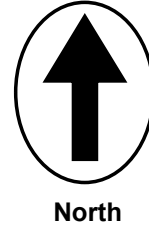


Date : 08/09/22

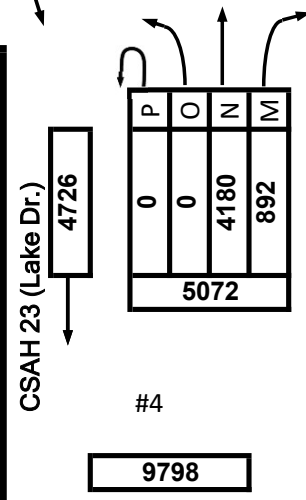
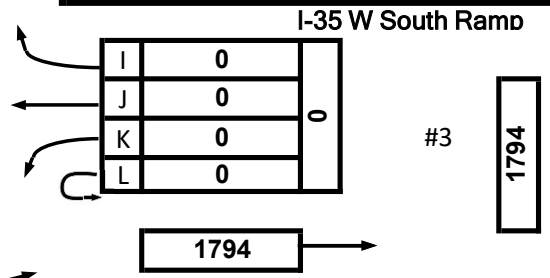
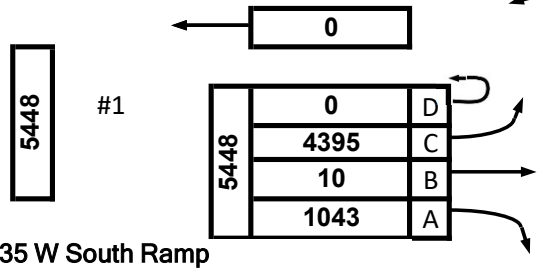
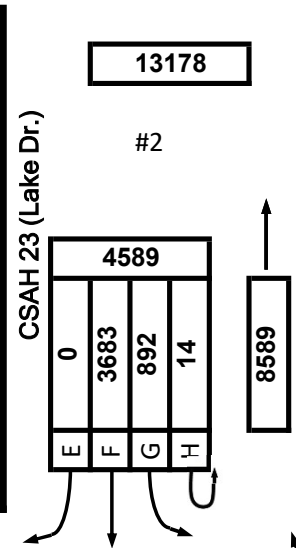
Count Number : TMC 2242

Location : CSAH 23 (Lake Dr.)
@ I-35 W South Ramp

Collection Period : 24 HR



North



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

Anoka County Highway Department

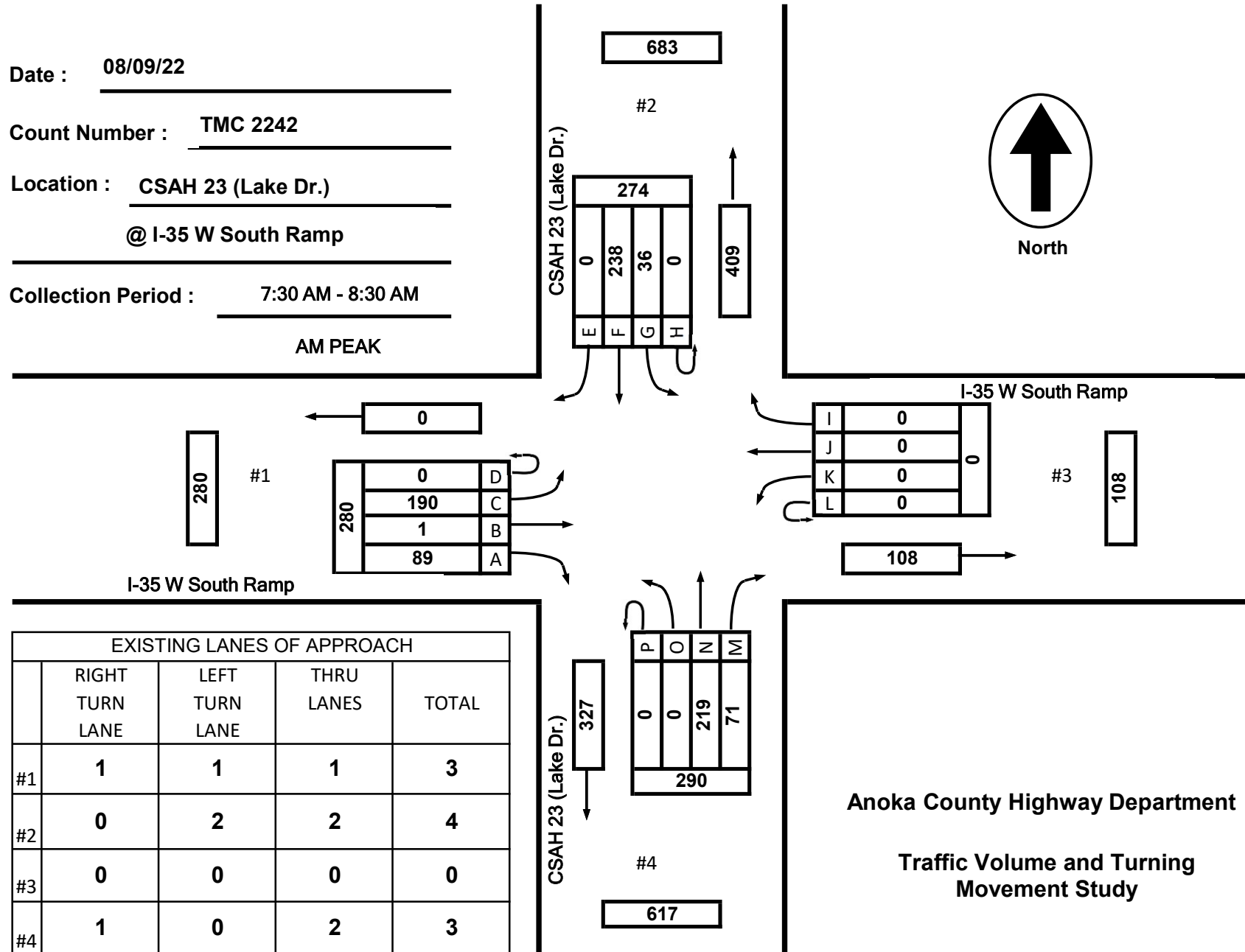
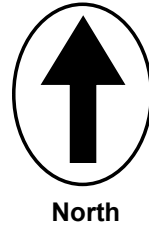
Traffic Volume and Turning Movement Study

