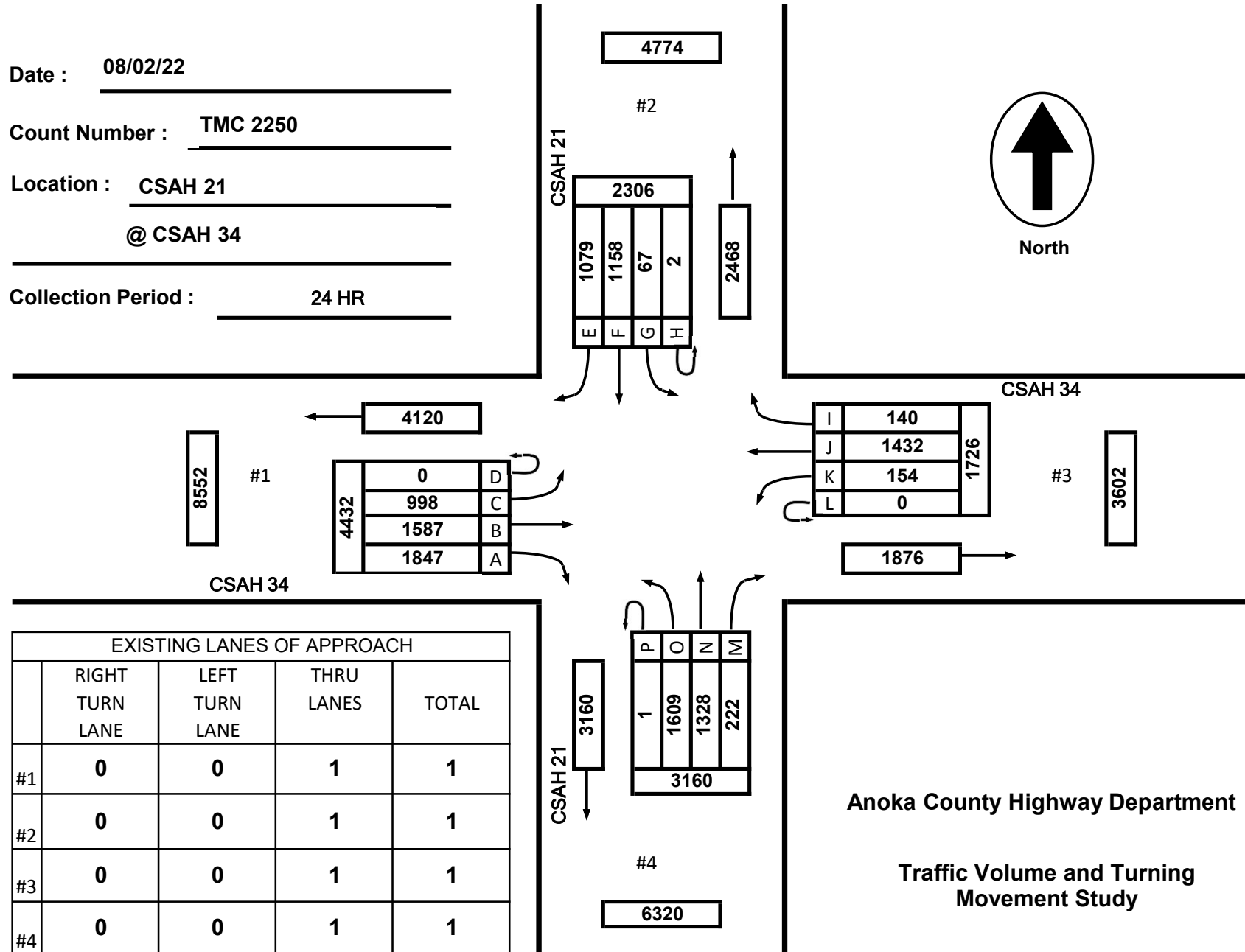
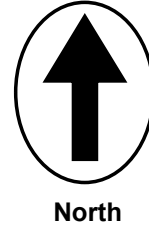


Date : 08/02/22

Count Number : TMC 2250

Location : CSAH 21
@ CSAH 34

Collection Period : 24 HR



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

Anoka County Highway Department

Traffic Volume and Turning Movement Study

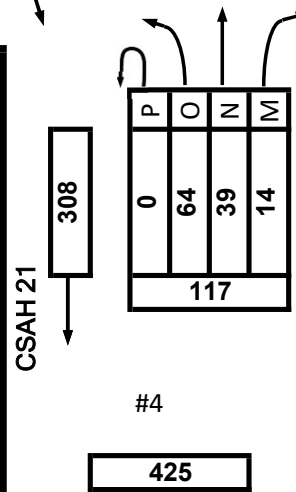
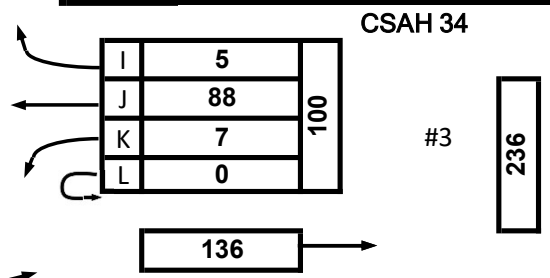
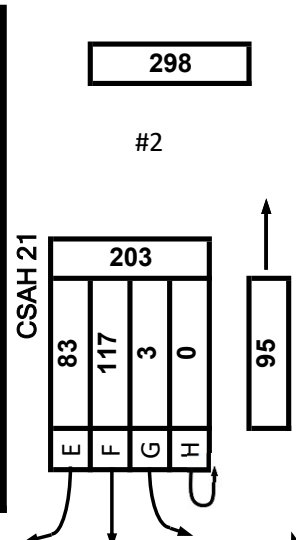
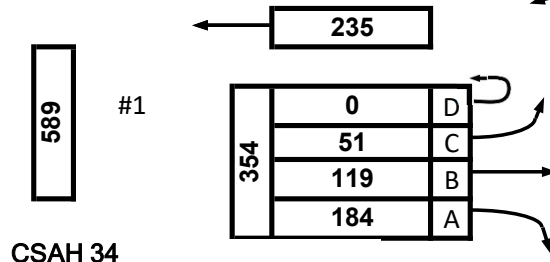
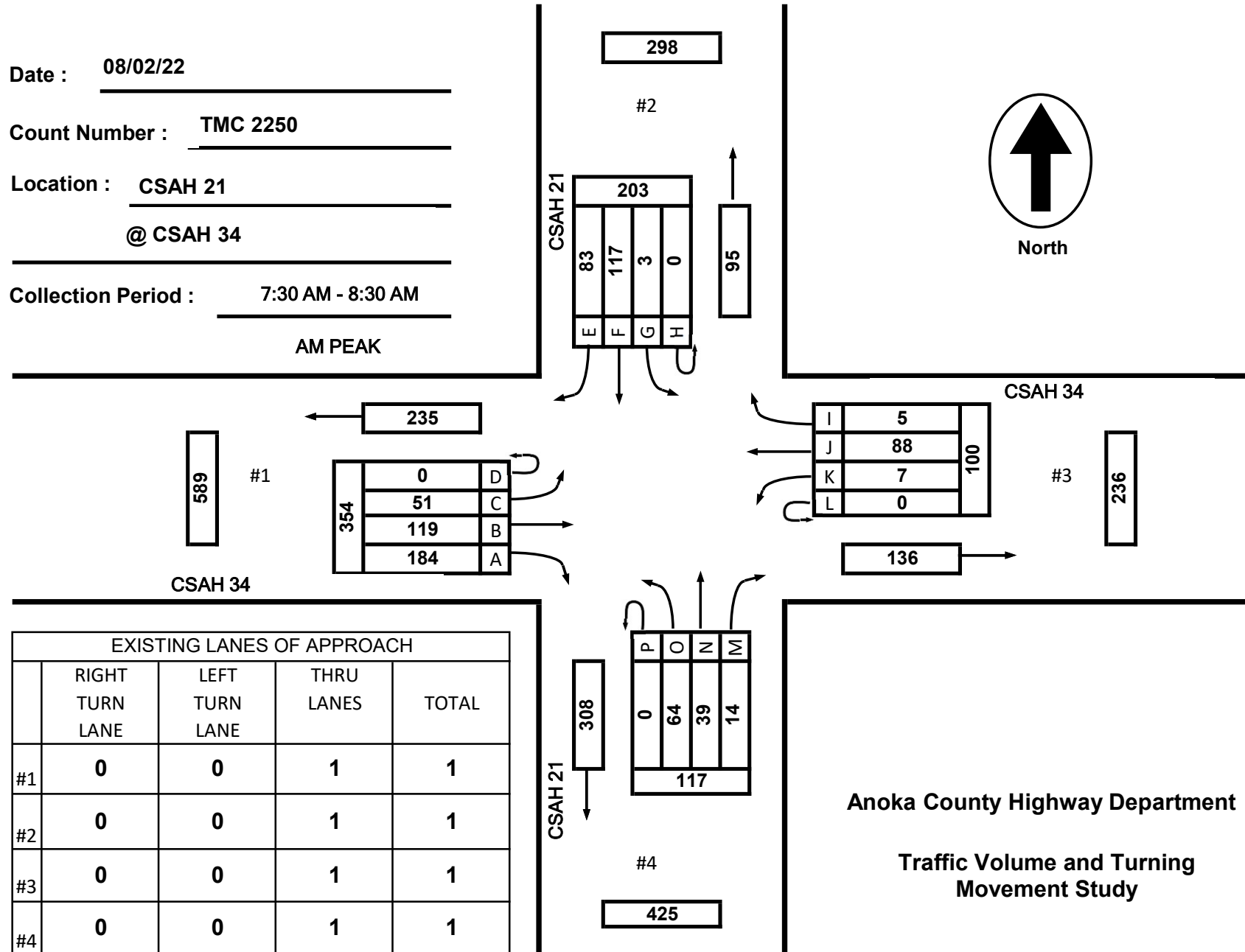
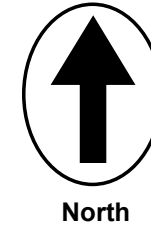
Date : 08/02/22

