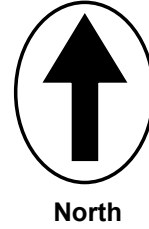


Date : 11/17/22

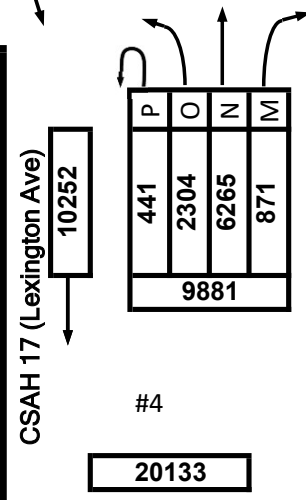
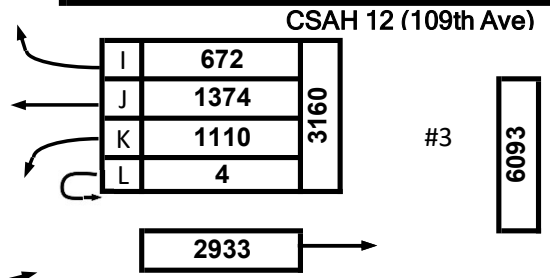
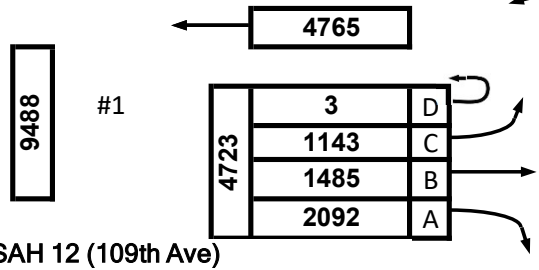
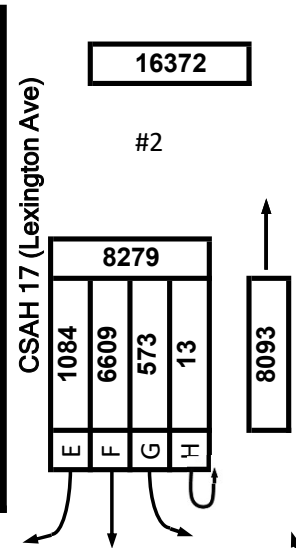
Count Number : TMC 2233

Location : CSAH 17 (Lexington Ave)
@ CSAH 12 (109th Ave)

Collection Period : 6AM - 9PM



North



EXISTING LANES OF APPROACH				
	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	TOTAL
#1	1	2	2	5
#2	0	1	2	3
#3	1	2	2	5
#4	0	1	2	3

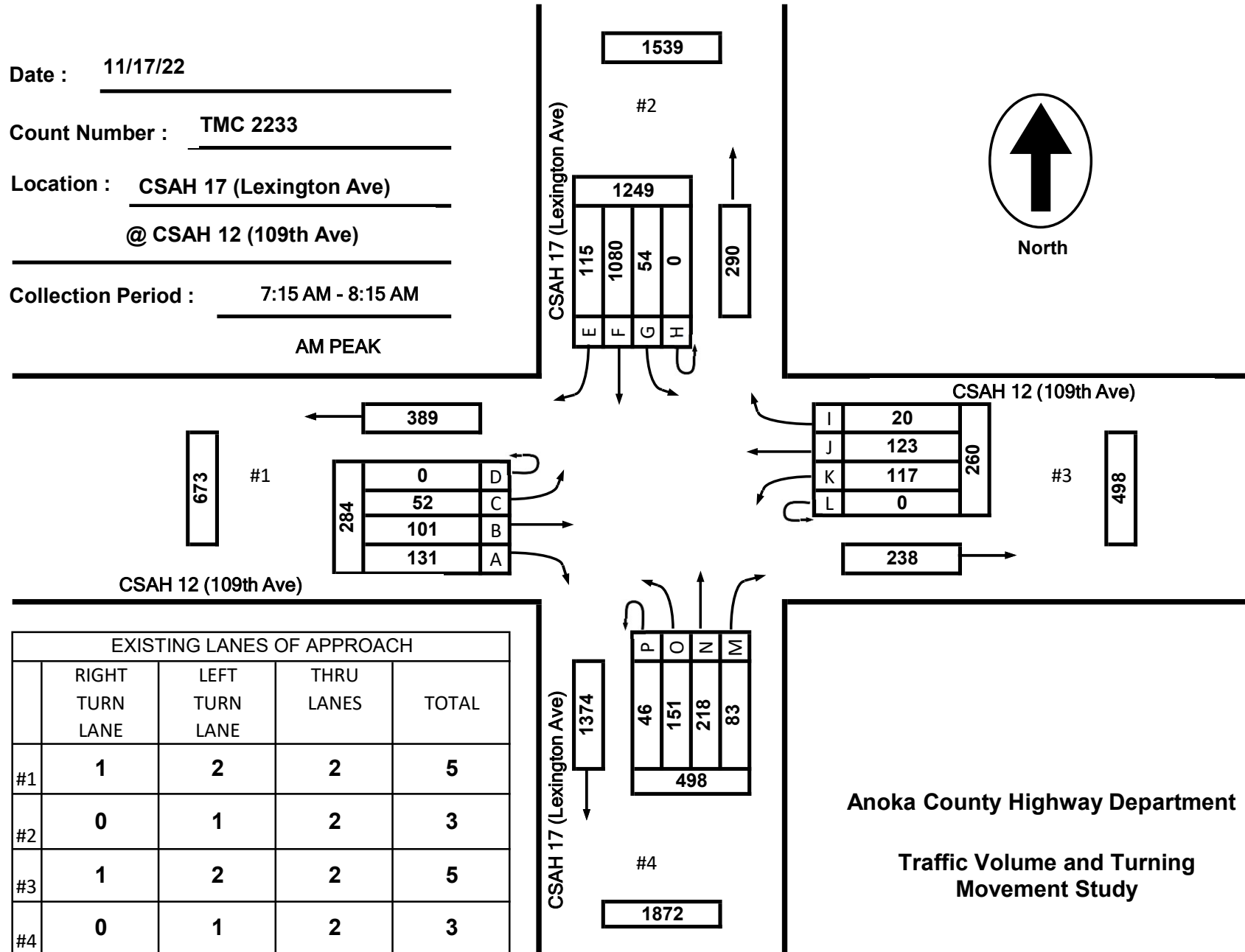
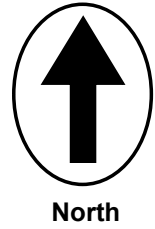
Anoka County Highway Department
 Traffic Volume and Turning Movement Study