Date : 08/09/22

Count Number : TMC 2242

Location : CSAH 23 (Lake Dr.)
@ I-35 W South Ramp

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



EXISTING LANES OF APPROACH

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

Anoka County Highway Department
 Traffic Volume and Turning Movement Study

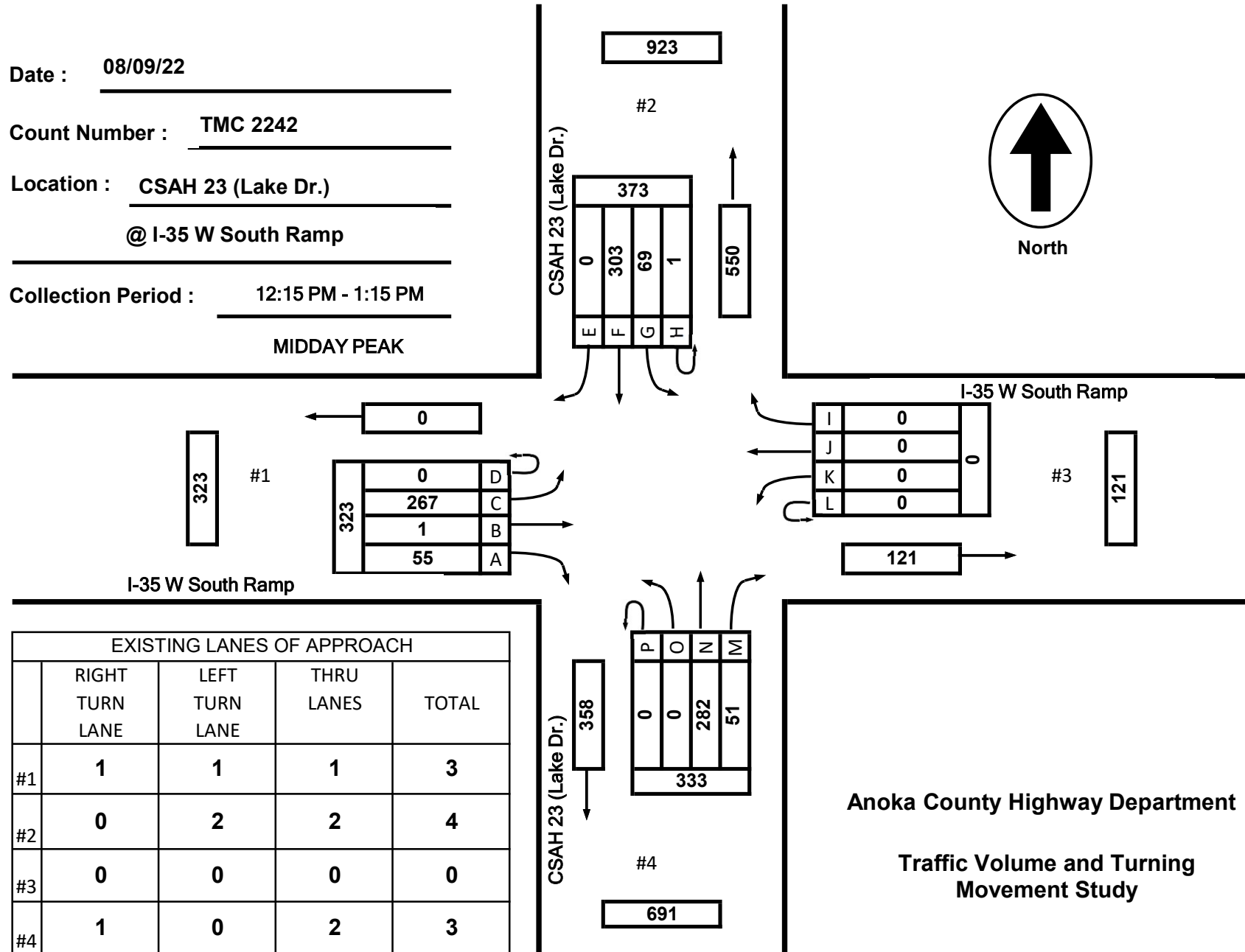
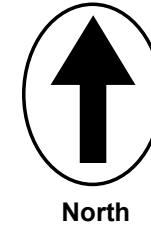
Date : 08/09/22

Count Number : TMC 2242

Location : CSAH 23 (Lake Dr.)
@ I-35 W South Ramp

Collection Period : 12:15 PM - 1:15 PM

MIDDAY PEAK



EXISTING LANES OF APPROACH

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

Anoka County Highway Department

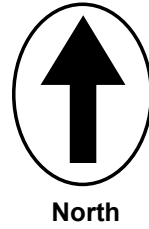
Traffic Volume and Turning Movement Study

