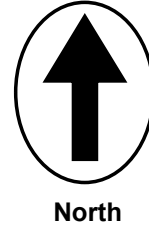


Date : 12/07/21

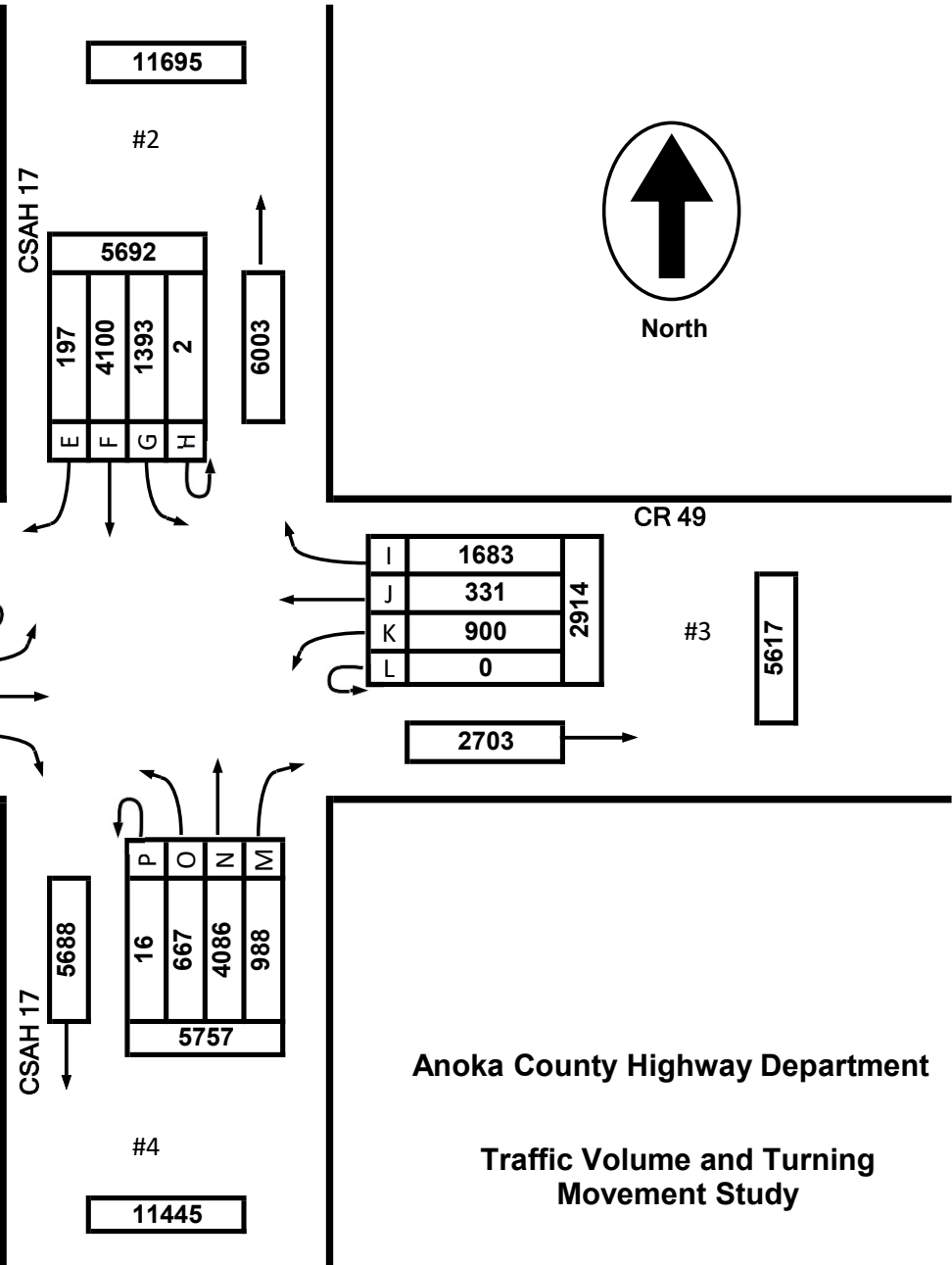
Count Number : TMC 2159

Location : CSAH 17 (Lexington Ave.)
@ CR 49 (North Rd.)

