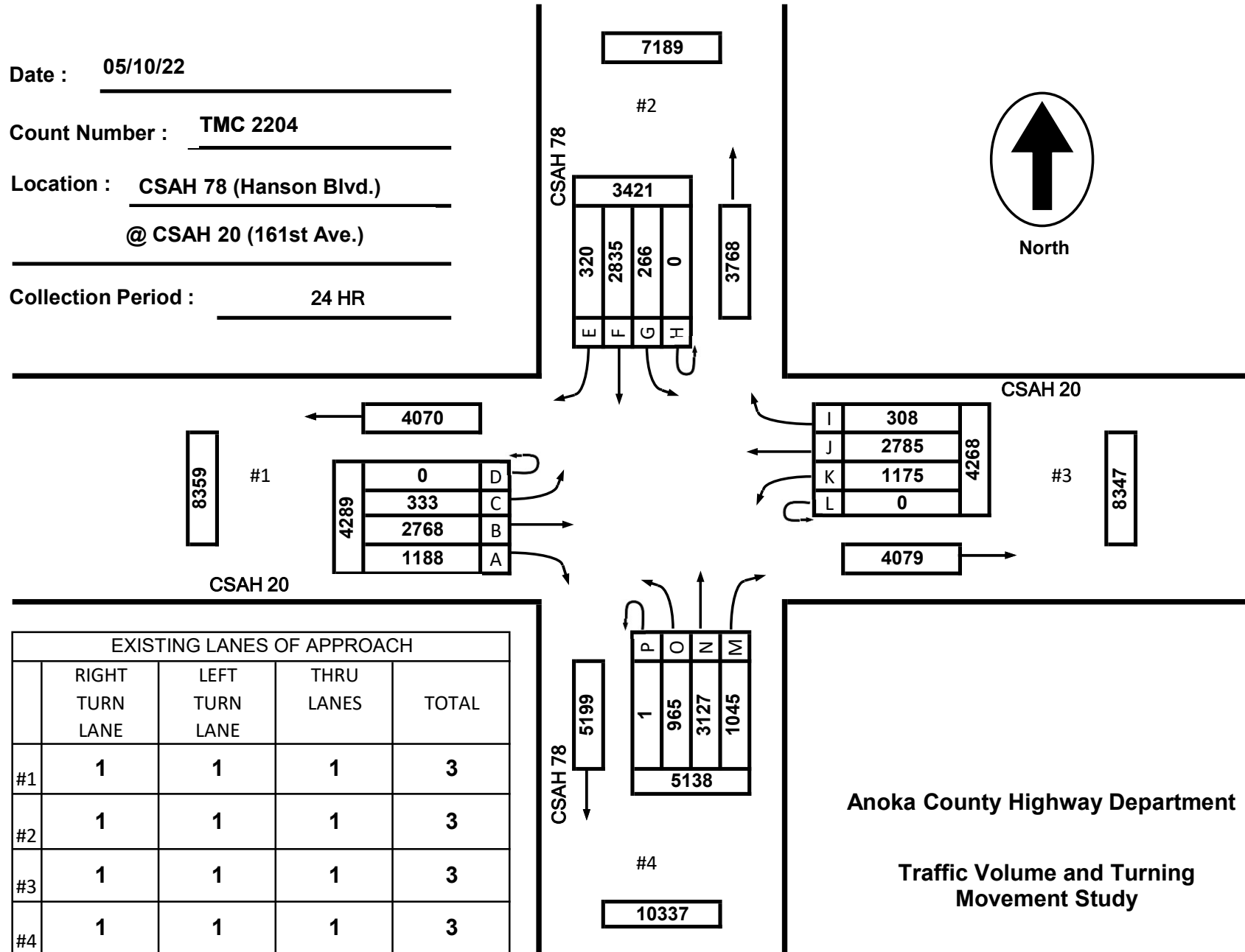


Date : 05/10/22

Count Number : TMC 2204

Location : CSAH 78 (Hanson Blvd.)
@ CSAH 20 (161st Ave.)

Collection Period : 24 HR



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

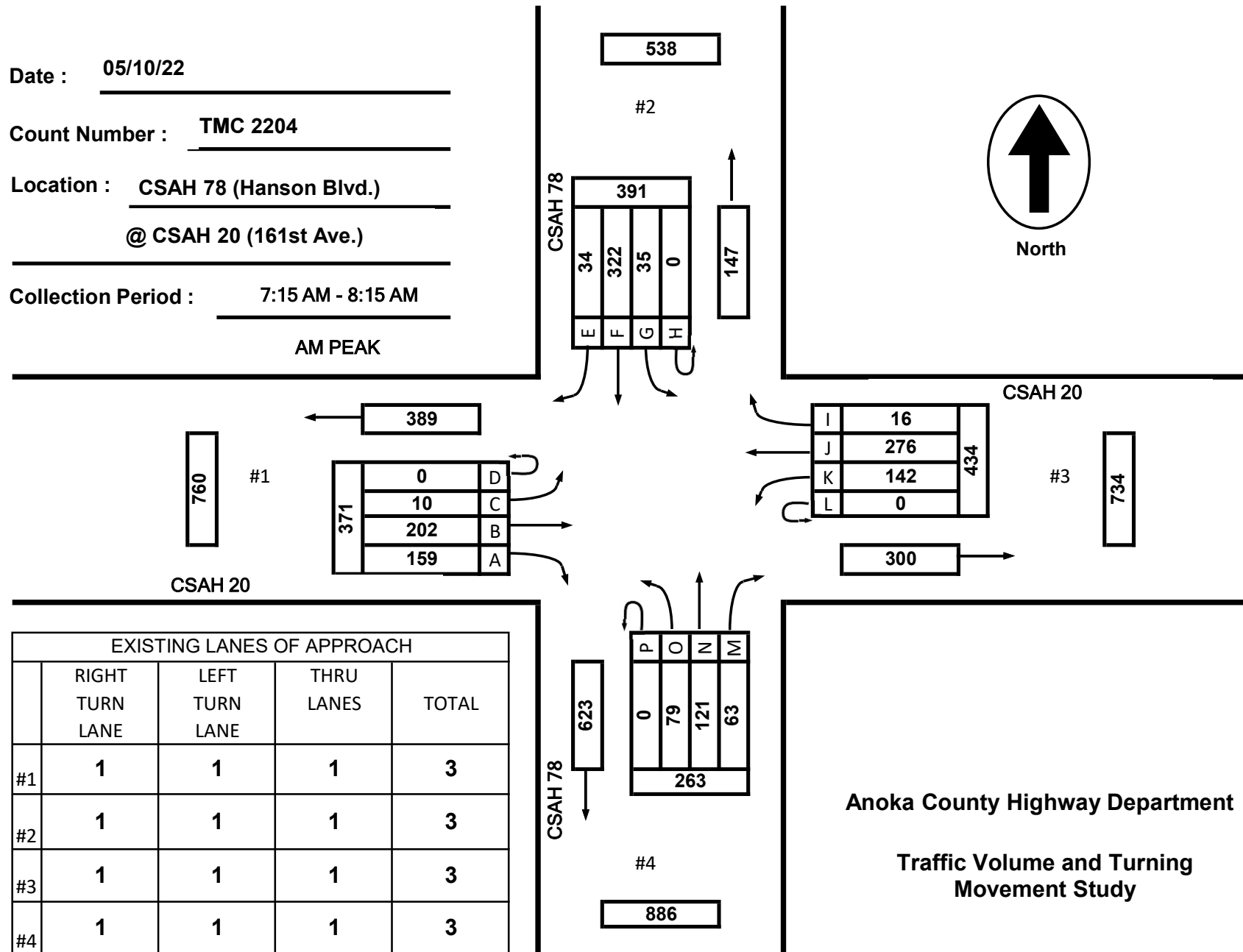
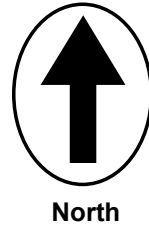
Anoka County Highway Department
 Traffic Volume and Turning Movement Study

Date : 05/10/22

Count Number : TMC 2204

Location : CSAH 78 (Hanson Blvd.)
@ CSAH 20 (161st Ave.)

