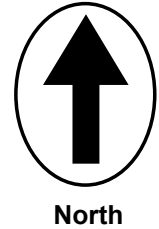


Date : 09/21/23

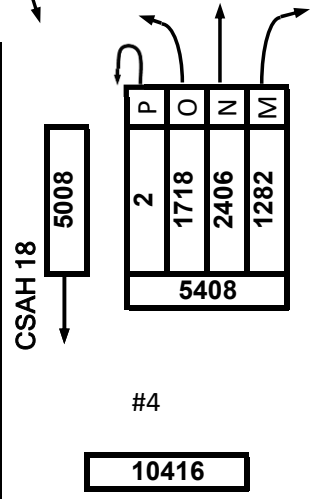
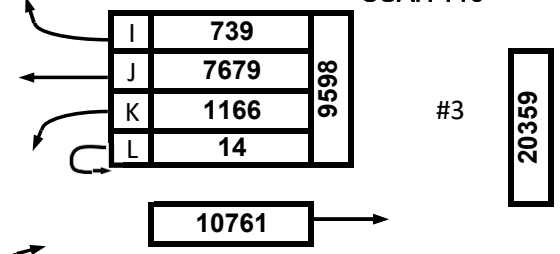
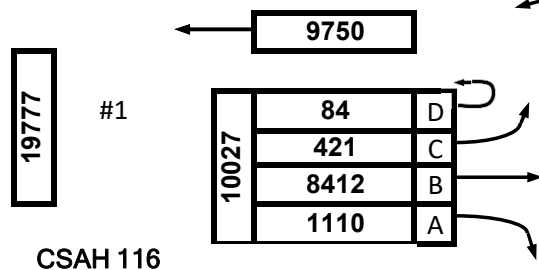
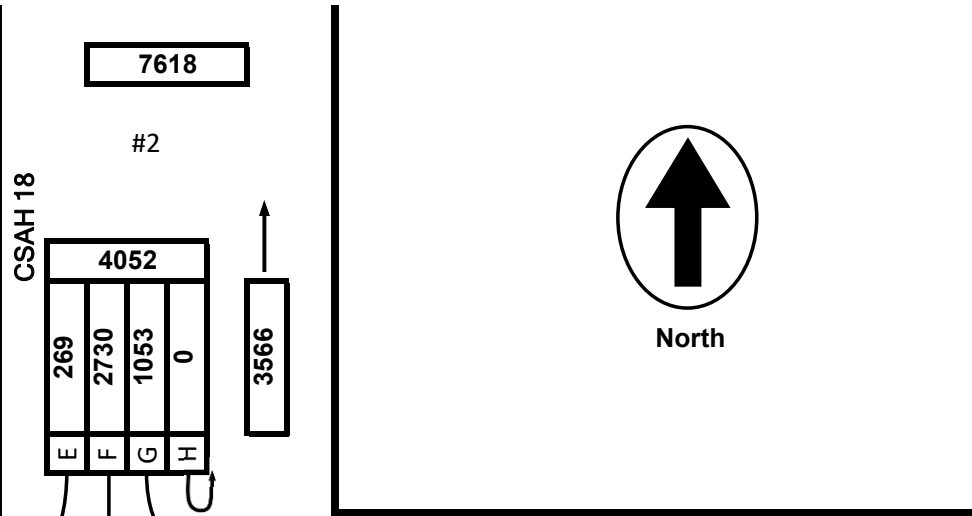
Count Number : TMC 2352

Location : CSAH 116
@ CSAH 18

Collection Period : 24 HR



North



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

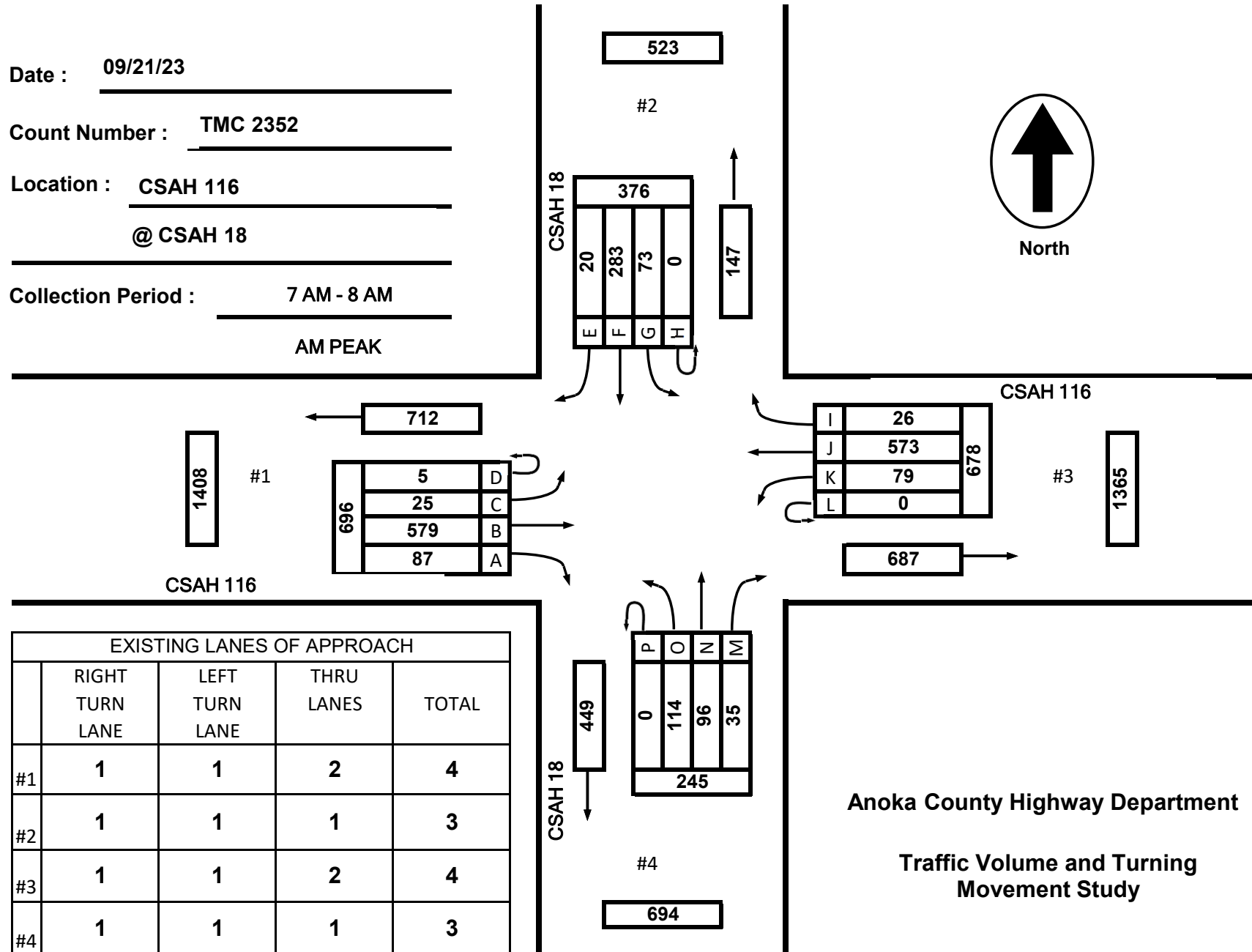
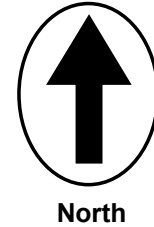
Anoka County Highway Department
 Traffic Volume and Turning Movement Study