Collection Period : 24 Hours



North



Parking Lot Entrance

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

Anoka County Highway Department

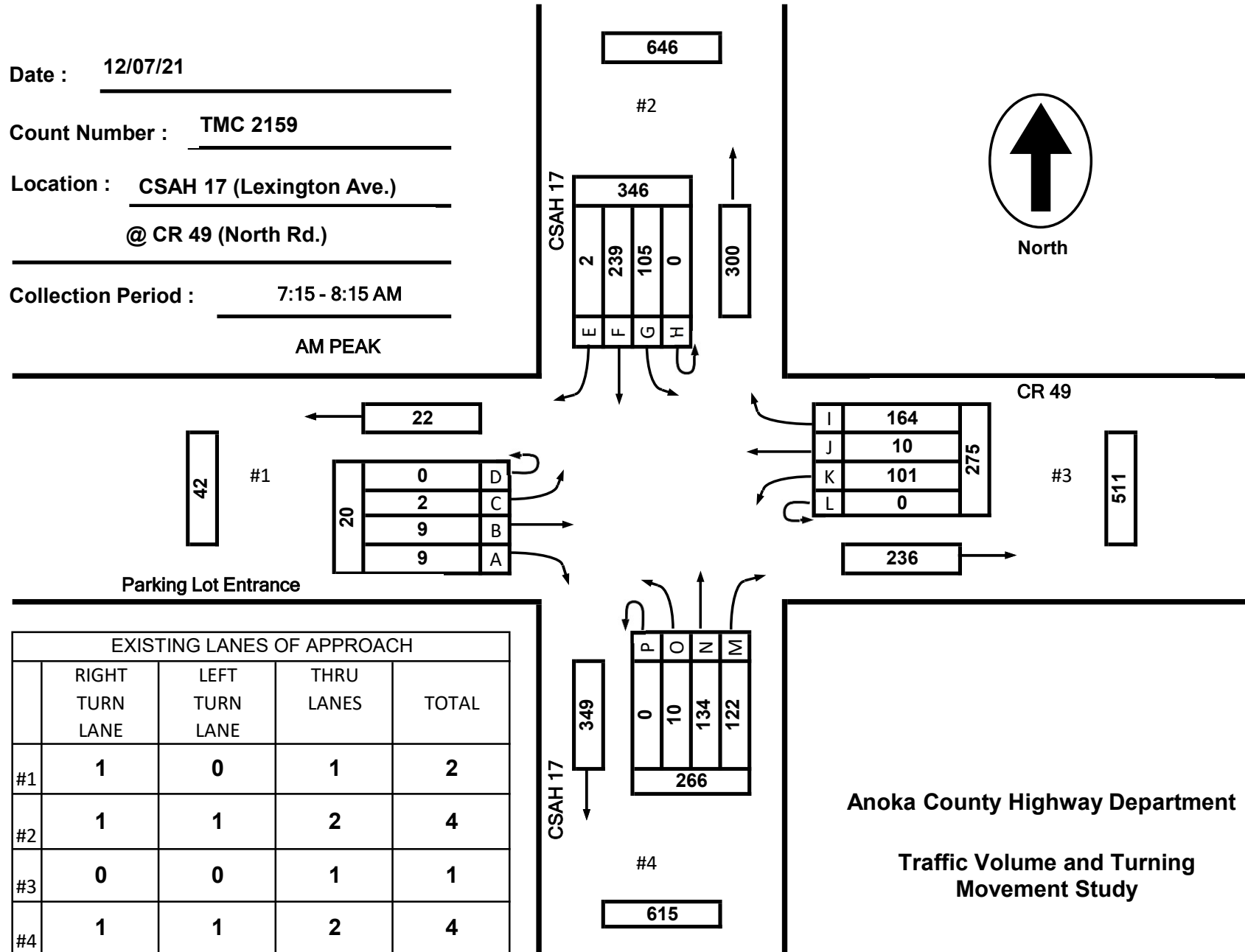
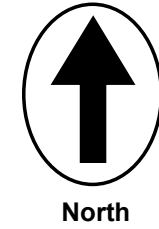
Traffic Volume and Turning Movement Study

Date : 12/07/21

Count Number : TMC 2159

Location : CSAH 17 (Lexington Ave.)
@ CR 49 (North Rd.)

Collection Period : 7:15 - 8:15 AM
AM PEAK



Parking Lot Entrance

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

Anoka County Highway Department

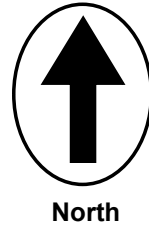
Traffic Volume and Turning Movement Study

Date : 12/07/21

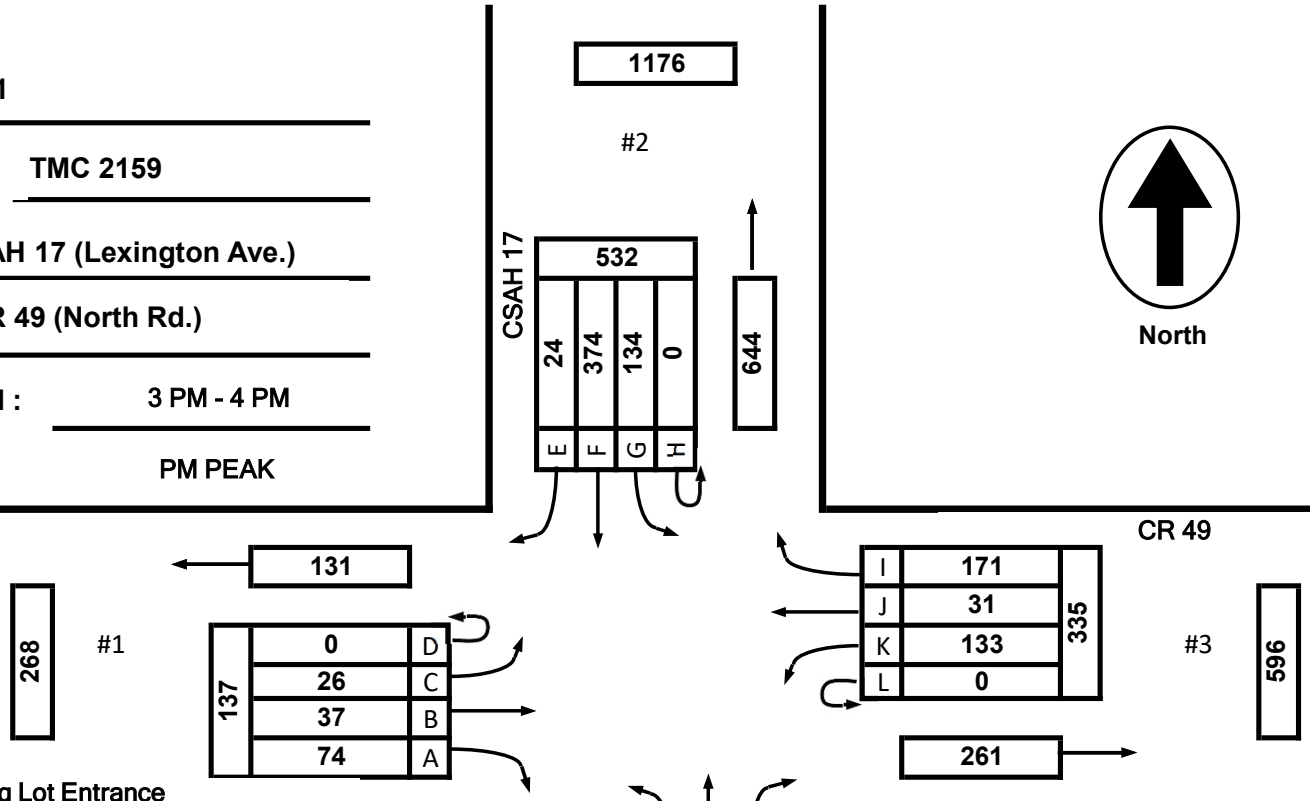
Count Number : TMC 2159

Location : CSAH 17 (Lexington Ave.)
@ CR 49 (North Rd.)