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



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

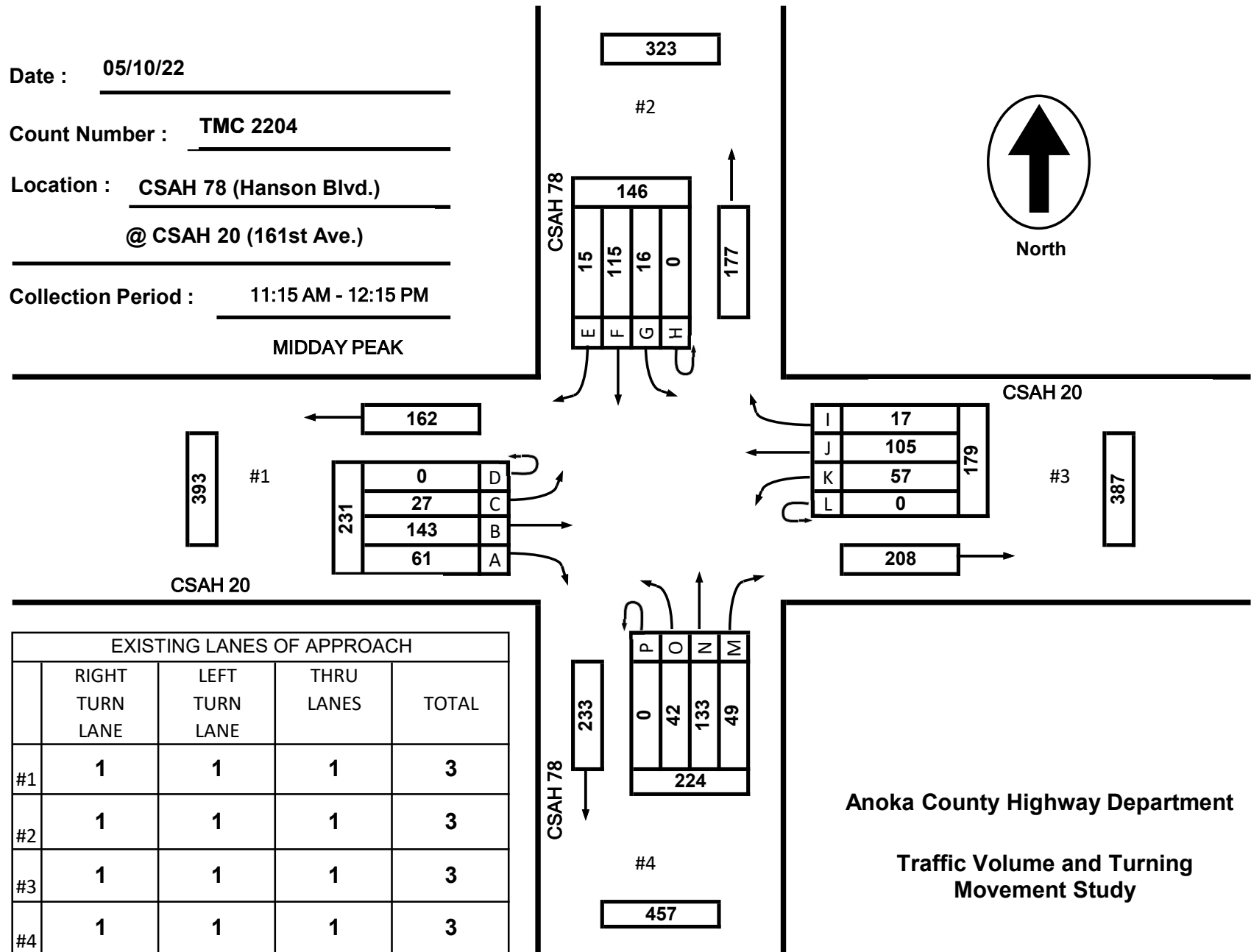
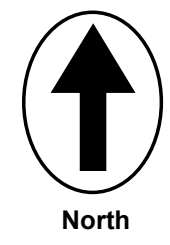
Anoka County Highway Department
Traffic Volume and Turning Movement Study

Date : 05/10/22

Count Number : TMC 2204

Location : CSAH 78 (Hanson Blvd.)
@ CSAH 20 (161st Ave.)

Collection Period : 11:15 AM - 12:15 PM
MIDDAY PEAK



#1

231	0	D
	27	C
	143	B
	61	A

CSAH 78

146			
15	115	16	0
E	F	G	H

CSAH 20

I	17	179
J	105	
K	57	
L	0	

CSAH 78

P	O	N	M
0	42	133	49
224			

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

Anoka County Highway Department
Traffic Volume and Turning Movement Study

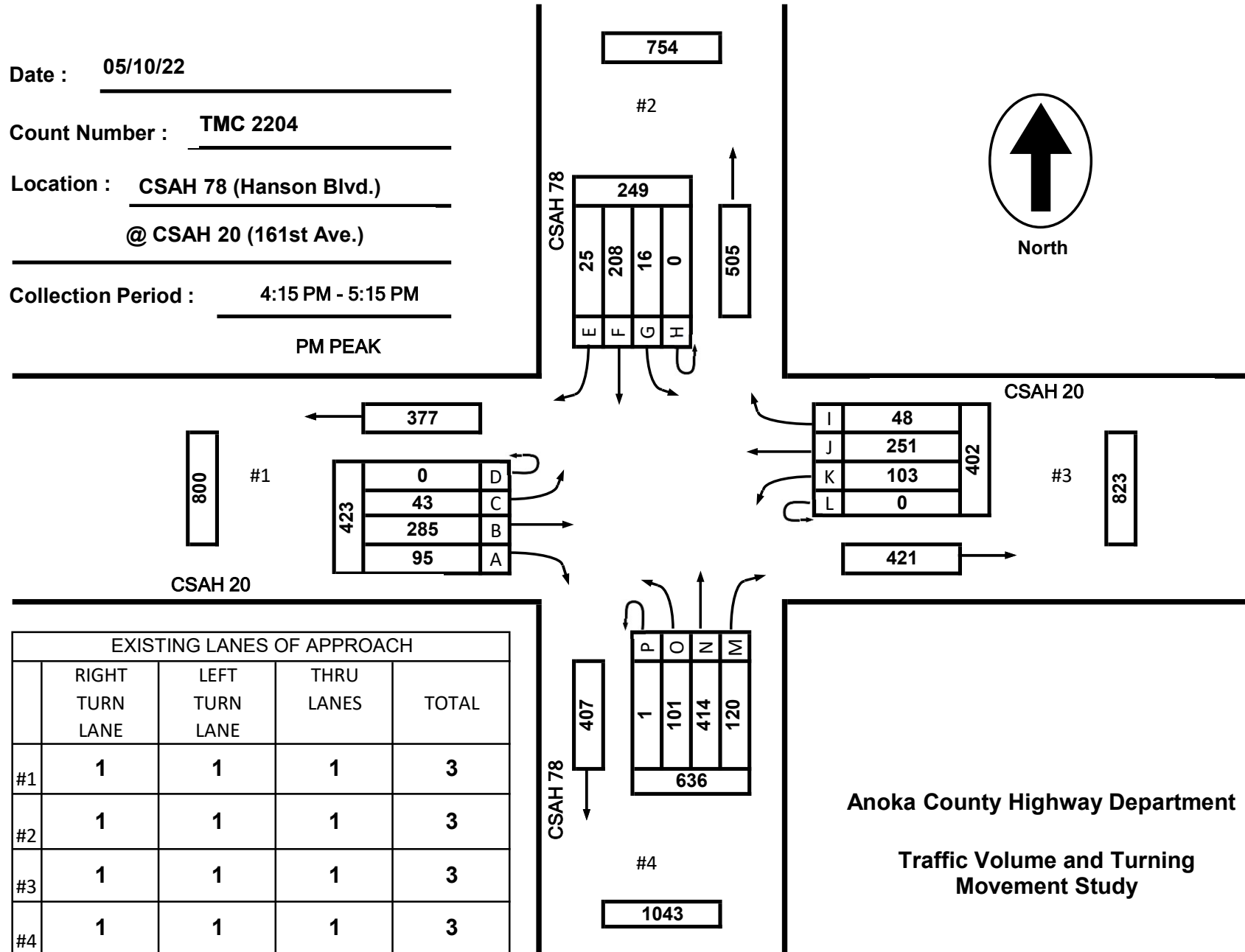
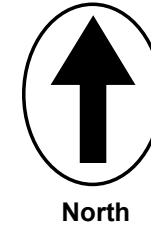
Date : 05/10/22