Date : 09/21/23

Count Number : TMC 2352

Location : CSAH 116
@ CSAH 18

Collection Period : 7 AM - 8 AM
AM PEAK



EXISTING LANES OF APPROACH

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

Anoka County Highway Department

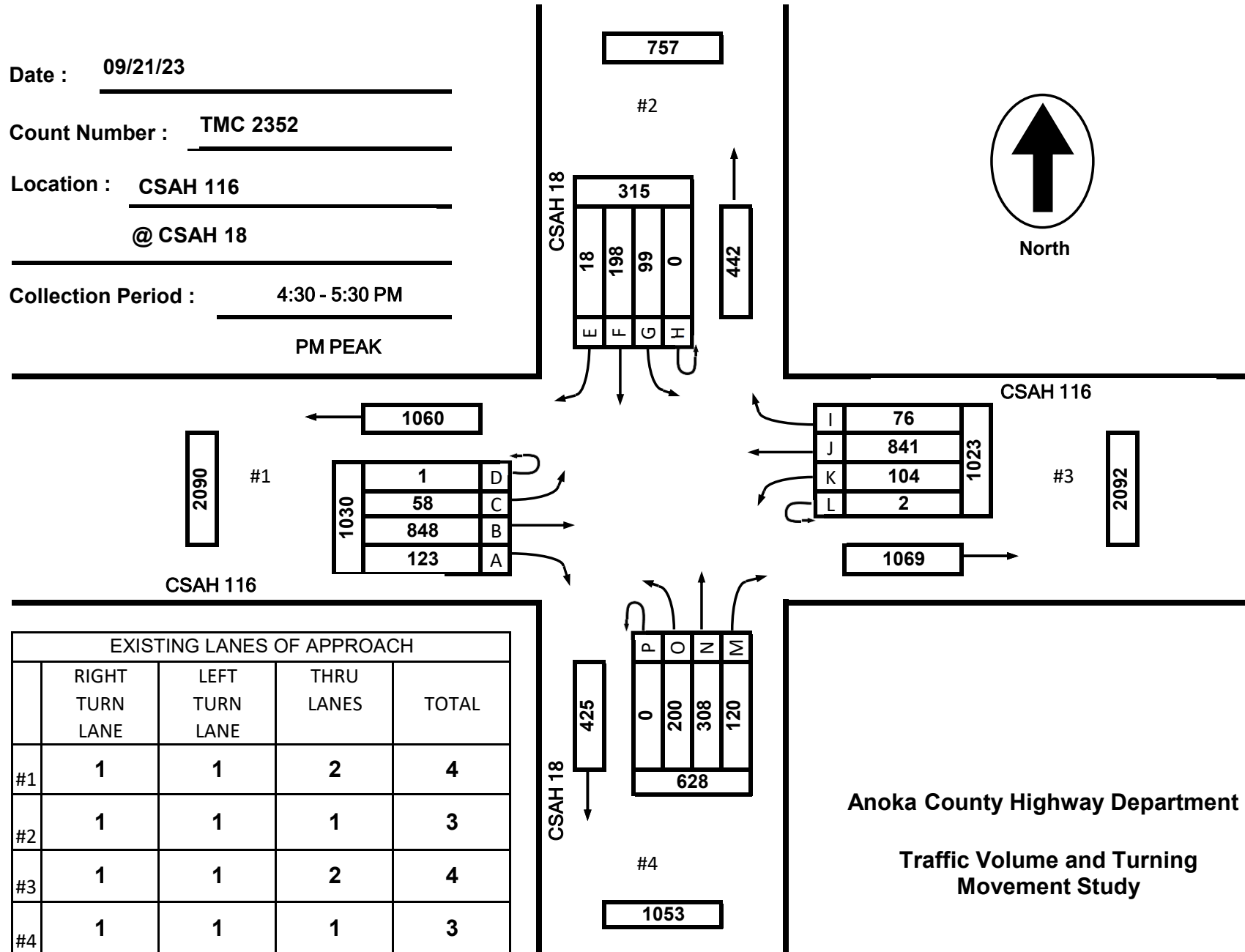
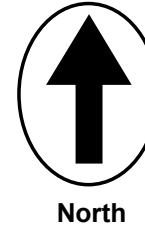
Traffic Volume and Turning Movement Study

