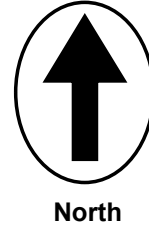


Date : 05/19/21

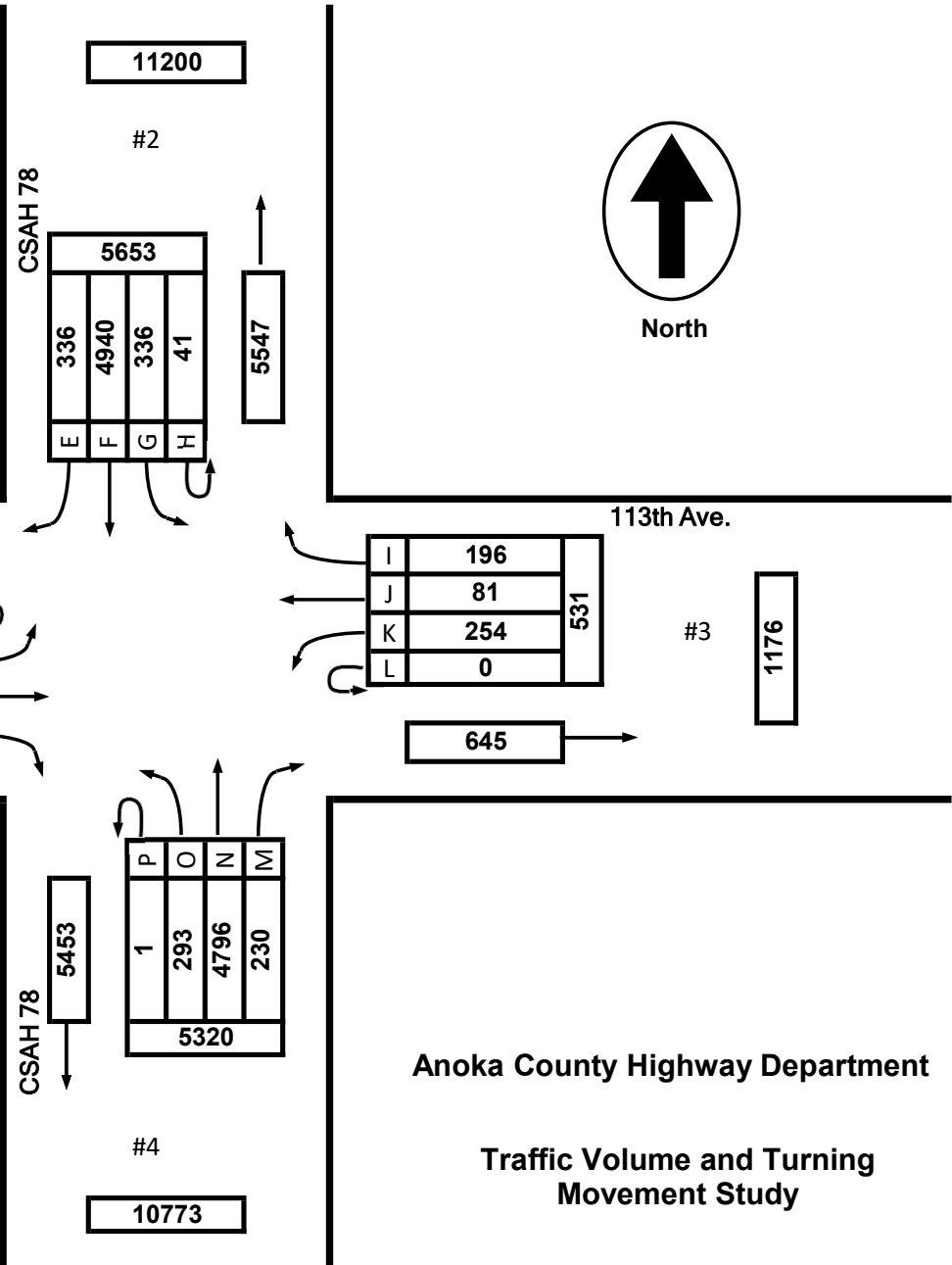
Count Number : TMC 2104

Location : CSAH 78 (Hanson Blvd.)
@ 113th Ave.

Collection Period : 6 AM - 7 PM



North



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

Anoka County Highway Department
 Traffic Volume and Turning Movement Study

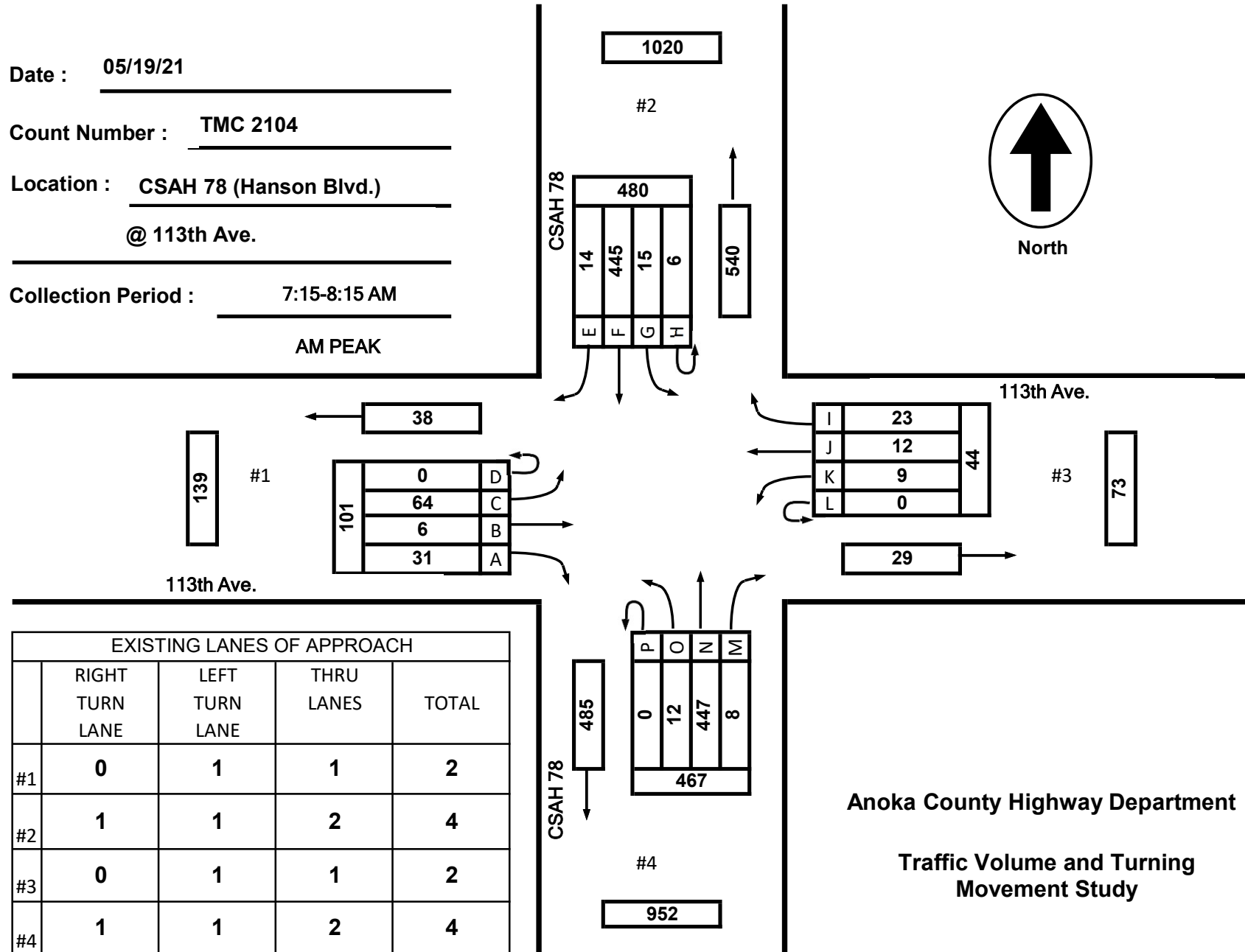
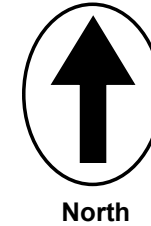
Date : 05/19/21