Date : 08/09/22

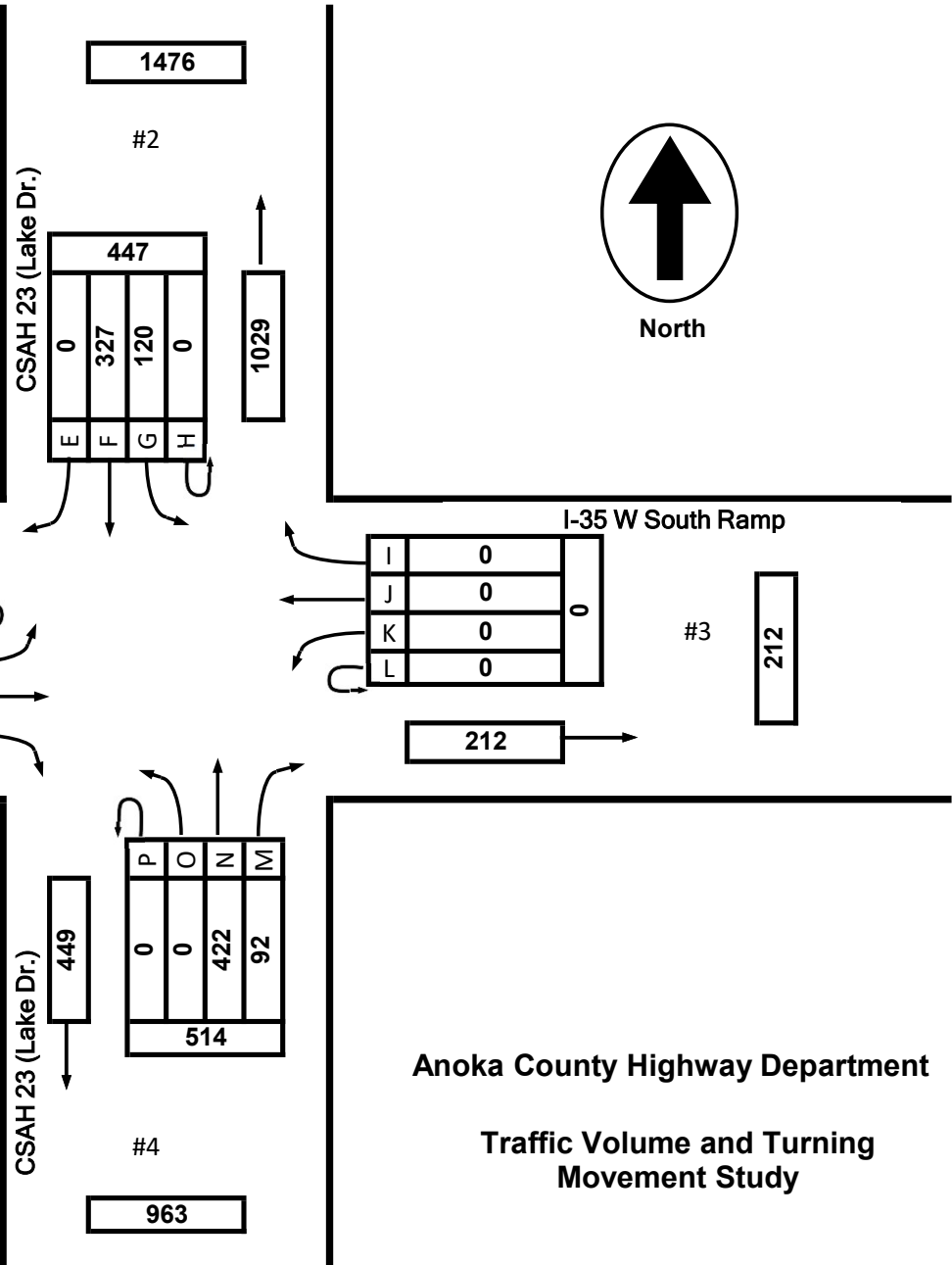
Count Number : TMC 2242

Location : CSAH 23 (Lake Dr.)
@ I-35 W South Ramp

Collection Period : 4:30 PM - 5:30 PM
PM PEAK



North



EXISTING LANES OF APPROACH				
	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	TOTAL
#1	1	1	1	3
#2	0	2	2	4
#3	0	0	0	0
#4	1	0	2	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 2242-t
 Site Code :
 Start Date : 08/09/2022
 Page No : 1

Weather: Warm & Sunny
 CountCAM 2
 Study Conducted by: Kevin

Groups Printed- Cars + - Trucks

Start Time	CSAH 23 (Lake Dr) Southbound						I-35 W South Ramp Westbound						CSAH 23 (Lake Dr) Northbound						I-35 W South Ramp 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	0	19	6	0	0	25	0	0	0	0	0	0	4	16	0	0	0	20	10	0	34	0	0	44	0	89	89
06:15	0	42	5	0	0	47	0	0	0	0	0	0	6	27	0	0	0	33	11	0	28	0	0	39	0	119	119
06:30	0	40	6	0	0	46	0	0	0	0	0	0	7	40	0	0	0	47	16	0	45	0	0	61	0	154	154
06:45	0	53	11	0	0	64	0	0	0	0	0	0	15	51	0	0	1	66	20	0	52	0	0	72	1	202	203
Total	0	154	28	0	0	182	0	0	0	0	0	0	32	134	0	0	1	166	57	0	159	0	0	216	1	564	565
07:00	0	42	11	0	0	53	0	0	0	0	3	0	16	39	0	0	0	55	11	0	54	0	0	65	3	173	176
07:15	0	53	4	0	0	57	0	0	0	0	2	0	9	56	0	0	0	65	14	0	51	0	0	65	2	187	189
07:30	0	54	13	0	0	67	0	0	0	0	0	0	18	61	0	0	0	79	12	0	43	0	0	55	0	201	201
07:45	0	69	9	0	0	78	0	0	0	0	1	0	24	55	0	0	0	79	31	0	59	0	0	90	1	247	248
Total	0	218	37	0	0	255	0	0	0	0	6	0	67	211	0	0	0	278	68	0	207	0	0	275	6	808	814
08:00	0	59	3	0	0	62	0	0	0	0	0	0	11	46	0	0	0	57	22	0	36	0	0	58	0	177	177
08:15	0	56	11	0	0	67	0	0	0	0	0	0	18	57	0	0	0	75	24	1	52	0	0	77	0	219	219
08:30	0	46	12	0	0	58	0	0	0	0	0	0	6	65	0	0	0	71	14	0	53	0	0	67	0	196	196
08:45	0	58	8	0	0	66	0	0	0	0	1	0	12	55	0	0	0	67	22	0	61	0	0	83	1	216	217
Total	0	219	34	0	0	253	0	0	0	0	1	0	47	223	0	0	0	270	82	1	202	0	0	285	1	808	809
09:00	0	56	11	0	0	67	0	0	0	0	0	0	17	65	0	0	0	82	12	0	51	0	0	63	0	212	212
09:15	0	60	12	0	0	72	0	0	0	0	0	0	18	55	0	0	0	73	7	0	34	0	0	41	0	186	186
09:30	0	44	13	0	0	57	0	0	0	0	0	0	15	57	0	0	0	72	12	0	43	0	0	55	0	184	184
09:45	0	53	7	0	0	60	0	0	0	0	0	0	12	53	0	0	0	65	12	0	52	0	0	64	0	189	189
Total	0	213	43	0	0	256	0	0	0	0	0	0	62	230	0	0	0	292	43	0	180	0	0	223	0	771	771
10:00	0	41	10	1	0	52	0	0	0	0	0	0	17	65	0	0	0	82	16	0	58	0	0	74	0	208	208
10:15	0	52	12	0	0	64	0	0	0	0	0	0	10	61	0	0	0	71	15	0	67	0	0	82	0	217	217
10:30	0	42	10	0	0	52	0	0	0	0	1	0	20	76	0	0	0	96	13	0	52	0	0	65	1	213	214
10:45	0	61	14	2	0	77	0	0	0	0	0	0	14	63	0	0	0	77	13	0	55	0	0	68	0	222	222
Total	0	196	46	3	0	245	0	0	0	0	1	0	61	265	0	0	0	326	57	0	232	0	0	289	1	860	861
11:00	0	61	10	1	0	72	0	0	0	0	1	0	4	72	0	0	0	76	8	0	46	0	0	54	1	202	203
11:15	0	65	13	0	0	78	0	0	0	0	0	0	9	80	0	0	0	89	18	0	66	0	0	84	0	251	251
11:30	0	64	21	0	0	85	0	0	0	0	0	0	12	88	0	0	0	100	13	0	57	0	0	70	0	255	255
11:45	0	72	13	0	0	85	0	0	0	0	1	0	13	82	0	0	0	95	16	2	59	0	0	77	1	257	258
Total	0	262	57	1	0	320	0	0	0	0	2	0	38	322	0	0	0	360	55	2	228	0	0	285	2	965	967