Count Number : TMC 2250

Location : CSAH 21
@ CSAH 34

Collection Period : 7:30 AM - 8:30 AM

AM PEAK



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

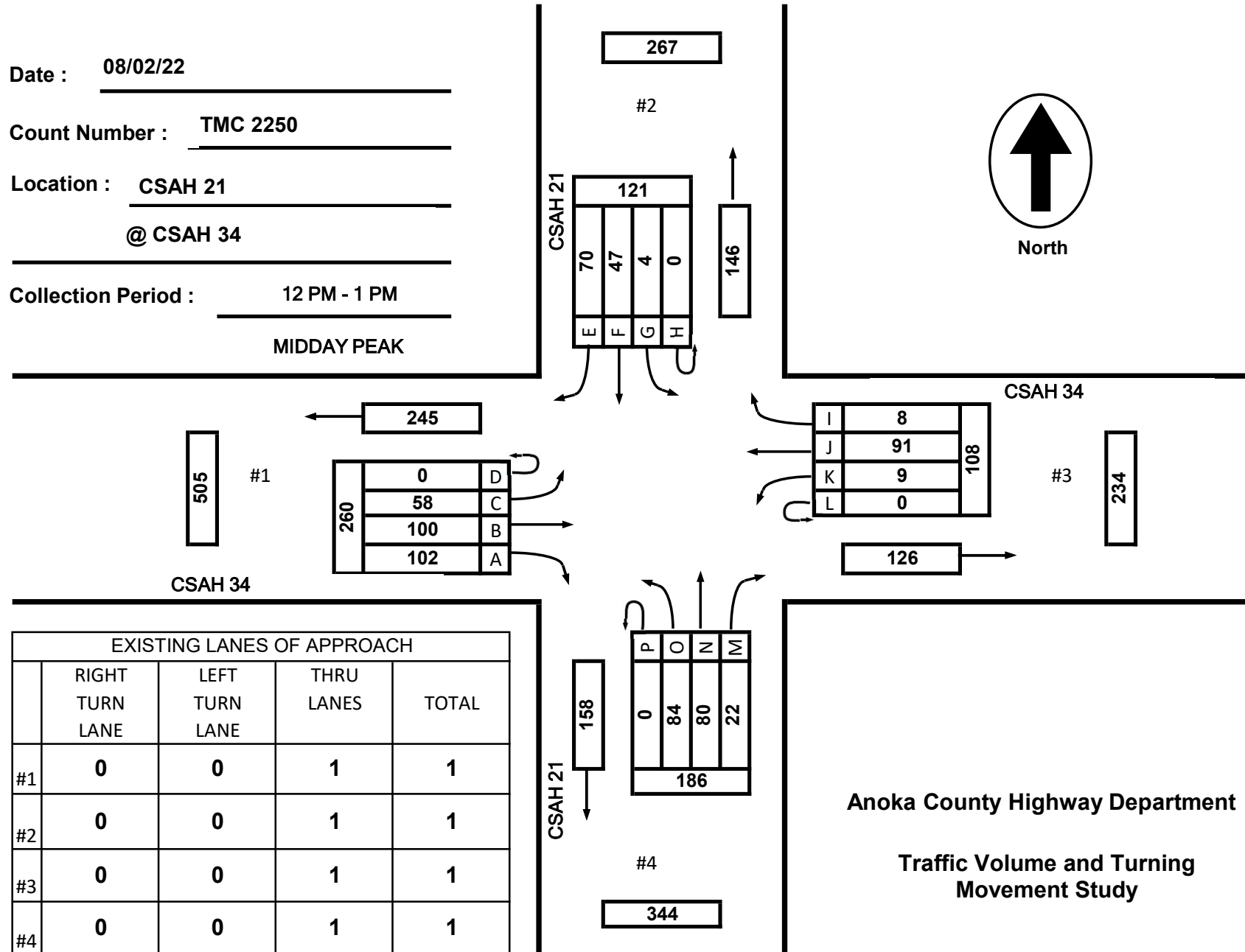
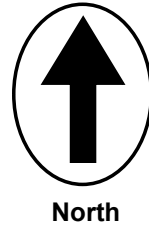
Anoka County Highway Department
 Traffic Volume and Turning Movement Study