Count Number : TMC 2104

Location : CSAH 78 (Hanson Blvd.)
@ 113th Ave.

Collection Period : 7:15-8:15 AM

AM PEAK



EXISTING LANES OF APPROACH

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

Anoka County Highway Department

Traffic Volume and Turning Movement Study

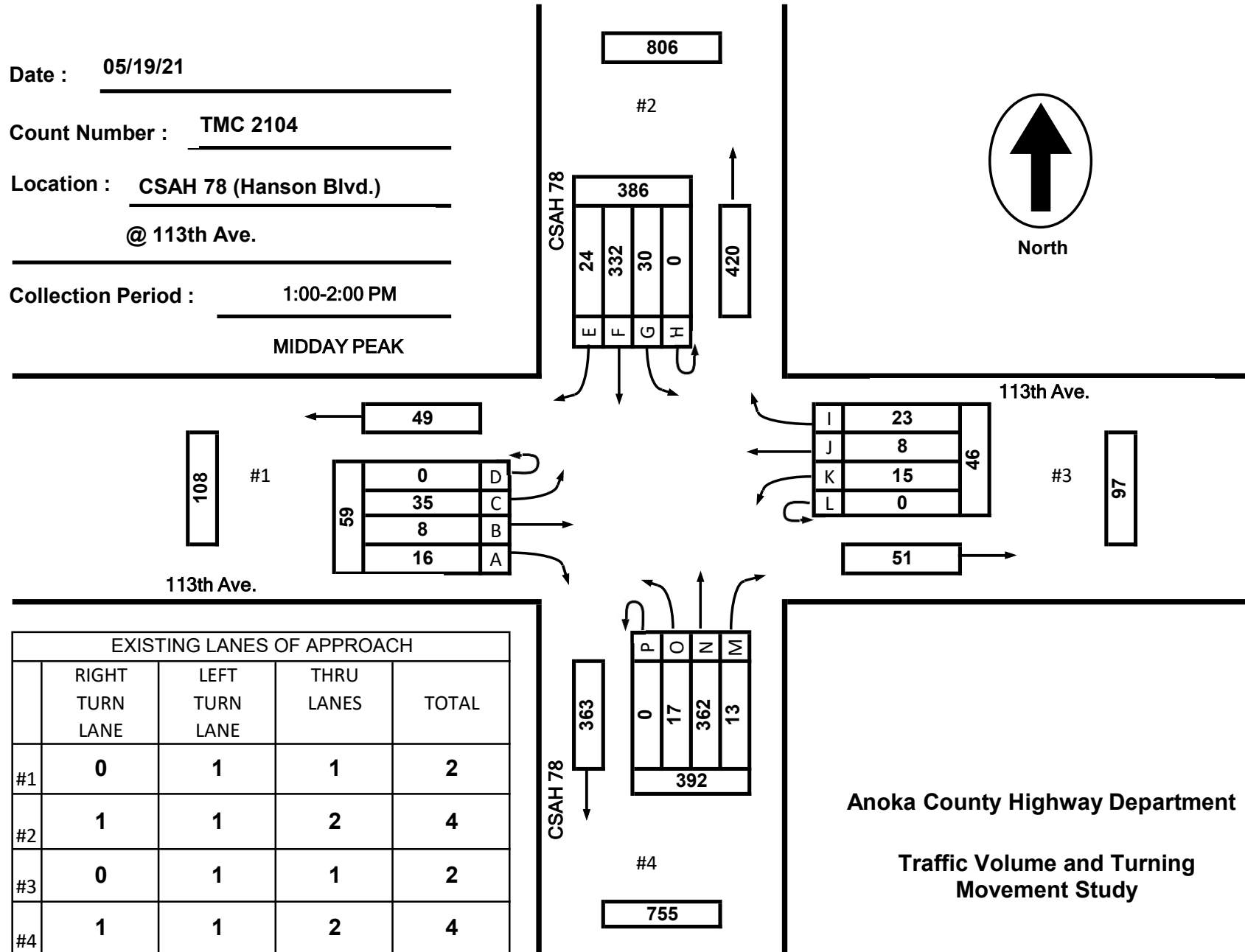
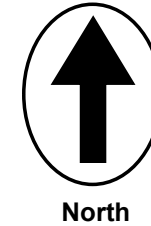
Date : 05/19/21

Count Number : TMC 2104

Location : CSAH 78 (Hanson Blvd.)
@ 113th Ave.