Collection Period : 3 PM - 4 PM
PM PEAK



North



Parking Lot Entrance

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

Anoka County Highway Department
 Traffic Volume and Turning Movement Study

**TMC 2159
Circle Pines MN
Tuesday, December 7, 2021**

Time	Southbound CSAH 17						Westbound CR 49					Northbound CSAH 17					Eastbound Parking Lot					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	4	5	0	0	9	0	0	0	0	0	0	0	0	4	1	0	5	0	0	0	1	2	1	15
12:15 AM	0	0	6	0	0	6	0	0	0	1	0	1	0	0	2	2	0	4	0	0	0	0	0	0	11
12:30 AM	0	3	0	0	0	3	0	3	0	0	0	3	0	0	3	2	0	5	0	0	0	0	0	0	11
12:45 AM	0	0	5	0	0	5	0	0	0	3	0	3	0	0	7	0	0	7	0	0	0	0	0	0	15
Hourly Total	0	7	16	0	0	23	0	3	0	4	0	7	0	0	16	5	0	21	0	0	0	1	2	1	52
1:00 AM	0	1	3	0	0	4	0	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	6
1:15 AM	0	1	1	0	0	2	0	1	0	2	0	3	0	0	1	3	0	4	0	0	0	0	0	0	9
1:30 AM	0	0	2	0	0	2	0	0	0	1	0	1	0	1	1	0	0	2	0	0	0	0	0	0	5
1:45 AM	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3
Hourly Total	0	2	8	0	0	10	0	2	0	4	0	6	0	1	2	3	0	6	0	0	1	0	0	1	23
2:00 AM	0	2	2	0	0	4	0	0	0	1	0	1	0	1	0	0	0	1	0	0	0	0	0	0	6
2:15 AM	0	1	3	0	0	4	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	5
2:30 AM	0	0	3	0	0	3	0	1	0	0	0	1	0	1	0	0	0	1	0	0	1	0	0	1	6
2:45 AM	0	0	4	0	0	4	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	7
Hourly Total	0	3	12	0	0	15	0	1	0	1	0	2	0	2	4	0	0	6	0	0	1	0	0	1	24
3:00 AM	0	2	2	0	0	4	0	0	1	1	0	2	0	0	1	1	0	2	0	0	0	0	0	0	8
3:15 AM	0	0	2	0	0	2	0	1	0	2	0	3	0	0	2	0	0	2	0	0	0	0	0	0	7
3:30 AM	0	0	0	0	0	0	0	0	0	4	0	4	1	0	2	0	0	3	0	0	0	0	0	0	7
3:45 AM	0	1	2	0	0	3	0	1	0	2	0	3	1	0	3	0	0	4	0	0	0	0	0	0	10
Hourly Total	0	3	6	0	0	9	0	2	1	9	0	12	2	0	8	1	0	11	0	0	0	0	0	0	32
4:00 AM	0	0	3	0	0	3	0	0	0	2	0	2	0	0	2	1	0	3	0	0	0	0	0	0	8
4:15 AM	0	2	6	1	0	9	0	0	0	5	0	5	0	1	4	0	0	5	0	0	0	0	0	0	19
4:30 AM	0	1	6	1	0	8	0	2	0	6	0	8	0	3	5	0	0	8	0	0	0	0	0	0	24
4:45 AM	0	1	11	1	0	13	0	3	1	6	0	10	0	2	7	1	0	10	0	0	0	0	0	0	33
Hourly Total	0	4	26	3	0	33	0	5	1	19	0	25	0	6	18	2	0	26	0	0	0	0	0	0	84
5:00 AM	0	1	12	0	0	13	0	8	0	6	0	14	0	0	10	1	0	11	0	0	0	0	0	0	38
5:15 AM	0	1	14	0	0	15	0	6	0	12	0	18	0	1	8	0	0	9	0	0	0	1	0	1	43
5:30 AM	0	0	24	0	0	24	0	3	0	13	0	16	0	0	11	1	0	12	0	0	0	1	0	1	53
5:45 AM	0	6	28	0	0	34	0	3	1	17	0	21	0	1	15	5	0	21	0	0	0	2	0	2	78
Hourly Total	0	8	78	0	0	86	0	20	1	48	0	69	0	2	44	7	0	53	0	0	0	4	0	4	212
6:00 AM	0	3	30	0	0	33	0	5	2	8	0	15	0	1	17	3	0	21	0	0	0	2	0	2	71
6:15 AM	0	6	38	1	0	45	0	7	1	20	0	28	0	1	33	4	0	38	0	0	0	0	0	0	111
6:30 AM	0	5	43	2	0	50	0	13	1	30	0	44	0	3	29	10	0	42	0	0	0	0	0	0	136
6:45 AM	0	13	53	1	0	67	0	10	1	22	0	33	0	1	42	5	0	48	0	0	1	1	0	2	150
Hourly Total	0	27	164	4	0	195	0	35	5	80	0	120	0	6	121	22	0	149	0	0	1	3	0	4	468
7:00 AM	0	20	44	0	0	64	0	16	1	28	0	45	1	1	36	5	0	43	0	1	1	0	0	2	154
7:15 AM	0	19	54	0	1	73	0	21	3	34	0	58	0	0	27	16	0	43	0	2	4	0	1	6	180
7:30 AM	0	22	52	0	0	74	0	20	1	36	0	57	0	4	35	47	0	86	0	0	1	2	0	3	220
7:45 AM	0	54	61	1	0	116	0	35	2	52	0	89	0	6	35	47	0	88	0	0	3	2	0	5	298
Hourly Total	0	115	211	1	1	327	0	92	7	150	0	249	1	11	133	115	0	260	0	3	9	4	1	16	852