Date : 09/21/23

Count Number : TMC 2352

Location : CSAH 116
@ CSAH 18

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



2090

#1

1030	1	D
	58	C
	848	B
	123	A

CSAH 116

757

#2

315			
18	198	99	0
E	F	G	H

CSAH 18

442

CSAH 116

I	76	1023
J	841	
K	104	
L	2	

#3

2092

1069

P	O	N	M
0	200	308	120
628			

CSAH 18

425

#4

1053

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

Anoka County Highway Department

Traffic Volume and Turning Movement Study

**TMC 2352 - CSAH 116 @ CSAH 18
Thursday, September 21, 2023**

Time	Southbound CSAH 18						Westbound CSAH 116						Northbound CSAH 18						Eastbound CSAH 116						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	1	0	0	1	0	0	6	1	0	7	0	2	6	2	0	10	0	0	6	0	0	6	24
12:15 AM	0	1	2	0	0	3	0	1	4	1	0	6	0	1	1	0	2	0	2	2	0	0	4	15	
12:30 AM	0	1	1	0	0	2	0	0	0	0	0	0	0	3	3	1	0	7	0	0	4	0	0	4	13
12:45 AM	0	1	2	1	0	4	0	1	5	1	0	7	0	0	1	0	0	1	0	0	1	0	0	1	13
Hourly Total	0	3	6	1	0	10	0	2	15	3	0	20	0	6	11	3	0	20	0	2	13	0	0	15	65
1:00 AM	0	0	0	0	0	0	0	1	3	0	0	4	0	0	1	0	0	1	0	0	3	0	0	3	8
1:15 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	5	0	0	5	0	0	1	0	0	1	7
1:30 AM	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	3	1	0	4	6
1:45 AM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	2	0	0	2	0	0	5	0	0	5	9
Hourly Total	0	0	0	0	0	0	0	1	7	1	0	9	0	0	8	0	0	8	0	0	12	1	0	13	30
2:00 AM	0	0	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	0	1	0	4	0	0	5	8
2:15 AM	0	0	1	0	0	1	0	0	2	0	0	2	0	1	0	2	0	3	0	0	4	1	0	5	11
2:30 AM	0	0	1	0	0	1	0	1	5	0	0	6	0	1	0	1	0	2	0	1	2	2	0	5	14
2:45 AM	0	2	0	0	0	2	0	0	0	0	0	0	0	1	1	0	0	2	0	0	3	0	0	3	7
Hourly Total	0	2	2	0	0	4	0	1	9	1	0	11	0	3	1	3	0	7	1	1	13	3	0	18	40
3:00 AM	0	0	3	0	0	3	0	0	2	0	0	2	0	0	0	0	0	0	0	0	2	0	0	2	7
3:15 AM	0	0	2	0	0	2	0	1	2	0	0	3	0	0	0	0	0	0	0	0	4	0	0	4	9
3:30 AM	0	1	4	0	0	5	0	1	5	0	0	6	0	0	0	0	0	0	0	0	2	0	0	2	13
3:45 AM	0	2	3	0	0	5	0	0	2	0	0	2	0	0	0	0	0	0	0	0	6	0	0	6	13
Hourly Total	0	3	12	0	0	15	0	2	11	0	0	13	0	0	0	0	0	0	0	0	14	0	0	14	42
4:00 AM	0	3	4	1	0	8	0	1	3	0	0	4	0	0	1	1	0	2	0	2	1	1	0	4	18
4:15 AM	0	0	10	0	0	10	0	2	7	0	0	9	0	3	1	0	0	4	0	0	13	1	0	14	37
4:30 AM	0	8	12	0	0	20	0	3	7	0	0	10	0	1	2	2	0	5	0	0	18	0	0	18	53
4:45 AM	0	2	11	0	0	13	0	4	10	0	0	14	0	3	1	3	0	7	0	0	15	0	0	15	49
Hourly Total	0	13	37	1	0	51	0	10	27	0	0	37	0	7	5	6	0	18	0	2	47	2	0	51	157
5:00 AM	0	2	23	1	0	26	0	2	16	0	0	18	0	6	4	0	0	10	1	0	10	0	0	11	65
5:15 AM	0	2	24	4	0	30	0	5	14	2	0	21	0	4	0	3	0	7	1	0	29	3	0	33	91
5:30 AM	0	4	30	1	0	35	0	4	29	0	0	33	0	5	2	3	0	10	1	1	39	4	0	45	123
5:45 AM	0	8	31	0	0	39	0	3	24	1	0	28	0	7	8	0	0	15	0	1	61	5	0	67	149
Hourly Total	0	16	108	6	0	130	0	14	83	3	0	100	0	22	14	6	0	42	3	2	139	12	0	156	428
6:00 AM	0	8	28	1	0	37	0	3	32	1	0	36	1	4	3	3	0	11	0	0	46	2	0	48	132
6:15 AM	0	5	54	3	0	62	0	8	49	1	0	58	0	4	7	5	0	16	1	0	90	5	0	96	232
6:30 AM	0	10	63	2	0	75	0	7	69	5	0	81	0	12	11	5	0	28	1	1	88	11	0	101	285
6:45 AM	0	20	68	4	0	92	0	11	62	5	0	78	0	16	14	6	0	36	2	1	122	9	0	134	340
Hourly Total	0	43	213	10	0	266	0	29	212	12	0	253	1	36	35	19	0	91	4	2	346	27	0	379	989
7:00 AM	0	22	85	3	0	110	0	20	82	5	0	107	0	28	29	7	0	64	0	5	92	14	0	111	392
7:15 AM	0	17	86	6	0	109	0	21	183	8	0	212	0	38	22	5	0	65	1	6	141	27	0	175	561
7:30 AM	0	20	67	6	0	93	0	23	171	4	0	198	0	21	16	10	0	47	2	9	203	29	0	243	581
7:45 AM	0	14	45	5	1	64	0	15	137	9	0	161	0	27	29	13	0	69	2	5	143	17	0	167	461
Hourly Total	0	73	283	20	1	376	0	79	573	26	0	678	0	114	96	35	0	245	5	25	579	87	0	696	1995