Collection Period : 1:00-2:00 PM

MIDDAY PEAK



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

Anoka County Highway Department

Traffic Volume and Turning Movement Study

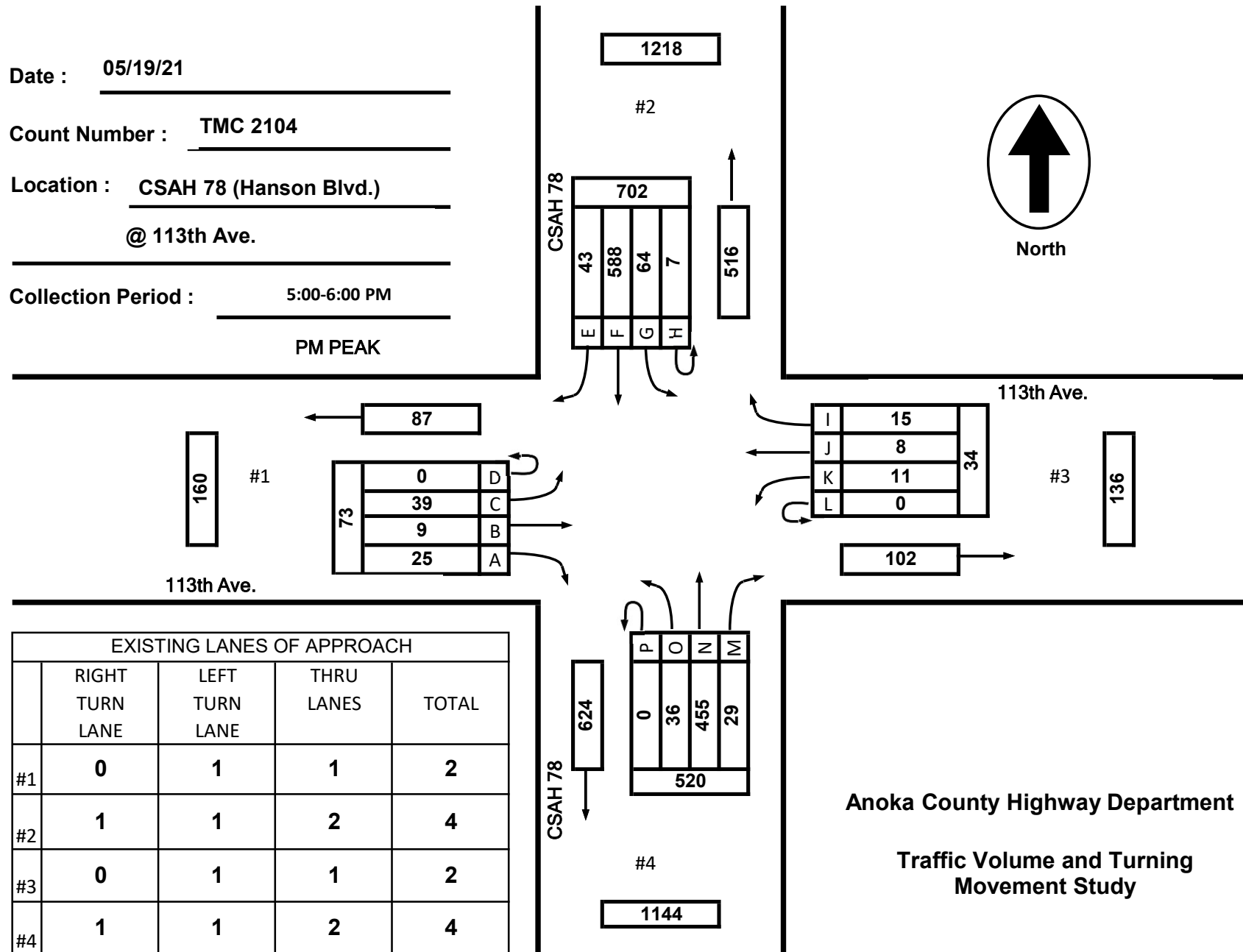
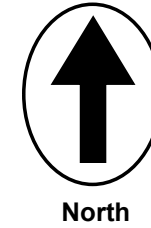
Date : 05/19/21

Count Number : TMC 2104

Location : CSAH 78 (Hanson Blvd.)
@ 113th Ave.

Collection Period : 5:00-6:00 PM

PM PEAK



#1
160

73	0	D
	39	C
	9	B
	25	A

#2
1218

CSAH 78	702			
	43	588	64	7
	E	F	G	H

516

113th Ave.

I	15	34
J	8	
K	11	
L	0	

#3

#3
136

113th Ave.