Date : 11/17/22

Count Number : TMC 2233

Location : CSAH 17 (Lexington Ave)
@ CSAH 12 (109th Ave)

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



EXISTING LANES OF APPROACH				
	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	TOTAL
#1	1	2	2	5
#2	0	1	2	3
#3	1	2	2	5
#4	0	1	2	3

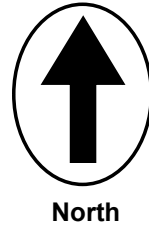
Anoka County Highway Department
 Traffic Volume and Turning Movement Study

Date : 11/17/22

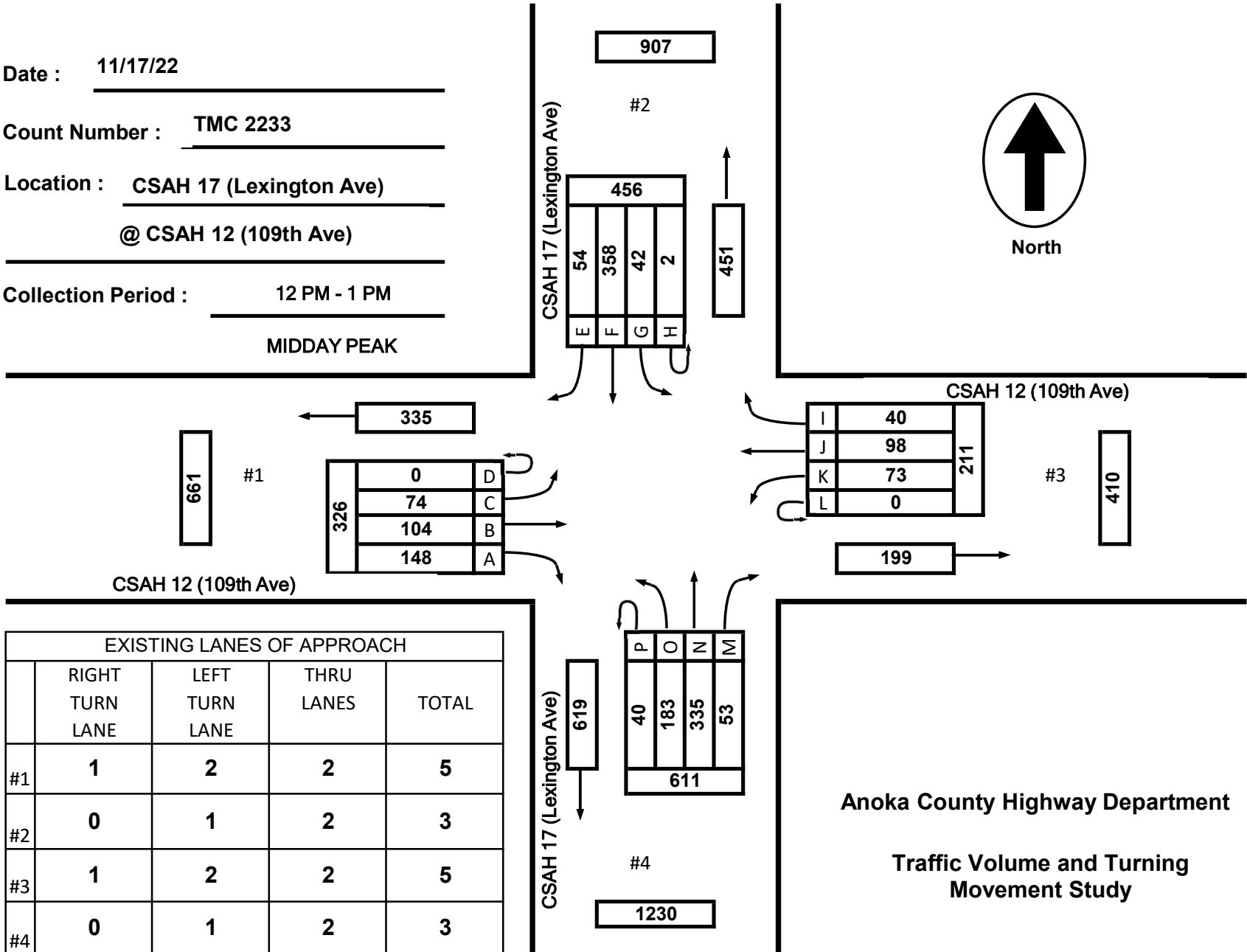
Count Number : TMC 2233

Location : CSAH 17 (Lexington Ave)
@ CSAH 12 (109th Ave)

Collection Period : 12 PM - 1 PM
MIDDAY PEAK



North



EXISTING LANES OF APPROACH				
	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	TOTAL
#1	1	2	2	5
#2	0	1	2	3
#3	1	2	2	5
#4	0	1	2	3

