

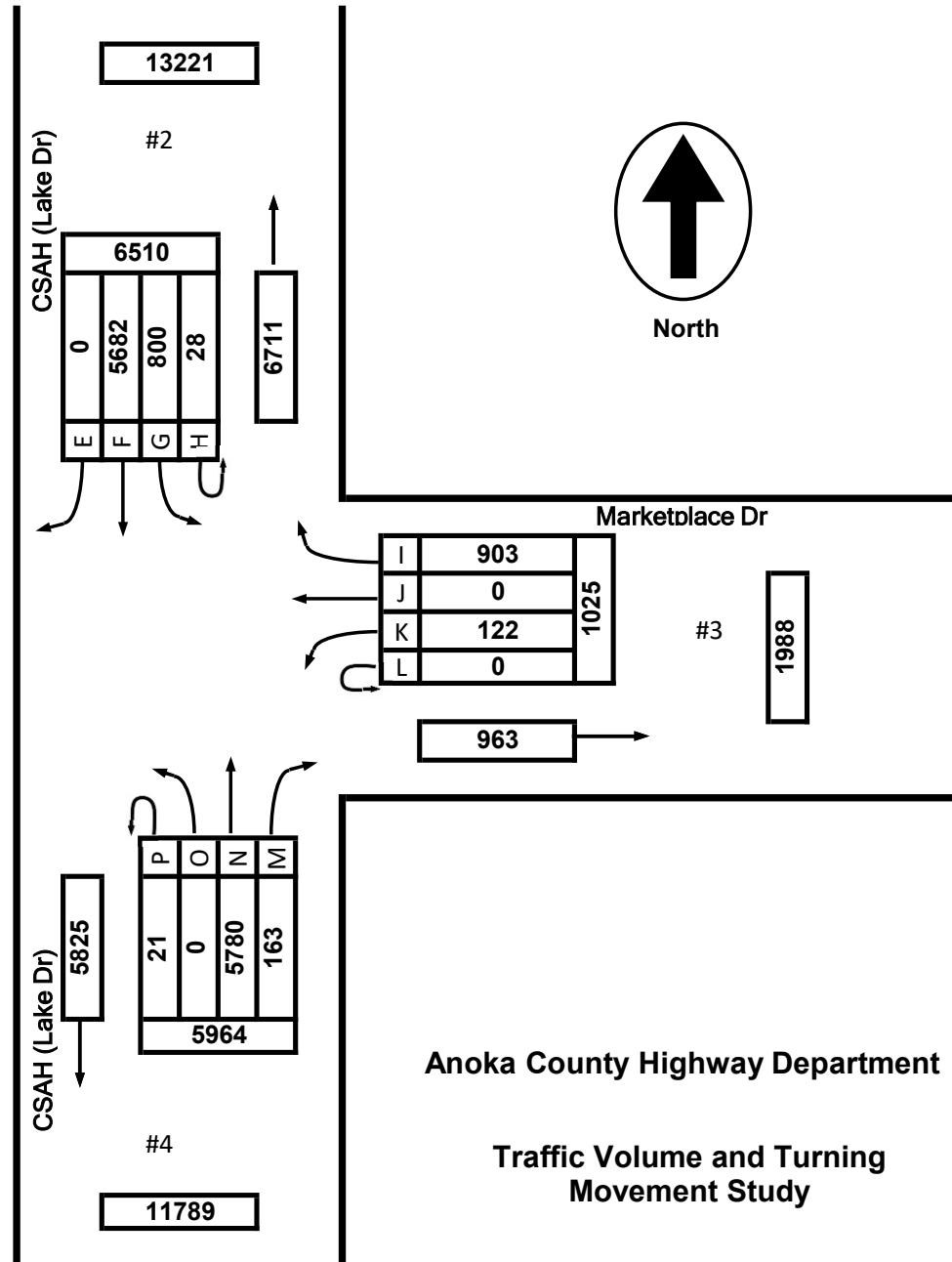
Date : 08/09/22

Count Number : TMC 2245

Location : CSAH (Lake Dr)
@ Marketplace Dr

Collection Period : 24 HR

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



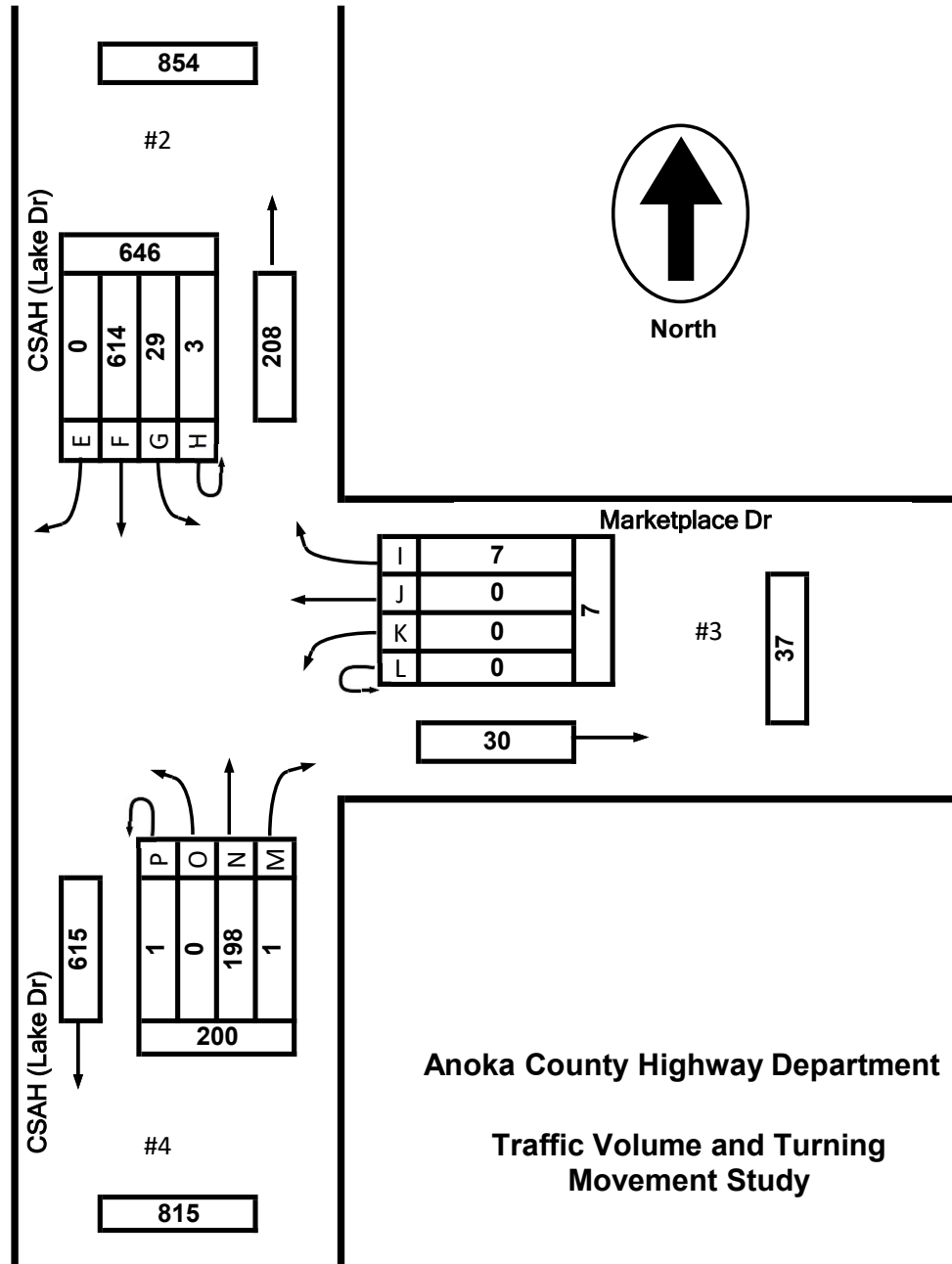
Date : 08/09/22

Count Number : TMC 2245

Location : CSAH (Lake Dr)
@ Marketplace Dr

Collection Period : 7 AM - 8 AM
AM PEAK

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



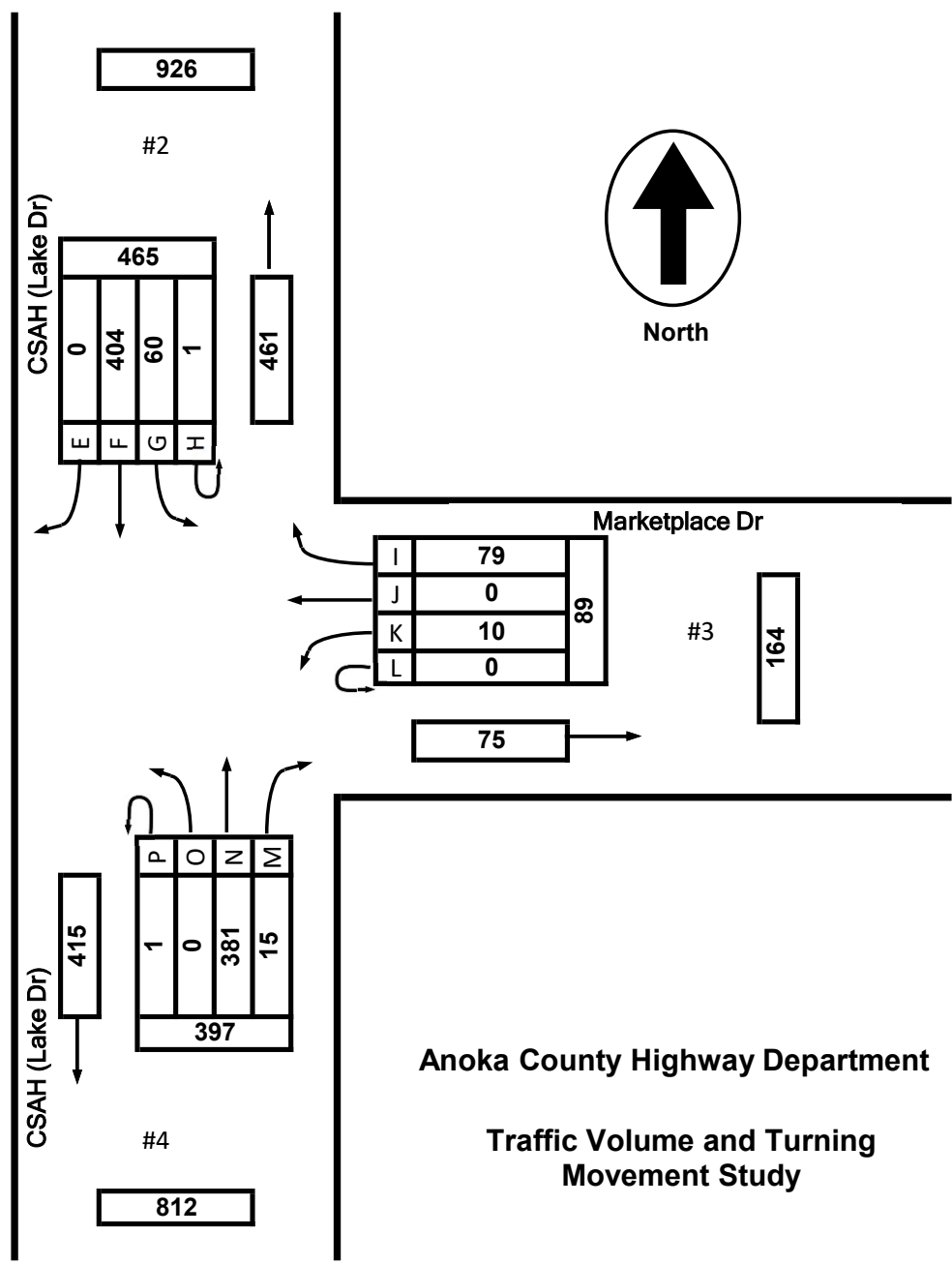
Date : 08/09/22

Count Number : TMC 2245

Location : CSAH (Lake Dr)
@ Marketplace Dr

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

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



Anoka County Highway Department
Traffic Volume and Turning Movement Study

Date : 08/09/22

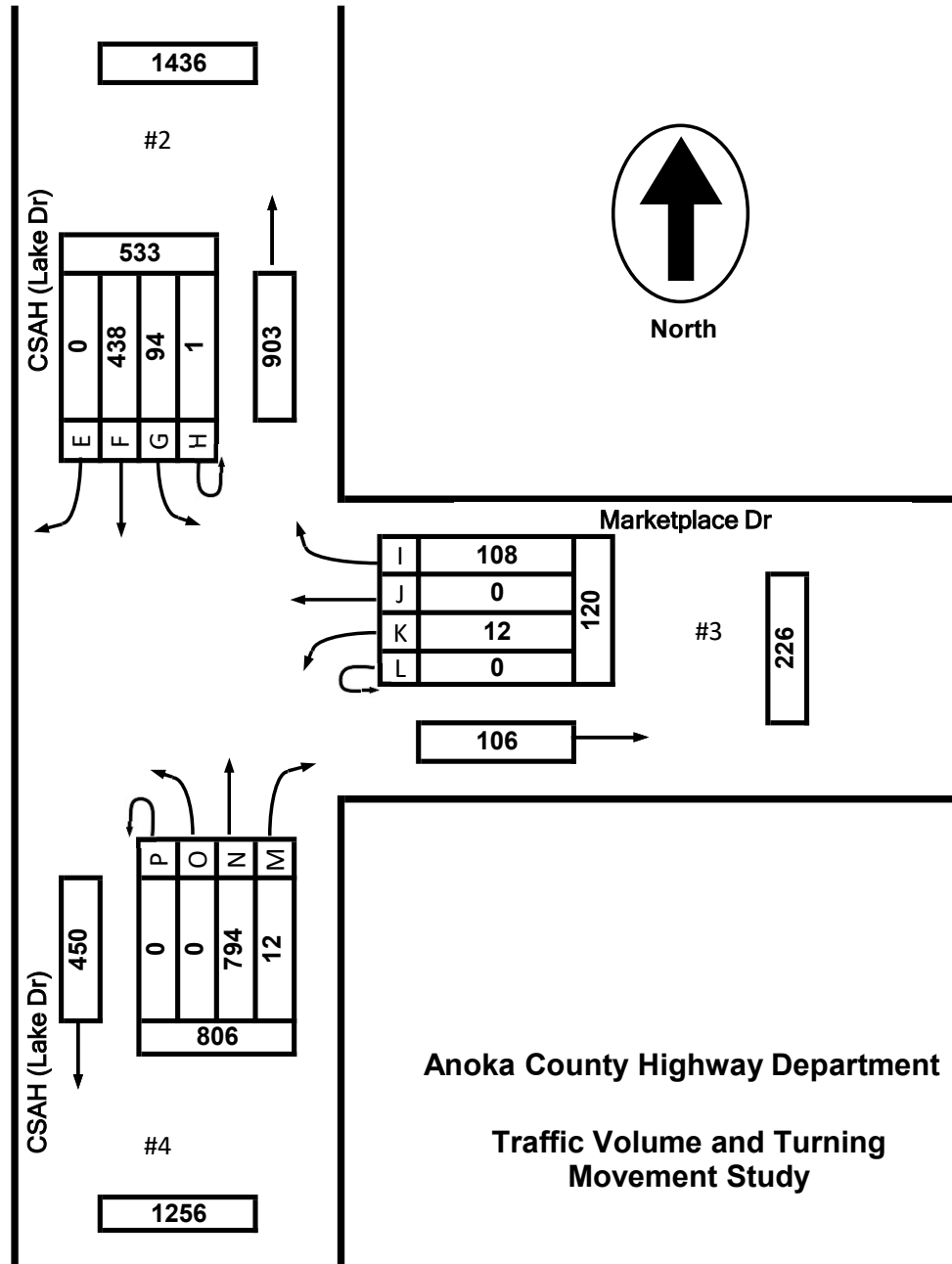
Count Number : TMC 2245

Location : CSAH (Lake Dr)
@ Marketplace Dr

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

PM PEAK

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





Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC 2245-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						Marketplace Dr Westbound						CSAH 23 (Lake Dr) Northbound						N/A 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	103	2	0	0	105	1	0	0	0	0	1	0	27	0	0	0	27	0	0	0	0	0	0	0	133	133
06:15	0	112	3	1	0	116	2	0	0	0	0	2	0	28	0	0	0	28	0	0	0	0	0	0	0	146	146
06:30	0	130	4	0	0	134	1	0	1	0	0	2	1	45	0	0	0	46	0	0	0	0	0	0	0	182	182
06:45	0	132	6	0	1	138	0	0	0	0	0	0	0	55	0	0	0	55	0	0	0	0	0	0	1	193	194