102

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

CSAH 78

624

CSAH 78	P	O	N	M
	0	36	455	29
	520			

#4

#4
1144

Anoka County Highway Department
 Traffic Volume and Turning Movement Study



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

Weather: Warm & Cloudy
 CountCAM 2
 Study Conducted By: Will

File Name : tmc 2104
 Site Code :
 Start Date : 5/19/2021
 Page No : 1

Groups Printed- Cars + - Trucks

Start Time	CSAH 78 Southbound						113th Ave. Westbound						CSAH 78 Northbound						113th Ave. Eastbound						Exclu. Total	Inclu. Total	Int. Total
	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total			
06:00	1	3	33	0	0	37	0	1	1	2	0	4	0	1	34	1	0	36	0	10	1	3	0	14	0	91	91
06:15	1	1	60	2	0	64	0	2	0	5	0	7	0	1	47	1	0	49	0	14	1	7	0	22	0	142	142
06:30	0	0	42	1	0	43	0	5	0	6	0	11	0	1	49	1	0	51	0	11	1	6	0	18	0	123	123
06:45	1	4	69	1	0	75	0	4	1	3	0	8	0	1	64	4	0	69	0	11	0	7	0	18	0	170	170
Total	3	8	204	4	0	219	0	12	2	16	0	30	0	4	194	7	0	205	0	46	3	23	0	72	0	526	526
07:00	1	4	71	8	0	84	0	3	0	4	0	7	0	4	87	5	0	96	0	15	2	6	0	23	0	210	210
07:15	1	4	151	2	2	158	0	5	8	5	1	18	0	4	123	4	0	131	0	19	2	9	2	30	5	337	342
07:30	2	6	113	3	1	124	0	2	2	9	0	13	0	2	133	0	0	135	0	17	2	8	1	27	2	299	301
07:45	0	0	112	5	0	117	0	1	1	3	0	5	0	3	92	2	1	97	0	14	0	9	1	23	2	242	244
Total	4	14	447	18	3	483	0	11	11	21	1	43	0	13	435	11	1	459	0	65	6	32	4	103	9	1088	1097
08:00	3	5	69	4	0	81	0	1	1	6	1	8	0	3	99	2	2	104	0	14	2	5	0	21	3	214	217
08:15	2	5	99	1	0	107	0	6	3	6	0	15	0	5	65	3	1	73	0	9	1	6	1	16	2	211	213
08:30	0	5	79	7	0	91	0	5	0	4	0	9	0	3	86	5	1	94	0	11	2	3	1	16	2	210	212
08:45	1	4	69	5	0	79	0	0	0	4	1	4	0	7	93	0	1	100	0	9	2	5	1	16	3	199	202
Total	6	19	316	17	0	358	0	12	4	20	2	36	0	18	343	10	5	371	0	43	7	19	3	69	10	834	844
09:00	0	3	72	1	1	76	0	2	0	4	1	6	0	1	79	3	0	83	0	6	0	5	1	11	3	176	179
09:15	0	3	71	8	0	82	0	4	1	3	0	8	0	1	98	0	1	99	0	9	2	6	2	17	3	206	209
09:30	0	3	72	5	0	80	0	2	1	2	0	5	0	5	53	1	1	59	0	12	2	1	2	15	3	159	162
09:45	0	2	78	4	0	84	0	4	2	5	1	11	0	2	49	3	0	54	0	4	0	5	0	9	1	158	159
Total	0	11	293	18	1	322	0	12	4	14	2	30	0	9	279	7	2	295	0	31	4	17	5	52	10	699	709
10:00	0	3	69	2	0	74	0	4	1	4	1	9	0	1	61	7	1	69	0	10	0	4	1	14	3	166	169
10:15	0	4	61	2	0	67	0	1	0	5	0	6	0	6	91	3	0	100	0	11	0	7	0	18	0	191	191
10:30	1	4	68	6	0	79	0	3	1	5	0	9	0	2	54	0	0	56	0	12	0	1	2	13	2	157	159
10:45	0	4	78	3	0	85	0	2	0	1	2	3	0	2	62	2	0	66	0	9	1	2	0	12	2	166	168
Total	1	15	276	13	0	305	0	10	2	15	3	27	0	11	268	12	1	291	0	42	1	14	3	57	7	680	687
11:00	0	2	65	5	0	72	0	2	1	3	0	6	0	3	63	4	2	70	0	7	0	5	0	12	2	160	162
11:15	0	2	81	8	0	91	0	0	2	3	0	5	0	2	53	7	0	62	0	10	0	3	4	13	4	171	175
11:30	1	2	61	9	0	73	0	4	2	3	0	9	0	3	80	1	0	84	0	8	0	5	0	13	0	179	179
11:45	1	2	74	12	0	89	0	3	1	8	2	12	0	2	92	2	0	96	0	10	2	7	0	19	2	216	218
Total	2	8	281	34	0	325	0	9	6	17	2	32	0	10	288	14	2	312	0	35	2	20	4	57	8	726	734
12:00	0	6	75	3	0	84	0	6	1	8	1	15	0	4	75	7	0	86	0	6	0	4	1	10	2	195	197
12:15	0	4	77	3	0	84	0	4	1	4	1	9	0	3	77	3	0	83	0	11	3	3	0	17	1	193	194
12:30	1	6	81	6	0	94	0	8	1	4	0	13	0	4	81	4	0	89	0	4	2	3	0	9	0	205	205



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

Weather: Warm & Cloudy
 CountCAM 2
 Study Conducted By: Will

File Name : tmc 2104
 Site Code :
 Start Date : 5/19/2021
 Page No : 2

Groups Printed- Cars + - Trucks

Start Time	CSAH 78 Southbound						113th Ave. Westbound						CSAH 78 Northbound						113th Ave. Eastbound						Exclu. Total	Inclu. Total	Int. Total
	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total			
12:45	0	12	69	6	1	87	0	7	2	3	2	12	0	8	79	3	0	90	0	9	1	0	1	10	4	199	203
Total	1	28	302	18	1	349	0	25	5	19	4	49	0	19	312	17	0	348	0	30	6	10	2	46	7	792	799
13:00	0	9	73	6	2	88	0	3	4	6	0	13	0	4	79	2	0	85	0	6	1	5	0	12	2	198	200
13:15	0	4	96	5	1	105	0	3	1	9	1	13	0	5	89	2	0	96	0	14	3	4	3	21	5	235	240
13:30	0	4	72	5	1	81	0	4	3	5	0	12	0	3	96	3	1	102	0	11	4	1	0	16	2	211	213
13:45	0	13	91	8	0	112	0	5	0	3	1	8	0	5	98	6	0	109	0	4	0	6	3	10	4	239	243
Total	0	30	332	24	4	386	0	15	8	23	2	46	0	17	362	13	1	392	0	35	8	16	6	59	13	883	896
14:00	0	5	87	4	1	96	0	5	3	8	0	16	0	5	87	11	0	103	0	8	1	3	0	12	1	227	228
14:15	1	13	144	11	2	169	0	5	1	6	1	12	1	5	104	3	1	113	0	8	3	3	2	14	6	308	314
14:30	2	8	153	3	3	166	0	7	5	3	1	15	0	11	135	5	0	151	0	10	4	7	0	21	4	353	357
14:45	1	7	116	6	0	130	0	10	1	3	1	14	0	11	154	5	0	170	0	13	1	2	0	16	1	330	331
Total	4	33	500	24	6	561	0	27	10	20	3	57	1	32	480	24	1	537	0	39	9	15	2	63	12	1218	1230
15:00	1	4	129	10	0	144	0	5	1	6	0	12	0	2	138	4	0	144	0	13	3	6	0	22	0	322	322
15:15	3	12	136	11	1	162	0	2	0	3	3	5	0	10	97	6	0	113	0	14	7	7	0	28	4	308	312
15:30	1	8	105	4	0	118	0	5	1	6	1	12	0	14	127	4	0	145	0	5	0	6	4	11	5	286	291
15:45	1	6	108	13	1	128	0	7	2	5	3	14	0	15	96	8	0	119	0	7	0	7	2	14	6	275	281
Total	6	30	478	38	2	552	0	19	4	20	7	43	0	41	458	22	0	521	0	39	10	26	6	75	15	1191	1206
16:00	2	13	125	13	0	153	0	3	1	2	1	6	0	17	115	6	2	138	0	8	0	5	2	13	5	310	315
16:15	2	12	103	17	0	134	0	1	1	6	2	8	0	11	130	7	1	148	0	4	0	8	2	12	5	302	307
16:30	0	10	106	11	0	127	0	6	5	11	3	22	0	9	137	15	1	161	0	6	2	7	0	15	4	325	329
16:45	0	9	117	8	0	134	0	7	4	3	3	14	0	16	113	12	0	141	0	13	5	7	0	25	3	314	317
Total	4	44	451	49	0	548	0	17	11	22	9	50	0	53	495	40	4	588	0	31	7	27	4	65	17	1251	1268
17:00	3	17	138	11	0	169	0	2	1	6	0	9	0	14	99	6	1	119	0	9	2	5	1	16	2	313	315
17:15	2	20	144	12	0	178	0	5	0	3	1	8	0	8	124	9	0	141	0	11	2	8	0	21	1	348	349
17:30	2	14	150	10	1	176	0	3	4	4	1	11	0	9	118	9	1	136	0	12	2	8	0	22	3	345	348
17:45	0	13	156	10	0	179	0	1	3	2	0	6	0	5	114	5	1	124	0	7	3	4	0	14	1	323	324
Total	7	64	588	43	1	702	0	11	8	15	2	34	0	36	455	29	3	520	0	39	9	25	1	73	7	1329	1336
18:00	1	11	148	10	0	170	0	4	0	4	0	8	0	7	102	4	2	113	0	13	3	5	2	21	4	312	316
18:15	1	2	103	9	0	115	0	4	2	12	0	18	0	5	150	7	0	162	0	7	1	5	1	13	1	308	309
18:30	0	13	111	9	0	133	0	3	3	12	2	18	0	7	94	8	1	109	0	6	1	3	2	10	5	270	275
18:45	1	6	110	8	0	125	0	5	1	4	0	10	0	11	81	5	0	97	0	13	2	1	2	16	2	248	250
Total	3	32	472	36	0	543	0	16	6	32	2	54	0	30	427	24	3	481	0	39	7	14	7	60	12	1138	1150
Grand Total	41	336	4940	336	18	5653	0	196	81	254	39	531	1	293	4796	230	23	5320	0	514	79	258	47	851	127	12355	12482
Apprch %	0.7	5.9	87.4	5.9			0	36.9	15.3	47.8			0	5.5	90.2	4.3			0	60.4	9.3	30.3					
Total %	0.3	2.7	40	2.7		45.8	0	1.6	0.7	2.1		4.3	0	2.4	38.8	1.9		43.1	0	4.2	0.6	2.1		6.9	1	99	
Cars +	41	329	4769	327		5484	0	185	74	237		535	0	268	4576	216		5083	0	502	79	231		859	0	0	11961
% Cars +	100	97.9	96.5	97.3	100	96.7	0	94.4	91.4	93.3	100	93.9	0	91.5	95.4	93.9	100	95.1	0	97.7	100	89.5	100	95.7	0	0	95.8



