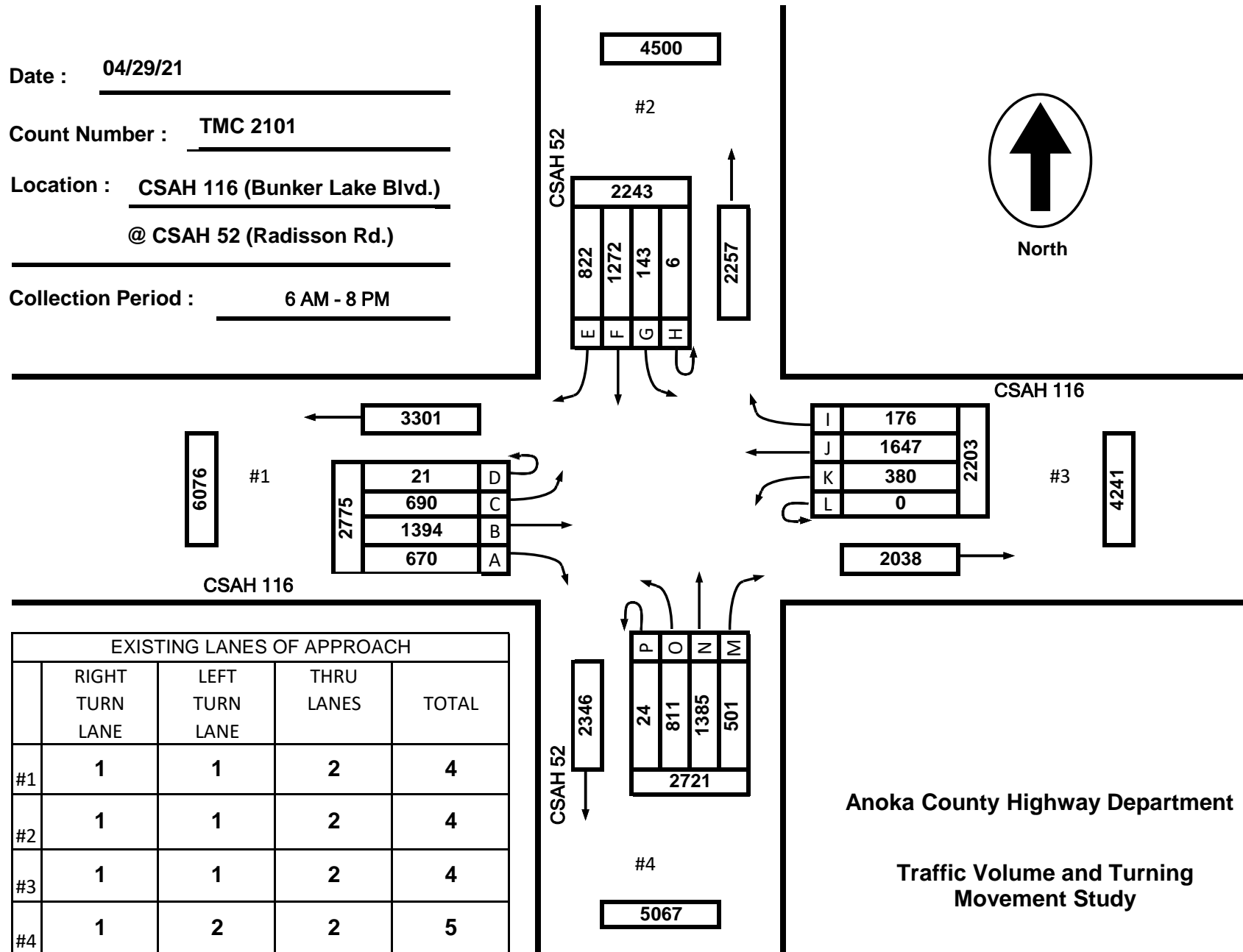
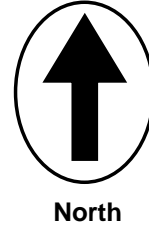


Date : 04/29/21

Count Number : TMC 2101

Location : CSAH 116 (Bunker Lake Blvd.)
@ CSAH 52 (Radisson Rd.)

Collection Period : 6 AM - 8 PM



21	D
690	C
1394	B
670	A

822	E
1272	F
143	G
6	H

176	I
1647	J
380	K
0	L

24	P
811	O
1385	N
501	M

EXISTING LANES OF APPROACH				
	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	TOTAL
#1	1	1	2	4
#2	1	1	2	4
#3	1	1	2	4
#4	1	2	2	5