Count Number : TMC 2204

Location : CSAH 78 (Hanson Blvd.)
@ CSAH 20 (161st Ave.)

Collection Period : 4:15 PM - 5:15 PM

PM PEAK



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

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 2204
 Site Code :
 Start Date : 05/10/2022
 Page No : 1

Weather: Hot & Cloudy
 CountCAM 2
 Study Conducted By: Sam/Adam

Groups Printed- Cars + - Trucks

Start Time	CSAH 78 Southbound						CSAH 20 Westbound						CSAH 78 Northbound						CSAH 20 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	2	0	0	0	2	0	0	1	0	0	1	1	1	0	0	0	2	0	3	0	0	0	3	0	8	8
00:15	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	4	2	4	0	0	0	6	0	10	10
00:30	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	1	1	0	0	0	2	0	4	4
00:45	0	0	0	0	0	0	0	2	1	0	0	3	1	0	0	0	0	1	0	2	0	0	0	2	0	6	6
Total	0	2	0	0	0	2	0	2	2	0	0	4	3	5	1	0	0	9	3	10	0	0	0	13	0	28	28
01:00	0	1	0	0	0	1	0	1	0	0	0	1	0	1	0	0	0	1	0	3	0	0	0	3	0	6	6
01:15	0	1	0	0	0	1	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
01:30	0	1	0	0	0	1	0	1	0	0	0	1	0	0	1	0	0	1	0	7	0	0	0	7	0	10	10
01:45	1	1	0	0	0	2	1	0	1	0	0	2	2	4	0	0	0	6	0	1	0	0	0	1	0	11	11
Total	1	4	0	0	0	5	1	3	2	0	0	6	2	5	1	0	0	8	0	11	0	0	0	11	0	30	30
02:00	0	1	0	0	0	1	0	0	1	0	0	1	0	2	2	0	0	4	1	2	0	0	0	3	0	9	9
02:15	1	0	0	0	0	1	0	0	0	0	0	0	1	2	0	0	0	3	0	2	0	0	0	2	0	6	6
02:30	0	4	0	0	0	4	0	2	2	0	0	4	2	0	1	0	0	3	1	2	1	0	0	4	0	15	15
02:45	0	1	0	0	0	1	0	2	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	1	0	4	4
Total	1	6	0	0	0	7	0	4	3	0	0	7	3	4	3	0	0	10	2	7	1	0	0	10	0	34	34
03:00	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	4	0	0	0	4	0	5	5
03:15	0	3	0	0	0	3	0	2	0	0	0	2	0	1	0	0	0	1	1	1	0	0	0	2	0	8	8
03:30	0	4	1	0	0	5	0	2	2	0	0	4	1	1	1	0	0	3	1	1	1	0	0	3	0	15	15
03:45	0	1	0	0	0	1	0	3	3	0	0	6	0	3	0	0	0	3	1	1	0	0	0	2	0	12	12
Total	0	8	1	0	0	9	0	7	6	0	0	13	1	5	1	0	0	7	3	7	1	0	0	11	0	40	40
04:00	0	6	0	0	0	6	0	9	1	0	0	10	1	2	0	0	0	3	1	1	0	0	0	2	0	21	21
04:15	0	6	0	0	0	6	0	5	0	0	0	5	0	1	0	0	0	1	3	2	0	0	0	5	0	17	17
04:30	1	21	0	0	0	22	0	15	7	0	0	22	2	1	2	0	0	5	6	7	1	0	0	14	0	63	63
04:45	3	27	0	0	0	30	0	7	2	0	0	9	0	3	0	0	0	3	2	4	0	0	0	6	0	48	48
Total	4	60	0	0	0	64	0	36	10	0	0	46	3	7	2	0	0	12	12	14	1	0	0	27	0	149	149
05:00	2	33	1	0	0	36	0	9	7	0	0	16	0	4	1	0	0	5	6	3	0	0	0	9	0	66	66
05:15	0	21	4	0	0	25	2	30	10	0	0	42	2	6	2	0	0	10	6	7	0	0	0	13	0	90	90
05:30	3	39	2	0	0	44	0	39	7	0	0	46	2	8	0	0	0	10	7	15	0	0	0	22	0	122	122
05:45	1	41	4	0	0	46	0	46	10	0	0	56	3	11	5	0	0	19	15	9	0	0	0	24	0	145	145
Total	6	134	11	0	0	151	2	124	34	0	0	160	7	29	8	0	0	44	34	34	0	0	0	68	0	423	423



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC 2204
 Site Code :
 Start Date : 05/10/2022
 Page No : 2