Date : 08/02/22

Count Number : TMC 2250

Location : CSAH 21
@ CSAH 34

Collection Period : 12 PM - 1 PM
MIDDAY PEAK



#1

260	0	D
	58	C
	100	B
	102	A

#2

121	70	E
	47	F
	4	G
	0	H

#3

108	8	I
	91	J
	9	K
	0	L

#4

186	0	P
	84	O
	80	N
	22	M

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

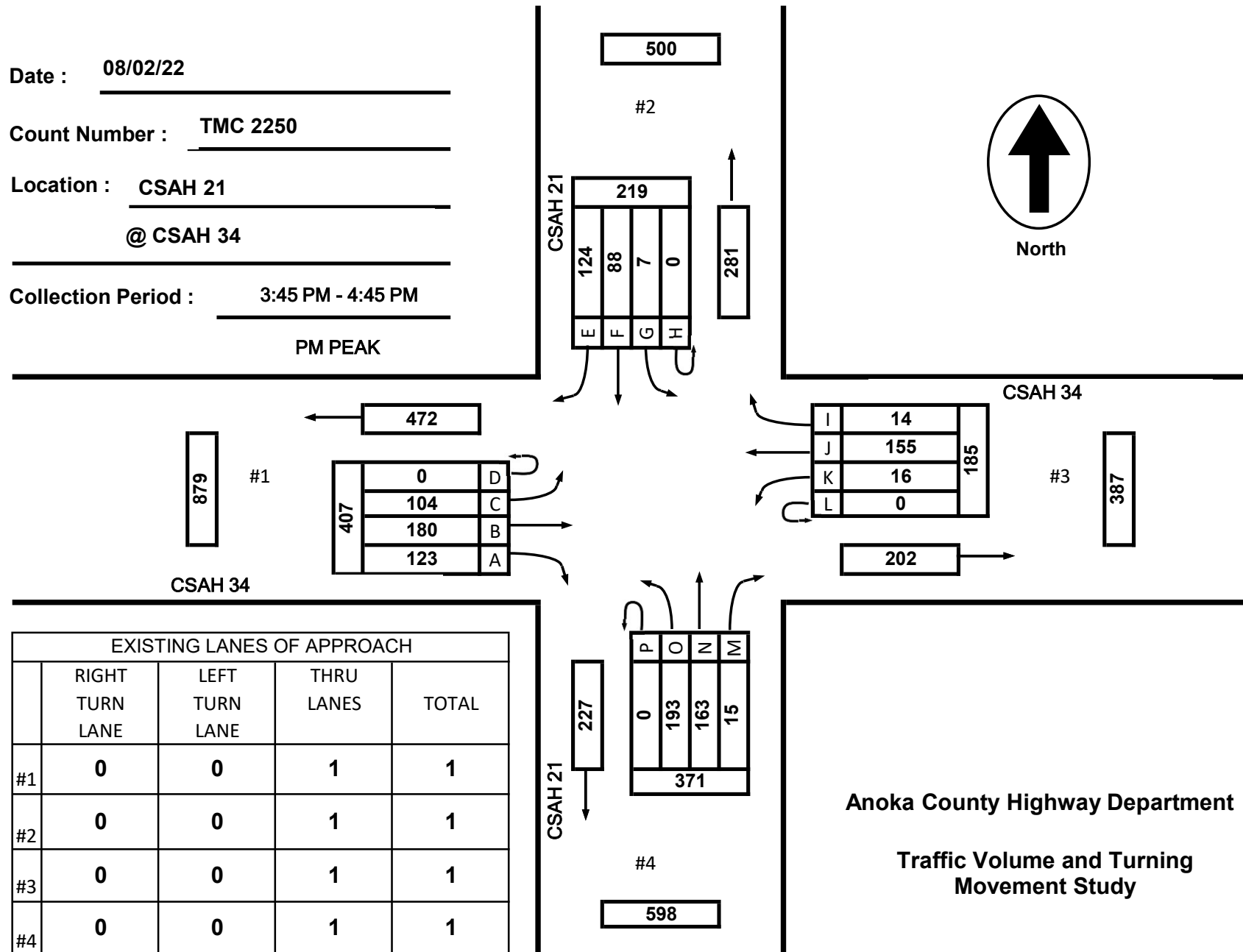
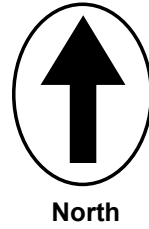
Anoka County Highway Department
Traffic Volume and Turning Movement Study

Date : 08/02/22

Count Number : TMC 2250

Location : CSAH 21
@ CSAH 34

Collection Period : 3:45 PM - 4:45 PM
PM PEAK



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

Anoka County Highway Department
Traffic Volume and Turning Movement Study



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC 2250
 Site Code :
 Start Date : 08/02/2022
 Page No : 1

Weather: Hot & Sunny
 CountCAM 3
 Study Conducted by: Adam

Groups Printed- Cars + - Trucks

Start Time	CSAH 21 Southbound						CSAH 34 Westbound						CSAH 21 Northbound						CSAH 34 Eastbound						Exclu. Total	Inclu. Total	Int. Total
	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total			
00:00	0	1	0	0	0	1	1	3	0	0	0	4	0	2	5	0	0	7	1	3	0	0	0	4	0	16	16
00:15	0	3	0	0	0	3	1	1	0	0	0	2	0	2	0	0	0	2	0	1	0	0	0	1	0	8	8
00:30	2	0	0	0	0	2	0	1	0	0	0	1	0	1	0	0	0	1	0	2	1	0	0	3	0	7	7
00:45	1	0	0	0	0	1	0	1	0	0	0	1	0	1	3	0	0	4	0	1	0	0	0	1	0	7	7
Total	3	4	0	0	0	7	2	6	0	0	0	8	0	6	8	0	0	14	1	7	1	0	0	9	0	38	38
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	1
01:15	0	0	0	0	0	0	0	2	0	0	0	2	1	2	1	0	0	4	0	1	1	0	0	2	0	8	8
01:30	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	1	0	1	1	0	0	2	0	4	4
01:45	1	0	0	0	0	1	0	0	0	0	0	0	0	1	2	0	0	3	2	1	0	0	0	3	0	7	7
Total	1	0	0	0	0	1	1	2	0	0	0	3	1	3	4	0	0	8	2	3	3	0	0	8	0	20	20
02:00	1	0	0	0	0	1	0	1	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	3	3
02:15	0	0	0	0	0	0	0	1	0	0	0	1	0	1	2	0	0	3	2	0	0	0	0	2	0	6	6
02:30	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	1	1	0	0	0	0	1	0	3	3
02:45	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0	3	3
Total	1	1	0	0	0	2	0	3	0	0	0	3	0	1	4	0	0	5	4	1	0	0	0	5	0	15	15
03:00	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	2
03:15	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	3	3
03:30	0	1	0	0	0	1	0	4	0	0	0	4	0	0	0	0	0	0	0	1	1	0	0	2	0	7	7
03:45	0	2	0	0	0	2	0	2	0	0	0	2	1	0	0	0	0	1	1	1	0	0	0	2	0	7	7
Total	0	5	1	0	0	6	0	6	0	0	0	6	1	0	0	0	1	2	3	1	0	0	6	0	19	19	
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	2	0	3	3
04:15	0	5	0	0	0	5	0	1	0	0	0	1	0	0	1	0	0	1	3	4	1	0	0	8	0	15	15
04:30	1	11	0	0	0	12	0	2	0	0	0	2	0	2	1	0	0	3	6	4	1	0	0	11	0	28	28
04:45	2	6	0	0	0	8	0	2	0	0	0	2	1	3	1	0	0	5	14	4	0	0	0	18	0	33	33
Total	3	22	0	0	0	25	0	5	0	0	0	5	1	6	3	0	0	10	24	13	2	0	0	39	0	79	79
05:00	3	7	0	0	0	10	0	2	0	0	0	2	0	1	2	0	0	3	14	2	1	0	0	17	0	32	32
05:15	4	13	0	0	0	17	0	4	0	0	0	4	0	2	3	0	0	5	20	6	0	0	0	26	0	52	52
05:30	5	15	0	0	0	20	0	9	5	0	0	14	2	0	2	0	0	4	19	10	1	0	0	30	0	68	68
05:45	5	17	0	0	0	22	0	4	0	0	0	4	2	4	2	0	0	8	28	20	1	0	0	49	0	83	83
Total	17	52	0	0	0	69	0	19	5	0	0	24	4	7	9	0	0	20	81	38	3	0	0	122	0	235	235