Total	0	477	15	1	1	493	4	0	1	0	0	5	1	155	0	0	0	156	0	0	0	0	0	0	1	654	655
07:00	0	142	5	0	0	147	1	0	0	0	0	1	1	44	0	1	0	46	0	0	0	0	0	0	0	194	194
07:15	0	172	8	1	0	181	3	0	0	0	0	3	0	33	0	0	0	33	0	0	0	0	0	0	0	217	217
07:30	0	163	5	0	0	168	2	0	0	0	0	2	0	49	0	0	0	49	0	0	0	0	0	0	0	219	219
07:45	0	137	11	2	0	150	1	0	0	0	0	1	0	72	0	0	0	72	0	0	0	0	0	0	0	223	223
Total	0	614	29	3	0	646	7	0	0	0	0	7	1	198	0	1	0	200	0	0	0	0	0	0	0	853	853
08:00	0	130	5	0	1	135	4	0	1	0	0	5	6	47	0	0	0	53	0	0	0	0	0	0	1	193	194
08:15	0	121	3	1	0	125	10	0	0	0	0	10	3	57	0	1	0	61	0	0	0	0	0	0	0	196	196
08:30	0	116	10	0	1	126	4	0	0	0	0	4	3	65	0	0	0	68	0	0	0	0	0	0	1	198	199
08:45	0	107	9	1	1	117	3	0	1	0	2	4	3	61	0	0	0	64	0	0	0	0	0	0	3	185	188
Total	0	474	27	2	3	503	21	0	2	0	2	23	15	230	0	1	0	246	0	0	0	0	0	0	5	772	777
09:00	0	93	6	0	0	99	2	0	1	0	0	3	2	52	0	0	0	54	0	0	0	0	0	0	0	156	156
09:15	0	91	6	0	0	97	5	0	2	0	0	7	1	51	0	0	0	52	0	0	0	0	0	0	0	156	156
09:30	0	91	12	0	0	103	11	0	0	0	0	11	1	52	0	0	0	53	0	0	0	0	0	0	0	167	167
09:45	0	79	19	1	0	99	3	0	1	0	0	4	2	67	0	0	0	69	0	0	0	0	0	0	0	172	172
Total	0	354	43	1	0	398	21	0	4	0	0	25	6	222	0	0	0	228	0	0	0	0	0	0	0	651	651
10:00	0	73	19	0	0	92	13	0	2	0	0	15	4	73	0	0	1	77	0	0	0	0	0	0	1	184	185
10:15	0	86	9	1	0	96	12	0	1	0	0	13	1	79	0	0	0	80	0	0	0	0	0	0	0	189	189
10:30	0	75	19	1	0	95	14	0	3	0	0	17	1	75	0	2	0	78	0	0	0	0	0	0	0	190	190
10:45	0	98	22	1	0	121	15	0	3	0	0	18	4	76	0	1	0	81	0	0	0	0	0	0	0	220	220
Total	0	332	69	3	0	404	54	0	9	0	0	63	10	303	0	3	1	316	0	0	0	0	0	0	1	783	784
11:00	0	66	16	0	0	82	11	0	2	0	0	13	0	75	0	1	0	76	0	0	0	0	0	0	0	171	171