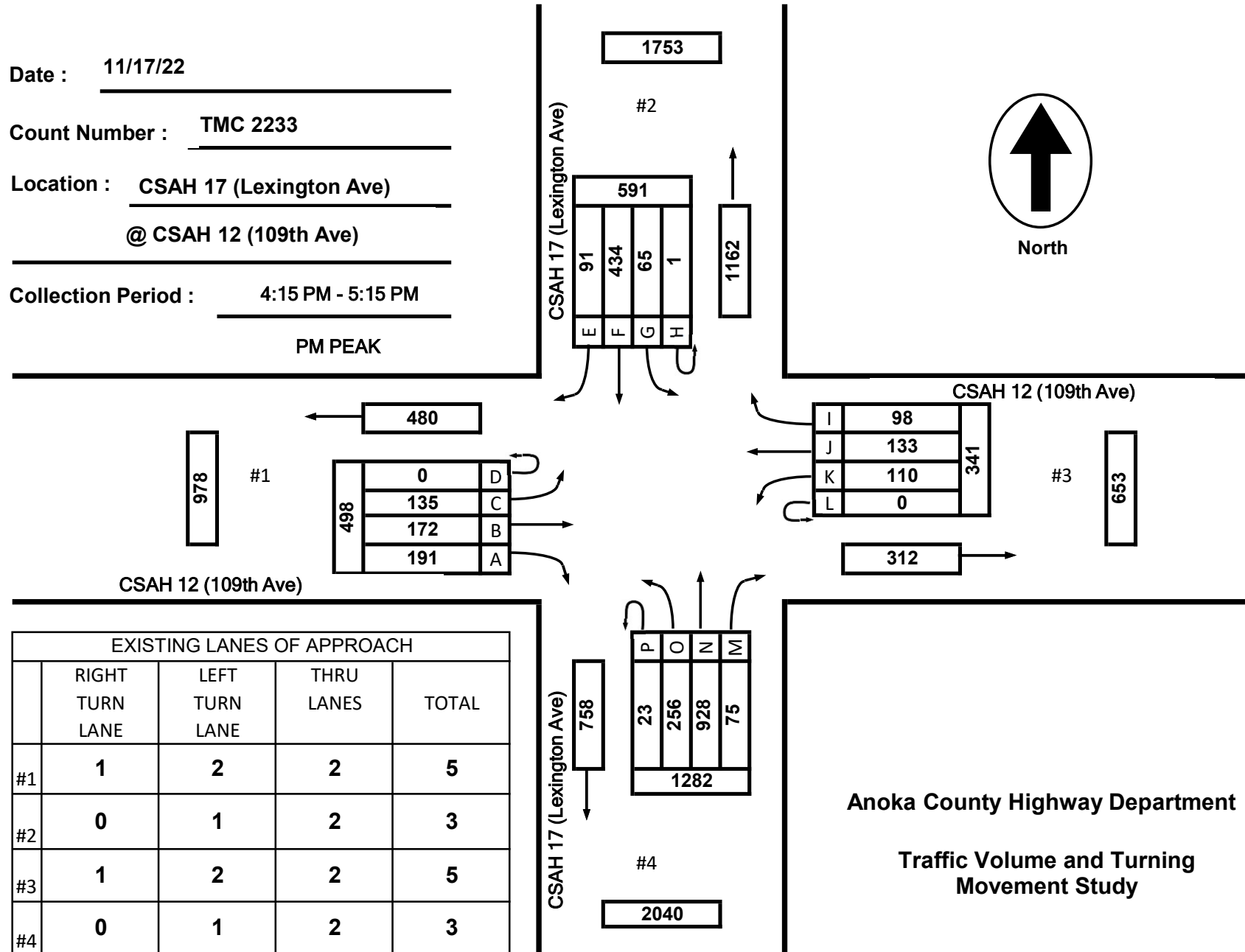
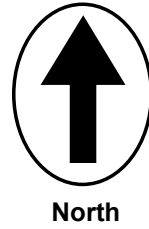
Anoka County Highway Department
Traffic Volume and Turning Movement Study

Date : 11/17/22

Count Number : TMC 2233

Location : CSAH 17 (Lexington Ave)
@ CSAH 12 (109th Ave)

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



EXISTING LANES OF APPROACH				
	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	TOTAL
#1	1	2	2	5
#2	0	1	2	3
#3	1	2	2	5
#4	0	1	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 2233-t
 Site Code :
 Start Date : 11/17/2022
 Page No : 1