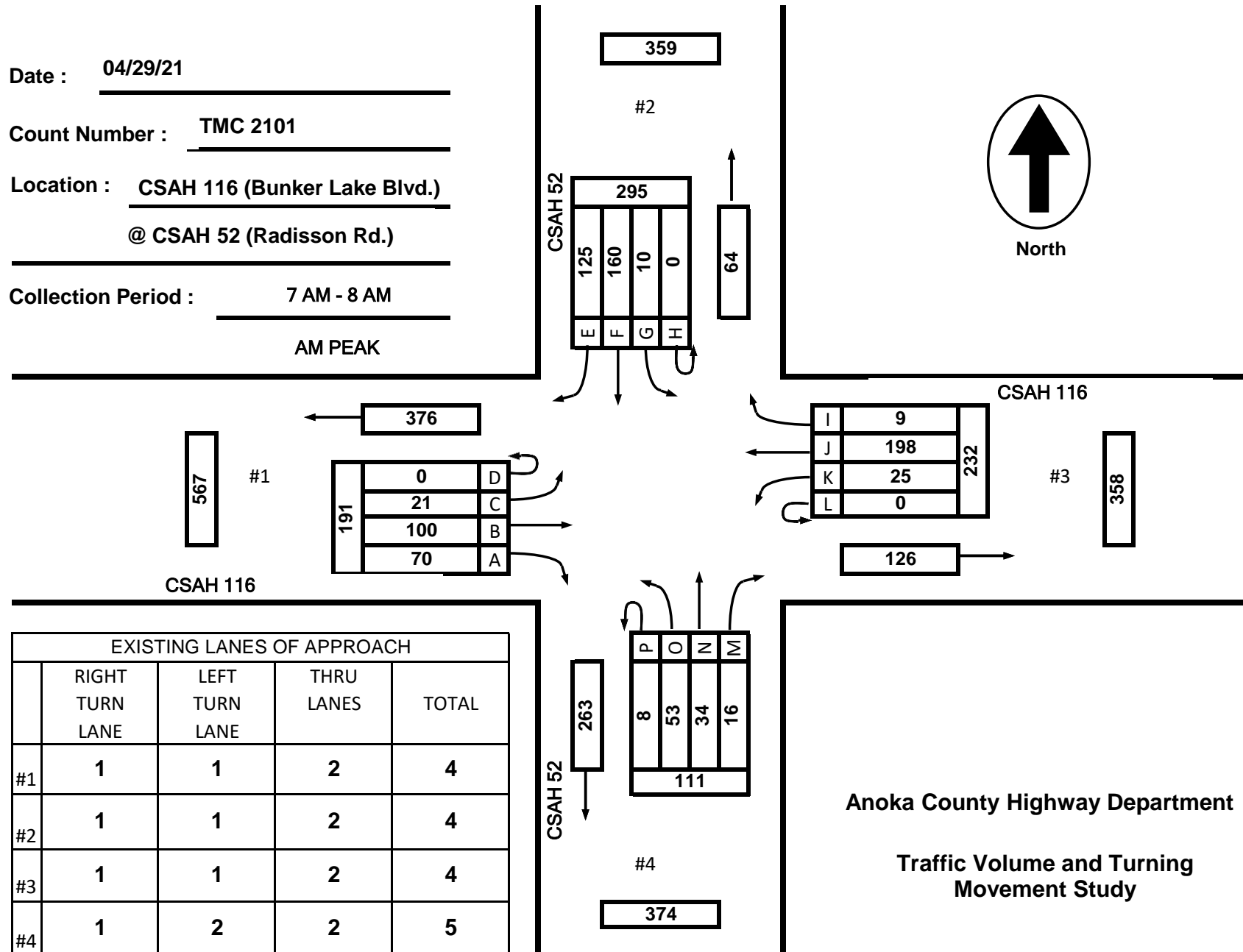
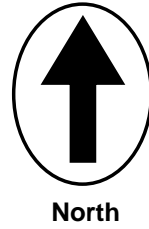
Anoka County Highway Department
 Traffic Volume and Turning Movement Study

Date : 04/29/21

Count Number : TMC 2101

Location : CSAH 116 (Bunker Lake Blvd.)
@ CSAH 52 (Radisson Rd.)

Collection Period : 7 AM - 8 AM
AM PEAK



EXISTING LANES OF APPROACH

	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	TOTAL
#1	1	1	2	4
#2	1	1	2	4
#3	1	1	2	4
#4	1	2	2	5

Anoka County Highway Department

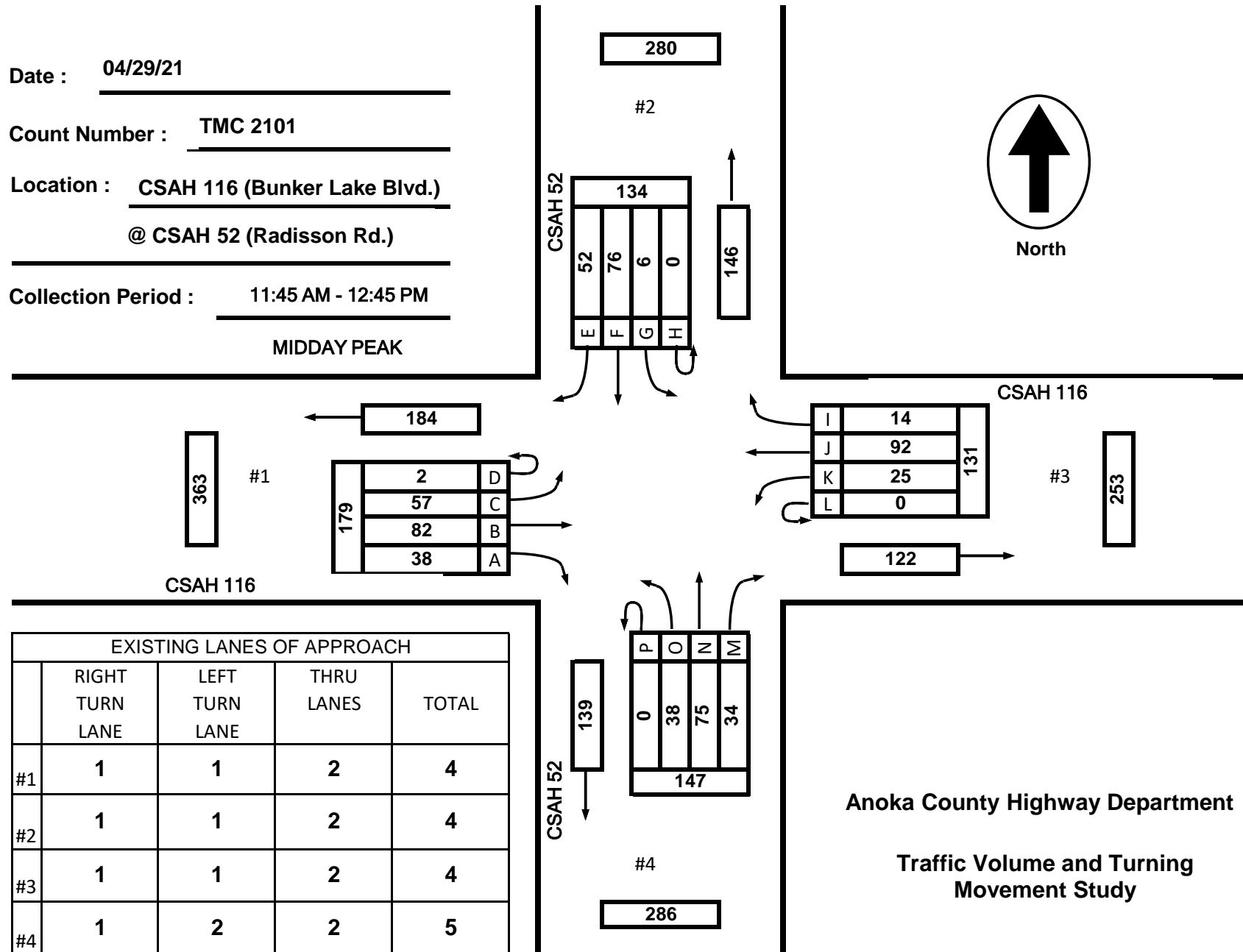
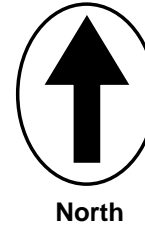
Traffic Volume and Turning Movement Study

Date : 04/29/21

Count Number : TMC 2101

Location : CSAH 116 (Bunker Lake Blvd.)
@ CSAH 52 (Radisson Rd.)