Weather: Hot & Cloudy
 CountCAM 2
 Study Conducted By: Sam/Adam

Groups Printed- Cars + - Trucks

Start Time	CSAH 78 Southbound						CSAH 20 Westbound						CSAH 78 Northbound						CSAH 20 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	2	51	3	0	0	56	1	34	11	0	0	46	2	4	2	0	0	8	13	17	3	0	0	33	0	143	143
06:15	1	68	2	0	0	71	4	58	13	0	0	75	7	8	4	0	0	19	16	28	0	0	0	44	0	209	209
06:30	7	62	7	0	0	76	6	76	11	0	0	93	5	16	7	0	0	28	14	30	4	0	0	48	0	245	245
06:45	6	70	5	0	0	81	4	70	19	0	0	93	8	9	8	0	0	25	21	32	2	0	0	55	0	254	254
Total	16	251	17	0	0	284	15	238	54	0	0	307	22	37	21	0	0	80	64	107	9	0	0	180	0	851	851
07:00	7	89	9	0	1	105	3	71	32	0	1	106	11	21	7	0	1	39	17	43	4	0	0	64	3	314	317
07:15	11	95	8	0	0	114	6	85	34	0	0	125	10	34	14	0	0	58	34	50	1	0	0	85	0	382	382
07:30	13	103	14	0	1	130	3	82	26	0	0	111	16	32	23	0	0	71	41	49	2	0	0	92	1	404	405
07:45	6	65	10	0	0	81	4	58	44	0	0	106	13	32	12	0	0	57	50	56	3	0	0	109	0	353	353
Total	37	352	41	0	2	430	16	296	136	0	1	448	50	119	56	0	1	225	142	198	10	0	0	350	4	1453	1457
08:00	4	59	3	0	0	66	3	51	38	0	0	92	24	23	30	0	0	77	34	47	4	0	0	85	0	320	320
08:15	5	45	3	0	0	53	3	57	20	0	0	80	17	39	19	0	0	75	15	23	3	0	0	41	0	249	249
08:30	6	45	2	0	0	53	3	33	7	0	0	43	5	32	6	0	0	43	12	43	2	0	0	57	0	196	196
08:45	2	63	10	0	0	75	4	29	21	0	0	54	8	33	10	0	1	51	9	37	4	0	0	50	1	230	231
Total	17	212	18	0	0	247	13	170	86	0	0	269	54	127	65	0	1	246	70	150	13	0	0	233	1	995	996
09:00	7	55	6	0	0	68	3	50	21	0	0	74	6	17	17	0	0	40	15	22	2	0	0	39	0	221	221
09:15	4	44	7	0	0	55	4	49	19	0	0	72	11	34	14	0	0	59	46	45	6	0	0	97	0	283	283
09:30	6	31	2	0	0	39	4	36	15	0	0	55	10	31	8	0	0	49	10	33	1	0	0	44	0	187	187
09:45	3	38	0	0	0	41	3	39	10	0	0	52	20	43	7	0	0	70	13	20	5	0	0	38	0	201	201
Total	20	168	15	0	0	203	14	174	65	0	0	253	47	125	46	0	0	218	84	120	14	0	0	218	0	892	892
10:00	5	37	1	0	0	43	5	35	10	0	0	50	10	33	9	0	0	52	8	17	2	0	0	27	0	172	172
10:15	2	23	4	0	0	29	3	33	12	0	0	48	5	37	13	0	0	55	13	25	3	0	0	41	0	173	173
10:30	8	32	4	0	0	44	4	33	10	0	0	47	7	38	6	0	0	51	9	36	6	0	0	51	0	193	193
10:45	3	34	3	0	0	40	6	37	14	0	0	57	9	31	7	0	0	47	20	17	4	0	0	41	0	185	185
Total	18	126	12	0	0	156	18	138	46	0	0	202	31	139	35	0	0	205	50	95	15	0	0	160	0	723	723
11:00	6	22	5	0	0	33	2	36	20	0	0	58	14	32	3	0	0	49	13	31	3	0	0	47	0	187	187
11:15	5	26	5	0	0	36	6	27	14	0	0	47	14	31	14	0	0	59	14	39	5	0	0	58	0	200	200
11:30	3	32	2	0	0	37	3	28	11	0	0	42	7	38	8	0	0	53	16	32	13	0	0	61	0	193	193
11:45	6	21	4	0	0	31	6	28	16	0	0	50	15	32	10	0	0	57	16	30	6	0	0	52	0	190	190
Total	20	101	16	0	0	137	17	119	61	0	0	197	50	133	35	0	0	218	59	132	27	0	0	218	0	770	770
12:00	1	36	5	0	1	42	2	22	16	0	0	40	13	32	10	0	0	55	15	42	3	0	0	60	1	197	198
12:15	7	23	5	0	0	35	5	26	16	0	0	47	8	41	11	0	0	60	20	36	2	0	0	58	0	200	200
12:30	3	36	4	0	0	43	5	28	17	0	0	50	10	30	6	0	0	46	9	43	2	0	0	54	0	193	193



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC 2204
 Site Code :
 Start Date : 05/10/2022
 Page No : 3

Weather: Hot & Cloudy
 CountCAM 2
 Study Conducted By: Sam/Adam

Groups Printed- Cars + - Trucks

Start Time	CSAH 78 Southbound						CSAH 20 Westbound						CSAH 78 Northbound						CSAH 20 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	6	29	3	0	0	38	3	33	8	0	0	44	15	33	7	0	0	55	12	32	2	0	0	46	0	183	183
Total	17	124	17	0	1	158	15	109	57	0	0	181	46	136	34	0	0	216	56	153	9	0	0	218	1	773	774
13:00	5	30	1	0	1	36	1	22	13	0	1	36	13	48	7	0	0	68	7	28	5	0	1	40	3	180	183
13:15	1	37	2	0	0	40	4	33	11	0	0	48	13	28	7	0	0	48	12	27	7	0	0	46	0	182	182
13:30	6	31	2	0	0	39	3	41	10	0	0	54	8	46	12	0	0	66	14	22	3	0	0	39	0	198	198
13:45	4	28	6	0	0	38	0	41	11	0	0	52	9	36	12	0	0	57	12	27	6	0	0	45	0	192	192
Total	16	126	11	0	1	153	8	137	45	0	1	190	43	158	38	0	0	239	45	104	21	0	1	170	3	752	755
14:00	3	29	0	0	0	32	7	39	8	0	0	54	18	43	3	0	1	64	10	39	8	0	1	57	2	207	209
14:15	3	32	5	0	0	40	6	42	17	0	0	65	18	61	7	0	0	86	10	55	4	0	0	69	0	260	260
14:30	4	33	1	0	0	38	4	32	14	0	0	50	31	62	22	0	0	115	15	66	8	0	0	89	0	292	292
14:45	5	37	7	0	0	49	6	38	22	0	0	66	14	80	10	0	0	104	21	44	5	0	0	70	0	289	289
Total	15	131	13	0	0	159	23	151	61	0	0	235	81	246	42	0	1	369	56	204	25	0	1	285	2	1048	1050
15:00	6	36	2	0	0	44	4	41	25	0	0	70	18	81	30	0	0	129	22	60	6	0	0	88	0	331	331
15:15	9	45	2	0	0	56	15	54	17	0	0	86	32	87	29	0	0	148	13	66	6	0	0	85	0	375	375
15:30	9	49	7	0	0	65	8	57	25	0	0	90	30	80	24	0	0	134	16	64	10	0	0	90	0	379	379
15:45	12	47	6	0	0	65	10	43	25	0	0	78	18	107	32	0	0	157	22	85	9	0	0	116	0	416	416
Total	36	177	17	0	0	230	37	195	92	0	0	324	98	355	115	0	0	568	73	275	31	0	0	379	0	1501	1501
16:00	7	43	3	0	0	53	8	44	26	0	0	78	27	98	27	0	0	152	37	92	10	0	0	139	0	422	422
16:15	7	47	9	0	0	63	8	58	20	0	0	86	31	118	34	0	0	183	22	64	9	0	0	95	0	427	427
16:30	4	48	0	0	0	52	14	70	26	0	0	110	32	120	18	0	0	170	16	78	12	0	0	106	0	438	438
16:45	7	56	5	0	0	68	12	66	28	0	0	106	24	90	20	1	0	135	30	74	8	0	2	112	2	421	423
Total	25	194	17	0	0	236	42	238	100	0	0	380	114	426	99	1	0	640	105	308	39	0	2	452	2	1708	1710
17:00	7	57	2	0	0	66	14	57	29	0	0	100	33	86	29	0	0	148	27	69	14	0	0	110	0	424	424
17:15	4	51	3	0	0	58	8	55	19	0	0	82	17	96	29	0	0	142	21	67	5	0	0	93	0	375	375
17:30	1	50	8	0	0	59	5	53	23	0	0	81	28	93	28	0	0	149	25	71	10	0	0	106	0	395	395
17:45	8	46	3	0	1	57	9	53	35	0	0	97	20	82	28	0	0	130	27	42	11	0	0	80	1	364	365
Total	20	204	16	0	1	240	36	218	106	0	0	360	98	357	114	0	0	569	100	249	40	0	0	389	1	1558	1559
18:00	6	33	4	0	0	43	8	42	21	0	0	71	17	60	22	0	0	99	23	55	2	0	0	80	0	293	293
18:15	2	32	4	0	0	38	1	32	19	0	0	52	20	62	14	0	0	96	8	37	1	0	0	46	0	232	232
18:30	6	34	5	0	0	45	3	38	13	0	0	54	14	58	26	0	0	98	14	42	4	0	0	60	0	257	257
18:45	0	43	6	0	2	49	3	33	18	0	0	54	22	60	32	0	0	114	19	36	5	0	2	60	4	277	281
Total	14	142	19	0	2	175	15	145	71	0	0	231	73	240	94	0	0	407	64	170	12	0	2	246	4	1059	1063