Weather: Cold & Cloudy
 CountCAM 3
 Study Conducted by: Kevin

Groups Printed- Cars + - Trucks

Start Time	CSAH 17 (Lexington Ave) Southbound						CSAH 12 (109th Ave) Westbound						CSAH 17 (Lexington Ave) Northbound						CSAH 12 (109th Ave) 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	7	128	3	0	0	138	3	6	11	0	0	20	6	16	11	5	0	38	12	7	4	0	0	23	0	219	219
06:15	22	172	4	0	0	198	1	11	19	0	0	31	8	29	13	5	0	55	30	8	3	0	0	41	0	325	325
06:30	21	189	6	0	0	216	4	13	25	0	0	42	7	21	24	6	0	58	30	10	4	0	0	44	0	360	360
06:45	22	265	7	0	0	294	2	21	29	0	0	52	17	30	29	12	0	88	57	19	5	0	0	81	0	515	515
Total	72	754	20	0	0	846	10	51	84	0	0	145	38	96	77	28	0	239	129	44	16	0	0	189	0	1419	1419
07:00	23	226	12	0	0	261	2	20	27	1	0	50	12	33	36	6	0	87	29	20	3	0	0	52	0	450	450
07:15	28	315	7	0	0	350	5	27	31	0	0	63	15	37	28	12	0	92	33	25	10	0	0	68	0	573	573
07:30	28	294	13	0	0	335	4	17	32	0	0	53	19	57	47	11	0	134	33	29	8	0	0	70	0	592	592
07:45	31	251	20	0	0	302	4	48	30	0	0	82	28	55	41	15	0	139	37	26	14	0	0	77	0	600	600
Total	110	1086	52	0	0	1248	15	112	120	1	0	248	74	182	152	44	0	452	132	100	35	0	0	267	0	2215	2215
08:00	28	220	14	0	0	262	7	31	24	0	0	62	21	69	35	8	0	133	28	21	20	0	0	69	0	526	526
08:15	25	166	13	0	0	204	4	25	23	0	0	52	21	59	30	11	0	121	36	16	31	0	0	83	0	460	460
08:30	19	140	9	0	0	168	3	14	16	0	0	33	19	69	32	15	0	135	31	27	18	0	0	76	0	412	412
08:45	19	143	18	2	0	182	4	27	20	0	0	51	24	51	29	8	0	112	29	17	20	0	0	66	0	411	411
Total	91	669	54	2	0	816	18	97	83	0	0	198	85	248	126	42	0	501	124	81	89	0	0	294	0	1809	1809
09:00	22	140	18	0	0	180	9	27	16	0	0	52	30	57	25	9	0	121	32	23	25	0	0	80	0	433	433
09:15	28	121	13	0	0	162	8	22	20	0	0	50	14	72	37	8	0	131	28	14	18	0	0	60	0	403	403
09:30	21	130	7	0	0	158	6	21	15	0	0	42	17	55	40	8	0	120	35	19	23	0	0	77	0	397	397
09:45	25	111	11	0	0	147	4	22	22	0	0	48	15	50	23	9	0	97	38	18	13	0	0	69	0	361	361
Total	96	502	49	0	0	647	27	92	73	0	0	192	76	234	125	34	0	469	133	74	79	0	0	286	0	1594	1594
10:00	16	91	12	0	0	119	7	15	13	0	0	35	7	56	36	8	0	107	29	24	14	0	0	67	0	328	328
10:15	12	97	9	0	0	118	8	16	18	0	0	42	12	62	30	9	0	113	27	21	21	0	0	69	0	342	342
10:30	12	97	3	0	0	112	11	18	11	0	0	40	12	62	36	3	0	113	28	24	13	0	0	65	0	330	330
10:45	17	73	8	0	0	98	7	19	11	0	0	37	12	57	40	11	1	120	32	18	14	0	0	64	1	319	320
Total	57	358	32	0	0	447	33	68	53	0	0	154	43	237	142	31	1	453	116	87	62	0	0	265	1	1319	1320
11:00	12	90	9	0	0	111	8	19	15	0	0	42	8	68	28	13	0	117	33	25	15	0	0	73	0	343	343
11:15	18	74	8	0	0	100	9	13	18	0	0	40	16	72	45	5	0	138	23	18	21	2	0	64	0	342	342
11:30	19	80	7	2	0	108	8	28	18	0	0	54	15	66	31	10	0	122	33	32	9	0	0	74	0	358	358
11:45	12	85	10	0	0	107	10	21	18	0	0	49	15	87	56	11	0	169	24	25	12	1	0	62	0	387	387
Total	61	329	34	2	0	426	35	81	69	0	0	185	54	293	160	39	0	546	113	100	57	3	0	273	0	1430	1430



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC 2233-t
 Site Code :
 Start Date : 11/17/2022
 Page No : 2

Weather: Cold & Cloudy
 CountCAM 3
 Study Conducted by: Kevin

Groups Printed- Cars + - Trucks

Start Time	CSAH 17 (Lexington Ave) Southbound						CSAH 12 (109th Ave) Westbound						CSAH 17 (Lexington Ave) Northbound						CSAH 12 (109th Ave) 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	15	85	8	0	0	108	11	26	16	0	0	53	13	83	38	4	0	138	33	29	19	0	0	81	0	380	380
12:15	11	93	8	1	0	113	13	19	18	0	0	50	13	96	53	11	0	173	36	30	14	0	0	80	0	416	416
12:30	10	87	11	0	0	108	8	23	19	0	0	50	12	77	47	14	0	150	42	25	20	0	0	87	0	395	395
12:45	18	93	15	1	0	127	8	30	20	0	0	58	15	79	45	11	0	150	37	20	21	0	0	78	0	413	413
Total	54	358	42	2	0	456	40	98	73	0	0	211	53	335	183	40	0	611	148	104	74	0	0	326	0	1604	1604
13:00	24	82	8	0	0	114	13	16	13	0	0	42	9	80	45	7	0	141	33	16	14	0	0	63	0	360	360
13:15	14	84	13	0	0	111	15	20	17	0	0	52	11	72	47	5	0	135	41	22	19	0	0	82	0	380	380
13:30	18	73	7	0	0	98	14	25	18	0	0	57	15	97	53	5	0	170	44	29	16	0	0	89	0	414	414
13:45	16	99	7	0	0	122	16	28	22	0	0	66	11	95	30	8	0	144	52	12	13	0	0	77	0	409	409
Total	72	338	35	0	0	445	58	89	70	0	0	217	46	344	175	25	0	590	170	79	62	0	0	311	0	1563	1563
14:00	10	83	9	0	0	102	12	29	16	0	0	57	14	107	48	6	0	175	48	23	15	0	0	86	0	420	420
14:15	18	116	7	0	0	141	14	18	19	0	0	51	11	152	37	7	0	207	49	32	21	0	0	102	0	501	501
14:30	7	104	9	0	0	120	24	19	27	0	0	70	19	148	58	7	0	232	42	25	10	0	0	77	0	499	499
14:45	26	89	9	1	0	125	13	28	18	0	0	59	13	159	41	12	1	225	57	31	19	0	0	107	1	516	517
Total	61	392	34	1	0	488	63	94	80	0	0	237	57	566	184	32	1	839	196	111	65	0	0	372	1	1936	1937
15:00	17	75	8	0	0	100	21	31	31	0	0	83	17	168	61	14	0	260	42	41	20	0	0	103	0	546	546
15:15	19	93	9	0	0	121	15	24	30	0	0	69	26	204	55	4	0	289	61	31	29	0	0	121	0	600	600
15:30	13	101	12	0	0	126	17	35	22	0	0	74	26	241	84	9	0	360	54	37	27	0	0	118	0	678	678
15:45	16	98	12	0	0	126	20	35	33	1	0	89	13	217	39	15	0	284	44	25	29	0	0	98	0	597	597
Total	65	367	41	0	0	473	73	125	116	1	0	315	82	830	239	42	0	1193	201	134	105	0	0	440	0	2421	2421
16:00	16	89	9	0	0	114	31	45	30	0	0	106	24	228	62	2	0	316	49	37	35	0	0	121	0	657	657
16:15	21	112	13	1	0	147	16	34	37	0	0	87	18	239	64	7	0	328	37	41	31	0	0	109	0	671	671
16:30	20	110	12	0	0	142	30	31	28	0	0	89	18	277	62	4	0	361	54	37	36	0	0	127	0	719	719
16:45	22	104	18	0	0	144	26	31	24	0	0	81	23	208	57	4	0	292	58	39	44	0	0	141	0	658	658
Total	79	415	52	1	0	547	103	141	119	0	0	363	83	952	245	17	0	1297	198	154	146	0	0	498	0	2705	2705
17:00	28	108	22	0	0	158	26	37	21	0	0	84	16	204	73	8	0	301	42	55	24	0	0	121	0	664	664
17:15	25	116	14	1	0	156	17	36	23	0	0	76	23	192	45	7	0	267	53	47	43	0	0	143	0	642	642
17:30	24	111	13	0	0	148	18	28	13	0	0	59	7	188	45	3	0	243	41	37	30	0	0	108	0	558	558
17:45	24	97	17	2	0	140	15	19	10	0	0	44	20	171	29	8	0	228	28	31	17	0	0	76	0	488	488
Total	101	432	66	3	0	602	76	120	67	0	0	263	66	755	192	26	0	1039	164	170	114	0	0	448	0	2352	2352
18:00	17	101	7	0	0	125	18	26	20	0	0	64	6	132	32	2	0	172	37	34	30	0	0	101	0	462	462
18:15	18	88	11	0	0	117	11	21	12	0	0	44	13	134	33	7	0	187	30	24	23	0	0	77	0	425	425
18:30	19	61	8	0	0	88	11	33	7	2	0	53	16	133	31	4	0	184	29	26	25	0	0	80	0	405	405