TMC 2159
Circle Pines MN
Tuesday, December 7, 2021

Time	Southbound CSAH 17						Westbound CR 49						Northbound CSAH 17						Eastbound Parking Lot						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	10	72	1	0	83	0	25	4	42	0	71	0	0	37	12	0	49	0	0	1	5	1	6	209
8:15 AM	0	10	72	0	0	82	0	16	5	14	0	35	0	9	33	7	0	49	0	1	0	2	0	3	169
8:30 AM	0	21	59	3	0	83	0	10	2	23	0	35	0	5	50	10	0	65	0	0	1	6	0	7	190
8:45 AM	1	16	58	1	0	76	0	11	7	11	0	29	0	5	44	24	0	73	0	4	2	6	0	12	190
Hourly Total	1	57	261	5	0	324	0	62	18	90	0	170	0	19	164	53	0	236	0	5	4	19	1	28	758
9:00 AM	0	25	55	3	0	83	0	31	7	33	0	71	0	9	59	35	0	103	0	2	2	4	0	8	265
9:15 AM	0	8	48	5	0	61	0	20	6	29	0	55	0	7	53	6	0	66	0	3	3	7	0	13	195
9:30 AM	0	13	45	1	0	59	0	8	8	20	0	36	0	10	55	8	0	73	0	1	3	6	0	10	178
9:45 AM	0	14	65	5	0	84	0	7	3	12	0	22	1	12	57	4	0	74	0	3	2	10	0	15	185
Hourly Total	0	60	213	14	0	287	0	66	24	94	0	184	1	38	224	53	0	316	0	9	10	27	0	46	833
10:00 AM	0	7	35	3	0	45	0	3	5	26	0	34	0	13	45	4	0	62	0	6	4	11	0	21	162
10:15 AM	1	12	44	4	0	61	0	6	8	7	0	21	0	12	50	11	0	73	0	0	7	15	0	22	177
10:30 AM	0	18	48	4	0	70	0	7	3	16	0	26	0	6	43	10	0	59	0	3	11	11	0	25	180
10:45 AM	0	20	56	1	0	77	0	9	2	16	0	27	1	16	42	4	0	63	0	4	5	12	0	21	188
Hourly Total	1	57	183	12	0	253	0	25	18	65	0	108	1	47	180	29	0	257	0	13	27	49	0	89	707
11:00 AM	0	9	57	6	0	72	0	8	7	24	0	39	0	10	54	8	0	72	0	2	1	10	0	13	196
11:15 AM	0	13	57	3	0	73	0	6	8	23	0	37	0	15	62	4	0	81	0	4	5	14	0	23	214
11:30 AM	0	13	59	4	0	76	0	12	5	19	0	36	0	14	75	6	0	95	0	4	4	17	0	25	232
11:45 AM	0	22	64	3	0	89	0	9	9	25	0	43	0	13	57	14	0	84	0	6	5	10	0	21	237
Hourly Total	0	57	237	16	0	310	0	35	29	91	0	155	0	52	248	32	0	332	0	16	15	51	0	82	879
12:00 PM	0	11	71	3	0	85	0	4	3	20	0	27	0	16	82	10	1	108	0	10	2	15	1	27	247
12:15 PM	0	20	63	5	0	88	0	4	7	17	0	28	0	18	61	3	0	82	0	7	7	18	0	32	230
12:30 PM	0	19	63	3	0	85	0	10	6	20	0	36	0	12	78	9	0	99	0	7	2	14	0	23	243
12:45 PM	0	15	56	6	0	77	0	6	7	10	0	23	0	18	75	7	0	100	0	3	6	15	0	24	224
Hourly Total	0	65	253	17	0	335	0	24	23	67	0	114	0	64	296	29	1	389	0	27	17	62	1	106	944
1:00 PM	0	8	61	5	0	74	0	13	6	20	0	39	0	10	71	12	1	93	0	3	1	16	0	20	226
1:15 PM	0	21	82	5	0	108	0	4	3	20	0	27	0	17	66	11	0	94	0	3	5	14	0	22	251
1:30 PM	0	13	70	8	0	91	0	9	3	22	0	34	0	14	72	9	0	95	0	6	11	13	0	30	250
1:45 PM	0	17	77	8	0	102	0	8	11	15	0	34	0	21	75	6	0	102	0	5	4	11	0	20	258
Hourly Total	0	59	290	26	0	375	0	34	23	77	0	134	0	62	284	38	1	384	0	17	21	54	0	92	985
2:00 PM	0	19	61	6	0	86	0	7	11	23	0	41	0	16	64	10	1	90	0	13	5	20	1	38	255
2:15 PM	0	17	80	1	0	98	0	5	5	17	0	27	0	19	66	9	0	94	0	5	10	14	0	29	248
2:30 PM	0	20	74	5	0	99	0	4	12	19	0	35	0	17	82	32	0	131	0	6	9	22	0	37	302
2:45 PM	0	42	56	5	0	103	0	29	8	37	0	74	0	21	84	31	1	136	0	9	11	18	0	38	351
Hourly Total	0	98	271	17	0	386	0	45	36	96	0	177	0	73	296	82	2	451	0	33	35	74	1	142	1156
3:00 PM	0	25	84	7	0	116	0	49	8	56	0	113	0	15	99	19	0	133	0	7	10	15	0	32	394
3:15 PM	0	36	94	6	1	136	0	20	5	43	0	68	0	16	102	23	0	141	0	4	12	16	2	32	377
3:30 PM	0	41	96	3	0	140	0	21	9	29	0	59	0	26	120	29	1	175	0	8	8	19	0	35	409
3:45 PM	0	32	100	8	0	140	0	43	9	43	0	95	0	19	126	19	0	164	0	7	7	24	0	38	437
Hourly Total	0	134	374	24	1	532	0	133	31	171	0	335	0	76	447	90	1	613	0	26	37	74	2	137	1617