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC 2204
 Site Code :
 Start Date : 05/10/2022
 Page No : 4

Weather: Hot & Cloudy
 CountCAM 2
 Study Conducted By: Sam/Adam

Groups Printed- Cars + - Trucks

Start Time	CSAH 78 Southbound						CSAH 20 Westbound						CSAH 78 Northbound						CSAH 20 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	4	36	2	0	0	42	2	22	15	0	0	39	24	48	19	0	0	91	26	39	3	0	0	68	0	240	240	
19:15	6	31	6	0	0	43	2	27	17	0	0	46	22	45	15	0	3	82	18	66	2	0	0	86	3	257	260	
19:30	3	22	2	0	0	27	2	26	5	0	0	33	22	39	18	0	0	79	12	33	8	0	0	53	0	192	192	
19:45	2	38	4	0	1	44	0	25	12	0	0	37	15	40	9	0	0	64	12	27	2	0	0	41	1	186	187	
Total	15	127	14	0	1	156	6	100	49	0	0	155	83	172	61	0	3	316	68	165	15	0	0	248	4	875	879	
20:00	2	30	2	0	0	34	4	25	17	0	0	46	13	27	15	0	0	55	16	26	7	0	0	49	0	184	184	
20:15	2	34	3	0	0	39	2	22	9	0	0	33	13	27	16	0	0	56	17	44	15	0	0	76	0	204	204	
20:30	2	27	2	0	0	31	3	25	9	0	0	37	17	45	18	0	0	80	16	33	4	0	0	53	0	201	201	
20:45	5	18	1	0	0	24	5	19	15	0	0	39	9	37	7	0	0	53	9	21	5	0	0	35	0	151	151	
Total	11	109	8	0	0	128	14	91	50	0	0	155	52	136	56	0	0	244	58	124	31	0	0	213	0	740	740	
21:00	1	17	1	0	0	19	7	14	6	0	0	27	15	32	8	0	0	55	7	23	3	0	0	33	0	134	134	
21:15	1	13	2	0	0	16	6	16	6	0	0	28	12	25	4	0	0	41	4	15	1	0	0	20	0	105	105	
21:30	1	13	0	0	0	14	0	9	7	0	0	16	8	18	7	0	0	33	1	12	2	0	0	15	0	78	78	
21:45	3	9	0	0	0	12	1	8	7	0	0	16	11	17	4	0	0	32	5	17	3	0	0	25	0	85	85	
Total	6	52	3	0	0	61	14	47	26	0	0	87	46	92	23	0	0	161	17	67	9	0	0	93	0	402	402	
22:00	0	3	0	0	0	3	0	9	0	0	0	9	12	12	2	0	0	26	3	15	4	0	0	22	0	60	60	
22:15	2	6	0	0	0	8	0	13	5	0	0	18	1	10	4	0	0	15	2	13	2	0	0	17	0	58	58	
22:30	0	5	0	0	0	5	0	6	0	0	0	6	4	12	3	0	0	19	7	6	2	0	0	15	0	45	45	
22:45	2	1	0	0	0	3	1	5	0	0	0	6	2	7	1	0	0	10	1	10	0	0	0	11	0	30	30	
Total	4	15	0	0	0	19	1	33	5	0	0	39	19	41	10	0	0	70	13	44	8	0	0	65	0	193	193	
23:00	0	3	0	0	0	3	1	3	3	0	0	7	5	9	1	0	0	15	2	5	1	0	0	8	0	33	33	
23:15	0	1	0	0	0	1	0	2	0	0	0	2	6	6	1	0	0	13	4	3	0	0	0	7	0	23	23	
23:30	0	2	0	0	0	2	0	3	3	0	0	6	3	9	1	0	0	13	4	7	1	0	0	12	0	33	33	
23:45	1	4	0	0	0	5	0	2	2	0	0	4	5	9	2	0	0	16	0	5	0	0	0	5	0	30	30	
Total	1	10	0	0	0	11	1	10	8	0	0	19	19	33	5	0	0	57	10	20	2	0	0	32	0	119	119	
Grand Total	320	2835	266	0	8	3421	308	2785	1175	0	2	4268	1045	3127	965	1	6	5138	1188	2768	333	0	6	4289	22	17116	17138	
Apprch %	9.4	82.9	7.8	0	0	0	7.2	65.3	27.5	0	0	0	20.3	60.9	18.8	0	0	0	27.7	64.5	7.8	0	0	0	0	0	0	0
Total %	1.9	16.6	1.6	0	0	20	1.8	16.3	6.9	0	0	24.9	6.1	18.3	5.6	0	0	30	6.9	16.2	1.9	0	0	25.1	0.1	99.9	0	0
Cars +	296	2763	240	0	0	3307	292	2659	1127	0	0	4080	997	3019	928	1	0	4951	1127	2612	303	0	0	4048	0	0	16386	
% Cars +	92.5	97.5	90.2	0	0	96.4	94.8	95.5	95.9	0	100	95.6	95.4	96.5	96.2	100	100	96.2	94.9	94.4	91	0	100	94.2	0	0	95.6	
Trucks	24	72	26	0	0	122	16	126	48	0	0	190	48	108	37	0	0	193	61	156	30	0	0	247	0	0	752	
% Trucks	7.5	2.5	9.8	0	0	3.6	5.2	4.5	4.1	0	0	4.4	4.6	3.5	3.8	0	0	3.8	5.1	5.6	9	0	0	5.8	0	0	4.4	



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC 2204
 Site Code :
 Start Date : 05/10/2022
 Page No : 5

Weather: Hot & Cloudy
 CountCAM 2
 Study Conducted By: Sam/Adam

Start Time	CSAH 78 Southbound					CSAH 20 Westbound					CSAH 78 Northbound					CSAH 20 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 07:15																					
07:15	11	95	8	0	114	6	85	34	0	125	10	34	14	0	58	34	50	1	0	85	382
07:30	13	103	14	0	130	3	82	26	0	111	16	32	23	0	71	41	49	2	0	92	404
07:45	6	65	10	0	81	4	58	44	0	106	13	32	12	0	57	50	56	3	0	109	353
08:00	4	59	3	0	66	3	51	38	0	92	24	23	30	0	77	34	47	4	0	85	320
Total Volume	34	322	35	0	391	16	276	142	0	434	63	121	79	0	263	159	202	10	0	371	1459
% App. Total	8.7	82.4	9	0		3.7	63.6	32.7	0		24	46	30	0		42.9	54.4	2.7	0		
PHF	.654	.782	.625	.000	.752	.667	.812	.807	.000	.868	.656	.890	.658	.000	.854	.795	.902	.625	.000	.851	.903