**TMC 2352 - CSAH 116 @ CSAH 18
Thursday, September 21, 2023**

Time	Southbound CSAH 18						Westbound CSAH 116						Northbound CSAH 18						Eastbound CSAH 116						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	27	43	2	0	72	0	11	90	10	0	111	0	11	22	5	0	38	1	7	133	14	0	155	376
8:15 AM	0	11	51	0	0	62	0	3	79	2	0	84	0	16	17	1	0	34	0	6	98	9	0	113	293
8:30 AM	0	13	35	0	0	48	0	15	82	7	0	104	0	19	16	8	0	43	0	3	100	11	0	114	309
8:45 AM	0	18	44	5	0	67	0	15	96	10	1	121	0	18	24	6	0	48	0	7	107	20	0	134	370
Hourly Total	0	69	173	7	0	249	0	44	347	29	1	420	0	64	79	20	0	163	1	23	438	54	0	516	1348
9:00 AM	0	22	39	4	0	65	0	18	69	8	0	95	0	13	29	8	0	50	0	4	103	14	0	121	331
9:15 AM	0	20	36	3	1	59	0	8	98	8	0	114	0	12	23	10	0	45	0	4	112	12	0	128	346
9:30 AM	0	14	45	3	1	62	1	16	97	9	0	123	0	8	19	13	0	40	2	5	122	15	0	144	369
9:45 AM	0	16	35	1	0	52	0	15	95	8	0	118	0	18	19	13	0	50	0	8	112	6	0	126	346
Hourly Total	0	72	155	11	2	238	1	57	359	33	0	450	0	51	90	44	0	185	2	21	449	47	0	519	1392
10:00 AM	0	14	39	7	0	60	0	16	90	12	0	118	0	16	21	10	0	47	1	4	105	8	0	118	343
10:15 AM	0	6	42	4	0	52	0	24	94	7	0	125	0	19	27	15	0	61	0	3	101	14	0	118	356
10:30 AM	0	15	54	3	0	72	0	26	97	11	0	134	0	28	11	20	0	59	0	5	97	15	0	117	382
10:45 AM	0	14	103	1	2	118	0	33	103	2	0	138	0	17	18	16	0	51	1	4	123	15	0	143	450
Hourly Total	0	49	238	15	2	302	0	99	384	32	0	515	0	80	77	61	0	218	2	16	426	52	0	496	1531
11:00 AM	0	13	46	7	0	66	0	23	85	4	0	112	0	21	26	21	0	68	0	5	126	20	0	151	397
11:15 AM	0	20	43	5	0	68	2	20	111	17	0	150	0	14	31	21	0	66	0	4	125	18	0	147	431
11:30 AM	0	17	39	2	0	58	0	18	141	8	0	167	0	22	32	22	0	76	1	5	124	7	0	137	438
11:45 AM	0	13	36	8	0	57	0	29	113	6	0	148	0	17	36	23	0	76	1	4	116	14	0	135	416
Hourly Total	0	63	164	22	0	249	2	90	450	35	0	577	0	74	125	87	0	286	2	18	491	59	0	570	1682
12:00 PM	0	18	49	8	0	75	0	15	100	15	0	130	0	29	20	28	0	77	1	4	138	19	0	162	444
12:15 PM	0	13	41	0	2	54	0	19	92	11	0	122	1	21	34	18	0	74	1	3	127	17	0	148	398
12:30 PM	0	12	35	4	0	51	0	23	84	10	0	117	0	25	30	20	0	75	1	6	125	19	0	151	394
12:45 PM	0	11	34	7	2	52	0	18	107	11	1	136	0	15	39	20	0	74	2	5	133	16	0	156	418
Hourly Total	0	54	159	19	4	232	0	75	383	47	1	505	1	90	123	86	0	300	5	18	523	71	0	617	1654
1:00 PM	0	18	32	2	1	52	0	14	99	13	0	126	0	26	40	22	0	88	1	3	127	19	2	150	416
1:15 PM	0	11	32	1	0	44	0	25	104	14	0	143	0	22	36	18	0	76	1	6	116	16	0	139	402
1:30 PM	0	13	21	2	0	36	0	16	104	11	0	131	0	31	34	25	0	90	2	2	123	18	0	145	402
1:45 PM	0	8	29	4	0	41	0	22	104	15	0	141	0	31	34	28	0	93	2	5	143	11	0	161	436
Hourly Total	0	50	114	9	1	173	0	77	411	53	0	541	0	110	144	93	0	347	6	16	509	64	2	595	1656
2:00 PM	0	15	27	1	1	43	0	13	156	9	1	178	0	19	40	18	0	77	1	7	127	12	1	147	445
2:15 PM	0	15	43	3	0	61	0	21	124	18	0	163	0	24	53	28	0	105	1	9	211	24	1	245	574
2:30 PM	0	25	44	3	0	72	0	20	133	17	0	170	0	29	57	24	0	110	1	11	179	17	3	208	560
2:45 PM	0	22	46	6	0	74	2	17	152	17	2	188	0	47	48	31	0	126	0	11	175	17	0	203	591
Hourly Total	0	77	160	13	1	250	2	71	565	61	3	699	0	119	198	101	0	418	3	38	692	70	5	803	2170
3:00 PM	0	14	48	4	0	66	0	19	187	16	1	222	0	42	51	28	0	121	1	9	155	31	0	196	605
3:15 PM	0	32	27	13	0	72	0	19	190	16	0	225	0	48	50	48	0	146	0	8	152	24	0	184	627
3:30 PM	0	7	2	7	0	16	0	29	218	2	0	249	0	90	12	71	0	173	8	2	218	30	0	258	696
3:45 PM	0	4	7	5	0	16	1	19	188	3	2	211	0	64	7	76	0	147	12	5	261	41	0	319	693
Hourly Total	0	57	84	29	0	170	1	86	783	37	3	907	0	244	120	223	0	587	21	24	786	126	0	957	2621