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC 2250
 Site Code :
 Start Date : 08/02/2022
 Page No : 2

Weather: Hot & Sunny
 CountCAM 3
 Study Conducted by: Adam

Groups Printed- Cars + - Trucks

Start Time	CSAH 21 Southbound						CSAH 34 Westbound						CSAH 21 Northbound						CSAH 34 Eastbound						Exclu. Total	Inclu. Total	Int. Total
	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total			
06:00	8	16	0	0	0	24	0	12	0	0	0	12	1	2	3	0	0	6	37	14	4	0	0	55	0	97	97
06:15	15	20	1	0	0	36	0	14	1	0	0	15	1	9	5	0	0	15	38	20	3	0	0	61	0	127	127
06:30	11	34	0	0	0	45	0	19	1	0	0	20	5	6	8	0	0	19	60	21	6	0	0	87	0	171	171
06:45	13	28	4	0	0	45	1	11	0	0	0	12	6	5	8	0	1	19	39	31	7	0	0	77	1	153	154
Total	47	98	5	0	0	150	1	56	2	0	0	59	13	22	24	0	1	59	174	86	20	0	0	280	1	548	549
07:00	12	28	0	0	0	40	0	18	5	0	2	23	2	4	10	0	2	16	50	17	6	0	0	73	4	152	156
07:15	16	31	0	0	0	47	0	12	2	0	0	14	2	9	5	0	0	16	45	29	6	0	0	80	0	157	157
07:30	22	40	0	0	0	62	1	25	1	0	0	27	4	5	14	0	1	23	65	36	11	0	0	112	1	224	225
07:45	20	24	1	0	1	45	1	22	2	0	1	25	4	12	19	0	0	35	52	39	17	0	1	108	3	213	216
Total	70	123	1	0	1	194	2	77	10	0	3	89	12	30	48	0	3	90	212	121	40	0	1	373	8	746	754
08:00	17	26	0	0	0	43	3	18	0	0	0	21	2	7	17	0	0	26	28	24	7	0	0	59	0	149	149
08:15	24	27	2	0	0	53	0	23	4	0	1	27	4	15	14	0	1	33	39	20	16	0	0	75	2	188	190
08:30	14	25	0	0	0	39	1	14	3	0	0	18	1	16	19	0	0	36	40	16	19	0	0	75	0	168	168
08:45	23	18	2	0	1	43	0	16	3	0	3	19	2	14	11	0	2	27	40	22	19	0	0	81	6	170	176
Total	78	96	4	0	1	178	4	71	10	0	4	85	9	52	61	0	3	122	147	82	61	0	0	290	8	675	683
09:00	18	26	0	1	0	45	1	17	2	0	0	20	4	11	11	0	0	26	33	31	3	0	0	67	0	158	158
09:15	18	18	2	0	0	38	2	18	5	0	0	25	6	13	16	0	0	35	29	15	14	0	0	58	0	156	156
09:30	17	19	0	0	0	36	0	19	3	0	0	22	5	11	11	0	0	27	21	26	14	0	0	61	0	146	146
09:45	19	17	0	0	0	36	0	18	1	0	0	19	3	13	12	0	0	28	26	28	14	0	0	68	0	151	151
Total	72	80	2	1	0	155	3	72	11	0	0	86	18	48	50	0	0	116	109	100	45	0	0	254	0	611	611
10:00	18	18	2	0	0	38	2	13	2	0	0	17	5	15	11	0	1	31	35	22	11	0	0	68	1	154	155
10:15	12	10	2	0	4	24	2	14	0	0	0	16	3	15	19	0	0	37	31	17	15	0	1	63	5	140	145
10:30	12	14	1	0	1	27	2	12	8	0	0	22	1	16	14	0	0	31	27	29	17	0	0	73	1	153	154
10:45	10	23	0	0	0	33	2	18	1	0	1	21	3	7	17	0	0	27	23	21	7	0	0	51	1	132	133
Total	52	65	5	0	5	122	8	57	11	0	1	76	12	53	61	0	1	126	116	89	50	0	1	255	8	579	587
11:00	17	10	1	0	0	28	4	19	1	0	0	24	3	18	16	0	0	37	29	18	16	0	0	63	0	152	152
11:15	11	18	1	0	0	30	3	26	2	0	0	31	3	15	22	0	0	40	23	23	13	0	0	59	0	160	160
11:30	14	25	4	0	0	43	3	20	3	0	0	26	3	11	19	0	0	33	25	26	22	0	0	73	0	175	175
11:45	15	9	0	0	0	24	1	29	2	0	0	32	4	10	20	0	0	34	31	24	12	0	0	67	0	157	157
Total	57	62	6	0	0	125	11	94	8	0	0	113	13	54	77	0	0	144	108	91	63	0	0	262	0	644	644
12:00	19	13	1	0	0	33	2	24	3	0	0	29	5	15	17	0	0	37	32	30	16	0	0	78	0	177	177
12:15	20	11	1	0	0	32	2	21	3	0	0	26	10	17	22	0	0	49	19	21	11	0	0	51	0	158	158
12:30	15	8	1	0	0	24	2	22	2	0	0	26	3	23	27	0	0	53	29	21	17	0	0	67	0	170	170



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC 2250
 Site Code :
 Start Date : 08/02/2022
 Page No : 3