Peak Hour Analysis From 10:00 to 13:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:15																					
11:15	5	26	5	0	36	6	27	14	0	47	14	31	14	0	59	14	39	5	0	58	200
11:30	3	32	2	0	37	3	28	11	0	42	7	38	8	0	53	16	32	13	0	61	193
11:45	6	21	4	0	31	6	28	16	0	50	15	32	10	0	57	16	30	6	0	52	190
12:00	1	36	5	0	42	2	22	16	0	40	13	32	10	0	55	15	42	3	0	60	197
Total Volume	15	115	16	0	146	17	105	57	0	179	49	133	42	0	224	61	143	27	0	231	780
% App. Total	10.3	78.8	11	0		9.5	58.7	31.8	0		21.9	59.4	18.8	0		26.4	61.9	11.7	0		
PHF	.625	.799	.800	.000	.869	.708	.938	.891	.000	.895	.817	.875	.750	.000	.949	.953	.851	.519	.000	.947	.975

Peak Hour Analysis From 14:00 to 23:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:15																					
16:15	7	47	9	0	63	8	58	20	0	86	31	118	34	0	183	22	64	9	0	95	427
16:30	4	48	0	0	52	14	70	26	0	110	32	120	18	0	170	16	78	12	0	106	438
16:45	7	56	5	0	68	12	66	28	0	106	24	90	20	1	135	30	74	8	0	112	421
17:00	7	57	2	0	66	14	57	29	0	100	33	86	29	0	148	27	69	14	0	110	424
Total Volume	25	208	16	0	249	48	251	103	0	402	120	414	101	1	636	95	285	43	0	423	1710
% App. Total	10	83.5	6.4	0		11.9	62.4	25.6	0		18.9	65.1	15.9	0.2		22.5	67.4	10.2	0		
PHF	.893	.912	.444	.000	.915	.857	.896	.888	.000	.914	.909	.863	.743	.250	.869	.792	.913	.768	.000	.944	.976



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC 2204
 Site Code :
 Start Date : 05/10/2022
 Page No : 1

Weather: Hot & Cloudy
 CountCAM 2
 Study Conducted By: Sam/Adam

Groups Printed- Trucks

Start Time	CSAH 78 Southbound					CSAH 20 Westbound					CSAH 78 Northbound					CSAH 20 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		
00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:15	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1
00:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:45	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	1	0	0	1	0	0	0	0	0	0	1
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45	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
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1
02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45	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	1	0	1	0	0	0	0	0	0	0	1
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
03:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	2
04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
04:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	2
Total	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	0	2	0	0	0	2	5
05:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
05:45	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	1	0	0	0	1	3
Total	0	2	0	0	2	0	2	0	0	2	0	1	0	0	1	0	1	0	0	0	1	6
06:00	0	0	0	0	0	0	1	0	0	1	0	1	0	1	0	1	0	0	0	1	3	3
06:15	0	5	1	0	6	0	1	1	0	2	0	0	1	0	1	2	1	0	0	3	12	12
06:30	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	6	1	0	7	10	10
06:45	1	2	0	0	3	2	6	0	0	8	1	0	0	0	1	2	3	0	0	5	17	17
Total	1	7	2	0	10	2	10	1	0	13	1	1	1	0	3	4	11	1	0	16	42	42
07:00	1	4	1	0	6	0	7	2	0	9	2	3	0	0	5	2	3	0	0	5	25	25
07:15	1	5	0	0	6	0	2	0	0	2	2	5	0	0	7	0	7	0	0	7	22	22
07:30	1	3	2	0	6	0	1	0	0	1	2	1	2	0	5	4	1	0	0	5	17	17
07:45	0	4	0	0	4	1	5	1	0	7	2	3	0	0	5	5	4	0	0	9	25	25
Total	3	16	3	0	22	1	15	3	0	19	8	12	2	0	22	11	15	0	0	26	89	89
08:00	0	2	0	0	2	0	4	6	0	10	1	1	1	0	3	6	7	0	0	13	28	28
08:15	0	0	0	0	0	0	5	1	0	6	1	2	0	0	3	1	2	0	0	3	12	12
08:30	2	2	1	0	5	0	2	0	0	2	1	7	0	0	8	1	4	0	0	5	20	20
08:45	0	3	2	0	5	2	0	3	0	5	1	2	0	0	3	0	2	1	0	3	16	16
Total	2	7	3	0	12	2	11	10	0	23	4	12	1	0	17	8	15	1	0	24	76	76
09:00	0	2	1	0	3	0	6	1	0	7	1	1	3	0	5	2	2	0	0	4	19	19



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC 2204
 Site Code :
 Start Date : 05/10/2022
 Page No : 2