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC 2242-t
 Site Code :
 Start Date : 08/09/2022
 Page No : 2

Weather: Warm & Sunny
 CountCAM 2
 Study Conducted by: Kevin

Groups Printed- Cars + - Trucks

Start Time	CSAH 23 (Lake Dr) Southbound						I-35 W South Ramp Westbound						CSAH 23 (Lake Dr) Northbound						I-35 W South Ramp 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			
12:00	0	57	13	0	0	70	0	0	0	0	1	0	13	104	0	0	0	117	12	1	59	0	0	72	1	259	260
12:15	0	80	12	0	0	92	0	0	0	0	0	0	10	83	0	0	1	93	10	0	61	0	0	71	1	256	257
12:30	0	73	18	1	0	92	0	0	0	0	0	0	6	68	0	0	0	74	16	1	73	0	0	90	0	256	256
12:45	0	74	18	0	0	92	0	0	0	0	2	0	17	68	0	0	0	85	18	0	61	0	0	79	2	256	258
Total	0	284	61	1	0	346	0	0	0	0	3	0	46	323	0	0	1	369	56	2	254	0	0	312	4	1027	1031
13:00	0	76	21	0	0	97	0	0	0	0	0	0	18	63	0	0	0	81	11	0	72	0	0	83	0	261	261
13:15	0	44	15	0	0	59	0	0	0	0	1	0	11	58	0	0	0	69	18	0	66	0	0	84	1	212	213
13:30	0	55	15	1	0	71	0	0	0	0	0	0	15	58	0	0	0	73	18	0	78	0	0	96	0	240	240
13:45	0	66	16	0	0	82	0	0	0	0	0	0	23	81	0	0	0	104	16	0	79	0	0	95	0	281	281
Total	0	241	67	1	0	309	0	0	0	0	1	0	67	260	0	0	0	327	63	0	295	0	0	358	1	994	995
14:00	0	54	24	1	0	79	0	0	0	0	2	0	9	75	0	0	2	84	16	0	92	0	0	108	4	271	275
14:15	0	75	19	1	0	95	0	0	0	0	0	0	18	58	0	0	0	76	16	0	77	0	0	93	0	264	264
14:30	0	65	17	0	0	82	0	0	0	0	0	0	25	91	0	0	0	116	13	0	101	0	0	114	0	312	312
14:45	0	64	24	0	0	88	0	0	0	0	2	0	15	61	0	0	0	76	21	0	112	0	0	133	2	297	299
Total	0	258	84	2	0	344	0	0	0	0	4	0	67	285	0	0	2	352	66	0	382	0	0	448	6	1144	1150
15:00	0	76	33	0	0	109	0	0	0	0	2	0	19	69	0	0	0	88	19	0	103	1	0	123	2	320	322
15:15	0	57	16	0	0	73	0	0	0	0	2	0	21	85	0	0	0	106	25	1	137	0	0	163	2	342	344
15:30	0	68	31	1	0	100	0	0	0	0	0	0	25	93	0	0	0	118	23	1	118	0	0	142	0	360	360
15:45	0	91	19	0	0	110	0	0	0	0	0	0	16	96	0	0	0	112	31	0	151	0	1	182	1	404	405
Total	0	292	99	1	0	392	0	0	0	0	4	0	81	343	0	0	0	424	98	2	509	1	1	610	5	1426	1431
16:00	0	70	28	0	0	98	0	0	0	0	1	0	28	94	0	0	0	122	29	1	139	0	0	169	1	389	390
16:15	0	72	15	0	0	87	0	0	0	0	0	0	28	99	0	0	0	127	25	0	128	0	0	153	0	367	367
16:30	0	82	30	0	0	112	0	0	0	0	0	0	28	116	0	0	0	144	31	0	172	0	0	203	0	459	459
16:45	0	78	30	0	0	108	0	0	0	0	0	0	27	105	0	0	0	132	39	0	154	0	0	193	0	433	433
Total	0	302	103	0	0	405	0	0	0	0	1	0	111	414	0	0	0	525	124	1	593	0	0	718	1	1648	1649
17:00	0	84	39	0	0	123	0	0	0	0	0	0	17	102	0	0	0	119	20	0	127	0	0	147	0	389	389
17:15	0	83	21	0	0	104	0	0	0	0	0	0	20	99	0	0	0	119	32	0	154	0	0	186	0	409	409
17:30	0	85	16	0	0	101	0	0	0	0	0	0	28	120	0	0	0	148	35	0	151	0	0	186	0	435	435
17:45	0	93	25	0	0	118	0	0	0	0	0	0	21	106	0	0	0	127	33	0	109	0	0	142	0	387	387
Total	0	345	101	0	0	446	0	0	0	0	0	0	86	427	0	0	0	513	120	0	541	0	0	661	0	1620	1620
18:00	0	80	24	0	0	104	0	0	0	0	0	0	24	85	0	0	0	109	21	0	81	0	0	102	0	315	315
18:15	0	68	16	2	0	86	0	0	0	0	0	0	22	76	0	0	0	98	21	0	80	0	0	101	0	285	285
18:30	0	76	11	0	0	87	0	0	0	0	1	0	5	78	0	0	0	83	11	1	76	0	0	88	1	258	259



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC 2242-t
 Site Code :
 Start Date : 08/09/2022
 Page No : 3