Weather: Hot & Sunny
 CountCAM 3
 Study Conducted by: Adam

Groups Printed- Cars + - Trucks

Start Time	CSAH 21 Southbound						CSAH 34 Westbound						CSAH 21 Northbound						CSAH 34 Eastbound						Exclu. Total	Inclu. Total	Int. Total
	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total			
12:45	16	15	1	0	0	32	2	24	1	0	0	27	4	25	18	0	0	47	22	28	14	0	0	64	0	170	170
Total	70	47	4	0	0	121	8	91	9	0	0	108	22	80	84	0	0	186	102	100	58	0	0	260	0	675	675
13:00	10	17	2	0	0	29	1	17	1	0	0	19	7	20	19	0	0	46	23	19	15	0	0	57	0	151	151
13:15	11	17	0	0	0	28	3	29	2	0	0	34	4	16	23	0	0	43	22	20	8	0	0	50	0	155	155
13:30	6	18	2	0	0	26	2	24	0	0	0	26	6	27	24	0	0	57	16	17	15	0	0	48	0	157	157
13:45	16	23	0	0	0	39	2	25	3	0	0	30	3	27	33	0	0	63	17	32	11	0	0	60	0	192	192
Total	43	75	4	0	0	122	8	95	6	0	0	109	20	90	99	0	0	209	78	88	49	0	0	215	0	655	655
14:00	15	19	1	0	0	35	4	15	4	0	0	23	0	28	15	0	0	43	15	27	13	0	0	55	0	156	156
14:15	20	19	0	0	0	39	3	27	2	0	0	32	0	30	34	0	0	64	22	25	19	0	1	66	1	201	202
14:30	18	16	3	0	0	37	3	7	1	0	0	11	5	31	31	0	0	67	17	27	14	0	1	58	1	173	174
14:45	22	12	0	0	0	34	0	25	2	0	0	27	4	34	30	0	0	68	21	17	22	0	0	60	0	189	189
Total	75	66	4	0	0	145	10	74	9	0	0	93	9	123	110	0	0	242	75	96	68	0	2	239	2	719	721
15:00	15	14	2	0	0	31	3	27	7	0	0	37	3	35	30	0	0	68	25	21	18	0	0	64	0	200	200
15:15	15	11	1	0	0	27	5	28	1	0	0	34	3	38	37	0	0	78	34	18	20	0	0	72	0	211	211
15:30	24	18	2	0	0	44	4	25	7	0	0	36	6	42	31	0	0	79	33	35	30	0	0	98	0	257	257
15:45	25	23	3	0	0	51	5	34	8	0	0	47	2	29	49	0	0	80	26	48	19	0	0	93	0	271	271
Total	79	66	8	0	0	153	17	114	23	0	0	154	14	144	147	0	0	305	118	122	87	0	0	327	0	939	939
16:00	26	33	2	0	0	61	3	43	2	0	0	48	6	42	52	0	0	100	32	27	31	0	0	90	0	299	299
16:15	36	15	1	0	0	52	4	38	1	0	0	43	2	46	51	0	0	99	35	49	28	0	0	112	0	306	306
16:30	37	17	1	0	0	55	2	40	5	0	0	47	5	46	41	0	0	92	30	56	26	0	0	112	0	306	306
16:45	20	18	2	0	0	40	6	33	2	0	0	41	7	36	53	0	0	96	26	33	27	0	0	86	0	263	263
Total	119	83	6	0	0	208	15	154	10	0	0	179	20	170	197	0	0	387	123	165	112	0	0	400	0	1174	1174
17:00	22	19	2	0	0	43	8	39	7	0	0	54	3	32	47	0	0	82	32	45	38	0	0	115	0	294	294
17:15	27	16	2	0	1	45	7	30	2	0	0	39	6	39	44	0	0	89	21	35	33	0	0	89	1	262	263
17:30	25	15	1	0	0	41	6	38	2	0	0	46	1	43	47	0	0	91	38	28	23	0	0	89	0	267	267
17:45	17	16	1	0	0	34	2	32	2	0	0	36	3	27	38	0	0	68	27	27	20	0	1	74	1	212	213
Total	91	66	6	0	1	163	23	139	13	0	0	175	13	141	176	0	0	330	118	135	114	0	1	367	2	1035	1037
18:00	22	14	0	0	0	36	1	23	2	0	0	26	4	30	36	1	0	71	43	22	20	0	0	85	0	218	218
18:15	24	16	0	0	1	40	3	21	2	0	0	26	6	31	41	0	0	78	21	17	22	0	1	60	2	204	206
18:30	12	14	2	0	0	28	2	26	3	0	0	31	3	22	32	0	0	57	26	18	19	0	0	63	0	179	179
18:45	16	13	0	0	0	29	1	15	1	0	0	17	4	18	25	0	0	47	19	13	12	0	0	44	0	137	137
Total	74	57	2	0	1	133	7	85	8	0	0	100	17	101	134	1	0	253	109	70	73	0	1	252	2	738	740



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC 2250
 Site Code :
 Start Date : 08/02/2022
 Page No : 4

Weather: Hot & Sunny
 CountCAM 3
 Study Conducted by: Adam

Groups Printed- Cars + - Trucks

Start Time	CSAH 21 Southbound						CSAH 34 Westbound						CSAH 21 Northbound						CSAH 34 Eastbound						Exclu. Total	Inclu. Total	Int. Total
	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total			
19:00	10	10	4	0	0	24	3	20	0	0	0	23	1	18	25	0	0	44	15	21	15	0	0	51	0	142	142
19:15	13	8	0	0	0	21	3	18	3	0	0	24	2	18	26	0	0	46	10	14	16	0	0	40	0	131	131
19:30	13	8	0	0	0	21	1	17	2	0	0	20	2	16	21	0	0	39	11	10	5	0	0	26	0	106	106
19:45	4	5	1	0	0	10	1	14	1	0	0	16	1	18	33	0	0	52	16	15	14	0	0	45	0	123	123
Total	40	31	5	0	0	76	8	69	6	0	0	83	6	70	105	0	0	181	52	60	50	0	0	162	0	502	502
20:00	9	6	1	0	0	16	2	21	1	0	0	24	2	14	17	0	0	33	12	23	19	0	0	54	0	127	127
20:15	13	3	1	0	0	17	0	17	4	0	0	21	3	13	18	0	0	34	11	18	10	0	0	39	0	111	111
20:30	13	4	1	0	0	18	0	13	0	0	0	13	2	9	27	0	0	38	11	14	10	0	0	35	0	104	104
20:45	8	6	0	0	0	14	0	14	1	0	0	15	1	17	26	0	0	44	8	11	7	0	0	26	0	99	99
Total	43	19	3	0	0	65	2	65	6	0	0	73	8	53	88	0	0	149	42	66	46	0	0	154	0	441	441
21:00	7	8	0	1	0	16	0	13	1	0	0	14	3	12	20	0	0	35	5	8	11	0	0	24	0	89	89
21:15	5	8	0	0	0	13	4	15	1	0	0	20	2	10	26	0	0	38	6	9	6	0	0	21	0	92	92
21:30	7	1	0	0	0	8	1	12	0	0	0	13	1	11	14	0	0	26	10	1	13	0	0	24	0	71	71
21:45	3	4	1	0	0	8	2	8	0	0	0	10	1	7	6	0	0	14	9	11	3	0	0	23	0	55	55
Total	22	21	1	1	0	45	7	48	2	0	0	57	7	40	66	0	0	113	30	29	33	0	0	92	0	307	307
22:00	5	6	0	0	0	11	1	3	0	0	0	4	0	4	13	0	0	17	3	8	2	0	0	13	0	45	45
22:15	3	2	0	0	0	5	0	7	2	0	0	9	1	5	11	0	0	17	3	2	2	0	0	7	0	38	38
22:30	3	4	0	0	0	7	0	6	1	0	0	7	1	0	5	0	0	6	6	2	2	0	0	10	0	30	30
22:45	3	2	0	0	0	5	1	4	1	0	0	6	0	7	11	0	0	18	4	1	4	0	0	9	0	38	38
Total	14	14	0	0	0	28	2	20	4	0	0	26	2	16	40	0	0	58	16	13	10	0	0	39	0	151	151
23:00	2	1	0	0	0	3	0	2	1	0	0	3	0	6	3	0	0	9	2	1	4	0	0	7	0	22	22
23:15	1	2	0	0	0	3	0	2	0	0	0	2	0	6	4	0	0	10	0	1	3	0	0	4	0	19	19
23:30	5	2	0	0	0	7	1	3	0	0	0	4	0	3	6	0	0	9	1	3	1	0	0	5	0	25	25
23:45	0	0	0	0	0	0	0	3	0	0	0	3	0	3	1	0	0	4	1	4	1	0	0	6	0	13	13
Total	8	5	0	0	0	13	1	10	1	0	0	12	0	18	14	0	0	32	4	9	9	0	0	22	0	79	79
Grand Total	1079	1158	67	2	9	2306	140	1432	154	0	8	1726	222	1328	1609	1	8	3160	1847	1587	998	0	6	4432	31	11624	11655
Apprch %	46.8	50.2	2.9	0.1			8.1	83	8.9	0			7	42	50.9	0			41.7	35.8	22.5	0					
Total %	9.3	10	0.6	0		19.8	1.2	12.3	1.3	0		14.8	1.9	11.4	13.8	0		27.2	15.9	13.7	8.6	0		38.1	0.3	99.7	
Cars +	1060	1153	64	2		2288	135	1399	151	0		1693	217	1308	1598	1		3132	1838	1546	979	0		4369	0	0	11482
% Cars +	98.2	99.6	95.5	100	100	98.8	96.4	97.7	98.1	0	100	97.6	97.7	98.5	99.3	100	100	98.9	99.5	97.4	98.1	0	100	98.4	0	0	98.5
Trucks	19	5	3	0		27	5	33	3	0		41	5	20	11	0		36	9	41	19	0		69	0	0	173
% Trucks	1.8	0.4	4.5	0	0	1.2	3.6	2.3	1.9	0	0	2.4	2.3	1.5	0.7	0	0	1.1	0.5	2.6	1.9	0	0	1.6	0	0	1.5