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC 2233-t
 Site Code :
 Start Date : 11/17/2022
 Page No : 3

Weather: Cold & Cloudy
 CountCAM 3
 Study Conducted by: Kevin

Groups Printed- Cars + - Trucks

Start Time	CSAH 17 (Lexington Ave) Southbound						CSAH 12 (109th Ave) Westbound						CSAH 17 (Lexington Ave) Northbound						CSAH 12 (109th Ave) 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	14	74	6	0	0	94	18	21	7	0	0	46	14	125	42	8	0	189	23	23	22	0	0	68	0	397	397
Total	68	324	32	0	0	424	58	101	46	2	0	207	49	524	138	21	0	732	119	107	100	0	0	326	0	1689	1689
19:00	16	45	3	0	0	64	14	16	8	0	0	38	13	109	39	5	0	166	23	21	26	0	0	70	0	338	338
19:15	12	34	5	0	0	51	10	19	12	0	0	41	13	94	29	5	0	141	31	23	18	0	0	72	0	305	305
19:30	18	36	2	0	0	56	11	17	10	0	0	38	4	74	21	3	0	102	18	17	17	0	0	52	0	248	248
19:45	9	38	4	0	0	51	9	14	7	0	0	30	8	78	20	1	0	107	16	19	19	0	0	54	0	242	242
Total	55	153	14	0	0	222	44	66	37	0	0	147	38	355	109	14	0	516	88	80	80	0	0	248	0	1133	1133
20:00	8	39	2	0	0	49	3	13	5	0	0	21	5	87	15	2	0	109	16	21	25	0	0	62	0	241	241
20:15	16	32	4	0	0	52	9	8	2	0	0	19	6	102	17	2	0	127	19	15	16	0	0	50	0	248	248
20:30	9	29	3	0	0	41	4	10	8	0	0	22	9	67	13	2	0	91	14	13	10	0	0	37	0	191	191
20:45	9	32	7	2	0	50	3	8	5	0	0	16	7	58	12	0	0	77	12	11	8	0	0	31	0	174	174
Total	42	132	16	2	0	192	19	39	20	0	0	78	27	314	57	6	0	404	61	60	59	0	0	180	0	854	854
Grand Total	1084	6609	573	13	0	8279	672	1374	1110	4	0	3160	871	6265	2304	441	2	9881	2092	1485	1143	3	0	4723	2	26043	26045
Apprch %	13.1	79.8	6.9	0.2			21.3	43.5	35.1	0.1			8.8	63.4	23.3	4.5			44.3	31.4	24.2	0.1					
Total %	4.2	25.4	2.2	0		31.8	2.6	5.3	4.3	0		12.1	3.3	24.1	8.8	1.7		37.9	8	5.7	4.4	0		18.1	0	100	
Cars +	1050	6477	563	11		8101	659	1336	1055	4		3054	828	6104	2242	439		9615	2018	1446	1099	3		4566	0	0	25336
% Cars +	96.9	98	98.3	84.6	0	97.8	98.1	97.2	95	100	0	96.6	95.1	97.4	97.3	99.5	100	97.3	96.5	97.4	96.2	100	0	96.7	0	0	97.3
Trucks	34	132	10	2		178	13	38	55	0		106	43	161	62	2		268	74	39	44	0		157	0	0	709
% Trucks	3.1	2	1.7	15.4	0	2.2	1.9	2.8	5	0	0	3.4	4.9	2.6	2.7	0.5	0	2.7	3.5	2.6	3.8	0	0	3.3	0	0	2.7

Start Time	CSAH 17 (Lexington Ave) Southbound						CSAH 12 (109th Ave) Westbound						CSAH 17 (Lexington Ave) Northbound						CSAH 12 (109th Ave) 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 07:15																											
07:15	28	315	7	0		350	5	27	31	0		63	15	37	28	12		92	33	25	10	0		68			573
07:30	28	294	13	0		335	4	17	32	0		53	19	57	47	11		134	33	29	8	0		70			592
07:45	31	251	20	0		302	4	48	30	0		82	28	55	41	15		139	37	26	14	0		77			600
08:00	28	220	14	0		262	7	31	24	0		62	21	69	35	8		133	28	21	20	0		69			526
Total Volume	115	1080	54	0		1249	20	123	117	0		260	83	218	151	46		498	131	101	52	0		284			2291
% App. Total	9.2	86.5	4.3	0			7.7	47.3	45	0			16.7	43.8	30.3	9.2			46.1	35.6	18.3	0					
PHF	.927	.857	.675	.000		.892	.714	.641	.914	.000		.793	.741	.790	.803	.767		.896	.885	.871	.650	.000		.922			.955