Weather: Warm & Sunny
 CountCAM 2
 Study Conducted by: Kevin

Groups Printed- Cars + - Trucks

Start Time	CSAH 23 (Lake Dr) Southbound						I-35 W South Ramp Westbound						CSAH 23 (Lake Dr) Northbound						I-35 W South Ramp 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			
18:45	0	58	8	0	0	66	0	0	0	0	0	0	10	60	0	0	0	70	13	0	42	0	0	55	0	191	191
Total	0	282	59	2	0	343	0	0	0	0	1	0	61	299	0	0	0	360	66	1	279	0	0	346	1	1049	1050
19:00	0	54	9	1	0	64	0	0	0	0	1	0	9	71	0	0	0	80	12	0	58	0	0	70	1	214	215
19:15	0	53	6	0	0	59	0	0	0	0	0	0	12	77	0	0	0	89	13	0	45	0	0	58	0	206	206
19:30	0	72	13	0	0	85	0	0	0	0	2	0	13	59	0	0	1	72	12	0	30	0	0	42	3	199	202
19:45	0	42	12	0	0	54	0	0	0	0	0	0	9	64	0	0	0	73	13	0	48	0	0	61	0	188	188
Total	0	221	40	1	0	262	0	0	0	0	3	0	43	271	0	0	1	314	50	0	181	0	0	231	4	807	811
20:00	0	65	3	1	0	69	0	0	0	0	1	0	8	46	0	0	0	54	7	1	47	0	0	55	1	178	179
20:15	0	47	8	0	0	55	0	0	0	0	0	0	5	46	0	0	0	51	20	0	48	0	0	68	0	174	174
20:30	0	42	9	1	0	52	0	0	0	0	0	0	6	36	0	0	0	42	6	0	28	0	0	34	0	128	128
20:45	0	42	13	0	0	55	0	0	0	0	0	0	4	45	0	0	0	49	5	0	30	0	0	35	0	139	139
Total	0	196	33	2	0	231	0	0	0	0	1	0	23	173	0	0	0	196	38	1	153	0	0	192	1	619	620
Grand Total	0	3683	892	14	0	4589	0	0	0	0	28	0	892	4180	0	0	5	5072	1043	10	4395	1	1	5449	34	15110	15144
Apprch %	0	80.3	19.4	0.3			0	0	0	0			17.6	82.4	0	0			19.1	0.2	80.7	0					
Total %	0	24.4	5.9	0.1		30.4	0	0	0	0	0		5.9	27.7	0	0		33.6	6.9	0.1	29.1	0		36.1	0.2	99.8	
Cars +	0	3524	864	14		4402	0	0	0	0	28		794	4014	0	0		4813	976	9	3983	1		4970	0	0	14213
% Cars +	0	95.7	96.9	100	0	95.9	0	0	0	0	100	100	89	96	0	0	100	94.8	93.6	90	90.6	100	100	91.2	0	0	93.9
Trucks	0	159	28	0		187	0	0	0	0	0		98	166	0	0		264	67	1	412	0		480	0	0	931
% Trucks	0	4.3	3.1	0	0	4.1	0	0	0	0	0	0	11	4	0	0	0	5.2	6.4	10	9.4	0	0	8.8	0	0	6.1

Start Time	CSAH 23 (Lake Dr) Southbound						I-35 W South Ramp Westbound						CSAH 23 (Lake Dr) Northbound						I-35 W South Ramp Eastbound						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			
Peak Hour Analysis From 06:00 to 09:45 - Peak 1 of 1																											
Peak Hour for Entire Intersection Begins at 07:30																											
07:30	0	54	13	0	0	67	0	0	0	0	0	0	18	61	0	0	0	79	12	0	43	0	0	55			201
07:45	0	69	9	0	0	78	0	0	0	0	0	0	24	55	0	0	0	79	31	0	59	0	0	90			247
08:00	0	59	3	0	0	62	0	0	0	0	0	0	11	46	0	0	0	57	22	0	36	0	0	58			177
08:15	0	56	11	0	0	67	0	0	0	0	0	0	18	57	0	0	0	75	24	1	52	0	0	77			219
Total Volume	0	238	36	0	0	274	0	0	0	0	0	0	71	219	0	0	0	290	89	1	190	0	0	280			844
% App. Total	0	86.9	13.1	0	0		0	0	0	0	0	0	24.5	75.5	0	0	0		31.8	0.4	67.9	0	0				
PHF	.000	.862	.692	.000		.878	.000	.000	.000	.000	.000	.000	.740	.898	.000	.000	.918		.718	.250	.805	.000	.000	.778			.854



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC 2242-t
 Site Code :
 Start Date : 08/09/2022
 Page No : 4

Weather: Warm & Sunny
 CountCAM 2
 Study Conducted by: Kevin

Start Time	CSAH 23 (Lake Dr) Southbound					I-35 W South Ramp Westbound					CSAH 23 (Lake Dr) Northbound					I-35 W South Ramp 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 10:00 to 13:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:15																					
12:15	0	80	12	0	92	0	0	0	0	0	10	83	0	0	93	10	0	61	0	71	256
12:30	0	73	18	1	92	0	0	0	0	0	6	68	0	0	74	16	1	73	0	90	256
12:45	0	74	18	0	92	0	0	0	0	0	17	68	0	0	85	18	0	61	0	79	256
13:00	0	76	21	0	97	0	0	0	0	0	18	63	0	0	81	11	0	72	0	83	261
Total Volume	0	303	69	1	373	0	0	0	0	0	51	282	0	0	333	55	1	267	0	323	1029
% App. Total	0	81.2	18.5	0.3		0	0	0	0		15.3	84.7	0	0		17	0.3	82.7	0		
PHF	.000	.947	.821	.250	.961	.000	.000	.000	.000	.000	.708	.849	.000	.000	.895	.764	.250	.914	.000	.897	.986

Peak Hour Analysis From 14:00 to 20:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	0	82	30	0	112	0	0	0	0	0	28	116	0	0	144	31	0	172	0	203	459
16:45	0	78	30	0	108	0	0	0	0	0	27	105	0	0	132	39	0	154	0	193	433
17:00	0	84	39	0	123	0	0	0	0	0	17	102	0	0	119	20	0	127	0	147	389
17:15	0	83	21	0	104	0	0	0	0	0	20	99	0	0	119	32	0	154	0	186	409
Total Volume	0	327	120	0	447	0	0	0	0	0	92	422	0	0	514	122	0	607	0	729	1690
% App. Total	0	73.2	26.8	0		0	0	0	0		17.9	82.1	0	0		16.7	0	83.3	0		
PHF	.000	.973	.769	.000	.909	.000	.000	.000	.000	.000	.821	.909	.000	.000	.892	.782	.000	.882	.000	.898	.920



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC 2242-t
 Site Code :
 Start Date : 08/09/2022
 Page No : 1