11:15	0	83	12	0	0	95	17	0	6	0	0	23	5	87	0	1	0	93	0	0	0	0	0	0	0	211	211
11:30	0	100	7	0	0	107	16	0	1	0	0	17	4	98	0	0	0	102	0	0	0	0	0	0	0	226	226
11:45	0	100	12	0	0	112	17	0	3	0	0	20	1	100	0	0	0	101	0	0	0	0	0	0	0	233	233
Total	0	349	47	0	0	396	61	0	12	0	0	73	10	360	0	2	0	372	0	0	0	0	0	0	0	841	841



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC 2245-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						Marketplace Dr Westbound						CSAH 23 (Lake Dr) Northbound						N/A 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	107	14	1	0	122	20	0	0	0	0	20	3	96	0	1	0	100	0	0	0	0	0	0	0	0	242	242
12:15	0	105	20	0	0	125	19	0	4	0	0	23	7	90	0	0	0	97	0	0	0	0	0	0	0	0	245	245
12:30	0	92	14	0	0	106	23	0	3	0	0	26	4	95	0	0	0	99	0	0	0	0	0	0	0	0	231	231
12:45	0	93	21	2	1	116	19	0	2	0	0	21	6	77	0	2	0	85	0	0	0	0	0	0	0	1	222	223
Total	0	397	69	3	1	469	81	0	9	0	0	90	20	358	0	3	0	381	0	0	0	0	0	0	0	1	940	941
13:00	0	84	10	0	0	94	21	0	1	0	0	22	4	99	0	0	0	103	0	0	0	0	0	0	0	0	219	219
13:15	0	86	20	1	0	107	14	0	2	0	0	16	2	101	0	0	0	103	0	0	0	0	0	0	0	0	226	226
13:30	0	83	10	1	0	94	24	0	4	0	0	28	2	104	0	1	0	107	0	0	0	0	0	0	0	0	229	229
13:45	0	89	23	1	1	113	24	0	1	0	1	25	9	104	0	0	0	113	0	0	0	0	0	0	0	2	251	253
Total	0	342	63	3	1	408	83	0	8	0	1	91	17	408	0	1	0	426	0	0	0	0	0	0	0	2	925	927
14:00	0	72	24	1	1	97	16	0	2	0	0	18	1	109	0	0	0	110	0	0	0	0	0	0	0	1	225	226
14:15	0	92	8	0	0	100	14	0	0	0	0	14	4	103	0	1	0	108	0	0	0	0	0	0	0	0	222	222
14:30	0	98	16	0	0	114	21	0	6	0	0	27	4	107	0	1	0	112	0	0	0	0	0	0	0	0	253	253