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : tmc 2104
 Site Code :
 Start Date : 5/19/2021
 Page No : 3

Weather: Warm & Cloudy
 CountCAM 2
 Study Conducted By: Will

Groups Printed- Cars + - Trucks

	CSAH 78 Southbound						113th Ave. Westbound						CSAH 78 Northbound						113th Ave. Eastbound						Exclu. Total	Inclu. Total	Int. Total							
	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total										
Trucks	0	7	171	9		187	0	11	7	17		35	1	25	220	14		260	0	12	0	27		39	0	0	0	0		0	0	0	0	521
% Trucks	0	2.1	3.5	2.7	0	3.3	0	5.6	8.6	6.7	0	6.1	100	8.5	4.6	6.1	0	4.9	0	2.3	0	10.5	0	4.3	0	0	0	4.2	0	0	0	4.2		

Start Time	CSAH 78 Southbound					113th Ave. Westbound					CSAH 78 Northbound					113th Ave. Eastbound					Int. Total
	UTrn	Left	Thru	Right	App. Total	UTrn	Left	Thru	Right	App. Total	UTrn	Left	Thru	Right	App. Total	UTrn	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 to 09:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15																					
07:15	1	4	151	2	158	0	5	8	5	18	0	4	123	4	131	0	19	2	9	30	337
07:30	2	6	113	3	124	0	2	2	9	13	0	2	133	0	135	0	17	2	8	27	299
07:45	0	0	112	5	117	0	1	1	3	5	0	3	92	2	97	0	14	0	9	23	242
08:00	3	5	69	4	81	0	1	1	6	8	0	3	99	2	104	0	14	2	5	21	214
Total Volume	6	15	445	14	480	0	9	12	23	44	0	12	447	8	467	0	64	6	31	101	1092
% App. Total	1.2	3.1	92.7	2.9		0	20.5	27.3	52.3		0	2.6	95.7	1.7		0	63.4	5.9	30.7		
PHF	.500	.625	.737	.700	.759	.000	.450	.375	.639	.611	.000	.750	.840	.500	.865	.000	.842	.750	.861	.842	.810

Peak Hour Analysis From 10:00 to 13:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 13:00																					
13:00	0	9	73	6	88	0	3	4	6	13	0	4	79	2	85	0	6	1	5	12	198
13:15	0	4	96	5	105	0	3	1	9	13	0	5	89	2	96	0	14	3	4	21	235
13:30	0	4	72	5	81	0	4	3	5	12	0	3	96	3	102	0	11	4	1	16	211
13:45	0	13	91	8	112	0	5	0	3	8	0	5	98	6	109	0	4	0	6	10	239
Total Volume	0	30	332	24	386	0	15	8	23	46	0	17	362	13	392	0	35	8	16	59	883
% App. Total	0	7.8	86	6.2		0	32.6	17.4	50		0	4.3	92.3	3.3		0	59.3	13.6	27.1		
PHF	.000	.577	.865	.750	.862	.000	.750	.500	.639	.885	.000	.850	.923	.542	.899	.000	.625	.500	.667	.702	.924

Peak Hour Analysis From 14:00 to 18:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	3	17	138	11	169	0	2	1	6	9	0	14	99	6	119	0	9	2	5	16	313
17:15	2	20	144	12	178	0	5	0	3	8	0	8	124	9	141	0	11	2	8	21	348
17:30	2	14	150	10	176	0	3	4	4	11	0	9	118	9	136	0	12	2	8	22	345
17:45	0	13	156	10	179	0	1	3	2	6	0	5	114	5	124	0	7	3	4	14	323
Total Volume	7	64	588	43	702	0	11	8	15	34	0	36	455	29	520	0	39	9	25	73	1329
% App. Total	1	9.1	83.8	6.1		0	32.4	23.5	44.1		0	6.9	87.5	5.6		0	53.4	12.3	34.2		
PHF	.583	.800	.942	.896	.980	.000	.550	.500	.625	.773	.000	.643	.917	.806	.922	.000	.813	.750	.781	.830	.955