Weather: Warm & Sunny
 CountCAM 2
 Study Conducted by: Kevin

Groups Printed- Trucks

Start Time	CSAH 23 (Lake Dr) Southbound					I-35 W South Ramp Westbound					CSAH 23 (Lake Dr) Northbound					I-35 W South Ramp 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	
06:00	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	1	0	1	0	2	5
06:15	0	3	0	0	3	0	0	0	0	0	1	2	0	0	3	1	0	5	0	6	12
06:30	0	4	1	0	5	0	0	0	0	0	1	3	0	0	4	5	0	5	0	10	19
06:45	0	3	2	0	5	0	0	0	0	0	0	5	0	0	5	0	0	4	0	4	14
Total	0	12	3	0	15	0	0	0	0	0	2	11	0	0	13	7	0	15	0	22	50
07:00	0	2	1	0	3	0	0	0	0	0	0	5	0	0	5	2	0	4	0	6	14
07:15	0	1	0	0	1	0	0	0	0	0	1	3	0	0	4	1	0	9	0	10	15
07:30	0	0	0	0	0	0	0	0	0	0	2	3	0	0	5	0	0	12	0	12	17
07:45	0	4	2	0	6	0	0	0	0	0	1	2	0	0	3	2	0	13	0	15	24
Total	0	7	3	0	10	0	0	0	0	0	4	13	0	0	17	5	0	38	0	43	70
08:00	0	7	0	0	7	0	0	0	0	0	2	2	0	0	4	1	0	5	0	6	17
08:15	0	1	0	0	1	0	0	0	0	0	5	8	0	0	13	1	1	7	0	9	23
08:30	0	6	2	0	8	0	0	0	0	0	0	5	0	0	5	1	0	6	0	7	20
08:45	0	6	0	0	6	0	0	0	0	0	2	1	0	0	3	1	0	12	0	13	22
Total	0	20	2	0	22	0	0	0	0	0	9	16	0	0	25	4	1	30	0	35	82
09:00	0	3	0	0	3	0	0	0	0	0	3	5	0	0	8	0	0	12	0	12	23
09:15	0	2	1	0	3	0	0	0	0	0	4	7	0	0	11	1	0	6	0	7	21
09:30	0	3	0	0	3	0	0	0	0	0	2	3	0	0	5	1	0	11	0	12	20
09:45	0	3	1	0	4	0	0	0	0	0	3	4	0	0	7	1	0	11	0	12	23
Total	0	11	2	0	13	0	0	0	0	0	12	19	0	0	31	3	0	40	0	43	87
10:00	0	6	2	0	8	0	0	0	0	0	3	1	0	0	4	2	0	9	0	11	23
10:15	0	3	2	0	5	0	0	0	0	0	2	7	0	0	9	2	0	15	0	17	31
10:30	0	5	0	0	5	0	0	0	0	0	2	4	0	0	6	1	0	12	0	13	24
10:45	0	2	0	0	2	0	0	0	0	0	2	3	0	0	5	1	0	6	0	7	14
Total	0	16	4	0	20	0	0	0	0	0	9	15	0	0	24	6	0	42	0	48	92
11:00	0	2	0	0	2	0	0	0	0	0	2	3	0	0	5	0	0	9	0	9	16
11:15	0	4	0	0	4	0	0	0	0	0	2	1	0	0	3	3	0	10	0	13	20
11:30	0	3	4	0	7	0	0	0	0	0	3	2	0	0	5	2	0	15	0	17	29
11:45	0	6	0	0	6	0	0	0	0	0	2	6	0	0	8	2	0	6	0	8	22
Total	0	15	4	0	19	0	0	0	0	0	9	12	0	0	21	7	0	40	0	47	87
12:00	0	3	2	0	5	0	0	0	0	0	2	6	0	0	8	2	0	13	0	15	28
12:15	0	4	1	0	5	0	0	0	0	0	3	4	0	0	7	1	0	6	0	7	19
12:30	0	2	0	0	2	0	0	0	0	0	2	2	0	0	4	0	0	11	0	11	17
12:45	0	2	0	0	2	0	0	0	0	0	4	4	0	0	8	3	0	4	0	7	17
Total	0	11	3	0	14	0	0	0	0	0	11	16	0	0	27	6	0	34	0	40	81
13:00	0	6	0	0	6	0	0	0	0	0	2	0	0	0	2	2	0	12	0	14	22
13:15	0	3	0	0	3	0	0	0	0	0	1	3	0	0	4	1	0	9	0	10	17
13:30	0	5	1	0	6	0	0	0	0	0	2	2	0	0	4	0	0	11	0	11	21
13:45	0	3	0	0	3	0	0	0	0	0	6	2	0	0	8	1	0	8	0	9	20
Total	0	17	1	0	18	0	0	0	0	0	11	7	0	0	18	4	0	40	0	44	80
14:00	0	4	0	0	4	0	0	0	0	0	1	4	0	0	5	1	0	9	0	10	19
14:15	0	5	0	0	5	0	0	0	0	0	1	5	0	0	6	0	0	9	0	9	20
14:30	0	2	0	0	2	0	0	0	0	0	3	1	0	0	4	1	0	6	0	7	13
14:45	0	3	0	0	3	0	0	0	0	0	3	6	0	0	9	3	0	9	0	12	24
Total	0	14	0	0	14	0	0	0	0	0	8	16	0	0	24	5	0	33	0	38	76
15:00	0	6	1	0	7	0	0	0	0	0	2	4	0	0	6	1	0	9	0	10	23



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC 2242-t
 Site Code :
 Start Date : 08/09/2022
 Page No : 2