**TMC 2352 - CSAH 116 @ CSAH 18
Thursday, September 21, 2023**

Time	Southbound CSAH 18						Westbound CSAH 116						Northbound CSAH 18						Eastbound CSAH 116						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	19	52	7	0	78	0	19	223	20	0	262	0	64	61	28	0	153	1	23	210	24	0	258	751
4:15 PM	0	20	42	6	0	68	0	32	195	16	2	243	0	50	86	34	0	170	2	16	193	28	0	239	720
4:30 PM	0	20	48	8	0	76	0	19	216	16	0	251	0	49	79	31	0	159	0	17	263	33	0	313	799
4:45 PM	0	24	47	2	0	73	0	25	209	21	0	255	0	41	48	23	0	112	0	10	221	34	1	265	705
Hourly Total	0	83	189	23	0	295	0	95	843	73	2	1011	0	204	274	116	0	594	3	66	887	119	1	1075	2975
5:00 PM	0	34	49	5	0	88	1	27	179	17	0	224	0	47	88	36	0	171	0	14	197	25	0	236	719
5:15 PM	0	21	54	3	0	78	1	33	237	22	0	293	0	63	93	30	0	186	1	17	167	31	0	216	773
5:30 PM	0	33	69	5	0	107	1	24	181	21	0	227	0	41	85	34	4	160	2	9	173	19	0	203	697
5:45 PM	0	34	56	6	1	96	0	21	163	25	0	209	0	34	69	31	0	134	3	7	149	22	1	181	620
Hourly Total	0	122	228	19	1	369	3	105	760	85	0	953	0	185	335	131	4	651	6	47	686	97	1	836	2809
6:00 PM	0	21	51	9	0	81	0	21	127	19	0	167	0	32	70	26	0	128	0	10	133	14	0	157	533
6:15 PM	0	23	57	8	0	88	0	29	139	13	0	181	0	24	59	17	0	100	2	17	131	23	0	173	542
6:30 PM	0	19	50	6	0	75	1	21	106	17	0	145	0	27	59	23	0	109	1	4	118	12	0	135	464
6:45 PM	0	11	29	6	0	46	0	23	125	20	0	168	0	32	37	30	0	99	0	9	126	21	0	156	469
Hourly Total	0	74	187	29	0	290	1	94	497	69	0	661	0	115	225	96	0	436	3	40	508	70	0	621	2008
7:00 PM	0	24	34	9	0	67	0	20	116	15	0	151	0	13	54	19	0	86	1	5	101	14	0	121	425
7:15 PM	0	22	30	8	0	60	1	21	101	12	0	135	0	20	29	14	0	63	4	14	97	14	0	129	387
7:30 PM	0	11	24	4	0	39	1	15	94	7	0	117	0	15	53	12	0	80	3	8	96	26	0	133	369
7:45 PM	0	14	20	2	0	36	0	7	108	18	0	133	0	23	34	22	0	79	1	4	83	9	0	97	345
Hourly Total	0	71	108	23	0	202	2	63	419	52	0	536	0	71	170	67	0	308	9	31	377	63	0	480	1526
8:00 PM	0	10	14	1	0	25	0	11	86	13	0	110	0	13	42	7	0	62	1	4	65	10	0	80	277
8:15 PM	0	12	19	1	0	32	0	7	78	12	0	97	0	19	36	13	0	68	0	4	80	10	0	94	291
8:30 PM	0	6	18	4	0	28	1	11	61	16	0	89	0	15	36	13	0	64	1	4	62	15	0	82	263
8:45 PM	0	4	11	1	0	16	0	10	53	8	0	71	0	10	20	9	0	39	1	3	49	9	0	62	188
Hourly Total	0	32	62	7	0	101	1	39	278	49	0	367	0	57	134	42	0	233	3	15	256	44	0	318	1019
9:00 PM	0	4	9	0	0	13	0	6	50	6	0	62	0	6	19	8	0	33	1	1	42	6	0	50	158
9:15 PM	0	5	4	1	0	10	1	3	52	6	0	62	0	13	19	4	0	36	0	2	34	6	0	42	150
9:30 PM	0	2	10	1	0	13	0	3	27	3	0	33	0	10	18	6	0	34	3	2	20	5	0	30	110
9:45 PM	0	0	4	1	0	5	0	7	15	5	0	27	0	10	15	7	0	32	0	1	26	7	0	34	98
Hourly Total	0	11	27	3	0	41	1	19	144	20	0	184	0	39	71	25	0	135	4	6	122	24	0	156	516
10:00 PM	0	4	8	0	0	12	0	2	29	4	0	35	0	5	16	5	1	26	0	2	23	5	0	30	103
10:15 PM	0	3	1	1	0	5	0	2	26	3	0	31	0	7	15	5	0	27	0	0	29	3	0	32	95
10:30 PM	0	3	1	0	0	4	0	3	12	6	0	21	0	3	8	2	0	13	0	0	12	7	0	19	57
10:45 PM	0	2	2	0	0	4	0	2	18	0	0	20	0	3	10	2	0	15	0	1	6	1	0	8	47
Hourly Total	0	12	12	1	0	25	0	9	85	13	0	107	0	18	49	14	1	81	0	3	70	16	0	89	302
11:00 PM	0	1	5	1	0	7	0	3	14	1	0	18	0	1	5	1	0	7	0	1	10	1	0	12	44
11:15 PM	0	2	3	0	0	5	0	2	11	3	0	16	0	4	8	3	0	15	0	2	9	1	0	12	48
11:30 PM	0	1	0	0	0	1	0	0	4	1	0	5	0	2	5	0	0	7	1	0	6	0	0	7	20
11:45 PM	0	0	1	0	0	1	0	0	5	0	0	5	0	2	4	0	0	6	0	2	4	0	0	6	18
Hourly Total	0	4	9	1	0	14	0	5	34	5	0	44	0	9	22	4	0	35	1	5	29	2	0	37	130
DAILY TOTAL	0	1053	2730	269	12	4052	14	1166	7679	739	10	9598	2	1718	2406	1282	5	5408	84	421	8412	1110	9	10027	29085
Cars	0	1038	2707	256	4	4001	14	1149	7480	729	6	9372	2	1689	2395	1267	0	5353	83	399	8220	1077	4	9779	28505
Heavy Vehicles	0	15	23	13	8	51	0	17	199	10	4	226	0	29	11	15	5	55	1	22	192	33	5	248	580
Heavy Vehicle %	0.00%	1.42%	0.84%	4.83%	66.67%	1.26%	0.00%	1.46%	2.59%	1.35%	40.00%	2.35%	0.00%	1.69%	0.46%	1.17%	100.00%	1.02%	1.19%	5.23%	2.28%	2.97%	55.56%	2.47%	1.99%