Collection Period : 11:45 AM - 12:45 PM
MIDDAY PEAK



EXISTING LANES OF APPROACH

	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	TOTAL
#1	1	1	2	4
#2	1	1	2	4
#3	1	1	2	4
#4	1	2	2	5

Anoka County Highway Department

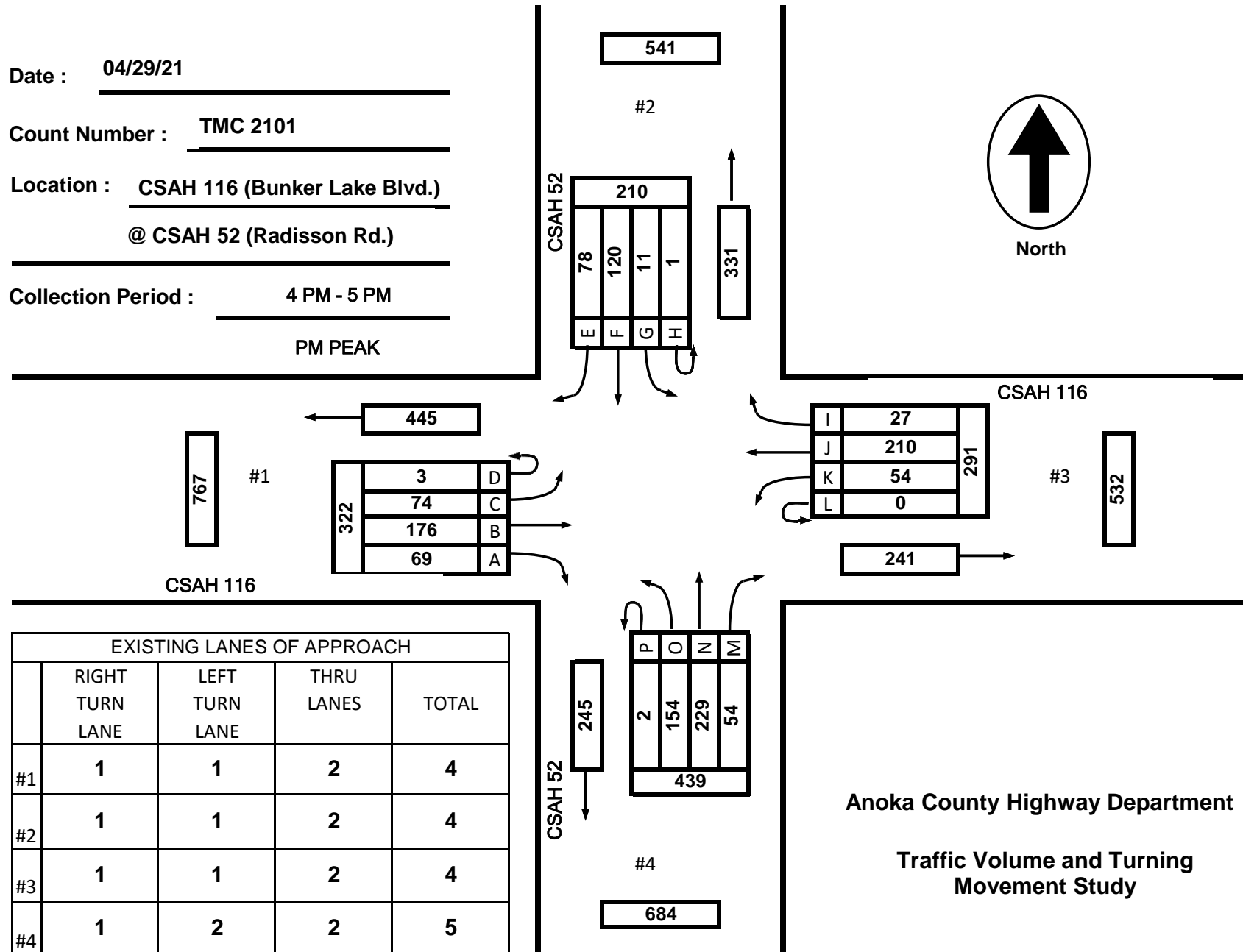
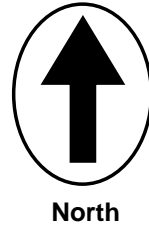
Traffic Volume and Turning Movement Study

Date : 04/29/21

Count Number : TMC 2101

Location : CSAH 116 (Bunker Lake Blvd.)
@ CSAH 52 (Radisson Rd.)

Collection Period : 4 PM - 5 PM
 PM PEAK



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 2101
 Site Code :
 Start Date : 4/29/2021
 Page No : 1