**TMC 2159
Circle Pines MN
Tuesday, December 7, 2021**

Time	Southbound CSAH 17						Westbound CR 49						Northbound CSAH 17						Eastbound Parking Lot						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	41	82	6	0	129	0	15	9	37	0	61	0	22	108	10	0	140	0	10	10	16	0	36	366
4:15 PM	0	31	93	6	0	130	0	22	8	36	0	66	0	22	122	29	0	173	0	6	11	17	0	34	403
4:30 PM	0	31	75	4	0	110	0	21	3	27	0	51	1	22	120	24	0	167	0	11	10	21	0	42	370
4:45 PM	0	41	94	6	0	141	0	8	8	28	0	44	0	22	123	25	0	170	0	9	6	22	0	37	392
Hourly Total	0	144	344	22	0	510	0	66	28	128	0	222	1	88	473	88	0	650	0	36	37	76	0	149	1531
5:00 PM	0	29	100	1	0	130	0	12	7	30	0	49	0	15	112	24	0	151	0	4	8	16	0	28	358
5:15 PM	0	41	92	8	0	141	0	24	9	37	0	70	0	10	120	27	0	157	0	4	10	16	0	30	398
5:30 PM	0	33	75	5	0	113	0	17	10	37	0	64	0	15	102	29	0	146	0	4	7	17	0	28	351
5:45 PM	0	33	73	3	0	109	0	12	5	25	0	42	1	10	103	19	0	133	0	6	8	14	1	28	312
Hourly Total	0	136	340	17	0	493	0	65	31	129	0	225	1	50	437	99	0	587	0	18	33	63	1	114	1419
6:00 PM	0	39	68	6	0	113	0	14	10	39	0	63	0	6	76	14	0	96	0	3	10	15	0	28	300
6:15 PM	0	33	73	1	0	107	0	17	9	27	0	53	1	11	62	23	0	97	0	5	12	9	0	26	283
6:30 PM	0	44	75	1	0	120	0	14	4	21	0	39	2	9	49	18	0	78	0	4	8	11	0	23	260
6:45 PM	0	35	52	2	0	89	0	9	7	18	0	34	0	4	53	29	0	86	0	0	7	8	0	15	224
Hourly Total	0	151	268	10	0	429	0	54	30	105	0	189	3	30	240	84	0	357	0	12	37	43	0	92	1067
7:00 PM	0	27	56	1	0	84	0	18	6	28	0	52	0	9	53	18	0	80	0	2	10	6	0	18	234
7:15 PM	0	13	59	4	0	76	0	5	4	12	0	21	0	11	52	26	0	89	0	4	5	16	0	25	211
7:30 PM	0	18	44	1	0	63	0	19	4	24	0	47	2	3	42	28	0	75	0	3	4	7	1	14	199
7:45 PM	0	15	40	1	0	56	0	10	4	27	0	41	1	4	35	7	2	47	0	1	6	8	0	15	159
Hourly Total	0	73	199	7	0	279	0	52	18	91	0	161	3	27	182	79	2	291	0	10	25	37	1	72	803
8:00 PM	0	20	43	1	0	64	0	14	3	33	0	50	1	1	37	9	0	48	0	2	3	7	0	12	174
8:15 PM	0	12	37	0	0	49	0	6	0	26	0	32	1	5	24	8	0	38	0	1	1	5	0	7	126
8:30 PM	0	11	30	0	0	41	0	16	3	30	0	49	0	2	28	9	0	39	0	1	2	6	0	9	138
8:45 PM	0	22	25	0	0	47	0	10	0	23	0	33	0	2	32	10	0	44	0	0	1	1	1	2	126
Hourly Total	0	65	135	1	0	201	0	46	6	112	0	164	2	10	121	36	0	169	0	4	7	19	1	30	564
9:00 PM	0	14	39	0	0	53	0	5	1	17	0	23	0	0	22	12	0	34	0	0	1	4	0	5	115
9:15 PM	0	2	34	0	0	36	0	7	2	0	0	9	0	0	23	3	0	26	0	1	3	4	1	8	79
9:30 PM	0	6	20	0	0	26	0	4	0	5	0	9	0	0	22	6	0	28	0	0	0	0	0	0	63
9:45 PM	0	13	28	0	0	41	0	2	0	2	0	4	0	0	17	2	0	19	0	0	0	1	0	1	65
Hourly Total	0	35	121	0	0	156	0	18	1	26	0	45	0	0	84	23	0	107	0	1	4	9	1	14	322
10:00 PM	0	8	12	0	0	20	0	7	0	7	0	14	0	1	15	2	0	18	0	0	0	2	2	2	54
10:15 PM	0	3	18	0	0	21	0	1	0	4	0	5	0	0	13	3	0	16	0	1	0	0	0	1	43
10:30 PM	0	4	11	0	0	15	0	2	0	5	0	7	0	1	8	8	0	17	0	0	0	0	0	0	39
10:45 PM	0	2	13	1	0	16	0	1	0	3	0	4	1	1	10	2	0	14	0	0	1	1	0	2	36
Hourly Total	0	17	54	1	0	72	0	11	0	19	0	30	1	3	46	15	0	65	0	1	1	3	2	5	172
11:00 PM	0	3	13	0	0	16	0	2	0	0	0	2	0	0	4	1	0	5	0	1	0	0	0	1	24
11:15 PM	0	7	4	0	0	11	0	0	0	1	0	1	0	0	5	0	0	5	0	0	0	0	0	0	17
11:30 PM	0	2	13	0	0	15	0	2	0	4	0	6	0	0	6	0	0	6	0	0	0	0	0	0	27
11:45 PM	0	4	6	0	0	10	0	0	0	2	0	2	0	0	3	2	0	5	0	0	0	0	0	0	17
Hourly Total	0	16	36	0	0	52	0	4	0	7	0	11	0	0	18	3	0	21	0	1	0	0	0	1	85
DAILY TOTAL	2	1393	4100	197	2	5692	0	900	331	1683	0	2914	16	667	4086	988	7	5757	0	232	322	672	14	1226	15589
Cars	2	1364	4033	187	2	5586	0	875	326	1655	0	2856	16	664	4021	944	7	5645	0	224	320	665	14	1209	15296
Heavy Vehicles	0	29	67	10	0	106	0	25	5	28	0	58	0	3	65	44	0	112	0	8	2	7	0	17	293
Heavy Vehicle %	0.00%	2.08%	1.63%	5.08%	0.00%	1.86%	0.00%	2.78%	1.51%	1.66%	0.00%	1.99%	0.00%	0.45%	1.59%	4.45%	0.00%	1.95%	0.00%	3.45%	0.62%	1.04%	0.00%	1.39%	1.88%