14:45	0	74	16	0	0	90	13	0	1	0	0	14	5	146	0	1	0	152	0	0	0	0	0	0	0	0	256	256
Total	0	336	64	1	1	401	64	0	9	0	0	73	14	465	0	3	0	482	0	0	0	0	0	0	0	1	956	957
15:00	0	89	12	0	1	101	25	0	3	0	0	28	6	118	0	0	0	124	0	0	0	0	0	0	0	1	253	254
15:15	0	84	14	1	1	99	20	0	3	0	0	23	4	153	0	0	0	157	0	0	0	0	0	0	0	1	279	280
15:30	0	110	17	1	0	128	17	0	7	0	0	24	2	166	0	1	0	169	0	0	0	0	0	0	0	0	321	321
15:45	0	105	28	0	0	133	23	0	6	0	0	29	6	171	0	1	0	178	0	0	0	0	0	0	0	0	340	340
Total	0	388	71	2	2	461	85	0	19	0	0	104	18	608	0	2	0	628	0	0	0	0	0	0	0	2	1193	1195
16:00	0	110	14	0	3	124	20	0	5	0	0	25	3	190	0	0	0	193	0	0	0	0	0	0	0	3	342	345
16:15	0	110	23	0	0	133	24	0	4	0	0	28	2	194	0	0	0	196	0	0	0	0	0	0	0	0	357	357
16:30	0	113	27	1	0	141	35	0	1	0	0	36	4	216	0	0	0	220	0	0	0	0	0	0	0	0	397	397
16:45	0	109	25	0	0	134	25	0	5	0	0	30	3	194	0	0	0	197	0	0	0	0	0	0	0	0	361	361
Total	0	442	89	1	3	532	104	0	15	0	0	119	12	794	0	0	0	806	0	0	0	0	0	0	0	3	1457	1460
17:00	0	106	19	0	1	125	24	0	2	0	0	26	3	190	0	0	0	193	0	0	0	0	0	0	0	1	344	345
17:15	0	99	19	0	0	118	19	0	1	0	0	20	2	168	0	0	0	170	0	0	0	0	0	0	0	0	308	308
17:30	0	100	22	1	0	123	32	0	4	0	0	36	3	178	0	1	0	182	0	0	0	0	0	0	0	0	341	341
17:45	0	100	20	0	0	120	24	0	1	0	0	25	3	163	0	0	0	166	0	0	0	0	0	0	0	0	311	311
Total	0	405	80	1	1	486	99	0	8	0	0	107	11	699	0	1	0	711	0	0	0	0	0	0	0	1	1304	1305
18:00	0	85	16	0	0	101	26	0	4	0	0	30	2	131	0	1	0	134	0	0	0	0	0	0	0	0	265	265
18:15	0	88	15	1	0	104	22	0	3	0	0	25	3	125	0	0	0	128	0	0	0	0	0	0	0	0	257	257
18:30	0	79	12	1	0	92	24	0	0	0	0	24	3	110	0	0	0	113	0	0	0	0	0	0	0	0	229	229