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : tmc 2104
 Site Code :
 Start Date : 5/19/2021
 Page No : 1

Weather: Warm & Cloudy
 CountCAM 2
 Study Conducted By: Will

Groups Printed- Trucks

Start Time	CSAH 78 Southbound					113th Ave. Westbound					CSAH 78 Northbound					113th Ave. Eastbound					Int. Total	
	UTrn	Left	Thru	Right	App. Total	UTrn	Left	Thru	Right	App. Total	UTrn	Left	Thru	Right	App. Total	UTrn	Left	Thru	Right	App. Total		
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
06:30	0	0	3	0	3	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	4
06:45	0	1	4	0	5	0	0	0	1	1	0	0	1	1	2	0	0	0	0	0	0	8
Total	0	1	10	0	11	0	0	0	1	1	0	0	2	1	3	0	0	0	0	0	0	15
07:00	0	0	0	0	0	0	0	0	0	0	0	0	4	1	5	0	1	0	0	1	1	6
07:15	0	0	3	1	4	0	1	1	1	3	0	1	1	0	2	0	0	0	0	0	0	9
07:30	0	0	5	0	5	0	0	0	0	0	0	1	1	0	2	0	0	0	2	2	2	9
07:45	0	0	8	0	8	0	0	1	0	1	0	1	5	1	7	0	1	0	2	3	3	19
Total	0	0	16	1	17	0	1	2	1	4	0	3	11	2	16	0	2	0	4	6	6	43
08:00	0	1	6	0	7	0	0	0	2	2	0	1	12	0	13	0	0	0	2	2	2	24
08:15	0	0	4	1	5	0	0	1	0	1	0	1	4	1	6	0	0	0	1	1	1	13
08:30	0	0	13	1	14	0	1	0	0	1	0	0	2	2	4	0	1	0	0	1	1	20
08:45	0	0	10	0	10	0	0	0	0	0	0	1	5	0	6	0	0	0	0	0	0	16
Total	0	1	33	2	36	0	1	1	2	4	0	3	23	3	29	0	1	0	3	4	4	73
09:00	0	0	5	0	5	0	0	0	0	0	0	0	8	0	8	0	0	0	0	0	0	13
09:15	0	0	3	0	3	0	0	0	1	1	0	0	11	0	11	0	0	0	0	0	0	15
09:30	0	0	7	0	7	0	0	1	0	1	0	1	6	0	7	0	0	0	0	0	0	15
09:45	0	0	4	0	4	0	0	0	0	0	0	1	5	0	6	0	0	0	1	1	1	11
Total	0	0	19	0	19	0	0	1	1	2	0	2	30	0	32	0	0	0	1	1	1	54
10:00	0	0	5	0	5	0	0	0	0	0	0	0	4	0	4	0	0	0	1	1	1	10
10:15	0	0	3	0	3	0	0	0	1	1	0	1	6	0	7	0	0	0	2	2	2	13
10:30	0	0	2	0	2	0	0	0	1	1	0	1	6	0	7	0	0	0	0	0	0	10
10:45	0	1	4	0	5	0	1	0	0	1	0	1	2	0	3	0	1	0	0	1	1	10
Total	0	1	14	0	15	0	1	0	2	3	0	3	18	0	21	0	1	0	3	4	4	43
11:00	0	0	2	0	2	0	0	1	0	1	0	0	4	0	4	0	1	0	0	1	1	8
11:15	0	0	3	0	3	0	0	0	0	0	0	0	6	0	6	0	1	0	1	2	2	11
11:30	0	0	3	0	3	0	0	0	0	0	0	1	2	0	3	0	0	0	0	0	0	6
11:45	0	0	1	0	1	0	0	0	0	0	0	0	6	0	6	0	1	0	1	2	2	9
Total	0	0	9	0	9	0	0	1	0	1	0	1	18	0	19	0	3	0	2	5	5	34
12:00	0	0	2	0	2	0	0	0	1	1	0	1	9	0	10	0	0	0	0	0	0	13
12:15	0	1	1	1	3	0	0	0	0	0	0	1	3	0	4	0	0	0	2	2	2	9
12:30	0	1	2	1	4	0	0	0	2	2	0	1	4	1	6	0	0	0	1	1	1	13
12:45	0	1	2	0	3	0	0	0	0	0	0	2	2	0	4	0	0	0	0	0	0	7
Total	0	3	7	2	12	0	0	0	3	3	0	5	18	1	24	0	0	0	3	3	3	42
13:00	0	0	1	0	1	0	0	1	0	1	0	0	5	0	5	0	0	0	1	1	1	8
13:15	0	0	2	0	2	0	0	0	0	0	0	0	5	0	5	0	0	0	1	1	1	8
13:30	0	0	1	0	1	0	1	0	0	1	0	1	5	2	8	0	0	0	0	0	0	10
13:45	0	0	6	0	6	0	1	0	0	1	0	0	9	0	9	0	0	0	0	0	0	16
Total	0	0	10	0	10	0	2	1	0	3	0	1	24	2	27	0	0	0	2	2	2	42
14:00	0	0	4	0	4	0	1	0	1	2	0	0	11	1	12	0	1	0	0	1	1	19
14:15	0	0	7	3	10	0	0	0	0	0	1	1	7	0	9	0	0	0	0	0	0	19
14:30	0	0	8	1	9	0	1	0	0	1	0	0	4	1	5	0	0	0	0	0	0	15
14:45	0	0	7	0	7	0	1	0	1	2	0	1	10	0	11	0	0	0	0	0	0	20
Total	0	0	26	4	30	0	3	0	2	5	1	2	32	2	37	0	1	0	0	1	1	73
15:00	0	0	8	0	8	0	0	0	0	0	0	1	4	0	5	0	0	0	1	1	1	14
15:15	0	1	7	0	8	0	0	0	0	0	0	0	3	1	4	0	2	0	1	3	3	15
15:30	0	0	3	0	3	0	0	0	1	1	0	3	4	0	7	0	0	0	1	1	1	12
15:45	0	0	2	0	2	0	2	1	0	3	0	0	2	0	2	0	2	0	1	3	3	10
Total	0	1	20	0	21	0	2	1	1	4	0	4	13	1	18	0	4	0	4	8	8	51