**TMC 2159
Circle Pines MN
Tuesday, December 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								
7:15 AM	0	19	54	0	1	73	0	21	3	34	0	58	0	0	27	16	0	43	0	2	4	0	1	6	0	0	0	0	0	0	3	180
7:30 AM	0	22	52	0	0	74	0	20	1	36	0	57	0	4	35	47	0	86	0	0	1	2	2	5	0	0	0	0	0	0	3	220
7:45 AM	0	54	61	1	0	116	0	35	2	52	0	89	0	6	35	47	0	88	0	0	3	2	0	5	0	0	0	0	0	0	5	298
8:00 AM	0	10	72	1	0	83	0	25	4	42	0	71	0	0	37	12	0	49	0	0	1	5	1	6	0	0	0	0	0	0	6	209
Peak Hour Total	0	105	239	2	1	346	0	101	10	164	0	275	0	10	134	122	0	266	0	2	9	9	2	20	0	0	0	0	0	0	20	907
PHF	0.000	0.486	0.830	0.500	0.250	0.746	0.000	0.721	0.625	0.788	0.000	0.772	0.000	0.417	0.905	0.649	0.000	0.756	0.000	0.250	0.563	0.450	0.500	0.833	0.000	0.000	0.000	0.000	0.000	0.000	0.761	

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								
3:00 PM	0	25	84	7	0	116	0	49	8	56	0	113	0	15	99	19	0	133	0	7	10	15	0	32	0	0	0	0	0	0	394	
3:15 PM	0	36	94	6	1	136	0	20	5	43	0	68	0	16	102	23	0	141	0	4	12	16	2	32	0	0	0	0	0	0	377	
3:30 PM	0	41	96	3	0	140	0	21	9	29	0	59	0	26	120	29	1	175	0	8	8	19	0	35	0	0	0	0	0	0	409	
3:45 PM	0	32	100	8	0	140	0	43	9	43	0	95	0	19	126	19	0	164	0	7	7	24	0	38	0	0	0	0	0	0	437	
Peak Hour Total	0	134	374	24	1	532	0	133	31	171	0	335	0	76	447	90	1	613	0	26	37	74	2	137	0	0	0	0	0	0	1617	
PHF	0.000	0.817	0.935	0.750	0.250	0.950	0.000	0.679	0.861	0.763	0.000	0.741	0.000	0.731	0.887	0.776	0.250	0.876	0.000	0.813	0.771	0.771	0.250	0.901	0.000	0.000	0.000	0.000	0.000	0.000	0.925	

Total Vehicles On Leg				11695	
Vehicles Entering Intersection		5692	Vehicles Exiting Intersection		6003
Southbound					
Cars	187	4033	1364	2	2
Heavy	10	67	29	0	0
Total	197	4100	1393	2	2



Total Vehicles on Leg 2421	Vehicles Entering Intersection 1226	Eastbound	Cars	Heavy	Total
	Vehicles Exiting Intersection 1195		14	0	14
			0	0	0
			224	8	232
			320	2	322
665	7	672			

Daily Volumes

Cars	Heavy	Total	Westbound	Vehicles Entering Intersection 2914	Total Vehicles on Leg 5617
1655	28	1683			
326	5	331			
875	25	900			
0	0	0			
0	0	0	Vehicles Exiting Intersection 2703		

Cars	7	16	664	4021	944
Heavy	0	0	3	65	44
Total	7	16	667	4086	988
Northbound					
Vehicles Entering Intersection 5757			Vehicles Exiting Intersection 5688		
Total Vehicles On Leg			11445		

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
12/7/2021	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	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
	0:45	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
	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	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
	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	0	0	0	0	0	0	0	0
	2:30	0	0	0	0	0	0	0	0	0	0	1	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
	3:00	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	1	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
	3:45	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
	4:15	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
	4:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	5:15	0	0	0	0	0	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	0	0	0	0	0	0
	5:45	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0
	6:15	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:30	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
	6:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:00	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
	7:15	0	0	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
	7:30	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0
	7:45	0	0	2	0	0	0	1	0	1	0	0	0	2	10	0	0	0	0	0	0
	8:00	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
	8:15	0	0	2	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0
	8:30	0	1	4	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
	8:45	0	2	3	0	0	0	0	1	1	0	0	0	4	2	0	0	0	1	0	0
	9:00	0	2	2	0	0	0	1	0	2	0	0	0	0	4	0	0	0	0	0	0
	9:15	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0
	9:30	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
	9:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0
	10:15	0	2	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	10:30	0	1	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0
	10:45	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
	11:00	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
	11:15	0	0	1	1	0	0	1	0	0	0	0	0	3	0	0	0	0	1	0	0
	11:30	0	1	2	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0
	11:45	0	1	2	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0