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC 2245-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						Marketplace Dr Westbound						CSAH 23 (Lake Dr) Northbound						N/A 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	75	14	1	0	90	27	0	1	0	0	28	3	79	0	0	0	82	0	0	0	0	0	0	0	0	200	200
Total	0	327	57	3	0	387	99	0	8	0	0	107	11	445	0	1	0	457	0	0	0	0	0	0	0	0	951	951
19:00	0	61	11	1	0	73	17	0	3	0	0	20	5	86	0	1	0	92	0	0	0	0	0	0	0	0	185	185
19:15	0	71	8	0	0	79	17	0	1	0	0	18	1	71	0	1	0	73	0	0	0	0	0	0	0	0	170	170
19:30	0	63	11	0	0	74	8	0	0	0	0	8	2	60	0	0	0	62	0	0	0	0	0	0	0	0	144	144
19:45	0	53	14	0	0	67	24	0	4	0	0	28	2	69	0	0	0	71	0	0	0	0	0	0	0	0	166	166
Total	0	248	44	1	0	293	66	0	8	0	0	74	10	286	0	2	0	298	0	0	0	0	0	0	0	0	665	665
20:00	0	60	9	1	0	70	18	0	5	0	0	23	3	76	0	0	0	79	0	0	0	0	0	0	0	0	172	172
20:15	0	41	7	0	0	48	19	0	3	0	0	22	2	72	0	0	0	74	0	0	0	0	0	0	0	0	144	144
20:30	0	53	13	1	0	67	8	0	1	0	0	9	0	39	0	0	0	39	0	0	0	0	0	0	0	0	115	115
20:45	0	43	4	1	0	48	9	0	1	0	0	10	2	62	0	1	0	65	0	0	0	0	0	0	0	0	123	123
Total	0	197	33	3	0	233	54	0	10	0	0	64	7	249	0	1	0	257	0	0	0	0	0	0	0	0	554	554
Grand Total	0	5682	800	28	13	6510	903	0	122	0	3	1025	163	5780	0	21	1	5964	0	0	0	0	0	0	0	17	13499	13516
Apprch %	0	87.3	12.3	0.4			88.1	0	11.9	0			2.7	96.9	0	0.4			0	0	0	0						
Total %	0	42.1	5.9	0.2		48.2	6.7	0	0.9	0		7.6	1.2	42.8	0	0.2		44.2	0	0	0	0			0.1	99.9		
Cars +	0	5312	797	28		6150	896	0	120	0		1019	155	5426	0	20		5602	0	0	0	0			0	0	12771	
% Cars +	0	93.5	99.6	100	100	94.3	99.2	0	98.4	0	100	99.1	95.1	93.9	0	95.2	100	93.9	0	0	0	0			0	0	94.5	
Trucks	0	370	3	0		373	7	0	2	0		9	8	354	0	1		363	0	0	0	0			0	0	745	
% Trucks	0	6.5	0.4	0	0	5.7	0.8	0	1.6	0	0	0.9	4.9	6.1	0	4.8	0	6.1	0	0	0	0			0	0	5.5	

