	+	413	=	962	38	151	Yes
14:00 - 15:00	534	+	420	=	954	33	151	Yes
13:00 - 14:00	432	+	469	=	901	20	138	Yes
19:00 - 20:00	409	+	263	=	672	25	105	Yes
08:00 - 09:00	256	+	384	=	640	48	172	Yes
12:00 - 13:00	346	+	262	=	608	6	120	Yes
09:00 - 10:00	262	+	329	=	591	18	120	Yes
11:00 - 12:00	296	+	256	=	552	9	117	Yes
10:00 - 11:00	278	+	231	=	509	19	113	Yes
06:00 - 07:00	146	+	309	=	455	10	188	Yes
20:00 - 21:00	301	+	227	=	528	40	67	No
20:15 - 21:15	292	+	207	=	499	48	54	No
20:30 - 21:30	262	+	189	=	451	49	45	No
20:45 - 21:45	242	+	172	=	414	46	44	No
05:45 - 06:45	94	+	264	=	358	8	170	No
21:00 - 22:00	196	+	151	=	347	25	43	No
21:15 - 22:15	175	+	127	=	302	14	45	No
21:30 - 22:30	189	+	105	=	294	8	44	No
05:30 - 06:30	77	+	217	=	294	5	144	No
21:45 - 22:45	178	+	99	=	277	5	41	No
05:15 - 06:15	56		189		245	5	128	No

# ANOKA COUNTY HIGHWAY

## PC-WARRANTS

### TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2117

Study Date : 11/08/2021

## 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

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 = **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 (University Ave.)					117th Ave.		
16:30 - 17:30	1094	+	452	=	1546	58	227	Yes
15:30 - 16:30	968	+	442	=	1410	61	204	Yes
17:30 - 18:30	688	+	465	=	1153	40	175	Yes
14:30 - 15:30	649	+	433	=	1082	56	154	Yes
13:30 - 14:30	480	+	500	=	980	31	151	Yes
07:30 - 08:30	325	+	606	=	931	66	220	Yes
18:30 - 19:30	493	+	346	=	839	31	140	Yes
06:30 - 07:30	328	+	487	=	815	27	254	Yes
12:30 - 13:30	385	+	288	=	673	6	119	Yes
06:15 - 07:15	232	+	388	=	620	17	213	No
12:15 - 13:15	339	+	276	=	615	6	118	No
12:00 - 13:00	346	+	262	=	608	6	120	No
09:00 - 10:00	262	+	329	=	591	18	120	No
19:30 - 20:30	336	+	247	=	583	23	85	No
08:45 - 09:45	246	+	334	=	580	16	119	No
09:15 - 10:15	275	+	298	=	573	20	116	No
10:45 - 11:45	312	+	255	=	567	10	101	No
08:30 - 09:30	251	+	310	=	561	16	138	No
11:45 - 12:45	301	+	258	=	559	9	127	No
11:30 - 12:30	300	+	257	=	557	10	128	No
09:30 - 10:30	268	+	288	=	556	14	123	No
11:00 - 12:00	296	+	256	=	552	9	117	No
11:15 - 12:15	300	+	244	=	544	10	117	No
10:15 - 11:15	289	+	249	=	538	15	121	No
10:30 - 11:30	296		241		537	16	111	No

# ANOKA COUNTY HIGHWAY

## PC-WARRANTS

### TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2117

Study Date : 11/08/2021

## 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.  
14 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 = **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 (University Ave.)

#### Minor Road 117th Ave.

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1A?
15:45 - 16:45	1048	+	432	=	1480	62	203	Yes
16:45 - 17:45	994	+	460	=	1454	57	223	Yes
14:45 - 15:45	744	+	422	=	1166	62	176	Yes
17:45 - 18:45	591	+	440	=	1031	38	162	Yes
13:45 - 14:45	498	+	500	=	998	28	150	Yes
06:45 - 07:45	403	+	583	=	986	40	276	Yes
18:45 - 19:45	471	+	319	=	790	29	124	Yes
12:45 - 13:45	429	+	357	=	786	14	134	Yes
07:45 - 08:45	277	+	485	=	762	55	198	Yes
08:45 - 09:45	246	+	334	=	580	16	119	Yes
10:45 - 11:45	312	+	255	=	567	10	101	Yes
11:45 - 12:45	301	+	258	=	559	9	127	Yes