Weather: Warm & Partly Cloudy
 countCAM2
 Study Conducted By: Andrea

Groups Printed- Cars + - Trucks

Start Time	CSAH 52 Southbound						CSAH 116 Westbound						CSAH 52 Northbound						CSAH 116 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	0	1	27	6	0	34	0	2	11	0	0	13	0	3	1	5	0	9	0	1	15	8	0	24	0	80	80
06:15	0	2	37	12	0	51	0	5	13	1	0	19	0	4	4	2	0	10	0	1	11	10	1	22	1	102	103
06:30	0	3	43	12	0	58	0	5	21	0	0	26	0	6	3	2	0	11	0	1	17	7	0	25	0	120	120
06:45	0	1	29	20	0	50	0	7	24	1	0	32	0	9	2	6	0	17	0	4	9	15	0	28	0	127	127
Total	0	7	136	50	0	193	0	19	69	2	0	90	0	22	10	15	0	47	0	7	52	40	1	99	1	429	430
07:00	0	1	42	42	0	85	0	5	49	1	0	55	2	8	6	5	0	21	0	3	16	7	0	26	0	187	187
07:15	0	5	47	43	0	95	0	12	60	3	0	75	2	17	12	4	0	35	0	4	14	22	0	40	0	245	245
07:30	0	1	45	22	0	68	0	4	49	1	0	54	0	16	8	3	0	27	0	7	29	21	0	57	0	206	206
07:45	0	3	26	18	0	47	0	4	40	4	0	48	4	12	8	4	0	28	0	7	41	20	0	68	0	191	191
Total	0	10	160	125	0	295	0	25	198	9	0	232	8	53	34	16	0	111	0	21	100	70	0	191	0	829	829
08:00	0	1	22	25	0	48	0	5	32	0	0	37	1	4	9	2	0	16	1	7	23	13	0	44	0	145	145
08:15	0	7	31	18	0	56	0	7	27	2	0	36	0	8	9	6	0	23	0	9	19	6	0	34	0	149	149
08:30	0	3	20	23	0	46	0	7	27	3	0	37	0	6	7	6	0	19	0	9	17	7	0	33	0	135	135
08:45	0	3	20	15	0	38	0	3	25	1	0	29	0	7	8	2	0	17	0	8	14	8	0	30	0	114	114
Total	0	14	93	81	0	188	0	22	111	6	0	139	1	25	33	16	0	75	1	33	73	34	0	141	0	543	543
09:00	0	1	21	5	0	27	0	7	27	1	0	35	0	5	7	2	0	14	0	3	11	12	0	26	0	102	102
09:15	1	2	24	20	0	47	0	4	26	3	0	33	0	8	14	4	0	26	0	5	14	8	0	27	0	133	133
09:30	1	2	19	15	0	37	0	3	22	3	0	28	0	8	12	6	0	26	3	7	15	10	1	35	1	126	127
09:45	0	4	17	18	0	39	0	7	21	3	0	31	1	12	13	1	0	27	1	6	17	7	1	31	1	128	129
Total	2	9	81	58	0	150	0	21	96	10	0	127	1	33	46	13	0	93	4	21	57	37	2	119	2	489	491
10:00	0	0	15	12	0	27	0	2	16	1	0	19	0	9	19	3	0	31	0	8	9	3	0	20	0	97	97
10:15	0	0	17	17	0	34	0	5	20	0	0	25	0	10	16	5	0	31	1	11	25	7	0	44	0	134	134
10:30	0	8	19	9	0	36	0	6	20	3	0	29	0	15	12	5	0	32	0	3	23	14	0	40	0	137	137
10:45	0	1	21	13	0	35	0	4	21	2	0	27	2	8	11	6	0	27	1	5	17	10	0	33	0	122	122
Total	0	9	72	51	0	132	0	17	77	6	0	100	2	42	58	19	0	121	2	27	74	34	0	137	0	490	490
11:00	0	1	24	13	0	38	0	11	25	4	0	40	1	14	21	9	0	45	0	7	19	6	0	32	0	155	155
11:15	0	6	20	10	0	36	0	1	22	0	0	23	1	5	12	8	0	26	2	14	11	15	0	42	0	127	127
11:30	0	0	15	17	0	32	0	6	22	6	0	34	1	9	14	6	0	30	0	12	24	10	0	46	0	142	142
11:45	0	1	25	14	0	40	0	4	32	4	0	40	0	8	16	13	0	37	2	18	13	14	1	47	1	164	165
Total	0	8	84	54	0	146	0	22	101	14	0	137	3	36	63	36	0	138	4	51	67	45	1	167	1	588	589
12:00	0	5	9	8	0	22	0	7	24	4	1	35	0	12	22	8	0	42	0	13	20	8	2	41	3	140	143
12:15	0	0	24	14	0	38	0	10	20	2	0	32	0	8	18	6	0	32	0	15	21	5	0	41	0	143	143
12:30	0	0	18	16	0	34	0	4	16	4	0	24	0	10	19	7	0	36	0	11	28	11	0	50	0	144	144

Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : tmc 2101
 Site Code :
 Start Date : 4/29/2021
 Page No : 2

Weather: Warm & Partly Cloudy
 countCAM2
 Study Conducted By: Andrea

Groups Printed- Cars + - Trucks

Start Time	CSAH 52 Southbound						CSAH 116 Westbound						CSAH 52 Northbound						CSAH 116 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	3	13	8	0	24	0	8	26	2	0	36	0	9	17	8	0	34	1	8	21	20	0	50	0	144	144
Total	0	8	64	46	0	118	0	29	86	12	1	127	0	39	76	29	0	144	1	47	90	44	2	182	3	571	574
13:00	0	4	17	11	0	32	0	5	13	0	0	18	0	16	23	7	0	46	1	15	23	7	0	46	0	142	142
13:15	0	3	13	9	0	25	0	8	24	3	0	35	1	8	21	7	0	37	0	7	18	5	2	30	2	127	129
13:30	2	2	12	14	0	30	0	7	25	3	0	35	0	9	18	4	0	31	1	15	31	14	0	61	0	157	157
13:45	0	2	18	9	0	29	0	6	20	1	0	27	1	11	22	19	0	53	0	18	18	18	0	54	0	163	163
Total	2	11	60	43	0	116	0	26	82	7	0	115	2	44	84	37	0	167	2	55	90	44	2	191	2	589	591
14:00	0	3	14	10	0	27	0	3	36	2	0	41	0	16	23	7	0	46	0	20	20	6	2	46	2	160	162
14:15	0	1	11	14	0	26	0	7	34	6	0	47	0	23	22	12	0	57	1	15	36	18	0	70	0	200	200
14:30	0	4	23	11	0	38	0	7	29	5	0	41	1	30	35	15	0	81	0	32	34	14	0	80	0	240	240
14:45	0	4	21	17	0	42	0	7	27	8	0	42	0	21	39	21	0	81	0	17	35	14	0	66	0	231	231
Total	0	12	69	52	0	133	0	24	126	21	0	171	1	90	119	55	0	265	1	84	125	52	2	262	2	831	833
15:00	0	3	23	15	0	41	0	5	33	3	1	41	2	17	45	13	0	77	1	19	32	17	0	69	1	228	229
15:15	0	6	17	8	0	31	0	9	52	5	0	66	0	18	42	18	1	78	0	20	40	11	0	71	1	246	247
15:30	0	2	19	18	0	39	0	7	29	2	0	38	0	26	54	8	0	88	0	17	35	16	0	68	0	233	233
15:45	0	1	15	9	1	25	0	11	50	8	0	69	0	35	50	13	0	98	0	16	34	14	0	64	1	256	257
Total	0	12	74	50	1	136	0	32	164	18	1	214	2	96	191	52	1	341	1	72	141	58	0	272	3	963	966
16:00	0	2	37	14	0	53	0	19	58	4	0	81	1	40	47	10	0	98	0	19	47	21	0	87	0	319	319
16:15	0	2	29	27	0	58	0	12	46	11	0	69	0	38	58	16	0	112	3	25	44	22	0	94	0	333	333
16:30	0	3	27	19	0	49	0	8	50	8	0	66	0	31	73	18	0	122	0	11	33	15	0	59	0	296	296
16:45	1	4	27	18	0	50	0	15	56	4	0	75	1	45	51	10	0	107	0	19	52	11	0	82	0	314	314
Total	1	11	120	78	0	210	0	54	210	27	0	291	2	154	229	54	0	439	3	74	176	69	0	322	0	1262	1262
17:00	0	1	20	21	0	42	0	6	50	5	0	61	0	30	52	15	0	97	0	25	37	21	0	83	0	283	283
17:15	0	3	29	11	0	43	0	11	39	9	0	59	1	29	56	17	0	103	0	20	37	15	0	72	0	277	277
17:30	0	6	33	19	0	58	0	8	31	7	0	46	0	17	36	21	0	74	2	17	43	11	2	73	2	251	253
17:45	0	2	29	15	0	46	0	14	35	3	0	52	0	21	47	9	0	77	0	16	41	14	1	71	1	246	247
Total	0	12	111	66	0	189	0	39	155	24	0	218	1	97	191	62	0	351	2	78	158	61	3	299	3	1057	1060
18:00	0	0	22	12	0	34	0	6	29	2	0	37	0	16	44	15	0	75	0	17	20	14	0	51	0	197	197
18:15	0	3	17	8	0	28	0	9	31	5	0	45	0	15	23	10	0	48	0	25	39	8	0	72	0	193	193
18:30	0	5	31	7	0	43	0	8	19	3	0	30	0	13	31	11	0	55	0	13	18	11	0	42	0	170	170
18:45	0	4	13	13	0	30	0	8	16	2	0	26	0	10	26	16	0	52	0	12	22	15	0	49	0	157	157
Total	0	12	83	40	0	135	0	31	95	12	0	138	0	54	124	52	0	230	0	67	99	48	0	214	0	717	717
19:00	0	3	22	8	0	33	0	5	28	0	0	33	0	10	34	16	0	60	0	12	23	7	0	42	0	168	168
19:15	1	1	18	7	0	27	0	2	14	5	0	21	0	4	37	8	0	49	0	10	26	7	0	43	0	140	140

Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : tmc 2101
 Site Code :
 Start Date : 4/29/2021
 Page No : 3

Weather: Warm & Partly Cloudy
 countCAM2
 Study Conducted By: Andrea

Groups Printed- Cars + - Trucks

Start Time	CSAH 52 Southbound						CSAH 116 Westbound						CSAH 52 Northbound						CSAH 116 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						
19:30	0	1	18	7	0	26	0	5	18	0	0	23	0	8	27	15	0	50	0	16	22	6	0	44	0	143	143			
19:45	0	3	7	6	0	16	0	7	17	3	0	27	1	4	29	6	0	40	0	15	21	14	0	50	0	133	133			
Total	1	8	65	28	0	102	0	19	77	8	0	104	1	26	127	45	0	199	0	53	92	34	0	179	0	584	584			
Grand Total	6	143	1272	822	1	2243	0	380	1647	176	2	2203	24	811	1385	501	1	2721	21	690	1394	670	13	2775	17	9942	9959			
Apprch %	0.3	6.4	56.7	36.6			0	17.2	74.8	8			0.9	29.8	50.9	18.4			0.8	24.9	50.2	24.1								
Total %	0.1	1.4	12.8	8.3		22.6	0	3.8	16.6	1.8		22.2	0.2	8.2	13.9	5		27.4	0.2	6.9	14	6.7		27.9	0.2	99.8				
Cars +	6	127	1230	793		2157	0	366	1563	161		2092	24	764	1332	483		2604	21	674	1321	632		2661	0	0	9514			
% Cars +	100	88.8	96.7	96.5	100	96.1	0	96.3	94.9	91.5	100	94.9	100	94.2	96.2	96.4	100	95.7	100	97.7	94.8	94.3	100	95.4	0	0	95.5			
Trucks	0	16	42	29		87	0	14	84	15		113	0	47	53	18		118	0	16	73	38		127	0	0	445			
% Trucks	0	11.2	3.3	3.5	0	3.9	0	3.7	5.1	8.5	0	5.1	0	5.8	3.8	3.6	0	4.3	0	2.3	5.2	5.7	0	4.6	0	0	4.5			

Start Time	CSAH 52 Southbound						CSAH 116 Westbound						CSAH 52 Northbound						CSAH 116 Eastbound						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		
Peak Hour Analysis From 06:00 to 09:45 - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 07:00																										
07:00	0	1	42	42		85	0	5	49	1		55	2	8	6	5		21	0	3	16	7		26		187
07:15	0	5	47	43		95	0	12	60	3		75	2	17	12	4		35	0	4	14	22		40	245	
07:30	0	1	45	22		68	0	4	49	1		54	0	16	8	3		27	0	7	29	21		57	206	
07:45	0	3	26	18		47	0	4	40	4		48	4	12	8	4		28	0	7	41	20		68	191	
Total Volume	0	10	160	125		295	0	25	198	9		232	8	53	34	16		111	0	21	100	70		191	829	
% App. Total	0	3.4	54.2	42.4			0	10.8	85.3	3.9			7.2	47.7	30.6	14.4			0	11	52.4	36.6				
PHF	.000	.500	.851	.727		.776	.000	.521	.825	.563		.773	.500	.779	.708	.800		.793	.000	.750	.610	.795		.702		.846

Peak Hour Analysis From 10:00 to 13:45 - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 11:45																										
11:45	0	1	25	14		40	0	4	32	4		40	0	8	16	13		37	2	18	13	14		47	164	
12:00	0	5	9	8		22	0	7	24	4		35	0	12	22	8		42	0	13	20	8		41	140	
12:15	0	0	24	14		38	0	10	20	2		32	0	8	18	6		32	0	15	21	5		41	143	
12:30	0	0	18	16		34	0	4	16	4		24	0	10	19	7		36	0	11	28	11		50	144	
Total Volume	0	6	76	52		134	0	25	92	14		131	0	38	75	34		147	2	57	82	38		179	591	
% App. Total	0	4.5	56.7	38.8			0	19.1	70.2	10.7			0	25.9	51	23.1			1.1	31.8	45.8	21.2				
PHF	.000	.300	.760	.813		.838	.000	.625	.719	.875		.819	.000	.792	.852	.654		.875	.250	.792	.732	.679		.895		.901

Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

Weather: Warm & Partly Cloudy
 countCAM2
 Study Conducted By: Andrea

File Name : tmc 2101
 Site Code :
 Start Date : 4/29/2021
 Page No : 4

Start Time	CSAH 52 Southbound					CSAH 116 Westbound					CSAH 52 Northbound					CSAH 116 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 14:00 to 19:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:00																					
16:00	0	2	37	14	53	0	19	58	4	81	1	40	47	10	98	0	19	47	21	87	319
16:15	0	2	29	27	58	0	12	46	11	69	0	38	58	16	112	3	25	44	22	94	333
16:30	0	3	27	19	49	0	8	50	8	66	0	31	73	18	122	0	11	33	15	59	296
16:45	1	4	27	18	50	0	15	56	4	75	1	45	51	10	107	0	19	52	11	82	314
Total Volume	1	11	120	78	210	0	54	210	27	291	2	154	229	54	439	3	74	176	69	322	1262
% App. Total	0.5	5.2	57.1	37.1		0	18.6	72.2	9.3		0.5	35.1	52.2	12.3		0.9	23	54.7	21.4		
PHF	.250	.688	.811	.722	.905	.000	.711	.905	.614	.898	.500	.856	.784	.750	.900	.250	.740	.846	.784	.856	.947

Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

Weather: Warm & Partly Cloudy
 countCAM2
 Study Conducted By: Andrea

File Name : tmc 2101
 Site Code :
 Start Date : 4/29/2021
 Page No : 1

Groups Printed- Trucks

Start Time	CSAH 52 Southbound					CSAH 116 Westbound					CSAH 52 Northbound					CSAH 116 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	1	0	1	0	0	0	0	0	0	0	2	1	3	4
06:15	0	0	4	0	4	0	0	0	0	0	0	1	0	1	2	0	0	2	0	2	8
06:30	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	3	0	3	5
06:45	0	0	0	0	0	0	0	2	1	3	0	0	0	1	1	0	0	1	0	1	5
Total	0	1	4	0	5	0	0	3	1	4	0	1	1	2	4	0	0	8	1	9	22
07:00	0	0	2	2	4	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	6
07:15	0	0	0	0	0	0	0	1	0	1	0	3	1	0	4	0	1	2	2	5	10
07:30	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	1	2	3	5
07:45	0	0	4	2	6	0	0	1	0	1	0	1	0	0	1	0	0	4	0	4	12
Total	0	0	6	4	10	0	0	3	0	3	0	6	2	0	8	0	1	7	4	12	33
08:00	0	0	1	1	2	0	0	5	0	5	0	1	0	1	2	0	0	1	1	2	11
08:15	0	1	1	0	2	0	0	2	1	3	0	1	1	0	2	0	0	1	0	1	8
08:30	0	0	1	2	3	0	0	2	0	2	0	0	0	0	0	0	1	4	1	6	11
08:45	0	0	0	1	1	0	0	3	0	3	0	0	0	0	0	0	0	2	2	4	8
Total	0	1	3	4	8	0	0	12	1	13	0	2	1	1	4	0	1	8	4	13	38
09:00	0	0	0	0	0	0	0	2	0	2	0	1	1	1	3	0	0	2	1	3	8
09:15	0	0	0	4	4	0	0	3	0	3	0	2	1	0	3	0	1	0	0	1	11
09:30	0	1	1	0	2	0	1	3	0	4	0	0	2	1	3	0	1	2	3	6	15
09:45	0	0	0	1	1	0	0	2	0	2	0	1	2	0	3	0	0	0	1	1	7
Total	0	1	1	5	7	0	1	10	0	11	0	4	6	2	12	0	2	4	5	11	41
10:00	0	0	1	0	1	0	0	2	0	2	0	1	0	0	1	0	0	1	1	2	6
10:15	0	0	1	0	1	0	0	2	0	2	0	1	1	0	2	0	1	1	0	2	7
10:30	0	1	0	0	1	0	1	0	0	1	0	1	1	0	2	0	0	2	1	3	7
10:45	0	0	1	1	2	0	0	1	0	1	0	1	2	0	3	0	0	1	0	1	7
Total	0	1	3	1	5	0	1	5	0	6	0	4	4	0	8	0	1	5	2	8	27
11:00	0	0	0	1	1	0	1	1	1	3	0	2	0	1	3	0	0	2	1	3	10
11:15	0	1	1	0	2	0	0	2	0	2	0	0	0	0	0	0	0	1	4	5	9
11:30	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	1	2	0	3	5
11:45	0	0	1	3	4	0	0	3	1	4	0	1	1	2	4	0	1	1	1	3	15
Total	0	1	3	4	8	0	2	6	2	10	0	3	1	3	7	0	2	6	6	14	39
12:00	0	0	0	0	0	0	0	3	0	3	0	1	1	0	2	0	0	2	0	2	7
12:15	0	0	0	0	0	0	1	1	0	2	0	0	0	1	1	0	0	0	0	0	3
12:30	0	0	0	0	0	0	0	2	0	2	0	0	1	1	2	0	1	4	1	6	10
12:45	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2	0	0	3	2	5	8
Total	0	0	0	0	0	0	1	7	0	8	0	2	2	3	7	0	1	9	3	13	28
13:00	0	0	2	0	2	0	0	2	0	2	0	1	0	0	1	0	1	2	0	3	8
13:15	0	1	1	0	2	0	1	1	0	2	0	2	0	0	2	0	0	3	1	4	10
13:30	0	2	0	1	3	0	0	1	1	2	0	0	4	0	4	0	0	3	2	5	14
13:45	0	1	1	0	2	0	1	0	0	1	0	1	0	1	2	0	0	2	2	4	9
Total	0	4	4	1	9	0	2	4	1	7	0	4	4	1	9	0	1	10	5	16	41
14:00	0	1	1	0	2	0	0	1	0	1	0	1	3	1	5	0	3	0	0	3	11
14:15	0	0	2	1	3	0	1	2	1	4	0	1	2	0	3	0	0	4	3	7	17
14:30	0	1	1	1	3	0	0	0	0	0	0	3	1	0	4	0	0	2	0	2	9
14:45	0	0	1	1	2	0	1	2	3	6	0	0	2	1	3	0	0	0	0	0	11
Total	0	2	5	3	10	0	2	5	4	11	0	5	8	2	15	0	3	6	3	12	48
15:00	0	1	2	1	4	0	0	2	0	2	0	2	2	0	4	0	1	2	0	3	13
15:15	0	1	1	0	2	0	0	8	0	8	0	2	2	2	6	0	0	0	1	1	17
15:30	0	0	1	0	1	0	1	1	0	2	0	2	4	0	6	0	0	0	0	0	9
15:45	0	1	0	1	2	0	1	2	2	5	0	0	0	0	0	0	1	1	0	2	9
Total	0	3	4	2	9	0	2	13	2	17	0	6	8	2	16	0	2	3	1	6	48

Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

Weather: Warm & Partly Cloudy
 countCAM2
 Study Conducted By: Andrea

File Name : tmc 2101
 Site Code :
 Start Date : 4/29/2021
 Page No : 2

Groups Printed- Trucks

Start Time	CSAH 52 Southbound					CSAH 116 Westbound					CSAH 52 Northbound					CSAH 116 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	2	2	1	5	0	4	1	1	6	0	0	2	1	3	14
16:15	0	0	1	1	2	0	0	0	1	1	0	0	4	1	5	0	0	0	1	1	9
16:30	0	0	2	0	2	0	0	2	1	3	0	4	1	0	5	0	0	1	2	3	13
16:45	0	1	1	2	4	0	1	4	0	5	0	1	0	0	1	0	0	1	0	1	11
Total	0	1	4	3	8	0	3	8	3	14	0	9	6	2	17	0	0	4	4	8	47
17:00	0	0	0	2	2	0	0	2	0	2	0	1	3	0	4	0	2	0	0	2	10
17:15	0	0	1	0	1	0	0	2	1	3	0	0	2	0	2	0	0	1	0	1	7
17:30	0	1	0	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	0	1	4
17:45	0	0	2	0	2	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0	4
Total	0	1	3	2	6	0	0	6	1	7	0	1	7	0	8	0	2	2	0	4	25
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	1	0	1	0	0	0	0	0	0	0	2	0	2	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	1	0	1	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	3
19:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
19:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:30	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
19:45	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1	2
Total	0	0	1	0	1	0	0	2	0	2	0	0	1	0	1	0	0	1	0	1	5
Grand Total	0	16	42	29	87	0	14	84	15	113	0	47	53	18	118	0	16	73	38	127	445
Apprch %	0	18.4	48.3	33.3		0	12.4	74.3	13.3		0	39.8	44.9	15.3		0	12.6	57.5	29.9		
Total %	0	3.6	9.4	6.5	19.6	0	3.1	18.9	3.4	25.4	0	10.6	11.9	4	26.5	0	3.6	16.4	8.5	28.5	

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 05/21/2021

Signal Warrants - Summary

Major Street Approaches

Eastbound: CSAH 116

Number of Lanes : 2+

Total Approach Volume: 2,775

Westbound: CSAH 116

Number of Lanes :2+

Total Approach Volume: 2,203

Minor Street Approaches

Northbound: CSAH 52

Number of Lanes :2+

Total Approach Volume: 2,721

Southbound: CSAH 52

Number of Lanes :2+

Total Approach Volume: 2,243

Warrant Summary (Rural Values Apply)

Warrant 1 - Eight Hour Vehicular Volumes.....Not Satisfied

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

Required volumes reached for 5 hours, 8 are needed

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

Required volumes reached for 0 hours, 8 are needed

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

Required 1A volumes reached for 7 hours, 8 are needed

Required 1B volumes reached for 2 hours, 8 are needed

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

Number of hours (5) volumes exceed minimum >= minimum required (4).

Warrant 3 - Peak Hour.....Satisfied

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

Number of one hour periods (17) 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 : 05/21/2021

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 5 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 = **2 or more**

Volume Requirements

Rural Factor of 70 % applied
 Veh/Hr Major = **420**
 Veh/Hr Minor = **140**

Time	Major Road				Minor Road			Met?
	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	
16:00 - 17:00	322	+	291	=	613	439	210	Yes
17:00 - 18:00	299	+	218	=	517	351	189	Yes
15:00 - 16:00	272	+	214	=	486	341	136	Yes
14:00 - 15:00	262	+	171	=	433	265	133	Yes
07:00 - 08:00	191	+	232	=	423	111	295	Yes
13:45 - 14:45	250	+	156	=	406	237	120	No
13:30 - 14:30	231	+	150	=	381	187	112	No
06:45 - 07:45	151	+	216	=	367	100	298	No
18:00 - 19:00	214	+	138	=	352	230	135	No
18:15 - 19:15	205	+	134	=	339	215	134	No
13:15 - 14:15	191	+	138	=	329	167	111	No
11:30 - 12:30	175	+	141	=	316	141	132	No
12:45 - 13:45	187	+	124	=	311	148	111	No
11:45 - 12:45	179	+	131	=	310	147	134	No
12:00 - 13:00	182	+	127	=	309	144	118	No
11:15 - 12:15	176	+	132	=	308	135	130	No
06:30 - 07:30	119	+	188	=	307	84	288	No
13:00 - 14:00	191	+	115	=	306	167	116	No
11:00 - 12:00	167	+	137	=	304	138	146	No
12:15 - 13:15	187	+	110	=	297	148	128	No
12:30 - 13:30	176	+	113	=	289	153	115	No
18:30 - 19:30	176	+	110	=	286	216	133	No
19:00 - 20:00	179	+	104	=	283	199	102	No
18:45 - 19:45	178	+	103	=	281	211	116	No
08:00 - 09:00	141		139		280	75	188	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 05/21/2021

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

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 = **2 or more**

Volume Requirements

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

Time	Major Road CSAH 116				=	Total	Minor Road CSAH 52		Met?
	Major EB	+	Major WB				Minor NB	Minor SB	
16:00 - 17:00	322	+	291	=	613	439	210	No	
16:15 - 17:15	318	+	271	=	589	438	199	No	
15:45 - 16:45	304	+	285	=	589	430	185	No	
15:30 - 16:30	313	+	257	=	570	396	175	No	
16:30 - 17:30	296	+	261	=	557	429	184	No	
16:45 - 17:45	310	+	241	=	551	381	193	No	
15:15 - 16:15	290	+	254	=	544	362	148	No	
17:00 - 18:00	299	+	218	=	517	351	189	No	
15:00 - 16:00	272	+	214	=	486	341	136	No	
14:30 - 15:30	286	+	190	=	476	317	152	No	
14:45 - 15:45	274	+	187	=	461	324	153	No	
17:15 - 18:15	267	+	194	=	461	329	181	No	
14:15 - 15:15	285	+	171	=	456	296	147	No	
17:30 - 18:30	267	+	180	=	447	274	166	No	
14:00 - 15:00	262	+	171	=	433	265	133	No	
07:15 - 08:15	209	+	214	=	423	106	258	No	
07:00 - 08:00	191	+	232	=	423	111	295	No	
13:45 - 14:45	250	+	156	=	406	237	120	No	
17:45 - 18:45	236	+	164	=	400	255	151	No	
13:30 - 14:30	231	+	150	=	381	187	112	No	
07:30 - 08:30	203	+	175	=	378	94	219	No	
06:45 - 07:45	151	+	216	=	367	100	298	No	
18:00 - 19:00	214	+	138	=	352	230	135	No	
18:15 - 19:15	205	+	134	=	339	215	134	No	
07:45 - 08:45	179		158		337	86	197	No	