Start Time	CSAH 23 (Lake Dr) Southbound						Marketplace Dr Westbound						CSAH 23 (Lake Dr) Northbound						N/A 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 07:00																												
07:00	0	142	5	0		147	1	0	0	0		1	1	44	0	1		46	0	0	0	0			0	0	194	
07:15	0	172	8	1		181	3	0	0	0		3	0	33	0	0		33	0	0	0	0			0	0	217	
07:30	0	163	5	0		168	2	0	0	0		2	0	49	0	0		49	0	0	0	0			0	0	219	
07:45	0	137	11	2		150	1	0	0	0		1	0	72	0	0		72	0	0	0	0			0	0	223	
Total Volume	0	614	29	3		646	7	0	0	0		7	1	198	0	1		200	0	0	0	0			0	0	853	
% App. Total	0	95	4.5	0.5			100	0	0	0			0.5	99	0	0.5			0	0	0	0			0	0		
PHF	.000	.892	.659	.375		.892	.583	.000	.000	.000		.583	.250	.688	.000	.250		.694	.000	.000	.000	.000			.000	.000	.956	



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC 2245-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					Marketplace Dr Westbound					CSAH 23 (Lake Dr) Northbound					N/A 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	9	0	0	9	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	11
06:15	0	12	1	0	13	1	0	0	0	1	0	3	0	0	3	0	0	0	0	0	17
06:30	0	11	0	0	11	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	16
06:45	0	13	0	0	13	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	15
Total	0	45	1	0	46	2	0	0	0	2	0	11	0	0	11	0	0	0	0	0	59
07:00	0	10	0	0	10	0	0	0	0	0	0	2	0	1	3	0	0	0	0	0	13
07:15	0	9	0	0	9	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	16
07:30	0	4	0	0	4	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	13
07:45	0	16	0	0	16	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	26
Total	0	39	0	0	39	0	0	0	0	0	0	28	0	1	29	0	0	0	0	0	68
08:00	0	13	0	0	13	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	18
08:15	0	3	0	0	3	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	9
08:30	0	7	0	0	7	0	0	0	0	0	1	6	0	0	7	0	0	0	0	0	14
08:45	0	8	0	0	8	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	18
Total	0	31	0	0	31	0	0	0	0	0	1	27	0	0	28	0	0	0	0	0	59
09:00	0	11	1	0	12	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	22
09:15	0	6	0	0	6	0	0	1	0	1	0	5	0	0	5	0	0	0	0	0	12
09:30	0	7	0	0	7	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	15
09:45	0	4	0	0	4	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	12
Total	0	28	1	0	29	0	0	1	0	1	0	31	0	0	31	0	0	0	0	0	61
10:00	0	6	0	0	6	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	12
10:15	0	8	0	0	8	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	16
10:30	0	6	0	0	6	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	13
10:45	0	6	0	0	6	1	0	0	0	1	0	6	0	0	6	0	0	0	0	0	13
Total	0	26	0	0	26	1	0	0	0	1	0	27	0	0	27	0	0	0	0	0	54
11:00	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4
11:15	0	9	0	0	9	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	16
11:30	0	14	0	0	14	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	23
11:45	0	8	0	0	8	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	15
Total	0	32	0	0	32	0	0	0	0	0	0	26	0	0	26	0	0	0	0	0	58
12:00	0	12	0	0	12	1	0	0	0	1	0	12	0	0	12	0	0	0	0	0	25
12:15	0	8	0	0	8	0	0	0	0	0	2	8	0	0	10	0	0	0	0	0	18
12:30	0	9	0	0	9	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	16
12:45	0	5	0	0	5	0	0	0	0	0	1	9	0	0	10	0	0	0	0	0	15
Total	0	34	0	0	34	1	0	0	0	1	3	36	0	0	39	0	0	0	0	0	74
13:00	0	8	0	0	8	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	17
13:15	0	11	0	0	11	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	22
13:30	0	9	0	0	9	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	19
13:45	0	5	1	0	6	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	14
Total	0	33	1	0	34	0	0	0	0	0	0	38	0	0	38	0	0	0	0	0	72
14:00	0	5	0	0	5	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	13
14:15	0	5	0	0	5	1	0	0	0	1	1	11	0	0	12	0	0	0	0	0	18
14:30	0	8	0	0	8	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	13
14:45	0	9	0	0	9	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	20
Total	0	27	0	0	27	1	0	0	0	1	1	35	0	0	36	0	0	0	0	0	64
15:00	0	2	0	0	2	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	10



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC 2245-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					Marketplace Dr Westbound					CSAH 23 (Lake Dr) Northbound					N/A 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	5	0	0	5	1	0	0	0	1	0	7	0	0	7	0	0	0	0	0	13
15:30	0	9	0	0	9	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	16
15:45	0	8	0	0	8	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	15
Total	0	24	0	0	24	1	0	0	0	1	0	29	0	0	29	0	0	0	0	0	54
16:00	0	4	0	0	4	0	0	0	0	0	1	8	0	0	9	0	0	0	0	0	13
16:15	0	6	0	0	6	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	10
16:30	0	2	0	0	2	0	0	0	0	0	1	7	0	0	8	0	0	0	0	0	10
16:45	0	5	0	0	5	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	8
Total	0	17	0	0	17	1	0	0	0	1	2	21	0	0	23	0	0	0	0	0	41
17:00	0	3	0	0	3	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	7
17:15	0	2	0	0	2	0	0	0	0	0	1	5	0	0	6	0	0	0	0	0	8
17:30	0	3	0	0	3	0	0	1	0	1	0	12	0	0	12	0	0	0	0	0	16
17:45	0	5	0	0	5	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	10
Total	0	13	0	0	13	0	0	1	0	1	1	26	0	0	27	0	0	0	0	0	41
18:00	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
18:15	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	6
18:30	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	3
18:45	0	4	0	0	4	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	5
Total	0	8	0	0	8	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	18
19:00	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
19:15	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	6
19:30	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
19:45	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
Total	0	9	0	0	9	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	13
20:00	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
20:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:30	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
20:45	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
Total	0	4	0	0	4	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	9
Grand Total	0	370	3	0	373	7	0	2	0	9	8	354	0	1	363	0	0	0	0	0	745
Apprch %	0	99.2	0.8	0		77.8	0	22.2	0		2.2	97.5	0	0.3		0	0	0	0		
Total %	0	49.7	0.4	0	50.1	0.9	0	0.3	0	1.2	1.1	47.5	0	0.1	48.7	0	0	0	0	0	