TMC 2352 - CSAH 116 @ CSAH 18
Thursday, September 21, 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	22	85	3	0	110	0	20	82	5	0	107	0	28	29	7	0	64	0	5	92	14	0	111	392
7:15 AM	0	17	86	6	0	109	0	21	183	8	0	212	0	38	22	5	0	65	1	6	141	27	0	175	561
7:30 AM	0	20	67	6	0	93	0	23	171	4	0	198	0	21	16	10	0	47	2	9	203	29	0	243	581
7:45 AM	0	14	45	5	1	64	0	15	137	9	0	161	0	27	29	13	0	69	2	5	143	17	0	167	461
Peak Hour Total	0	73	283	20	1	376	0	79	573	26	0	678	0	114	96	35	0	245	5	25	579	87	0	696	1995
PHF	0.000	0.830	0.823	0.833	0.250	0.855	0.000	0.859	0.783	0.722	0.000	0.800	0.000	0.750	0.828	0.673	0.000	0.888	0.625	0.694	0.713	0.750	0.000	0.716	0.858

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	20	48	8	0	76	0	19	216	16	0	251	0	49	79	31	0	159	0	17	263	33	0	313	799
4:45 PM	0	24	47	2	0	73	0	25	209	21	0	255	0	41	48	23	0	112	0	10	221	34	1	265	705
5:00 PM	0	34	49	5	0	88	1	27	179	17	0	224	0	47	88	36	0	171	0	14	197	25	0	236	719
5:15 PM	0	21	54	3	0	78	1	33	237	22	0	293	0	63	93	30	0	186	1	17	167	31	0	216	773
Peak Hour Total	0	99	198	18	0	315	2	104	841	76	0	1023	0	200	308	120	0	628	1	58	848	123	1	1030	2996
PHF	0.000	0.728	0.917	0.563	0.000	0.895	0.500	0.788	0.887	0.864	0.000	0.873	0.000	0.794	0.828	0.833	0.000	0.844	0.250	0.853	0.806	0.904	0.250	0.823	0.937

Total Vehicles On Leg		7618	
Vehicles Entering Intersection	4052	Vehicles Exiting Intersection	3566
Southbound			
Cars	256	2707	1038
Heavy	13	23	15
Total	269	2730	1053

Total Vehicles on Leg 19777	Vehicles Entering Intersection 10027	Eastbound	Cars	Heavy	Total	Daily Volumes	Vehicles Entering Intersection 9598	Westbound	Total Vehicles on Leg 20359
			4	5	9				
			83	1	84				
			399	22	421				
			8220	192	8412				
1077	33	1110							

Cars	0	2	1689	2395	1267
Heavy	5	0	29	11	15
Total	5	2	1718	2406	1282
Northbound					
Vehicles Entering Intersection			Vehicles Exiting Intersection		
5408			5008		
Total Vehicles On Leg			10416		

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	
09/21/2023	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	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	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	1	0	0	0	
	5:15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	
	5:30	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	
	5:45	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	
	6:15	0	0	0	0	0	0	0	0	4	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	
	6:30	0	0	0	0	0	0	0	0	8	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	
	6:45	0	0	2	0	0	0	0	1	8	1	0	0	0	1	0	1	0	0	0	0	1	0	0	0	
	7:00	0	0	1	0	0	0	0	1	4	0	0	0	0	2	0	0	0	0	0	0	3	1	0	0	
	7:15	0	1	0	0	0	0	0	1	5	1	0	0	0	2	1	0	0	0	0	0	2	7	2	0	0
	7:30	0	0	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	2	6	3	0	0
	7:45	0	0	0	0	0	0	0	0	3	1	0	0	0	0	1	0	0	0	0	0	1	5	1	0	0
	8:00	0	0	1	0	0	0	0	0	5	0	0	0	0	1	0	1	0	0	0	0	2	8	0	0	0
	8:15	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0
	8:30	0	1	0	0	0	0	0	0	5	0	0	0	0	0	1	0	0	0	0	0	3	0	0	0	0
	8:45	0	2	1	2	0	0	0	0	3	1	1	0	0	2	0	0	0	0	0	0	0	2	2	0	0
	9:00	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	3	0	0	0	0
	9:15	0	0	2	0	0	1	0	1	5	0	0	0	0	0	0	0	0	0	0	0	7	2	0	0	0
	9:30	0	0	2	0	0	1	0	0	1	0	0	0	0	0	1	1	0	0	0	0	1	6	2	0	0
	9:45	0	0	2	0	0	0	0	1	6	0	0	0	0	1	0	0	0	0	0	0	4	0	0	0	0
	10:00	0	1	1	2	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0
	10:15	0	0	1	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0	0
	10:30	0	0	1	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0
	10:45	0	0	2	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0	0
	11:00	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0
	11:15	0	1	0	0	0	0	0	1	8	0	0	0	0	1	0	0	0	0	0	0	4	0	0	0	0
	11:30	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	1	0	0	0	0	1	8	0	0	0
	11:45	0	0	0	0	0	0	0	2	6	0	0	0	0	0	0	1	0	0	0	0	4	0	0	0	0

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2352

Study Date : 09/27/2023

Signal Warrants - Summary

Major Street Approaches

Eastbound: CSAH 116

Number of Lanes : 2+

Total Approach Volume: 10,027

Westbound: CSAH 116

Number of Lanes :2+

Total Approach Volume: 9,598

Minor Street Approaches

Northbound: CSAH 18

Number of Lanes :1

Total Approach Volume: 5,408

Southbound: CSAH 18

Number of Lanes :1

Total Approach Volume: 4,052

Warrant Summary (Rural Values Apply)

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

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

Required volumes reached for 15 hours, 8 are needed

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

Required volumes reached for 15 hours, 8 are needed

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

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

Required 1B volumes reached for 15 hours, 8 are needed

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

Number of hours (15) volumes exceed minimum >= minimum required (4).