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC 2250
 Site Code :
 Start Date : 08/02/2022
 Page No : 5

Weather: Hot & Sunny
 CountCAM 3
 Study Conducted by: Adam

Start Time	CSAH 21 Southbound					CSAH 34 Westbound					CSAH 21 Northbound					CSAH 34 Eastbound					Int. Total
	Right	Thru	Left	UTrn	App. Total	Right	Thru	Left	UTrn	App. Total	Right	Thru	Left	UTrn	App. Total	Right	Thru	Left	UTrn	App. Total	
Peak Hour Analysis From 00:00 to 09:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	22	40	0	0	62	1	25	1	0	27	4	5	14	0	23	65	36	11	0	112	224
07:45	20	24	1	0	45	1	22	2	0	25	4	12	19	0	35	52	39	17	0	108	213
08:00	17	26	0	0	43	3	18	0	0	21	2	7	17	0	26	28	24	7	0	59	149
08:15	24	27	2	0	53	0	23	4	0	27	4	15	14	0	33	39	20	16	0	75	188
Total Volume	83	117	3	0	203	5	88	7	0	100	14	39	64	0	117	184	119	51	0	354	774
% App. Total	40.9	57.6	1.5	0		5	88	7	0		12	33.3	54.7	0		52	33.6	14.4	0		
PHF	.865	.731	.375	.000	.819	.417	.880	.438	.000	.926	.875	.650	.842	.000	.836	.708	.763	.750	.000	.790	.864

Peak Hour Analysis From 10:00 to 13:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00																					
12:00	19	13	1	0	33	2	24	3	0	29	5	15	17	0	37	32	30	16	0	78	177
12:15	20	11	1	0	32	2	21	3	0	26	10	17	22	0	49	19	21	11	0	51	158
12:30	15	8	1	0	24	2	22	2	0	26	3	23	27	0	53	29	21	17	0	67	170
12:45	16	15	1	0	32	2	24	1	0	27	4	25	18	0	47	22	28	14	0	64	170
Total Volume	70	47	4	0	121	8	91	9	0	108	22	80	84	0	186	102	100	58	0	260	675
% App. Total	57.9	38.8	3.3	0		7.4	84.3	8.3	0		11.8	43	45.2	0		39.2	38.5	22.3	0		
PHF	.875	.783	1.00	.000	.917	1.00	.948	.750	.000	.931	.550	.800	.778	.000	.877	.797	.833	.853	.000	.833	.953

Peak Hour Analysis From 14:00 to 23:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 15:45																					
15:45	25	23	3	0	51	5	34	8	0	47	2	29	49	0	80	26	48	19	0	93	271
16:00	26	33	2	0	61	3	43	2	0	48	6	42	52	0	100	32	27	31	0	90	299
16:15	36	15	1	0	52	4	38	1	0	43	2	46	51	0	99	35	49	28	0	112	306
16:30	37	17	1	0	55	2	40	5	0	47	5	46	41	0	92	30	56	26	0	112	306
Total Volume	124	88	7	0	219	14	155	16	0	185	15	163	193	0	371	123	180	104	0	407	1182
% App. Total	56.6	40.2	3.2	0		7.6	83.8	8.6	0		4	43.9	52	0		30.2	44.2	25.6	0		
PHF	.838	.667	.583	.000	.898	.700	.901	.500	.000	.964	.625	.886	.928	.000	.928	.879	.804	.839	.000	.908	.966



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC 2250
 Site Code :
 Start Date : 08/02/2022
 Page No : 2