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC 2233-t
 Site Code :
 Start Date : 11/17/2022
 Page No : 4

Weather: Cold & Cloudy
 CountCAM 3
 Study Conducted by: Kevin

Start Time	CSAH 17 (Lexington Ave) Southbound					CSAH 12 (109th Ave) Westbound					CSAH 17 (Lexington Ave) Northbound					CSAH 12 (109th Ave) 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 12:00																					
12:00	15	85	8	0	108	11	26	16	0	53	13	83	38	4	138	33	29	19	0	81	380
12:15	11	93	8	1	113	13	19	18	0	50	13	96	53	11	173	36	30	14	0	80	416
12:30	10	87	11	0	108	8	23	19	0	50	12	77	47	14	150	42	25	20	0	87	395
12:45	18	93	15	1	127	8	30	20	0	58	15	79	45	11	150	37	20	21	0	78	413
Total Volume	54	358	42	2	456	40	98	73	0	211	53	335	183	40	611	148	104	74	0	326	1604
% App. Total	11.8	78.5	9.2	0.4		19	46.4	34.6	0		8.7	54.8	30	6.5		45.4	31.9	22.7	0		
PHF	.750	.962	.700	.500	.898	.769	.817	.913	.000	.909	.883	.872	.863	.714	.883	.881	.867	.881	.000	.937	.964

Peak Hour Analysis From 14:00 to 20:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:15																					
16:15	21	112	13	1	147	16	34	37	0	87	18	239	64	7	328	37	41	31	0	109	671
16:30	20	110	12	0	142	30	31	28	0	89	18	277	62	4	361	54	37	36	0	127	719
16:45	22	104	18	0	144	26	31	24	0	81	23	208	57	4	292	58	39	44	0	141	658
17:00	28	108	22	0	158	26	37	21	0	84	16	204	73	8	301	42	55	24	0	121	664
Total Volume	91	434	65	1	591	98	133	110	0	341	75	928	256	23	1282	191	172	135	0	498	2712
% App. Total	15.4	73.4	11	0.2		28.7	39	32.3	0		5.9	72.4	20	1.8		38.4	34.5	27.1	0		
PHF	.813	.969	.739	.250	.935	.817	.899	.743	.000	.958	.815	.838	.877	.719	.888	.823	.782	.767	.000	.883	.943



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

Weather: Cold & Cloudy
 CountCAM 3
 Study Conducted by: Kevin

File Name : TMC 2233-t
 Site Code :
 Start Date : 11/17/2022
 Page No : 1

Groups Printed- Trucks

Start Time	CSAH 17 (Lexington Ave) Southbound					CSAH 12 (109th Ave) Westbound					CSAH 17 (Lexington Ave) Northbound					CSAH 12 (109th Ave) 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	0	0	0	0	0	0	0	0	0	0	2	1	0	3	0	1	0	0	1	4
06:15	2	2	0	0	4	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	6
06:30	0	3	0	0	3	0	0	2	0	2	1	1	0	0	2	0	1	0	0	1	8
06:45	1	3	0	0	4	0	1	2	0	3	1	3	1	0	5	3	0	1	0	4	16
Total	3	8	0	0	11	0	1	4	0	5	2	6	2	0	10	4	3	1	0	8	34
07:00	1	2	0	0	3	1	2	1	0	4	1	2	2	0	5	3	1	0	0	4	16
07:15	3	7	0	0	10	0	2	1	0	3	0	4	1	0	5	1	3	0	0	4	22
07:30	2	3	0	0	5	0	0	1	0	1	1	2	2	0	5	0	1	0	0	1	12
07:45	0	3	1	0	4	0	3	3	0	6	2	2	1	0	5	3	1	1	0	5	20
Total	6	15	1	0	22	1	7	6	0	14	4	10	6	0	20	7	6	1	0	14	70
08:00	1	2	0	0	3	0	0	1	0	1	0	2	2	0	4	2	1	2	0	5	13
08:15	2	3	0	0	5	0	0	0	0	0	2	5	2	0	9	2	2	3	0	7	21
08:30	1	2	0	0	3	0	0	1	0	1	1	4	1	0	6	1	0	3	0	4	14
08:45	1	4	0	2	7	2	0	1	0	3	2	3	4	0	9	0	0	2	0	2	21
Total	5	11	0	2	18	2	0	3	0	5	5	14	9	0	28	5	3	10	0	18	69
09:00	0	2	0	0	2	0	1	2	0	3	2	2	0	0	4	2	2	4	0	8	17
09:15	1	2	0	0	3	1	0	2	0	3	0	5	1	0	6	2	1	0	0	3	15
09:30	1	3	0	0	4	0	1	0	0	1	1	4	1	0	6	3	0	1	0	4	15
09:45	0	0	0	0	0	0	5	0	0	5	0	5	1	1	7	4	2	1	0	7	19
Total	2	7	0	0	9	1	7	4	0	12	3	16	3	1	23	11	5	6	0	22	66
10:00	1	1	0	0	2	0	2	0	0	2	1	1	4	0	6	1	1	0	0	2	12
10:15	0	2	0	0	2	0	0	2	0	2	2	3	2	0	7	1	0	0	0	1	12
10:30	1	5	0	0	6	0	2	1	0	3	1	5	5	0	11	2	2	2	0	6	26
10:45	1	3	0	0	4	0	2	2	0	4	2	3	1	0	6	1	0	3	0	4	18
Total	3	11	0	0	14	0	6	5	0	11	6	12	12	0	30	5	3	5	0	13	68
11:00	0	5	0	0	5	1	1	3	0	5	0	5	2	0	7	2	1	0	0	3	20
11:15	1	0	1	0	2	0	1	0	0	1	2	5	2	0	9	1	1	1	0	3	15
11:30	0	3	0	0	3	0	0	3	0	3	1	3	4	1	9	1	1	0	0	2	17
11:45	0	6	0	0	6	0	2	3	0	5	2	3	0	0	5	1	1	0	0	2	18
Total	1	14	1	0	16	1	4	9	0	14	5	16	8	1	30	5	4	1	0	10	70
12:00	0	1	1	0	2	1	2	2	0	5	0	1	1	0	2	1	2	0	0	3	12
12:15	1	3	0	0	4	1	0	1	0	2	1	7	1	0	9	1	0	0	0	1	16
12:30	0	0	0	0	0	1	0	1	0	2	1	2	2	0	5	1	0	4	0	5	12
12:45	0	2	1	0	3	0	1	0	0	1	2	2	2	0	6	0	1	1	0	2	12
Total	1	6	2	0	9	3	3	4	0	10	4	12	6	0	22	3	3	5	0	11	52
13:00	2	2	0	0	4	0	0	1	0	1	2	1	0	0	3	2	0	3	0	5	13
13:15	1	3	1	0	5	1	0	1	0	2	1	3	0	0	4	1	0	0	0	1	12
13:30	3	2	0	0	5	0	0	1	0	1	2	2	2	0	6	6	2	0	0	8	20
13:45	0	4	0	0	4	1	1	2	0	4	1	0	1	0	2	3	1	0	0	4	14
Total	6	11	1	0	18	2	1	5	0	8	6	6	3	0	15	12	3	3	0	18	59
14:00	0	4	0	0	4	2	1	1	0	4	1	3	2	0	6	2	0	1	0	3	17
14:15	0	3	0	0	3	1	2	1	0	4	0	3	0	0	3	3	0	0	0	3	13
14:30	0	2	1	0	3	0	0	0	0	0	0	4	1	0	5	2	0	1	0	3	11
14:45	0	3	1	0	4	0	0	0	0	0	1	2	0	0	3	3	0	1	0	4	11
Total	0	12	2	0	14	3	3	2	0	8	2	12	3	0	17	10	0	3	0	13	52
15:00	0	4	0	0	4	0	0	3	0	3	2	3	0	0	5	0	2	1	0	3	15