Warrant 3 - Peak Hour.....Satisfied

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

Number of one hour periods (58) 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 2352

Study Date : 09/27/2023

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

15 one hour periods meet minimums.
Warrant IS met.

Site Data Required

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

Volume Requirements

Rural Factor of 70 % applied
 Veh/Hr Major = **420**
 Veh/Hr Minor = **105**

Time	Major Road				Total	Minor Road		Met?
	Major EB	+	Major WB	=		Minor NB	Minor SB	
15:45 - 16:45	1129	+	967	=	2096	629	238	Yes
16:45 - 17:45	920	+	999	=	1919	629	346	Yes
14:45 - 15:45	841	+	884	=	1725	566	228	Yes
13:45 - 14:45	761	+	652	=	1413	385	217	Yes
17:45 - 18:45	646	+	702	=	1348	471	340	Yes
06:45 - 07:45	663	+	595	=	1258	212	404	Yes
10:45 - 11:45	578	+	567	=	1145	261	310	Yes
12:45 - 13:45	590	+	536	=	1126	328	184	Yes
11:45 - 12:45	596	+	517	=	1113	302	237	Yes
18:45 - 19:45	539	+	571	=	1110	328	212	Yes
07:45 - 08:45	549	+	460	=	1009	184	246	Yes
08:45 - 09:45	527	+	453	=	980	183	253	Yes
09:45 - 10:45	479	+	495	=	974	217	236	Yes
19:45 - 20:45	353	+	429	=	782	273	121	Yes
05:45 - 06:45	312	+	203	=	515	70	213	Yes
20:45 - 21:45	184	+	228	=	412	142	52	No
05:30 - 06:30	256	+	155	=	411	52	173	No
21:00 - 22:00	156	+	184	=	340	135	41	No
05:15 - 06:15	193	+	118	=	311	43	141	No
21:15 - 22:15	136	+	157	=	293	128	40	No
05:00 - 06:00	156	+	100	=	256	42	130	No
21:30 - 22:30	126	+	126	=	252	119	35	No
21:45 - 22:45	115	+	114	=	229	98	26	No
22:00 - 23:00	89	+	107	=	196	81	25	No
04:45 - 05:45	104		86		190	34	104	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2352

Study Date : 09/27/2023

Warrant 1B - Interruption of Continuous Traffic

Description

Intended for sites where the volume of the major street is so heavy that traffic on the minor street suffers excessive delay or hazard.

Summary

15 one hour periods meet minimums.
Warrant IS met.

Site Data Required

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

Volume Requirements

Rural Factor of 70 % applied
 Veh/Hr Major = **630**
 Veh/Hr Minor = **53**

Time	Major Road				Total	Minor Road		Met?
	Major EB	+	Major WB	=		Minor NB	Minor SB	
16:00 - 17:00	1075	+	1011	=	2086	594	295	Yes
15:00 - 16:00	957	+	907	=	1864	587	170	Yes
17:00 - 18:00	836	+	953	=	1789	651	369	Yes
14:00 - 15:00	803	+	699	=	1502	418	250	Yes
07:00 - 08:00	696	+	678	=	1374	245	376	Yes
18:00 - 19:00	621	+	661	=	1282	436	290	Yes
11:00 - 12:00	570	+	577	=	1147	286	249	Yes
13:00 - 14:00	595	+	541	=	1136	347	173	Yes
12:00 - 13:00	617	+	505	=	1122	300	232	Yes
19:00 - 20:00	480	+	536	=	1016	308	202	Yes
10:00 - 11:00	496	+	515	=	1011	218	302	Yes
09:00 - 10:00	519	+	450	=	969	185	238	Yes
08:00 - 09:00	516	+	420	=	936	163	249	Yes
20:00 - 21:00	318	+	367	=	685	233	101	Yes
06:00 - 07:00	379	+	253	=	632	91	266	Yes
05:45 - 06:45	312	+	203	=	515	70	213	No
05:30 - 06:30	256	+	155	=	411	52	173	No
21:00 - 22:00	156	+	184	=	340	135	41	No
05:15 - 06:15	193	+	118	=	311	43	141	No
21:15 - 22:15	136	+	157	=	293	128	40	No
05:00 - 06:00	156	+	100	=	256	42	130	No
21:30 - 22:30	126	+	126	=	252	119	35	No
21:45 - 22:45	115	+	114	=	229	98	26	No
22:00 - 23:00	89	+	107	=	196	81	25	No
04:45 - 05:45	104		86		190	34	104	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2352

Study Date : 09/27/2023

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

16 hours meet 1A minimums.
15 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 116

Minor Road CSAH 18

Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met1A?
16:30 - 17:30	1030	+	1023	=	2053	628	315	Yes
15:30 - 16:30	1074	+	965	=	2039	643	178	Yes
14:30 - 15:30	791	+	805	=	1596	503	284	Yes
17:30 - 18:30	714	+	784	=	1498	522	372	Yes
13:30 - 14:30	698	+	613	=	1311	365	181	Yes
07:30 - 08:30	678	+	554	=	1232	188	291	Yes
11:30 - 12:30	582	+	567	=	1149	303	244	Yes
18:30 - 19:30	541	+	599	=	1140	357	248	Yes
12:30 - 13:30	596	+	522	=	1118	313	199	Yes
10:30 - 11:30	558	+	534	=	1092	244	324	Yes
06:30 - 07:30	521	+	478	=	999	193	386	Yes
09:30 - 10:30	506	+	484	=	990	198	226	Yes

Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met1B?
15:45 - 16:45	1129	+	967	=	2096	629	238	Yes
16:45 - 17:45	920	+	999	=	1919	629	346	Yes
14:45 - 15:45	841	+	884	=	1725	566	228	Yes
13:45 - 14:45	761	+	652	=	1413	385	217	Yes
17:45 - 18:45	646	+	702	=	1348	471	340	Yes
06:45 - 07:45	663	+	595	=	1258	212	404	Yes
10:45 - 11:45	578	+	567	=	1145	261	310	Yes
12:45 - 13:45	590	+	536	=	1126	328	184	Yes
11:45 - 12:45	596	+	517	=	1113	302	237	Yes
18:45 - 19:45	539	+	571	=	1110	328	212	Yes
07:45 - 08:45	549	+	460	=	1009	184	246	Yes
08:45 - 09:45	527	+	453	=	980	183	253	Yes

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2352

Study Date : 09/27/2023

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.

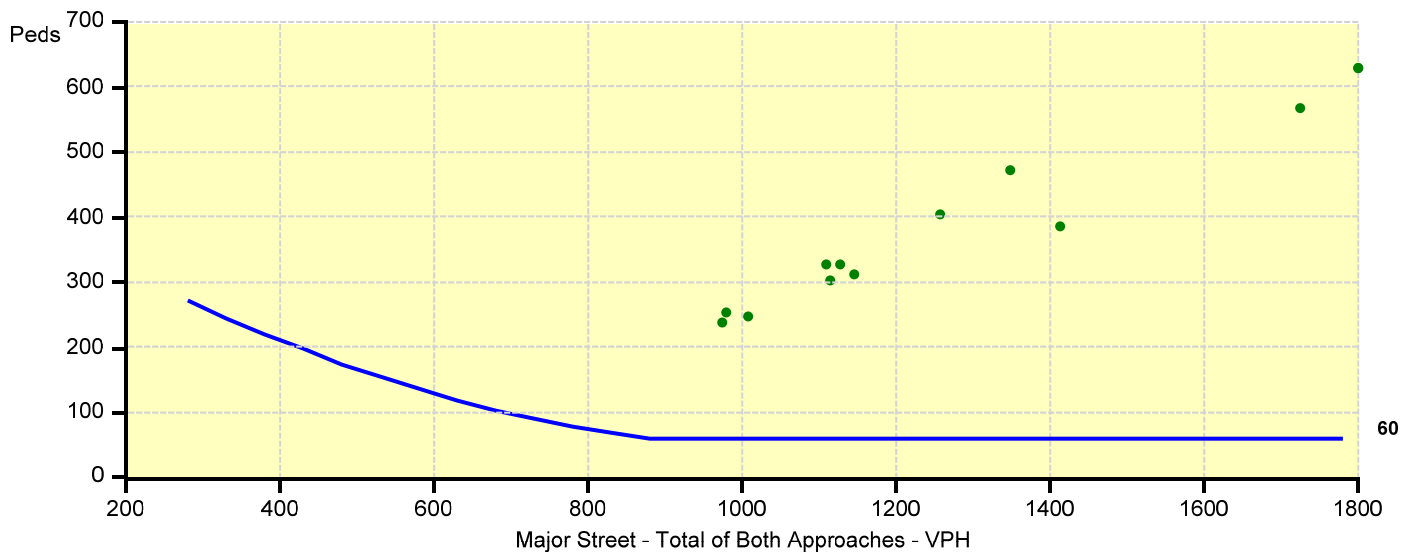
Summary

15 one hour periods meet minimums.
Warrant IS met.

Site Data Required

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

Time	Major Road CSAH 116					Minor Road CSAH 18		Met?
	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	
15:45 - 16:45	1129	+	967	=	2096	629	238	Yes
16:45 - 17:45	920	+	999	=	1919	629	346	Yes
14:45 - 15:45	841	+	884	=	1725	566	228	Yes
13:45 - 14:45	761	+	652	=	1413	385	217	Yes
17:45 - 18:45	646	+	702	=	1348	471	340	Yes
06:45 - 07:45	663	+	595	=	1258	212	404	Yes
10:45 - 11:45	578	+	567	=	1145	261	310	Yes
12:45 - 13:45	590	+	536	=	1126	328	184	Yes
11:45 - 12:45	596	+	517	=	1113	302	237	Yes
18:45 - 19:45	539	+	571	=	1110	328	212	Yes
07:45 - 08:45	549	+	460	=	1009	184	246	Yes
08:45 - 09:45	527		453		980	183	253	Yes



ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2352

Study Date : 09/27/2023

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

57 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 116				Total	Minor Road CSAH 18		Met?
	Major EB	+	Major WB	=		Minor NB	Minor SB	
15:45 - 16:45	1129	+	967	=	2096	629	238	Yes
16:00 - 17:00	1075	+	1011	=	2086	594	295	Yes
16:30 - 17:30	1030	+	1023	=	2053	628	315	Yes
15:30 - 16:30	1074	+	965	=	2039	643	178	Yes
16:15 - 17:15	1053	+	973	=	2026	612	305	Yes
15:15 - 16:15	1019	+	947	=	1966	619	182	Yes
16:45 - 17:45	920	+	999	=	1919	629	346	Yes
15:00 - 16:00	957	+	907	=	1864	587	170	Yes
17:00 - 18:00	836	+	953	=	1789	651	369	Yes
14:45 - 15:45	841	+	884	=	1725	566	228	Yes
17:15 - 18:15	757	+	896	=	1653	608	362	Yes
14:30 - 15:30	791	+	805	=	1596	503	284	Yes