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
12/07/2021	12:00	0	0	2	0	0	0	0	0	0	0	0	0	4	1	0	0	0	0	0	0
	12:15	0	1	1	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0
	12:30	0	0	1	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0
	12:45	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
	13:00	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	13:15	0	0	4	0	0	0	1	0	0	0	0	0	2	1	0	0	0	0	0	0
	13:30	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
	13:45	0	0	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
	14:00	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0	0	1	0	0	0
	14:15	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
	14:30	0	0	1	0	0	0	1	0	0	0	0	0	1	1	0	0	1	0	0	0
	14:45	0	0	1	1	0	0	0	0	0	0	0	1	2	0	0	0	1	0	1	0
	15:00	0	1	1	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0
	15:15	0	1	2	0	0	0	2	0	0	0	0	0	2	2	0	0	0	0	0	0
	15:30	0	2	2	1	0	0	0	0	0	0	0	0	5	4	0	0	0	0	0	0
	15:45	0	0	5	1	0	0	3	0	3	0	0	0	1	1	0	0	1	0	0	0
	16:00	0	1	2	0	0	0	0	0	1	0	0	0	3	0	0	0	0	0	0	0
	16:15	0	1	1	0	0	0	0	1	0	0	0	1	2	0	0	0	0	0	0	0
	16:30	0	2	2	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0
	16:45	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0
	17:00	0	2	1	0	0	0	1	0	1	0	0	0	4	0	0	0	0	0	0	0
	17:15	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0
	17:30	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
	17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
	18:00	0	1	1	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0
	18:15	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	1	0	0	0
	18:30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	19:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	19:15	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	19:30	0	0	1	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0
	19:45	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	20:00	0	0	0	0	0	0	3	0	5	0	0	0	1	0	0	0	0	0	0	0
	20:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	20:30	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
	20:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	21:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	21:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	21:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	21:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	22:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	22:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	22:45	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	23:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	23:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	23:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	23:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2159

Study Date : 12/17/2021

Signal Warrants - Summary

Major Street Approaches

Northbound: CSAH 17

Number of Lanes : 2+

Total Approach Volume: 5,757

Southbound: CSAH 17

Number of Lanes :2+

Total Approach Volume: 5,692

Minor Street Approaches

Eastbound: Parking Lot

Number of Lanes :1

Total Approach Volume: 1,226

Westbound: CR 49

Number of Lanes :1

Total Approach Volume: 2,914

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 8 hours, 8 are needed

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

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

Required 1B volumes reached for 13 hours, 8 are needed

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

Number of hours (12) volumes exceed minimum >= minimum required (4).

Warrant 3 - Peak Hour.....Satisfied

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

Number of one hour periods (42) 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 2159

Study Date : 12/17/2021

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	
	CSAH 17					Parking Lot		
15:30 - 16:30	652	+	539	=	1191	143	281	Yes
16:30 - 17:30	645	+	522	=	1167	137	214	Yes
14:30 - 15:30	541	+	454	=	995	139	290	Yes
17:30 - 18:30	472	+	442	=	914	110	222	Yes
13:30 - 14:30	381	+	377	=	758	117	136	Yes
12:30 - 13:30	386	+	344	=	730	89	125	Yes
11:30 - 12:30	369	+	338	=	707	105	134	Yes
18:30 - 19:30	333	+	369	=	702	81	146	Yes
07:30 - 08:30	272	+	355	=	627	17	252	Yes
08:30 - 09:30	307	+	303	=	610	40	190	Yes
10:30 - 11:30	275	+	292	=	567	82	129	Yes
09:30 - 10:30	282	+	249	=	531	68	113	Yes
19:30 - 20:30	208	+	232	=	440	48	170	Yes
06:30 - 07:30	176	+	254	=	430	10	180	Yes
06:15 - 07:15	171	+	226	=	397	4	150	No
06:00 - 07:00	149	+	195	=	344	4	120	No
20:30 - 21:30	143	+	177	=	320	24	114	No
20:45 - 21:45	132	+	162	=	294	15	74	No
05:45 - 06:45	122	+	162	=	284	4	108	No
21:00 - 22:00	107	+	156	=	263	14	45	No
05:30 - 06:30	92	+	136	=	228	5	80	No
21:15 - 22:15	91	+	123	=	214	11	36	No
21:30 - 22:30	81	+	108	=	189	4	32	No
05:15 - 06:15	63	+	106	=	169	6	70	No
21:45 - 22:45	70		97		167	4	30	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2159

Study Date : 12/17/2021

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

8 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 17					Parking Lot		
16:00 - 17:00	650	+	510	=	1160	149	222	Yes
15:00 - 16:00	613	+	532	=	1145	137	335	Yes
17:00 - 18:00	587	+	493	=	1080	114	225	Yes
14:00 - 15:00	451	+	386	=	837	142	177	Yes
18:00 - 19:00	357	+	429	=	786	92	189	Yes
13:00 - 14:00	384	+	375	=	759	92	134	Yes
12:00 - 13:00	389	+	335	=	724	106	114	Yes
11:00 - 12:00	332	+	310	=	642	82	155	Yes
07:30 - 08:30	272	+	355	=	627	17	252	No
07:45 - 08:45	251	+	364	=	615	21	230	No
08:15 - 09:15	290	+	324	=	614	30	170	No
07:15 - 08:15	266	+	346	=	612	20	275	No
08:30 - 09:30	307	+	303	=	610	40	190	No
10:45 - 11:45	311	+	298	=	609	82	139	No
09:00 - 10:00	316	+	287	=	603	46	184	No
08:45 - 09:45	315	+	279	=	594	43	191	No
07:00 - 08:00	260	+	327	=	587	16	249	No
19:00 - 20:00	291	+	279	=	570	72	161	No
10:30 - 11:30	275	+	292	=	567	82	129	No
08:00 - 09:00	236	+	324	=	560	28	170	No
10:15 - 11:15	267	+	280	=	547	81	113	No
09:30 - 10:30	282	+	249	=	531	68	113	No
09:45 - 10:45	268	+	260	=	528	83	103	No
09:15 - 10:15	275	+	249	=	524	59	147	No
19:15 - 20:15	259		259		518	66	159	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2159