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1B?
16:15 - 17:15	1063	+	444	=	1507	56	216	Yes
15:15 - 16:15	920	+	444	=	1364	69	205	Yes
17:15 - 18:15	844	+	485	=	1329	42	193	Yes
07:15 - 08:15	381	+	680	=	1061	55	256	Yes
14:15 - 15:15	560	+	424	=	984	44	148	Yes
13:15 - 14:15	482	+	487	=	969	26	143	Yes
18:15 - 19:15	519	+	378	=	897	35	151	Yes
19:15 - 20:15	370	+	255	=	625	24	96	Yes
06:15 - 07:15	232	+	388	=	620	17	213	Yes
12:15 - 13:15	339	+	276	=	615	6	118	Yes
09:15 - 10:15	275	+	298	=	573	20	116	Yes
08:15 - 09:15	246	+	326	=	572	31	157	Yes

# ANOKA COUNTY HIGHWAY

## PC-WARRANTS

### TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2117

Study Date : 11/08/2021

## 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.

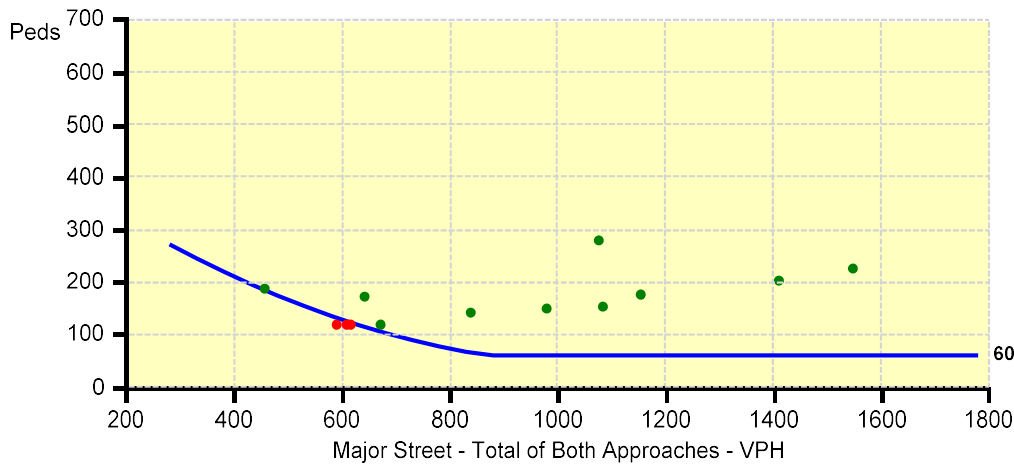
#### Summary

10 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 (University Ave.)				Total	Minor Road 117th Ave.		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
16:30 - 17:30	1094	+	452	=	1546	58	227	Yes
15:30 - 16:30	968	+	442	=	1410	61	204	Yes
17:30 - 18:30	688	+	465	=	1153	40	175	Yes
14:30 - 15:30	649	+	433	=	1082	56	154	Yes
07:00 - 08:00	412	+	664	=	1076	44	281	Yes
13:30 - 14:30	480	+	500	=	980	31	151	Yes
18:30 - 19:30	493	+	346	=	839	31	140	Yes
12:30 - 13:30	385	+	288	=	673	6	119	Yes
08:00 - 09:00	256	+	384	=	640	48	172	Yes
06:00 - 07:00	146	+	309	=	455	10	188	Yes
12:15 - 13:15	339	+	276	=	615	6	118	No
							120	No



# ANOKA COUNTY HIGHWAY

## PC-WARRANTS

### TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2117

Study Date : 11/08/2021

## 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

28 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 (University Ave.)				Total	Minor Road 117th Ave.		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
16:30 - 17:30	1094	+	452	=	1546	58	227	Yes
16:00 - 17:00	1074	+	435	=	1509	57	213	Yes
16:15 - 17:15	1063	+	444	=	1507	56	216	Yes
15:45 - 16:45	1048	+	432	=	1480	62	203	Yes
16:45 - 17:45	994	+	460	=	1454	57	223	Yes
15:30 - 16:30	968	+	442	=	1410	61	204	Yes
17:00 - 18:00	931	+	479	=	1410	54	219	Yes
15:15 - 16:15	920	+	444	=	1364	69	205	Yes
17:15 - 18:15	844	+	485	=	1329	42	193	Yes
15:00 - 16:00	830	+	433	=	1263	67	184	Yes
14:45 - 15:45	744	+	422	=	1166	62	176	Yes
							175	Yes