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

Weather: Warm & Cloudy
 CountCAM 2
 Study Conducted By: Will

File Name : tmc 2104
 Site Code :
 Start Date : 5/19/2021
 Page No : 2

Groups Printed- Trucks

Start Time	CSAH 78 Southbound					113th Ave. Westbound					CSAH 78 Northbound					113th Ave. Eastbound					Int. Total
	UTrn	Left	Thru	Right	App. Total	UTrn	Left	Thru	Right	App. Total	UTrn	Left	Thru	Right	App. Total	UTrn	Left	Thru	Right	App. Total	
16:00	0	0	0	0	0	0	1	0	0	1	0	0	5	1	6	0	0	0	2	2	9
16:15	0	0	0	0	0	0	0	0	1	1	0	0	9	0	9	0	0	0	2	2	12
16:30	0	0	2	0	2	0	0	0	2	2	0	1	6	0	7	0	0	0	0	0	11
16:45	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	0	0	0	1	1	5
Total	0	0	2	0	2	0	1	0	3	4	0	1	24	1	26	0	0	0	5	5	37
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	2	0	2	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	4
17:30	0	0	1	0	1	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	3
17:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
Total	0	0	3	0	3	0	0	0	0	0	0	0	4	1	5	0	0	0	0	0	8
18:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
18:15	0	0	0	0	0	0	0	0	1	1	0	0	1	0	1	0	0	0	0	0	2
18:30	0	0	2	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	3
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	2	0	2	0	0	0	1	1	0	0	3	0	3	0	0	0	0	0	6
Grand Total	0	7	171	9	187	0	11	7	17	35	1	25	220	14	260	0	12	0	27	39	521
Apprch %	0	3.7	91.4	4.8		0	31.4	20	48.6		0.4	9.6	84.6	5.4		0	30.8	0	69.2		
Total %	0	1.3	32.8	1.7	35.9	0	2.1	1.3	3.3	6.7	0.2	4.8	42.2	2.7	49.9	0	2.3	0	5.2	7.5	

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2104

Study Date : 06/08/2021

Signal Warrants - Summary

Major Street Approaches

Northbound: CSAH 78

Number of Lanes : 2+

Total Approach Volume: 5,320

Southbound: CSAH 78

Number of Lanes :2+

Total Approach Volume: 5,653

Minor Street Approaches

Eastbound: 113th Ave.

Number of Lanes :1

Total Approach Volume: 851

Westbound: 113th Ave.

Number of Lanes :1

Total Approach Volume: 531

Warrant Summary (Rural Values Apply)

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

Warrant 1A - Minimum Vehicular Volume.....Not Satisfied

Required volumes reached for 0 hours, 8 are needed

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

Required volumes reached for 10 hours, 8 are needed

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

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

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

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

Number of hours (6) volumes exceed minimum >= minimum required (4).

Warrant 3 - Peak Hour.....Satisfied

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

Number of one hour periods (2) 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 2104

Study Date : 06/08/2021

Warrant 1A - Minimum Volumes

Description

Intended for sites where the volume of intersecting traffic is the principal reason for consideration of a signal installation.

Summary

Only 0 one hour periods meet minimums.
Warrant is NOT 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 CSAH 78				Total	Minor Road 113th Ave.		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
17:00 - 18:00	520	+	702	=	1222	73	34	No
17:15 - 18:15	514	+	703	=	1217	78	33	No
16:45 - 17:45	537	+	657	=	1194	84	42	No
14:15 - 15:15	578	+	609	=	1187	73	53	No
14:30 - 15:30	578	+	602	=	1180	87	46	No
17:30 - 18:30	535	+	640	=	1175	70	43	No
16:30 - 17:30	562	+	608	=	1170	77	53	No
16:00 - 17:00	588	+	548	=	1136	65	50	No
16:15 - 17:15	569	+	564	=	1133	68	53	No
14:45 - 15:45	572	+	554	=	1126	77	43	No
15:45 - 16:45	566	+	542	=	1108	54	50	No
17:45 - 18:45	508	+	597	=	1105	58	50	No
14:00 - 15:00	537	+	561	=	1098	63	57	No
15:30 - 16:30	550	+	533	=	1083	50	40	No
15:15 - 16:15	515	+	561	=	1076	66	37	No
15:00 - 16:00	521	+	552	=	1073	75	43	No
18:00 - 19:00	481	+	543	=	1024	60	54	No
13:45 - 14:45	476	+	543	=	1019	57	51	No
07:15 - 08:15	467	+	480	=	947	101	44	No
07:00 - 08:00	459	+	483	=	942	103	43	No
13:30 - 14:30	427	+	458	=	885	52	48	No
06:45 - 07:45	431	+	441	=	872	98	46	No
07:30 - 08:30	409	+	429	=	838	87	41	No
13:15 - 14:15	410	+	394	=	804	59	49	No
13:00 - 14:00	392		386		778	59	46	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2104

Study Date : 06/08/2021

Warrant 1B - Interruption of Continuous Traffic

Description

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

Summary

10 one hour periods meet minimums.
Warrant IS met.

Site Data Required

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

Volume Requirements

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

 Veh/Hr Minor = **52**

Time	Major Road CSAH 78				=	Total	Minor Road 113th Ave.		Met?
	Major NB	+	Major SB				Minor EB	Minor WB	
16:45 - 17:45	537	+	657	=	1194	84	42	Yes	
14:30 - 15:30	578	+	602	=	1180	87	46	Yes	
15:45 - 16:45	566	+	542	=	1108	54	50	Yes	
17:45 - 18:45	508	+	597	=	1105	58	50	Yes	
13:30 - 14:30	427	+	458	=	885	52	48	Yes	
07:30 - 08:30	409	+	429	=	838	87	41	Yes	
12:30 - 13:30	360	+	374	=	734	52	51	Yes	
06:30 - 07:30	347	+	360	=	707	89	44	Yes	
08:30 - 09:30	376	+	328	=	704	60	27	Yes	
11:00 - 12:00	312	+	325	=	637	57	32	Yes	
15:30 - 16:30	550	+	533	=	1083	50	40	No	
12:15 - 13:15	347	+	353	=	700	48	47	No	
12:00 - 13:00	348	+	349	=	697	46	49	No	
10:45 - 11:45	282	+	321	=	603	50	23	No	
10:00 - 11:00	291	+	305	=	596	57	27	No	
10:15 - 11:15	292	+	303	=	595	55	24	No	
09:30 - 10:30	282	+	305	=	587	56	31	No	
09:45 - 10:45	279	+	304	=	583	54	35	No	
10:30 - 11:30	254	+	327	=	581	50	23	No	
06:15 - 07:15	265	+	266	=	531	81	33	No	
06:00 - 07:00	205	+	219	=	424	72	30	No	
05:45 - 06:45	136	+	144	=	280	54	22	No	
18:45 - 19:45	97	+	125	=	222	16	10	No	
05:30 - 06:30	85	+	101	=	186	36	11	No	
05:15 - 06:15	36		37		73	14	4	No	

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2104

Study Date : 06/08/2021

Warrant 1C Combination of Warrants

Description

Intended for sites where the traffic volumes don't meet individual warrants but where Warrants 1A and 1B are both met to 80% of their stated values.