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 12/06/2022

Signal Warrants - Summary

Major Street Approaches

Northbound: CSAH 23 (Lake Dr)

Number of Lanes : 2+

Total Approach Volume: 5,964

Southbound: CSAH 23 (Lake Dr)

Number of Lanes :2+

Total Approach Volume: 6,510

Minor Street Approaches

Westbound: Marketplace Dr

Number of Lanes :1

Total Approach Volume: 1,025

Warrant Summary (Rural Values Apply)

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

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

Required volumes reached for 3 hours, 8 are needed

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

Required volumes reached for 9 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 11 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 (13) volumes exceed minimum >= required (1). Delay data not evaluated.

Warrant 3B - Peak Hour Volumes.....Satisfied

Volumes exceed minimums for at least one hour period.

Warrant 4 - Pedestrian Volumes.....Not Evaluated

Warrant 5 - School Crossing.....Not Evaluated

Warrant 6 - Coordinated Signal System.....Not Evaluated

Warrant 7 - Crash Experience.....Not Evaluated

Warrant 8 - Roadway Network.....Not Evaluated

Warrant 9 - Intersection Near a Grade Crossing.....Not Evaluated

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 12/06/2022

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

Only 3 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				Total	Minor EB	Minor Road		Met?
	Major NB	+	Major SB	=			Minor WB		
	CSAH 23 (Lake Dr)						N/A		
16:30 - 17:30	780	+	518	=	1298	0	112		Yes
15:30 - 16:30	736	+	518	=	1254	0	106		Yes
17:30 - 18:30	610	+	448	=	1058	0	116		Yes
15:15 - 16:15	697	+	484	=	1181	0	101		No
15:00 - 16:00	628	+	461	=	1089	0	104		No
14:45 - 15:45	602	+	418	=	1020	0	89		No
14:30 - 15:30	545	+	404	=	949	0	92		No
14:15 - 15:15	496	+	405	=	901	0	83		No
14:00 - 15:00	482	+	401	=	883	0	73		No
13:45 - 14:45	443	+	424	=	867	0	84		No
11:30 - 12:30	400	+	466	=	866	0	80		No
11:45 - 12:45	397	+	465	=	862	0	89		No
12:00 - 13:00	381	+	469	=	850	0	90		No
07:00 - 08:00	200	+	646	=	846	0	7		No
13:15 - 14:15	433	+	411	=	844	0	87		No
13:30 - 14:30	438	+	404	=	842	0	85		No
07:15 - 08:15	207	+	634	=	841	0	11		No
13:00 - 14:00	426	+	408	=	834	0	91		No
11:15 - 12:15	396	+	436	=	832	0	80		No
12:15 - 13:15	384	+	441	=	825	0	92		No
06:45 - 07:45	183	+	634	=	817	0	6		No
12:30 - 13:30	390	+	423	=	813	0	85		No
07:30 - 08:30	235	+	578	=	813	0	18		No
12:45 - 13:45	398	+	411	=	809	0	87		No
07:45 - 08:45	254		536		790	0	20		No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 12/06/2022

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

9 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 = **53**

Time	Major Road				Total	Minor EB	Minor Road		Met?
	Major NB	+	Major SB	=			Minor WB		
	CSAH 23 (Lake Dr)						N/A		
16:00 - 17:00	806	+	532	=	1338	0	119	Yes	
17:00 - 18:00	711	+	486	=	1197	0	107	Yes	
15:00 - 16:00	628	+	461	=	1089	0	104	Yes	
14:00 - 15:00	482	+	401	=	883	0	73	Yes	
12:00 - 13:00	381	+	469	=	850	0	90	Yes	
18:00 - 19:00	457	+	387	=	844	0	107	Yes	
13:00 - 14:00	426	+	408	=	834	0	91	Yes	
11:00 - 12:00	372	+	396	=	768	0	73	Yes	
10:00 - 11:00	316	+	404	=	720	0	63	Yes	
07:00 - 08:00	200	+	646	=	846	0	7	No	
07:15 - 08:15	207	+	634	=	841	0	11	No	
06:45 - 07:45	183	+	634	=	817	0	6	No	
07:30 - 08:30	235	+	578	=	813	0	18	No	
07:45 - 08:45	254	+	536	=	790	0	20	No	
06:30 - 07:30	180	+	600	=	780	0	6	No	
08:00 - 09:00	246	+	503	=	749	0	23	No	
08:15 - 09:15	247	+	467	=	714	0	21	No	
06:15 - 07:15	175	+	535	=	710	0	5	No	
09:45 - 10:45	304	+	382	=	686	0	49	No	
08:30 - 09:30	238	+	439	=	677	0	18	No	
09:30 - 10:30	279	+	390	=	669	0	43	No	
06:00 - 07:00	156	+	493	=	649	0	5	No	
09:15 - 10:15	251	+	391	=	642	0	37	No	
08:45 - 09:45	223	+	416	=	639	0	25	No	
09:00 - 10:00	228		398		626	0	25	No	

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 12/06/2022

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

Only 7 hours meet 1A minimums.
11 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 23 (Lake Dr)

Minor Road N/A

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1A?
15:45 - 16:45	787	+	531	=	1318	0	118	Yes
16:45 - 17:45	742	+	500	=	1242	0	112	Yes
14:45 - 15:45	602	+	418	=	1020	0	89	Yes
17:45 - 18:45	541	+	417	=	958	0	104	Yes
13:45 - 14:45	443	+	424	=	867	0	84	Yes
11:45 - 12:45	397	+	465	=	862	0	89	Yes
12:45 - 13:45	398	+	411	=	809	0	87	Yes
11:30 - 12:30	400	+	466	=	866	0	80	No
07:00 - 08:00	200	+	646	=	846	0	7	No
07:15 - 08:15	207	+	634	=	841	0	11	No
11:15 - 12:15	396	+	436	=	832	0	80	No
06:45 - 07:45	183	+	634	=	817	0	6	No