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC 2233-t
 Site Code :
 Start Date : 11/17/2022
 Page No : 2

Weather: Cold & Cloudy
 CountCAM 3
 Study Conducted by: Kevin

Groups Printed- Trucks

Start Time	CSAH 17 (Lexington Ave) Southbound					CSAH 12 (109th Ave) Westbound					CSAH 17 (Lexington Ave) Northbound					CSAH 12 (109th Ave) 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	3	4	0	0	7	0	0	0	0	0	0	9	1	0	10	1	0	2	0	3	20
15:30	0	5	1	0	6	0	0	1	0	1	1	6	3	0	10	2	1	0	0	3	20
15:45	0	2	0	0	2	0	1	0	0	1	0	6	0	0	6	1	0	1	0	2	11
Total	3	15	1	0	19	0	1	4	0	5	3	24	4	0	31	4	3	4	0	11	66
16:00	1	5	0	0	6	0	0	3	0	3	1	1	1	0	3	0	0	2	0	2	14
16:15	2	3	1	0	6	0	2	1	0	3	1	3	1	0	5	0	1	0	0	1	15
16:30	0	1	0	0	1	0	0	0	0	0	0	5	1	0	6	2	1	1	0	4	11
16:45	0	1	1	0	2	0	0	1	0	1	1	2	1	0	4	2	0	1	0	3	10
Total	3	10	2	0	15	0	2	5	0	7	3	11	4	0	18	4	2	4	0	10	50
17:00	0	1	0	0	1	0	0	0	0	0	0	5	1	0	6	0	0	0	0	0	7
17:15	0	1	0	0	1	0	1	0	0	1	0	3	0	0	3	1	1	0	0	2	7
17:30	1	1	0	0	2	0	0	1	0	1	0	1	0	0	1	1	1	0	0	2	6
17:45	0	2	0	0	2	0	1	0	0	1	0	4	0	0	4	0	0	0	0	0	7
Total	1	5	0	0	6	0	2	1	0	3	0	13	1	0	14	2	2	0	0	4	27
18:00	0	3	0	0	3	0	0	1	0	1	0	0	0	0	0	1	1	0	0	2	6
18:15	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
18:30	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
18:45	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	3
Total	0	4	0	0	4	0	0	1	0	1	0	4	1	0	5	1	1	0	0	2	12
19:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
19:15	0	1	0	0	1	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	4
19:30	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	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	0	0	0	0
Total	0	2	0	0	2	0	0	2	0	2	0	2	0	0	2	0	0	1	0	1	7
20:00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
20:15	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	2
20:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:45	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	4
Total	0	1	0	0	1	0	1	0	0	1	0	3	0	0	3	1	1	0	0	2	7
Grand Total	34	132	10	2	178	13	38	55	0	106	43	161	62	2	268	74	39	44	0	157	709
Apprch %	19.1	74.2	5.6	1.1		12.3	35.8	51.9	0		16	60.1	23.1	0.7		47.1	24.8	28	0		
Total %	4.8	18.6	1.4	0.3	25.1	1.8	5.4	7.8	0	15	6.1	22.7	8.7	0.3	37.8	10.4	5.5	6.2	0	22.1	

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 11/17/2022

Signal Warrants - Summary

Major Street Approaches

Northbound: CSAH 17 (Lexington Ave)

Number of Lanes : 2+

Total Approach Volume: 9,881

Southbound: CSAH 17 (Lexington Ave)

Number of Lanes :2+

Total Approach Volume: 8,279

Minor Street Approaches

Eastbound: CSAH 12 (109th Ave)

Number of Lanes :2+

Total Approach Volume: 4,723

Westbound: CSAH 12 (109th Ave)

Number of Lanes :2+

Total Approach Volume: 3,160

Warrant Summary (Rural Values Apply)

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

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

Required volumes reached for 15 hours, 8 are needed

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

Required volumes reached for 14 hours, 8 are needed

Warrant 1C - Combination of Warrants.....Satisfied

Required 1A volumes reached for 15 hours, 8 are needed

Required 1B volumes reached for 15 hours, 8 are needed

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

Number of hours (15) volumes exceed minimum >= minimum required (4).

Warrant 3 - Peak Hour.....Satisfied

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

Number of one hour periods (57) 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 : 11/17/2022

Warrant 1A - Minimum Volumes

Description

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

Summary

15 one hour periods meet minimums.
Warrant IS met.