Study Date : 12/17/2021

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

15 hours meet 1A minimums.
13 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 17

Minor Road Parking Lot

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1A?
16:00 - 17:00	650	+	510	=	1160	149	222	Yes
15:00 - 16:00	613	+	532	=	1145	137	335	Yes
17:00 - 18:00	587	+	493	=	1080	114	225	Yes
14:00 - 15:00	451	+	386	=	837	142	177	Yes
18:00 - 19:00	357	+	429	=	786	92	189	Yes
13:00 - 14:00	384	+	375	=	759	92	134	Yes
12:00 - 13:00	389	+	335	=	724	106	114	Yes
11:00 - 12:00	332	+	310	=	642	82	155	Yes
09:00 - 10:00	316	+	287	=	603	46	184	Yes
07:00 - 08:00	260	+	327	=	587	16	249	Yes
19:00 - 20:00	291	+	279	=	570	72	161	Yes
08:00 - 09:00	236		324		560	28	170	Yes

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1B?
16:00 - 17:00	650	+	510	=	1160	149	222	Yes
15:00 - 16:00	613	+	532	=	1145	137	335	Yes
17:00 - 18:00	587	+	493	=	1080	114	225	Yes
14:00 - 15:00	451	+	386	=	837	142	177	Yes
18:00 - 19:00	357	+	429	=	786	92	189	Yes
13:00 - 14:00	384	+	375	=	759	92	134	Yes
12:00 - 13:00	389	+	335	=	724	106	114	Yes
11:00 - 12:00	332	+	310	=	642	82	155	Yes
09:00 - 10:00	316	+	287	=	603	46	184	Yes
07:00 - 08:00	260	+	327	=	587	16	249	Yes
19:00 - 20:00	291	+	279	=	570	72	161	Yes
08:00 - 09:00	236		324		560	28	170	Yes

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2159

Study Date : 12/17/2021

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.

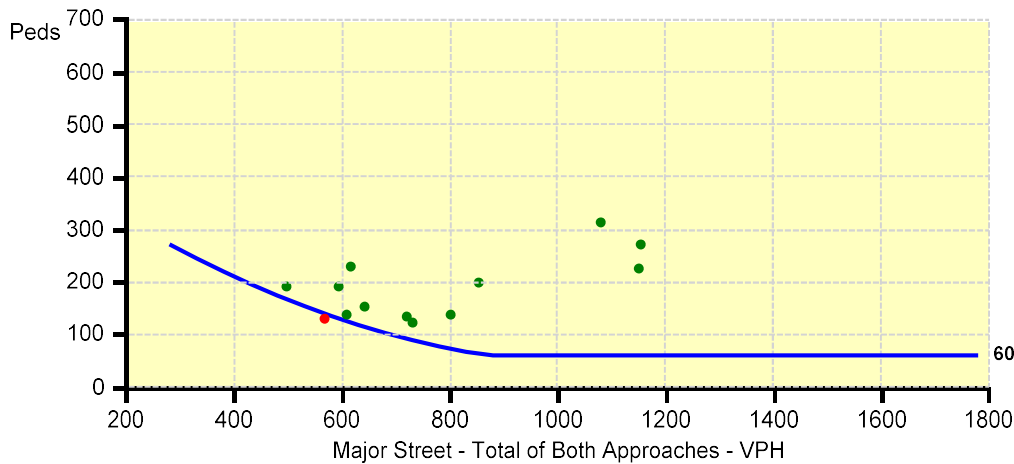
Summary

12 one hour periods meet minimums.
Warrant IS met.

Site Data Required

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

Time	Major Road CSAH 17				Total	Minor Road Parking Lot		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
15:45 - 16:45	644	+	509	=	1153	150	273	Yes
16:45 - 17:45	624	+	525	=	1149	123	227	Yes
14:45 - 15:45	585	+	495	=	1080	137	314	Yes
17:45 - 18:45	404	+	449	=	853	105	197	Yes
13:45 - 14:45	417	+	385	=	802	124	137	Yes
12:45 - 13:45	382	+	350	=	732	96	123	Yes
11:45 - 12:45	373	+	347	=	720	103	134	Yes
18:45 - 19:45	330	+	312	=	642	72	154	Yes
07:45 - 08:45	251	+	364	=	615	21	230	Yes
10:45 - 11:45	311	+	298	=	609	82	139	Yes
08:45 - 09:45	315	+	279	=	594	43	191	Yes
							193	Yes



ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2159

Study Date : 12/17/2021

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

20 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 17				Total	Minor Road Parking Lot		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
15:30 - 16:30	652	+	539	=	1191	143	281	Yes
16:15 - 17:15	661	+	511	=	1172	141	210	Yes
16:30 - 17:30	645	+	522	=	1167	137	214	Yes
15:15 - 16:15	620	+	545	=	1165	141	283	Yes
16:00 - 17:00	650	+	510	=	1160	149	222	Yes
15:45 - 16:45	644	+	509	=	1153	150	273	Yes
16:45 - 17:45	624	+	525	=	1149	123	227	Yes
15:00 - 16:00	613	+	532	=	1145	137	335	Yes
17:00 - 18:00	587	+	493	=	1080	114	225	Yes
14:45 - 15:45	585	+	495	=	1080	137	314	Yes
17:15 - 18:15	532	+	476	=	1008	114	239	Yes
							290	Yes