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 05/21/2021

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 7 hours meet 1A minimums.
Only 2 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 = **2 or more**

Volume Requirements

Rural Factor of 70% applied
Warrant 1A 1B
Veh/Hr Major = **336 504**

Veh/Hr Minor = **112 56**

Major Road CSAH 116

Minor Road CSAH 52

Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met1A?
15:30 - 16:30	313	+	257	=	570	396	175	Yes
16:30 - 17:30	296	+	261	=	557	429	184	Yes
14:30 - 15:30	286	+	190	=	476	317	152	Yes
17:30 - 18:30	267	+	180	=	447	274	166	Yes
13:30 - 14:30	231	+	150	=	381	187	112	Yes
06:45 - 07:45	151	+	216	=	367	100	298	Yes
07:45 - 08:45	179	+	158	=	337	86	197	Yes
13:15 - 14:15	191	+	138	=	329	167	111	No
11:30 - 12:30	175	+	141	=	316	141	132	No
12:45 - 13:45	187	+	124	=	311	148	111	No
11:45 - 12:45	179	+	131	=	310	147	134	No
12:00 - 13:00	182	+	127	=	309	144	118	No

Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met1B?
16:15 - 17:15	318	+	271	=	589	438	199	Yes
15:15 - 16:15	290	+	254	=	544	362	148	Yes
15:00 - 16:00	272	+	214	=	486	341	136	No
14:30 - 15:30	286	+	190	=	476	317	152	No
17:15 - 18:15	267	+	194	=	461	329	181	No
14:45 - 15:45	274	+	187	=	461	324	153	No
14:15 - 15:15	285	+	171	=	456	296	147	No
17:30 - 18:30	267	+	180	=	447	274	166	No
14:00 - 15:00	262	+	171	=	433	265	133	No
07:00 - 08:00	191	+	232	=	423	111	295	No
07:15 - 08:15	209	+	214	=	423	106	258	No
13:45 - 14:45	250	+	156	=	406	237	120	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 05/21/2021

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.

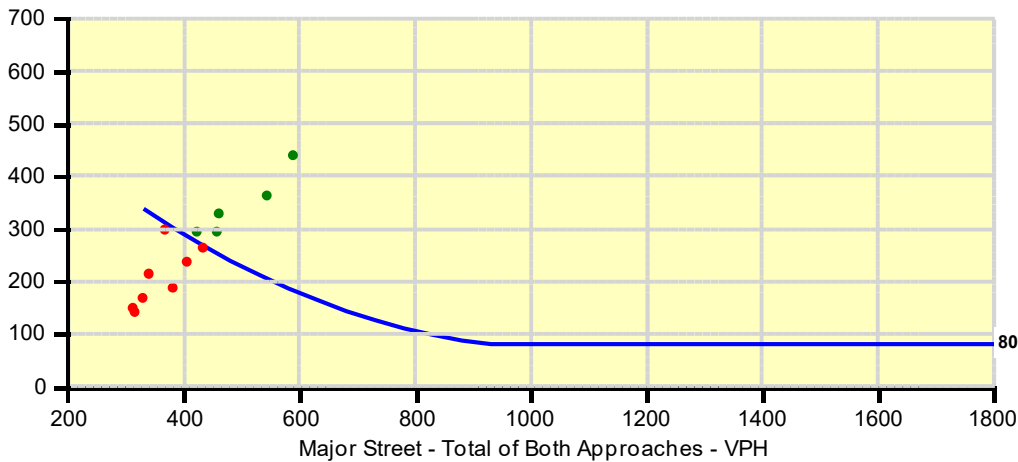
Summary

5 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 = **2 or more**

Time	Major Road CSAH 116				=	Total	Minor Road CSAH 52		Met?
	Major EB	+	Major WB	Minor NB			Minor SB		
16:15 - 17:15	318	+	271	=	589	438	199	Yes	
15:15 - 16:15	290	+	254	=	544	362	148	Yes	
17:15 - 18:15	267	+	194	=	461	329	181	Yes	
14:15 - 15:15	285	+	171	=	456	296	147	Yes	
07:00 - 08:00	191	+	232	=	423	111	295	Yes	
14:00 - 15:00	262	+	171	=	433	265	133	No	
13:45 - 14:45	250	+	156	=	406	237	120	No	
13:30 - 14:30	231	+	150	=	381	187	112	No	
06:45 - 07:45	151	+	216	=	367	100	298	No	
18:15 - 19:15	205	+	134	=	339	215	134	No	
13:15 - 14:15	191	+	138	=	329	167	111	No	
							132	No	



ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 05/21/2021

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

7 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 = **2 or more**

Time	Major Road CSAH 116				=	Total	Minor Road CSAH 52		Met?
	Major EB	+	Major WB				Minor NB	Minor SB	
16:00 - 17:00	322	+	291	=	613	439	210	Yes	
16:15 - 17:15	318	+	271	=	589	438	199	Yes	
15:45 - 16:45	304	+	285	=	589	430	185	Yes	
15:30 - 16:30	313	+	257	=	570	396	175	Yes	
16:30 - 17:30	296	+	261	=	557	429	184	Yes	
16:45 - 17:45	310	+	241	=	551	381	193	Yes	
15:15 - 16:15	290	+	254	=	544	362	148	Yes	
17:00 - 18:00	299	+	218	=	517	351	189	No	
15:00 - 16:00	272	+	214	=	486	341	136	No	
14:30 - 15:30	286	+	190	=	476	317	152	No	
14:45 - 15:45	274	+	187	=	461	324	153	No	
							181	No	