Weather: Hot & Sunny
 CountCAM 3
 Study Conducted by: Adam

Groups Printed- Trucks

Start Time	CSAH 21 Southbound					CSAH 34 Westbound					CSAH 21 Northbound					CSAH 34 Eastbound					Int. Total
	Right	Thru	Left	UTrn	App. Total	Right	Thru	Left	UTrn	App. Total	Right	Thru	Left	UTrn	App. Total	Right	Thru	Left	UTrn	App. Total	
09:15	3	0	0	0	3	0	0	0	0	0	1	1	1	0	3	1	2	0	0	3	9
09:30	1	0	0	0	1	0	2	0	0	2	0	1	0	0	1	0	1	0	0	1	5
09:45	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	4	0	0	0	4	0	4	1	0	5	1	2	1	0	4	1	3	0	0	4	17
10:00	0	0	1	0	1	1	2	0	0	3	0	1	0	0	1	1	2	0	0	3	8
10:15	1	0	0	0	1	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	7
10:30	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	2	0	2	0	4	6
10:45	2	0	0	0	2	1	1	0	0	2	0	0	0	0	0	0	2	0	0	2	6
Total	4	0	1	0	5	2	6	0	0	8	0	2	0	0	2	3	7	2	0	12	27
11:00	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	3
11:15	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	4
11:30	1	1	0	0	2	0	1	0	0	1	0	0	2	0	2	0	3	1	0	4	9
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	2	2	0	0	4	0	2	0	0	2	0	1	2	0	3	0	6	2	0	8	17
12:00	1	0	0	0	1	0	1	0	0	1	0	0	1	0	1	0	3	0	0	3	6
12:15	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:30	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3	0	2	0	0	2	5
12:45	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	3
Total	3	0	0	0	3	0	2	0	0	2	0	2	2	0	4	0	5	1	0	6	15
13:00	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	2
13:15	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
13:30	0	0	0	0	0	0	1	0	0	1	0	2	0	0	2	0	1	1	0	2	5
13:45	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	2	0	0	2	4
Total	0	0	0	0	0	0	4	0	0	4	0	4	0	0	4	0	3	1	0	4	12
14:00	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	5
14:15	2	0	0	0	2	0	1	0	0	1	0	3	1	0	4	0	0	0	0	0	7
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
14:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	2
Total	4	0	0	0	4	0	2	0	0	2	0	3	1	0	4	0	1	4	0	5	15
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3	3
15:15	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	1	0	2	3
15:30	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2	0	1	0	3	4
15:45	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	2
Total	0	0	0	0	0	0	0	1	0	1	1	1	0	0	2	3	2	4	0	9	12
16:00	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	3
16:15	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	1	0	0	1	3
16:30	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
16:45	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	2
Total	1	0	0	0	1	0	4	0	0	4	0	0	2	0	2	1	3	0	0	4	11
17:00	0	0	0	0	0	3	0	0	0	3	0	1	0	0	1	0	0	0	0	0	4
17:15	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
17:30	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	3	0	0	0	3	1	1	0	0	2	0	0	0	0	0	6
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC 2250
 Site Code :
 Start Date : 08/02/2022
 Page No : 3

Weather: Hot & Sunny
 CountCAM 3
 Study Conducted by: Adam

Groups Printed- Trucks

Start Time	CSAH 21 Southbound					CSAH 34 Westbound					CSAH 21 Northbound					CSAH 34 Eastbound					Int. Total	
	Right	Thru	Left	UTrn	App. Total	Right	Thru	Left	UTrn	App. Total	Right	Thru	Left	UTrn	App. Total	Right	Thru	Left	UTrn	App. Total		
19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1
19:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	0	2
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	0	0
20:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	2
20:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	2
21:00	0	0	0	0	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	0	0
21:30	0	0	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	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
22:00	0	0	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	0	0
22:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	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	0	0	0	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	0	0
23:30	0	0	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	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	19	5	3	0	27	5	33	3	0	41	5	20	11	0	36	9	41	19	0	69	173	
Apprch %	70.4	18.5	11.1	0		12.2	80.5	7.3	0		13.9	55.6	30.6	0		13	59.4	27.5	0			
Total %	11	2.9	1.7	0	15.6	2.9	19.1	1.7	0	23.7	2.9	11.6	6.4	0	20.8	5.2	23.7	11	0	39.9		

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 08/02/2022

Signal Warrants - Summary

Major Street Approaches

Eastbound: CSAH 34

Number of Lanes : 1

Total Approach Volume: 4,432

Westbound: CSAH 34

Number of Lanes : 1

Total Approach Volume: 1,726

Minor Street Approaches

Northbound: CSAH 21

Number of Lanes : 1

Total Approach Volume: 3,160

Southbound: CSAH 21

Number of Lanes : 1

Total Approach Volume: 2,306

Warrant Summary (Rural Values Apply)

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

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

Required volumes reached for 9 hours, 8 are needed

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

Required volumes reached for 2 hours, 8 are needed

Warrant 1C - Combination of Warrants.....Not Satisfied

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

Required 1B volumes reached for 4 hours, 8 are needed

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

Number of hours (9) volumes exceed minimum >= minimum required (4).

Warrant 3 - Peak Hour.....Satisfied

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

Number of one hour periods (13) 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:

Study Date : 08/02/2022

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

9 one hour periods meet minimums.
Warrant IS met.

Site Data Required

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

Volume Requirements

Rural Factor of 70 % applied
Veh/Hr Major = **350**

Veh/Hr Minor = **105**

Time	Major Road				Total	Minor Road		Met?
	Major EB	+	Major WB	=		Minor NB	Minor SB	
16:15 - 17:15	425	+	185	=	610	369	190	Yes
15:15 - 16:15	353	+	165	=	518	337	183	Yes
17:15 - 18:15	337	+	147	=	484	319	156	Yes
07:15 - 08:15	359	+	87	=	446	100	197	Yes
08:15 - 09:15	298	+	84	=	382	122	180	Yes
11:00 - 12:00	262	+	113	=	375	144	125	Yes
06:15 - 07:15	298	+	70	=	368	69	166	Yes
12:00 - 13:00	260	+	108	=	368	186	121	Yes
14:15 - 15:15	248	+	107	=	355	267	141	Yes
10:45 - 11:45	246	+	102	=	348	137	134	No
09:45 - 10:45	272	+	74	=	346	127	125	No
10:30 - 11:30	246	+	98	=	344	135	118	No
13:30 - 14:30	229	+	111	=	340	227	139	No
06:00 - 07:00	280	+	59	=	339	59	150	No
09:15 - 10:15	255	+	83	=	338	121	148	No
13:45 - 14:45	239	+	96	=	335	237	150	No
09:30 - 10:30	260	+	74	=	334	123	134	No
10:15 - 11:15	250	+	83	=	333	132	112	No
14:00 - 15:00	239	+	93	=	332	242	145	No
10:00 - 11:00	255	+	76	=	331	126	122	No
13:15 - 14:15	213	+	113	=	326	206	128	No
13:00 - 14:00	215	+	109	=	324	209	122	No
18:15 - 19:15	218	+	97	=	315	226	121	No
05:45 - 06:45	252	+	51	=	303	48	127	No
18:30 - 19:30	198		95		293	194	102	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 08/02/2022

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 2 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

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

Volume Requirements

Rural Factor of 70 % applied
 Veh/Hr Major = **525**
 Veh/Hr Minor = **52**

Time	Major Road				Total	Minor Road		Met?
	Major EB	+	Major WB	=		Minor NB	Minor SB	
16:30 - 17:30	402	+	181	=	583	359	183	Yes
15:30 - 16:30	393	+	174	=	567	358	208	Yes
15:15 - 16:15	353	+	165	=	518	337	183	No
15:00 - 16:00	327	+	154	=	481	305	153	No
07:00 - 08:00	373	+	89	=	462	90	194	No
07:30 - 08:30	354	+	100	=	454	117	203	No
07:15 - 08:15	359	+	87	=	446	100	197	No
17:30 - 18:30	308	+	134	=	442	308	151	No
14:45 - 15:45	294	+	134	=	428	293	136	No
06:45 - 07:45	342	+	76	=	418	74	194	No
07:45 - 08:45	317	+	91	=	408	130	180	No
17:45 - 18:45	282	+	119	=	401	274	138	No
11:15 - 12:15	277	+	118	=	395	144	130	No
06:30 - 07:30	317	+	69	=	386	70	177	No
08:15 - 09:15	298	+	84	=	382	122	180	No
11:30 - 12:30	269	+	113	=	382	153	132	No
11:45 - 12:45	263	+	113	=	376	173	113	No
08:00 - 09:00	290	+	85	=	375	122	178	No
11:00 - 12:00	262	+	113	=	375	144	125	No
06:15 - 07:15	298	+	70	=	368	69	166	No
12:00 - 13:00	260	+	108	=	368	186	121	No
08:30 - 09:30	281	+	82	=	363	124	165	No
14:30 - 15:30	254	+	109	=	363	281	129	No
14:15 - 15:15	248	+	107	=	355	267	141	No
08:45 - 09:45	267		86		353	115	162	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 08/02/2022

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

13 hours meet 1A minimums.
Only 4 hours meet 1B minimums.
Warrant is NOT met.