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1B?
16:30 - 17:30	780	+	518	=	1298	0	112	Yes
15:30 - 16:30	736	+	518	=	1254	0	106	Yes
17:30 - 18:30	610	+	448	=	1058	0	116	Yes
14:30 - 15:30	545	+	404	=	949	0	92	Yes
11:30 - 12:30	400	+	466	=	866	0	80	Yes
13:30 - 14:30	438	+	404	=	842	0	85	Yes
12:30 - 13:30	390	+	423	=	813	0	85	Yes
10:30 - 11:30	328	+	393	=	721	0	71	Yes
18:30 - 19:30	360	+	334	=	694	0	90	Yes
09:30 - 10:30	279	+	390	=	669	0	43	Yes
19:30 - 20:30	286	+	259	=	545	0	81	Yes
07:00 - 08:00	200	+	646	=	846	0	7	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 12/06/2022

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.

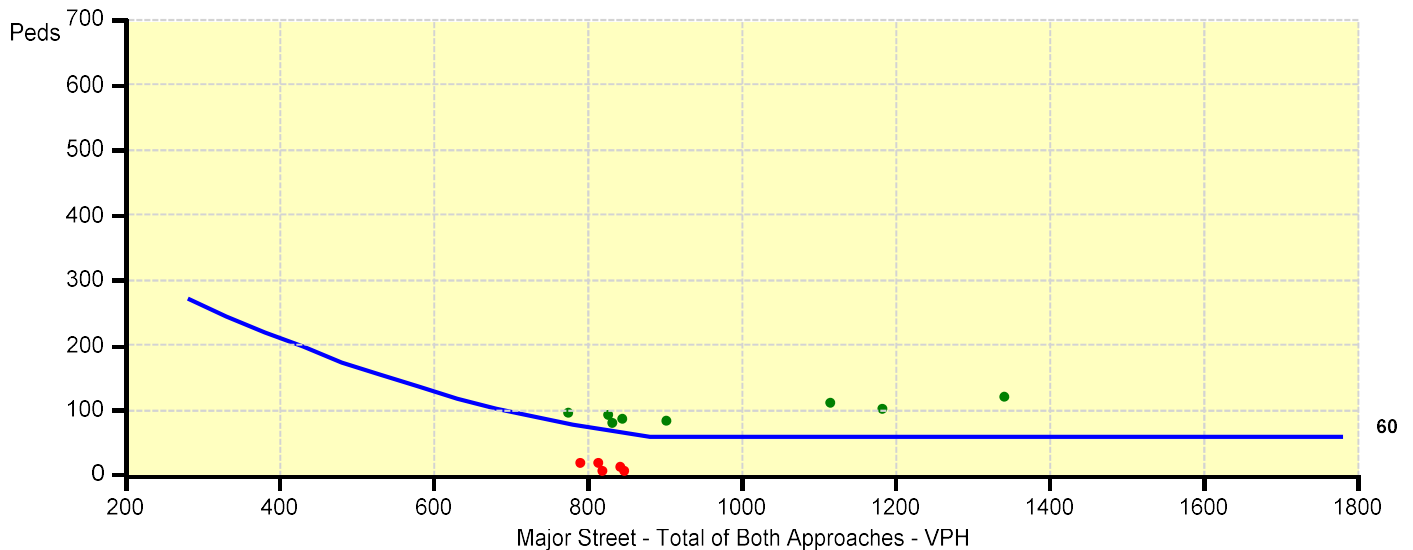
Summary

8 one hour periods meet minimums.
Warrant IS met.

Site Data Required

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

Time	Major Road					Minor Road		Met?
	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	
	CSAH 23 (Lake Dr)					N/A		
16:15 - 17:15	806	+	533	=	1339	0	120	Yes
15:15 - 16:15	697	+	484	=	1181	0	101	Yes
17:15 - 18:15	652	+	462	=	1114	0	111	Yes
14:15 - 15:15	496	+	405	=	901	0	83	Yes
13:15 - 14:15	433	+	411	=	844	0	87	Yes
11:15 - 12:15	396	+	436	=	832	0	80	Yes
12:15 - 13:15	384	+	441	=	825	0	92	Yes
18:15 - 19:15	415	+	359	=	774	0	97	Yes
07:00 - 08:00	200	+	646	=	846	0	7	No
07:15 - 08:15	207	+	634	=	841	0	11	No
06:45 - 07:45	183	+	634	=	817	0	6	No
07:30 - 08:30	235	+	578	=	813	0	18	No



ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 12/06/2022

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

11 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					Minor Road			Met?
	Major NB	+	Major SB	=	Total	Minor EB	Minor WB		
	CSAH 23 (Lake Dr)					N/A			
16:15 - 17:15	806	+	533	=	1339	0	120	Yes	
16:00 - 17:00	806	+	532	=	1338	0	119	Yes	
15:45 - 16:45	787	+	531	=	1318	0	118	Yes	
16:30 - 17:30	780	+	518	=	1298	0	112	Yes	
15:30 - 16:30	736	+	518	=	1254	0	106	Yes	
16:45 - 17:45	742	+	500	=	1242	0	112	Yes	
17:00 - 18:00	711	+	486	=	1197	0	107	Yes	
15:15 - 16:15	697	+	484	=	1181	0	101	Yes	
17:15 - 18:15	652	+	462	=	1114	0	111	Yes	
15:00 - 16:00	628	+	461	=	1089	0	104	Yes	
17:30 - 18:30	610	+	448	=	1058	0	116	Yes	
14:45 - 15:45	602		418		1020	0	89	No	