Weather: Hot & Cloudy
 CountCAM 2
 Study Conducted By: Sam/Adam

Groups Printed- Trucks

Start Time	CSAH 78 Southbound					CSAH 20 Westbound					CSAH 78 Northbound					CSAH 20 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	0	3	2	0	5	0	4	0	0	4	4	1	2	0	7	8	1	0	0	9	25
09:30	1	0	0	0	1	0	2	0	0	2	1	0	0	0	1	0	4	1	0	5	9
09:45	0	0	0	0	0	0	3	1	0	4	2	2	0	0	4	0	1	1	0	2	10
Total	1	5	3	0	9	0	15	2	0	17	8	4	5	0	17	10	8	2	0	20	63
10:00	1	4	0	0	5	0	2	1	0	3	2	2	0	0	4	1	2	0	0	3	15
10:15	0	2	0	0	2	0	2	3	0	5	1	3	0	0	4	0	1	0	0	1	12
10:30	0	1	1	0	2	1	4	0	0	5	1	0	0	0	1	1	3	1	0	5	13
10:45	0	1	1	0	2	3	9	1	0	13	1	0	0	0	1	0	2	0	0	2	18
Total	1	8	2	0	11	4	17	5	0	26	5	5	0	0	10	2	8	1	0	11	58
11:00	2	0	0	0	2	1	1	3	0	5	1	3	0	0	4	0	3	1	0	4	15
11:15	0	1	2	0	3	0	1	0	0	1	2	1	1	0	4	0	5	1	0	6	14
11:30	0	1	0	0	1	0	1	1	0	2	2	4	0	0	6	1	0	1	0	2	11
11:45	2	3	1	0	6	0	3	0	0	3	0	2	0	0	2	1	4	1	0	6	17
Total	4	5	3	0	12	1	6	4	0	11	5	10	1	0	16	2	12	4	0	18	57
12:00	0	3	1	0	4	0	2	2	0	4	0	2	1	0	3	0	1	0	0	1	12
12:15	0	5	1	0	6	0	1	1	0	2	0	1	1	0	2	0	3	1	0	4	14
12:30	1	0	1	0	2	0	3	0	0	3	2	0	0	0	2	0	7	1	0	8	15
12:45	1	2	0	0	3	0	2	0	0	2	0	2	1	0	3	1	1	0	0	2	10
Total	2	10	3	0	15	0	8	3	0	11	2	5	3	0	10	1	12	2	0	15	51
13:00	0	1	0	0	1	0	1	1	0	2	0	2	1	0	3	0	2	1	0	3	9
13:15	1	2	0	0	3	1	5	0	0	6	0	2	1	0	3	1	2	0	0	3	15
13:30	0	1	0	0	1	1	3	2	0	6	0	4	0	0	4	0	3	0	0	3	14
13:45	0	0	0	0	0	0	1	0	0	1	0	3	2	0	5	1	5	2	0	8	14
Total	1	4	0	0	5	2	10	3	0	15	0	11	4	0	15	2	12	3	0	17	52
14:00	1	0	0	0	1	0	2	0	0	2	0	2	0	0	2	0	2	3	0	5	10
14:15	1	0	0	0	1	0	2	2	0	4	0	2	0	0	2	1	2	1	0	4	11
14:30	0	1	0	0	1	0	2	0	0	2	1	1	1	0	3	1	5	0	0	6	12
14:45	0	0	0	0	0	1	4	3	0	8	1	3	0	0	4	4	6	1	0	11	23
Total	2	1	0	0	3	1	10	5	0	16	2	8	1	0	11	6	15	5	0	26	56
15:00	1	0	0	0	1	0	1	4	0	5	0	3	0	0	3	3	2	1	0	6	15
15:15	2	0	0	0	2	1	6	0	0	7	4	4	2	0	10	0	3	0	0	3	22
15:30	0	1	0	0	1	0	1	1	0	2	0	1	2	0	3	0	4	2	0	6	12
15:45	1	0	2	0	3	1	1	0	0	2	1	0	3	0	4	0	1	0	0	1	10
Total	4	1	2	0	7	2	9	5	0	16	5	8	7	0	20	3	10	3	0	16	59
16:00	1	0	2	0	3	0	4	2	0	6	1	1	2	0	4	3	9	1	0	13	26
16:15	0	1	1	0	2	0	1	0	0	1	1	2	4	0	7	0	4	2	0	6	16
16:30	1	0	0	0	1	0	0	1	0	1	0	4	0	0	4	2	0	0	0	2	8
16:45	0	1	0	0	1	0	3	2	0	5	1	1	0	0	2	3	3	1	0	7	15
Total	2	2	3	0	7	0	8	5	0	13	3	8	6	0	17	8	16	4	0	28	65
17:00	0	0	0	0	0	1	0	0	0	1	2	4	1	0	7	1	6	2	0	9	17
17:15	0	0	0	0	0	0	0	0	0	0	0	4	1	0	5	1	2	0	0	3	8
17:30	0	1	2	0	3	0	0	0	0	0	0	0	3	0	3	0	1	2	0	3	9
17:45	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	4
Total	0	3	2	0	5	1	0	0	0	1	2	9	5	0	16	2	10	4	0	16	38
18:00	1	0	0	0	1	0	0	0	0	0	0	4	0	0	4	0	2	0	0	2	7
18:15	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	1	0	0	1	4
18:30	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	1	0	0	0	1	3
18:45	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	2	0	0	3	4
Total	1	0	0	0	1	0	0	0	0	0	1	9	0	0	10	2	5	0	0	7	18



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC 2204
 Site Code :
 Start Date : 05/10/2022
 Page No : 3

Weather: Hot & Cloudy
 CountCAM 2
 Study Conducted By: Sam/Adam

Groups Printed- Trucks

Start Time	CSAH 78 Southbound					CSAH 20 Westbound					CSAH 78 Northbound					CSAH 20 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	1	0	0	1	0	1	0	0	1	1	2
19:30	0	0	0	0	0	0	0	0	0	0	2	1	1	0	4	0	1	0	0	1	1	5
19:45	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	2
Total	0	0	0	0	0	0	1	0	0	1	2	3	1	0	6	0	2	0	0	2	2	9
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	1	0	0	1	1	1
20:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:45	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	1	0	0	1	1	3
Total	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	2	0	0	2	2	4
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	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
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	24	72	26	0	122	16	126	48	0	190	48	108	37	0	193	61	156	30	0	247	752	
Apprch %	19.7	59	21.3	0		8.4	66.3	25.3	0		24.9	56	19.2	0		24.7	63.2	12.1	0			
Total %	3.2	9.6	3.5	0	16.2	2.1	16.8	6.4	0	25.3	6.4	14.4	4.9	0	25.7	8.1	20.7	4	0	32.8		

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 05/10/2022

Signal Warrants - Summary

Major Street Approaches

Northbound: CSAH 78

Number of Lanes : 1

Total Approach Volume: 5,138

Southbound: CSAH 78

Number of Lanes : 1

Total Approach Volume: 3,421

Minor Street Approaches

Eastbound: CSAH 20

Number of Lanes : 1

Total Approach Volume: 4,289

Westbound: CSAH 20

Number of Lanes : 1

Total Approach Volume: 4,268

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.....Not Satisfied

Required volumes reached for 7 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 9 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 (38) 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 : 05/10/2022

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

15 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 NB	+	Major SB	=		Minor EB	Minor WB	
16:00 - 17:00	640	+	236	=	876	452	380	Yes
17:00 - 18:00	569	+	240	=	809	389	360	Yes
15:00 - 16:00	568	+	230	=	798	379	324	Yes
07:00 - 08:00	225	+	430	=	655	350	448	Yes
18:00 - 19:00	407	+	175	=	582	246	231	Yes
14:00 - 15:00	369	+	159	=	528	285	235	Yes
08:00 - 09:00	246	+	247	=	493	233	269	Yes
19:00 - 20:00	316	+	156	=	472	248	155	Yes
09:00 - 10:00	218	+	203	=	421	218	253	Yes
13:00 - 14:00	239	+	153	=	392	170	190	Yes
12:00 - 13:00	216	+	158	=	374	218	181	Yes
20:00 - 21:00	244	+	128	=	372	213	155	Yes
06:00 - 07:00	80	+	284	=	364	180	307	Yes
10:00 - 11:00	205	+	156	=	361	160	202	Yes
11:00 - 12:00	218	+	137	=	355	218	197	Yes
05:45 - 06:45	74	+	249	=	323	149	270	No
05:30 - 06:30	56	+	217	=	273	123	223	No
21:00 - 22:00	161	+	61	=	222	93	87	No
05:15 - 06:15	47	+	171	=	218	92	190	No
05:00 - 06:00	44	+	151	=	195	68	160	No
21:15 - 22:15	132	+	45	=	177	82	69	No
04:45 - 05:45	28	+	135	=	163	50	113	No
21:30 - 22:30	106	+	37	=	143	79	59	No
04:30 - 05:30	23	+	113	=	136	42	89	No
21:45 - 22:45	92		28		120	79	49	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 05/10/2022