Site Data Required

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

Volume Requirements

Rural Factor of 70% applied
Warrant 1A 1B
Veh/Hr Major = **280 420**

Veh/Hr Minor = **84 42**

Major Road CSAH 34

Minor Road CSAH 21

Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met1A?
15:45 - 16:45	407	+	185	=	592	371	219	Yes
16:45 - 17:45	379	+	180	=	559	358	169	Yes
14:45 - 15:45	294	+	134	=	428	293	136	Yes
06:45 - 07:45	342	+	76	=	418	74	194	Yes
07:45 - 08:45	317	+	91	=	408	130	180	Yes
17:45 - 18:45	282	+	119	=	401	274	138	Yes
11:45 - 12:45	263	+	113	=	376	173	113	Yes
08:45 - 09:45	267	+	86	=	353	115	162	Yes
10:45 - 11:45	246	+	102	=	348	137	134	Yes
09:45 - 10:45	272	+	74	=	346	127	125	Yes
13:45 - 14:45	239	+	96	=	335	237	150	Yes
12:45 - 13:45	219	+	106	=	325	193	115	Yes

Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met1B?
15:45 - 16:45	407	+	185	=	592	371	219	Yes
16:45 - 17:45	379	+	180	=	559	358	169	Yes
07:00 - 08:00	373	+	89	=	462	90	194	Yes
14:45 - 15:45	294	+	134	=	428	293	136	Yes
06:45 - 07:45	342	+	76	=	418	74	194	No
17:45 - 18:45	282	+	119	=	401	274	138	No
11:15 - 12:15	277	+	118	=	395	144	130	No
06:30 - 07:30	317	+	69	=	386	70	177	No
11:30 - 12:30	269	+	113	=	382	153	132	No
08:15 - 09:15	298	+	84	=	382	122	180	No
11:45 - 12:45	263	+	113	=	376	173	113	No
11:00 - 12:00	262	+	113	=	375	144	125	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 08/02/2022

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.

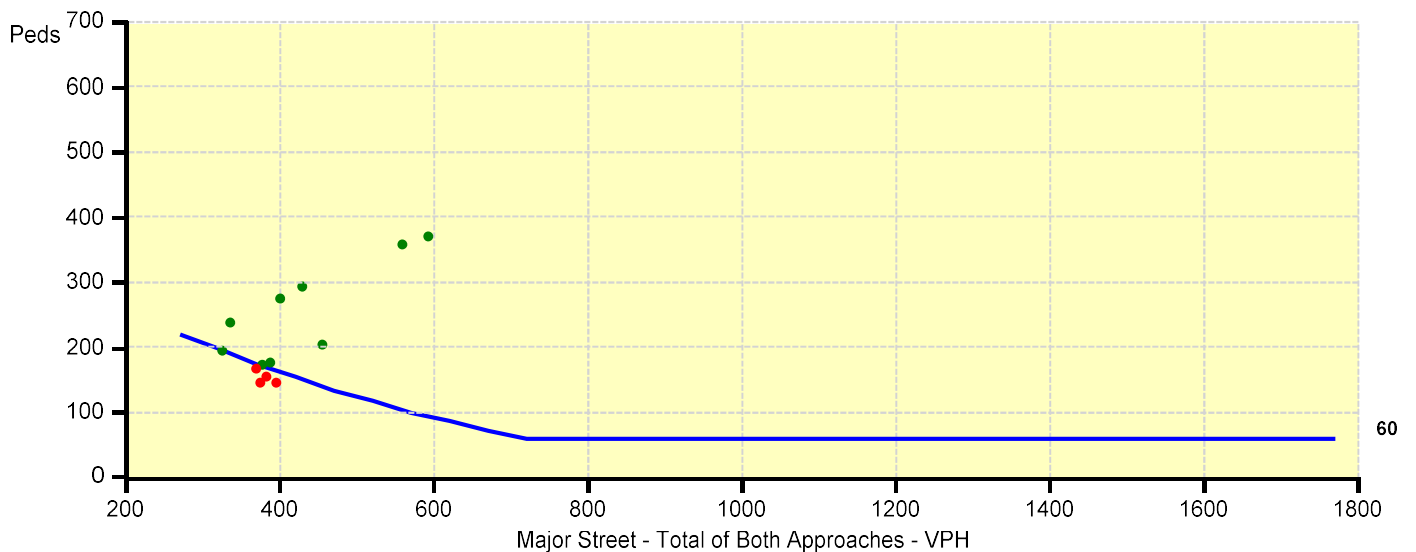
Summary

9 one hour periods meet minimums.
Warrant IS met.

Site Data Required

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

Time	Major Road CSAH 34				Total	Minor Road CSAH 21		Met?
	Major EB	+	Major WB	=		Minor NB	Minor SB	
15:45 - 16:45	407	+	185	=	592	371	219	Yes
16:45 - 17:45	379	+	180	=	559	358	169	Yes
07:30 - 08:30	354	+	100	=	454	117	203	Yes
14:45 - 15:45	294	+	134	=	428	293	136	Yes
17:45 - 18:45	282	+	119	=	401	274	138	Yes
06:30 - 07:30	317	+	69	=	386	70	177	Yes
11:45 - 12:45	263	+	113	=	376	173	113	Yes
13:45 - 14:45	239	+	96	=	335	237	150	Yes
12:45 - 13:45	219	+	106	=	325	193	115	Yes
11:15 - 12:15	277	+	118	=	395	144	130	No
11:30 - 12:30	269	+	113	=	382	153	132	No
11:00 - 12:00	262	+	113	=	375	144	125	No



ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 08/02/2022

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

13 one hour periods meet minimums.
Warrant IS met.

Site Data Required

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

Time	Major Road CSAH 34				Total	Minor Road CSAH 21		Met?
	Major EB	+	Major WB	=		Minor NB	Minor SB	
16:15 - 17:15	425	+	185	=	610	369	190	Yes
15:45 - 16:45	407	+	185	=	592	371	219	Yes
16:30 - 17:30	402	+	181	=	583	359	183	Yes
16:00 - 17:00	400	+	179	=	579	387	208	Yes
15:30 - 16:30	393	+	174	=	567	358	208	Yes
16:45 - 17:45	379	+	180	=	559	358	169	Yes
17:00 - 18:00	367	+	175	=	542	330	163	Yes
15:15 - 16:15	353	+	165	=	518	337	183	Yes
17:15 - 18:15	337	+	147	=	484	319	156	Yes
15:00 - 16:00	327	+	154	=	481	305	153	Yes
17:30 - 18:30	308	+	134	=	442	308	151	Yes
14:45 - 15:45	294		134		428	293	136	Yes