Summary

Only 4 hours meet 1A minimums.
13 hours meet 1B minimums.
Warrant is NOT 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 78

Minor Road 113th Ave.

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1A?
16:45 - 17:45	537	+	657	=	1194	84	42	Yes
14:30 - 15:30	578	+	602	=	1180	87	46	Yes
07:30 - 08:30	409	+	429	=	838	87	41	Yes
06:30 - 07:30	347	+	360	=	707	89	44	Yes
14:15 - 15:15	578	+	609	=	1187	73	53	No
16:30 - 17:30	562	+	608	=	1170	77	53	No
16:00 - 17:00	588	+	548	=	1136	65	50	No
16:15 - 17:15	569	+	564	=	1133	68	53	No
15:45 - 16:45	566	+	542	=	1108	54	50	No
17:45 - 18:45	508	+	597	=	1105	58	50	No
14:00 - 15:00	537	+	561	=	1098	63	57	No
15:30 - 16:30	550	+	533	=	1083	50	40	No

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1B?
17:15 - 18:15	514	+	703	=	1217	78	33	Yes
14:15 - 15:15	578	+	609	=	1187	73	53	Yes
16:15 - 17:15	569	+	564	=	1133	68	53	Yes
15:15 - 16:15	515	+	561	=	1076	66	37	Yes
07:15 - 08:15	467	+	480	=	947	101	44	Yes
13:15 - 14:15	410	+	394	=	804	59	49	Yes
18:15 - 19:15	368	+	373	=	741	39	46	Yes
08:15 - 09:15	350	+	353	=	703	59	34	Yes
12:15 - 13:15	347	+	353	=	700	48	47	Yes
11:15 - 12:15	328	+	337	=	665	55	41	Yes
09:15 - 10:15	281	+	320	=	601	55	33	Yes
10:15 - 11:15	292	+	303	=	595	55	24	Yes

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2104

Study Date : 06/08/2021

Warrant 2 - Four Hour Volumes

Description

Intended for sites where the volume of intersecting traffic during any four hours of the day is the principal reason for consideration of a signal installation.

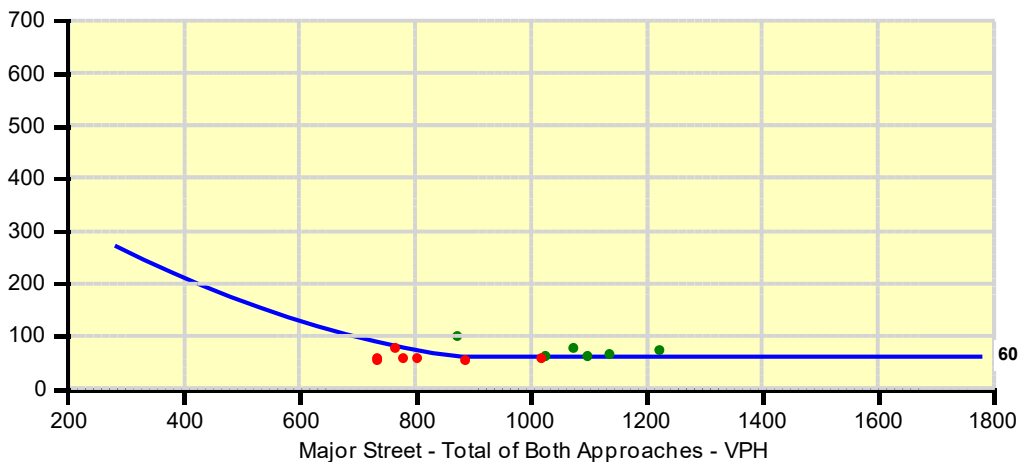
Summary

6 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 78				=	Total	Minor Road 113th Ave.		Met?
	Major NB	+	Major SB				Minor EB	Minor WB	
17:00 - 18:00	520	+	702	=	1222	73	34	Yes	
16:00 - 17:00	588	+	548	=	1136	65	50	Yes	
14:00 - 15:00	537	+	561	=	1098	63	57	Yes	
15:00 - 16:00	521	+	552	=	1073	75	43	Yes	
18:00 - 19:00	481	+	543	=	1024	60	54	Yes	
06:45 - 07:45	431	+	441	=	872	98	46	Yes	
13:45 - 14:45	476	+	543	=	1019	57	51	No	
13:30 - 14:30	427	+	458	=	885	52	48	No	
13:15 - 14:15	410	+	394	=	804	59	49	No	
13:00 - 14:00	392	+	386	=	778	59	46	No	
07:45 - 08:45	368	+	396	=	764	76	37	No	
							50	No	



ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2104

Study Date : 06/08/2021

Warrant 3B - Peak Hour Volumes

Description

Intended for sites where the volume of intersecting traffic during one hour of the day is the principal reason for consideration of a signal installation.

Summary

4 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 78				=	Total	Minor Road 113th Ave.		Met?
	Major NB	+	Major SB				Minor EB	Minor WB	
17:15 - 18:15	514	+	703	=	1217	78	33	Yes	
16:45 - 17:45	537	+	657	=	1194	84	42	Yes	
14:30 - 15:30	578	+	602	=	1180	87	46	Yes	
16:30 - 17:30	562	+	608	=	1170	77	53	Yes	
17:00 - 18:00	520	+	702	=	1222	73	34	No	
14:15 - 15:15	578	+	609	=	1187	73	53	No	
17:30 - 18:30	535	+	640	=	1175	70	43	No	
16:00 - 17:00	588	+	548	=	1136	65	50	No	
16:15 - 17:15	569	+	564	=	1133	68	53	No	
14:45 - 15:45	572	+	554	=	1126	77	43	No	
15:45 - 16:45	566	+	542	=	1108	54	50	No	