Weather: Warm & Sunny
 CountCAM 2
 Study Conducted by: Kevin

Groups Printed- Trucks

Start Time	CSAH 23 (Lake Dr) Southbound					I-35 W South Ramp Westbound					CSAH 23 (Lake Dr) Northbound					I-35 W South Ramp 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	
15:15	0	1	0	0	1	0	0	0	0	0	2	5	0	0	7	1	0	8	0	9	17
15:30	0	4	0	0	4	0	0	0	0	0	4	4	0	0	8	1	0	7	0	8	20
15:45	0	4	1	0	5	0	0	0	0	0	1	2	0	0	3	3	0	7	0	10	18
Total	0	15	2	0	17	0	0	0	0	0	9	15	0	0	24	6	0	31	0	37	78
16:00	0	4	2	0	6	0	0	0	0	0	4	0	0	0	4	1	0	6	0	7	17
16:15	0	1	0	0	1	0	0	0	0	0	1	2	0	0	3	1	0	4	0	5	9
16:30	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	0	0	6	0	6	10
16:45	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3	4	0	7	0	11	14
Total	0	8	2	0	10	0	0	0	0	0	6	5	0	0	11	6	0	23	0	29	50
17:00	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3	0	0	2	0	2	5
17:15	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	2	0	6	0	8	13
17:30	0	4	0	0	4	0	0	0	0	0	1	4	0	0	5	1	0	8	0	9	18
17:45	0	3	0	0	3	0	0	0	0	0	1	4	0	0	5	2	0	5	0	7	15
Total	0	8	0	0	8	0	0	0	0	0	3	14	0	0	17	5	0	21	0	26	51
18:00	0	1	0	0	1	0	0	0	0	0	1	3	0	0	4	2	0	2	0	4	9
18:15	0	1	0	0	1	0	0	0	0	0	3	0	0	0	3	0	0	4	0	4	8
18:30	0	2	2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	8
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total	0	4	2	0	6	0	0	0	0	0	4	3	0	0	7	2	0	11	0	13	26
19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
19:15	0	1	0	0	1	0	0	0	0	0	1	1	0	0	2	0	0	3	0	3	6
19:30	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	2
19:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total	0	1	0	0	1	0	0	0	0	0	1	2	0	0	3	0	0	6	0	6	10
20:00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2	0	2	3
20:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
20:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	2
20:45	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	4	0	4	5
Total	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	1	0	8	0	9	11
Grand Total	0	159	28	0	187	0	0	0	0	0	98	166	0	0	264	67	1	412	0	480	931
Apprch %	0	85	15	0		0	0	0	0		37.1	62.9	0	0		14	0.2	85.8	0		
Total %	0	17.1	3	0	20.1	0	0	0	0	0	10.5	17.8	0	0	28.4	7.2	0.1	44.3	0	51.6	

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 08/09/2022

Signal Warrants - Summary

Major Street Approaches

Northbound: CSAH 23 (Lake Dr)

Number of Lanes : 2+

Total Approach Volume: 5,072

Southbound: CSAH 23 (Lake Dr)

Number of Lanes : 2+

Total Approach Volume: 4,589

Minor Street Approaches

Eastbound: I-35 W South Ramp

Number of Lanes : 1

Total Approach Volume: 5,449

Westbound: I-35 W South Ramp

Number of Lanes : 1

Total Approach Volume: 0

Warrant Summary (Urban Values Apply)

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

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

Required volumes reached for 8 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 5 hours, 8 are needed

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

Number of hours (8) volumes exceed minimum >= minimum required (4).

Warrant 3 - Peak Hour.....Satisfied

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

Number of one hour periods (45) 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 : 08/09/2022

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

8 one hour periods meet minimums.
Warrant IS met.

Site Data Required

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

Volume Requirements

Veh/Hr Major = **600**

Veh/Hr Minor = **150**

Time	Major Road				Total	Minor Road		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
	CSAH 23 (Lake Dr)					I-35 W South Ramp		
16:30 - 17:30	514	+	447	=	961	729	0	Yes
17:30 - 18:30	482	+	409	=	891	531	0	Yes
15:30 - 16:30	479	+	395	=	874	646	0	Yes
14:30 - 15:30	386	+	352	=	738	533	0	Yes
11:30 - 12:30	405	+	332	=	737	290	0	Yes
13:30 - 14:30	337	+	327	=	664	392	0	Yes
12:30 - 13:30	309	+	340	=	649	336	0	Yes
10:30 - 11:30	338	+	279	=	617	271	0	Yes
18:30 - 19:30	322	+	276	=	598	271	0	No
10:15 - 11:15	320	+	265	=	585	269	0	No
18:45 - 19:45	311	+	274	=	585	225	0	No
19:00 - 20:00	314	+	262	=	576	231	0	No
10:00 - 11:00	326	+	245	=	571	289	0	No
07:30 - 08:30	290	+	274	=	564	280	0	No
08:45 - 09:45	294	+	262	=	556	242	0	No
08:30 - 09:30	293	+	263	=	556	254	0	No
19:15 - 20:15	288	+	267	=	555	216	0	No
08:15 - 09:15	295	+	258	=	553	290	0	No
09:00 - 10:00	292	+	256	=	548	223	0	No
07:45 - 08:45	282	+	265	=	547	292	0	No
07:15 - 08:15	280	+	264	=	544	268	0	No
09:45 - 10:45	314	+	228	=	542	285	0	No
09:15 - 10:15	292	+	241	=	533	234	0	No
07:00 - 08:00	278	+	255	=	533	275	0	No
09:30 - 10:30	290		233		523	275	0	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 08/09/2022

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 = **False**
 Number of Major Lanes = **2 or more**
 Number of Minor Lanes = **1**

Volume Requirements

Veh/Hr Major = **900**

Veh/Hr Minor = **75**

Time	Major Road				Total	Minor Road		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
	CSAH 23 (Lake Dr)					I-35 W South Ramp		
16:45 - 17:45	518	+	436	=	954	712	0	Yes
15:45 - 16:45	505	+	407	=	912	707	0	Yes
15:30 - 16:30	479	+	395	=	874	646	0	No
15:15 - 16:15	458	+	381	=	839	656	0	No
15:00 - 16:00	424	+	392	=	816	610	0	No
17:45 - 18:45	417	+	395	=	812	433	0	No
14:45 - 15:45	388	+	370	=	758	561	0	No
14:30 - 15:30	386	+	352	=	738	533	0	No
11:30 - 12:30	405	+	332	=	737	290	0	No
14:15 - 15:15	356	+	374	=	730	463	0	No
11:15 - 12:15	401	+	318	=	719	303	0	No
13:45 - 14:45	380	+	338	=	718	410	0	No
11:45 - 12:45	379	+	339	=	718	310	0	No
12:00 - 13:00	369	+	346	=	715	312	0	No
12:15 - 13:15	333	+	373	=	706	323	0	No
18:00 - 19:00	360	+	343	=	703	346	0	No
14:00 - 15:00	352	+	344	=	696	448	0	No
11:00 - 12:00	360	+	320	=	680	285	0	No
13:30 - 14:30	337	+	327	=	664	392	0	No
10:45 - 11:45	342	+	312	=	654	276	0	No
12:30 - 13:30	309	+	340	=	649	336	0	No
13:00 - 14:00	327	+	309	=	636	358	0	No
18:15 - 19:15	331	+	303	=	634	314	0	No
12:45 - 13:45	308	+	319	=	627	342	0	No
13:15 - 14:15	330		291		621	383	0	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 08/09/2022

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 5 hours meet 1B minimums.
Warrant is NOT met.