Warrant 1B - Interruption of Continuous Traffic

Description

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

Summary

Only 7 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = **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 NB	+	Major SB	=		Minor EB	Minor WB	
16:00 - 17:00	640	+	236	=	876	452	380	Yes
17:00 - 18:00	569	+	240	=	809	389	360	Yes
15:00 - 16:00	568	+	230	=	798	379	324	Yes
07:30 - 08:30	280	+	330	=	610	327	389	Yes
18:00 - 19:00	407	+	175	=	582	246	231	Yes
14:00 - 15:00	369	+	159	=	528	285	235	Yes
06:30 - 07:30	150	+	376	=	526	252	417	Yes
19:00 - 20:00	316	+	156	=	472	248	155	No
13:45 - 14:45	322	+	148	=	470	260	221	No
08:30 - 09:30	193	+	251	=	444	243	243	No
06:15 - 07:15	111	+	333	=	444	211	367	No
08:45 - 09:45	199	+	237	=	436	230	255	No
19:15 - 20:15	280	+	148	=	428	229	162	No
13:30 - 14:30	273	+	149	=	422	210	225	No
09:00 - 10:00	218	+	203	=	421	218	253	No
09:15 - 10:15	230	+	178	=	408	206	229	No
19:45 - 20:45	255	+	148	=	403	219	153	No
19:30 - 20:30	254	+	144	=	398	219	149	No
13:00 - 14:00	239	+	153	=	392	170	190	No
12:45 - 13:45	237	+	153	=	390	171	182	No
09:45 - 10:45	228	+	157	=	385	157	197	No
13:15 - 14:15	235	+	149	=	384	187	208	No
12:15 - 13:15	229	+	152	=	381	198	177	No
09:30 - 10:30	226	+	152	=	378	150	205	No
12:30 - 13:30	217		157		374	186	178	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 05/10/2022

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

15 hours meet 1A minimums.
9 hours meet 1B 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
Warrant 1A 1B
Veh/Hr Major = **280 420**

Veh/Hr Minor = **84 42**

Major Road CSAH 78

Minor Road CSAH 20

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1A?
15:45 - 16:45	662	+	233	=	895	456	352	Yes
16:45 - 17:45	574	+	251	=	825	421	369	Yes
14:45 - 15:45	515	+	214	=	729	333	312	Yes
06:45 - 07:45	193	+	430	=	623	296	435	Yes
17:45 - 18:45	423	+	183	=	606	266	274	Yes
18:45 - 19:45	366	+	161	=	527	267	172	Yes
07:45 - 08:45	252	+	253	=	505	292	321	Yes
13:45 - 14:45	322	+	148	=	470	260	221	Yes
08:45 - 09:45	199	+	237	=	436	230	255	Yes
19:45 - 20:45	255	+	148	=	403	219	153	Yes
12:45 - 13:45	237	+	153	=	390	171	182	Yes
09:45 - 10:45	228	+	157	=	385	157	197	Yes

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1B?
15:30 - 16:30	626	+	246	=	872	440	332	Yes
16:30 - 17:30	595	+	244	=	839	421	398	Yes
14:30 - 15:30	496	+	187	=	683	332	272	Yes
17:30 - 18:30	474	+	197	=	671	312	301	Yes
07:15 - 08:15	263	+	391	=	654	371	434	Yes
18:30 - 19:30	385	+	179	=	564	274	193	Yes
08:15 - 09:15	209	+	249	=	458	187	251	Yes
06:15 - 07:15	111	+	333	=	444	211	367	Yes
13:30 - 14:30	273	+	149	=	422	210	225	Yes
09:15 - 10:15	230	+	178	=	408	206	229	No
19:45 - 20:45	255	+	148	=	403	219	153	No
19:30 - 20:30	254	+	144	=	398	219	149	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 05/10/2022

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.

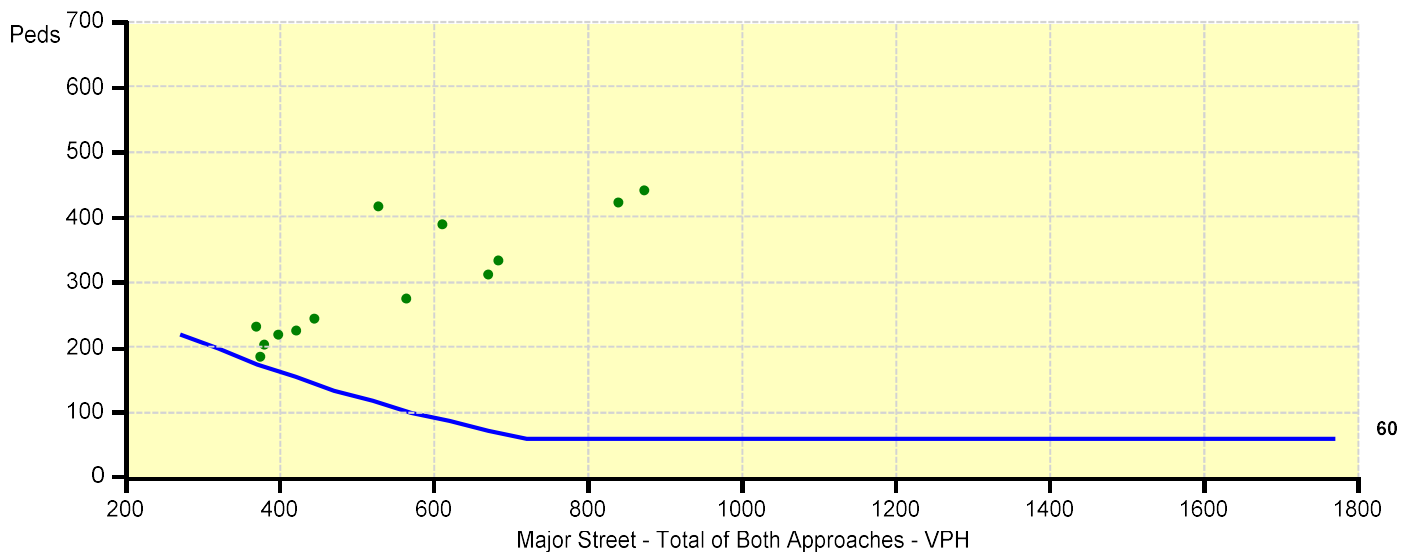
Summary

15 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 78				Total	Minor Road CSAH 20		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
15:30 - 16:30	626	+	246	=	872	440	332	Yes
16:30 - 17:30	595	+	244	=	839	421	398	Yes
14:30 - 15:30	496	+	187	=	683	332	272	Yes
17:30 - 18:30	474	+	197	=	671	312	301	Yes
07:30 - 08:30	280	+	330	=	610	327	389	Yes
18:30 - 19:30	385	+	179	=	564	274	193	Yes
06:30 - 07:30	150	+	376	=	526	252	417	Yes
08:30 - 09:30	193	+	251	=	444	243	243	Yes
13:30 - 14:30	273	+	149	=	422	210	225	Yes
19:30 - 20:30	254	+	144	=	398	219	149	Yes
09:30 - 10:30	226	+	152	=	378	150	205	Yes
12:30 - 13:30	217		157		374	186	178	Yes



ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 05/10/2022

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

33 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 78					Minor Road CSAH 20		Met?
	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	
15:45 - 16:45	662	+	233	=	895	456	352	Yes
16:15 - 17:15	636	+	249	=	885	423	402	Yes
16:00 - 17:00	640	+	236	=	876	452	380	Yes
15:30 - 16:30	626	+	246	=	872	440	332	Yes
16:30 - 17:30	595	+	244	=	839	421	398	Yes
15:15 - 16:15	591	+	239	=	830	430	332	Yes
16:45 - 17:45	574	+	251	=	825	421	369	Yes
17:00 - 18:00	569	+	240	=	809	389	360	Yes
15:00 - 16:00	568	+	230	=	798	379	324	Yes
17:15 - 18:15	520	+	217	=	737	359	331	Yes
14:45 - 15:45	515	+	214	=	729	333	312	Yes
14:30 - 15:30	496		187		683	332	272	Yes