Site Data Required

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

Volume Requirements

Warrant 1A 1B
Veh/Hr Major = **480 720**

Veh/Hr Minor = **120 60**

Major Road CSAH 23 (Lake Dr)

Minor Road I-35 W South Ramp

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1A?
16:45 - 17:45	518	+	436	=	954	712	0	Yes
15:45 - 16:45	505	+	407	=	912	707	0	Yes
17:45 - 18:45	417	+	395	=	812	433	0	Yes
14:45 - 15:45	388	+	370	=	758	561	0	Yes
13:45 - 14:45	380	+	338	=	718	410	0	Yes
11:45 - 12:45	379	+	339	=	718	310	0	Yes
10:45 - 11:45	342	+	312	=	654	276	0	Yes
12:45 - 13:45	308	+	319	=	627	342	0	Yes
18:45 - 19:45	311	+	274	=	585	225	0	Yes
08:45 - 09:45	294	+	262	=	556	242	0	Yes
07:45 - 08:45	282	+	265	=	547	292	0	Yes
09:45 - 10:45	314	+	228	=	542	285	0	Yes

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1B?
16:15 - 17:15	522	+	430	=	952	696	0	Yes
17:15 - 18:15	503	+	427	=	930	616	0	Yes
15:15 - 16:15	458	+	381	=	839	656	0	Yes
11:30 - 12:30	405	+	332	=	737	290	0	Yes
14:15 - 15:15	356	+	374	=	730	463	0	Yes
11:15 - 12:15	401	+	318	=	719	303	0	No
13:45 - 14:45	380	+	338	=	718	410	0	No
14:00 - 15:00	352	+	344	=	696	448	0	No
11:00 - 12:00	360	+	320	=	680	285	0	No
13:30 - 14:30	337	+	327	=	664	392	0	No
10:45 - 11:45	342	+	312	=	654	276	0	No
12:30 - 13:30	309	+	340	=	649	336	0	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 08/09/2022

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.

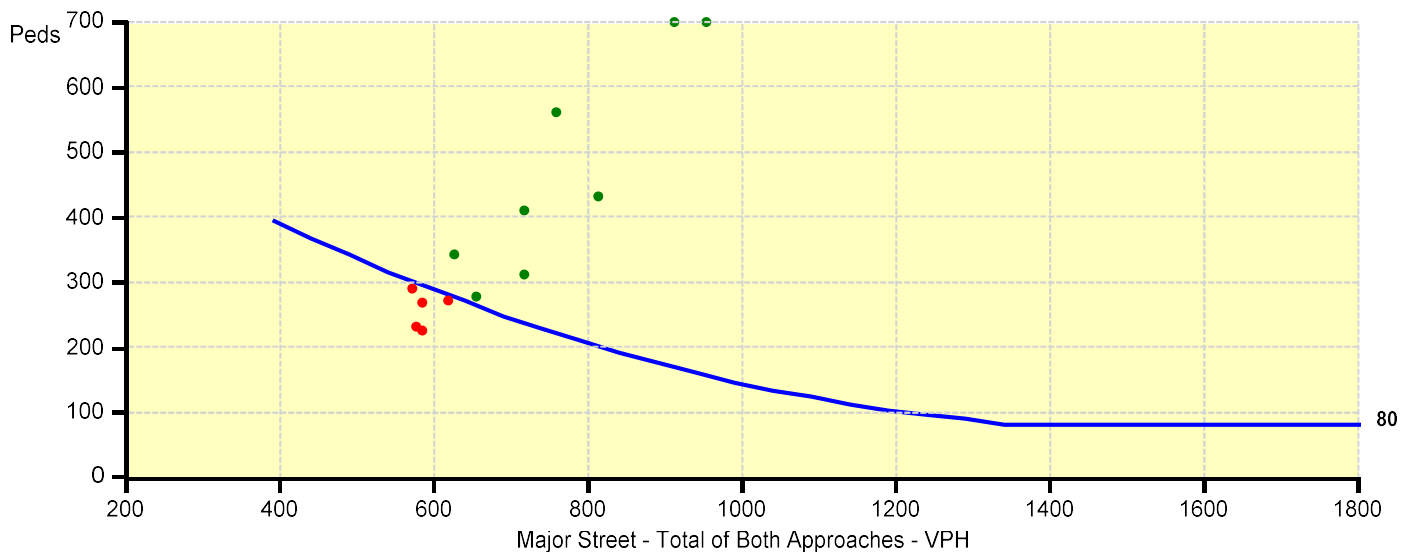
Summary

8 one hour periods meet minimums.
Warrant IS met.

Site Data Required

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

Time	Major Road CSAH 23 (Lake Dr)					Minor Road I-35 W South Ramp		Met?
	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	
16:45 - 17:45	518	+	436	=	954	712	0	Yes
15:45 - 16:45	505	+	407	=	912	707	0	Yes
17:45 - 18:45	417	+	395	=	812	433	0	Yes
14:45 - 15:45	388	+	370	=	758	561	0	Yes
13:45 - 14:45	380	+	338	=	718	410	0	Yes
11:45 - 12:45	379	+	339	=	718	310	0	Yes
10:45 - 11:45	342	+	312	=	654	276	0	Yes
12:45 - 13:45	308	+	319	=	627	342	0	Yes
10:30 - 11:30	338	+	279	=	617	271	0	No
10:15 - 11:15	320	+	265	=	585	269	0	No
18:45 - 19:45	311	+	274	=	585	225	0	No
19:00 - 20:00	314	+	262	=	576	231	0	No



ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 08/09/2022

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

17 one hour periods meet minimums.
Warrant IS met.

Site Data Required

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

Time	Major Road CSAH 23 (Lake Dr)					Minor Road I-35 W South Ramp		Met?
	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	
16:30 - 17:30	514	+	447	=	961	729	0	Yes
17:00 - 18:00	513	+	446	=	959	661	0	Yes
16:45 - 17:45	518	+	436	=	954	712	0	Yes
16:15 - 17:15	522	+	430	=	952	696	0	Yes
16:00 - 17:00	525	+	405	=	930	718	0	Yes
17:15 - 18:15	503	+	427	=	930	616	0	Yes
15:45 - 16:45	505	+	407	=	912	707	0	Yes
17:30 - 18:30	482	+	409	=	891	531	0	Yes
15:30 - 16:30	479	+	395	=	874	646	0	Yes
15:15 - 16:15	458	+	381	=	839	656	0	Yes
15:00 - 16:00	424	+	392	=	816	610	0	Yes
17:45 - 18:45	417		395		812	433	0	Yes