Site Data Required

Rural Settings Apply = **True**
 Number of Major Lanes = **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				Total	Minor Road		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
	CSAH 17 (Lexington Ave)					CSAH 12 (109th Ave)		
16:00 - 17:00	1297	+	547	=	1844	498	363	Yes
07:00 - 08:00	452	+	1248	=	1700	267	248	Yes
15:00 - 16:00	1193	+	473	=	1666	440	315	Yes
17:00 - 18:00	1039	+	602	=	1641	448	263	Yes
14:00 - 15:00	839	+	488	=	1327	372	237	Yes
08:00 - 09:00	501	+	816	=	1317	294	198	Yes
18:00 - 19:00	732	+	424	=	1156	326	207	Yes
09:00 - 10:00	469	+	647	=	1116	286	192	Yes
06:00 - 07:00	239	+	846	=	1085	189	145	Yes
12:00 - 13:00	611	+	456	=	1067	326	211	Yes
13:00 - 14:00	590	+	445	=	1035	311	217	Yes
11:00 - 12:00	546	+	426	=	972	273	185	Yes
10:00 - 11:00	453	+	447	=	900	265	154	Yes
19:00 - 20:00	516	+	222	=	738	248	147	Yes
20:00 - 21:00	404	+	192	=	596	180	78	Yes
05:45 - 06:45	151	+	552	=	703	108	93	No
05:30 - 06:30	93	+	336	=	429	64	51	No
05:15 - 06:15	38	+	138	=	176	23	20	No
00:00 - 01:00	0	+	0	=	0	0	0	No
00:15 - 01:15	0	+	0	=	0	0	0	No
00:30 - 01:30	0	+	0	=	0	0	0	No
00:45 - 01:45	0	+	0	=	0	0	0	No
01:00 - 02:00	0	+	0	=	0	0	0	No
01:15 - 02:15	0	+	0	=	0	0	0	No
01:30 - 02:30	0		0		0	0	0	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 11/17/2022

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

14 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**

Volume Requirements

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

Time	Major Road				Total	Minor Road		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
	CSAH 17 (Lexington Ave)					CSAH 12 (109th Ave)		
15:45 - 16:45	1289	+	529	=	1818	455	371	Yes
16:45 - 17:45	1103	+	606	=	1709	513	300	Yes
06:45 - 07:45	401	+	1240	=	1641	271	218	Yes
14:45 - 15:45	1134	+	472	=	1606	449	285	Yes
07:45 - 08:45	528	+	936	=	1464	305	229	Yes
13:45 - 14:45	758	+	485	=	1243	342	244	Yes
17:45 - 18:45	771	+	470	=	1241	334	205	Yes
08:45 - 09:45	484	+	682	=	1166	283	195	Yes
11:45 - 12:45	630	+	436	=	1066	310	202	Yes
12:45 - 13:45	596	+	450	=	1046	312	209	Yes
09:45 - 10:45	430	+	496	=	926	270	165	Yes
10:45 - 11:45	497	+	417	=	914	275	173	Yes
18:45 - 19:45	598	+	265	=	863	262	163	Yes
05:45 - 06:45	151	+	552	=	703	108	93	Yes
19:45 - 20:45	434	+	193	=	627	203	92	No
20:00 - 21:00	404	+	192	=	596	180	78	No
20:15 - 21:15	295	+	143	=	438	118	57	No
05:30 - 06:30	93	+	336	=	429	64	51	No
20:30 - 21:30	168	+	91	=	259	68	38	No
05:15 - 06:15	38	+	138	=	176	23	20	No
20:45 - 21:45	77	+	50	=	127	31	16	No
04:30 - 05:30	0	+	0	=	0	0	0	No
04:45 - 05:45	0	+	0	=	0	0	0	No
05:00 - 06:00	0	+	0	=	0	0	0	No
04:15 - 05:15	0		0		0	0	0	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 11/17/2022

Warrant 1C Combination of Warrants

Description

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

Summary

15 hours meet 1A minimums.
15 hours meet 1B 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**

Volume Requirements

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

Veh/Hr Minor = **112 56**

Major Road CSAH 17 (Lexington Ave)

Minor Road CSAH 12 (109th Ave)

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1A?
16:00 - 17:00	1297	+	547	=	1844	498	363	Yes
07:00 - 08:00	452	+	1248	=	1700	267	248	Yes
15:00 - 16:00	1193	+	473	=	1666	440	315	Yes
17:00 - 18:00	1039	+	602	=	1641	448	263	Yes
14:00 - 15:00	839	+	488	=	1327	372	237	Yes
08:00 - 09:00	501	+	816	=	1317	294	198	Yes
18:00 - 19:00	732	+	424	=	1156	326	207	Yes
09:00 - 10:00	469	+	647	=	1116	286	192	Yes
06:00 - 07:00	239	+	846	=	1085	189	145	Yes
12:00 - 13:00	611	+	456	=	1067	326	211	Yes
13:00 - 14:00	590	+	445	=	1035	311	217	Yes
11:00 - 12:00	546	+	426	=	972	273	185	Yes

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1B?
15:45 - 16:45	1289	+	529	=	1818	455	371	Yes
16:45 - 17:45	1103	+	606	=	1709	513	300	Yes
06:45 - 07:45	401	+	1240	=	1641	271	218	Yes
14:45 - 15:45	1134	+	472	=	1606	449	285	Yes
07:45 - 08:45	528	+	936	=	1464	305	229	Yes
13:45 - 14:45	758	+	485	=	1243	342	244	Yes
17:45 - 18:45	771	+	470	=	1241	334	205	Yes
08:45 - 09:45	484	+	682	=	1166	283	195	Yes
11:45 - 12:45	630	+	436	=	1066	310	202	Yes
12:45 - 13:45	596	+	450	=	1046	312	209	Yes
09:45 - 10:45	430	+	496	=	926	270	165	Yes
10:45 - 11:45	497	+	417	=	914	275	173	Yes

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 11/17/2022

Warrant 2 - Four Hour Volumes

Description

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

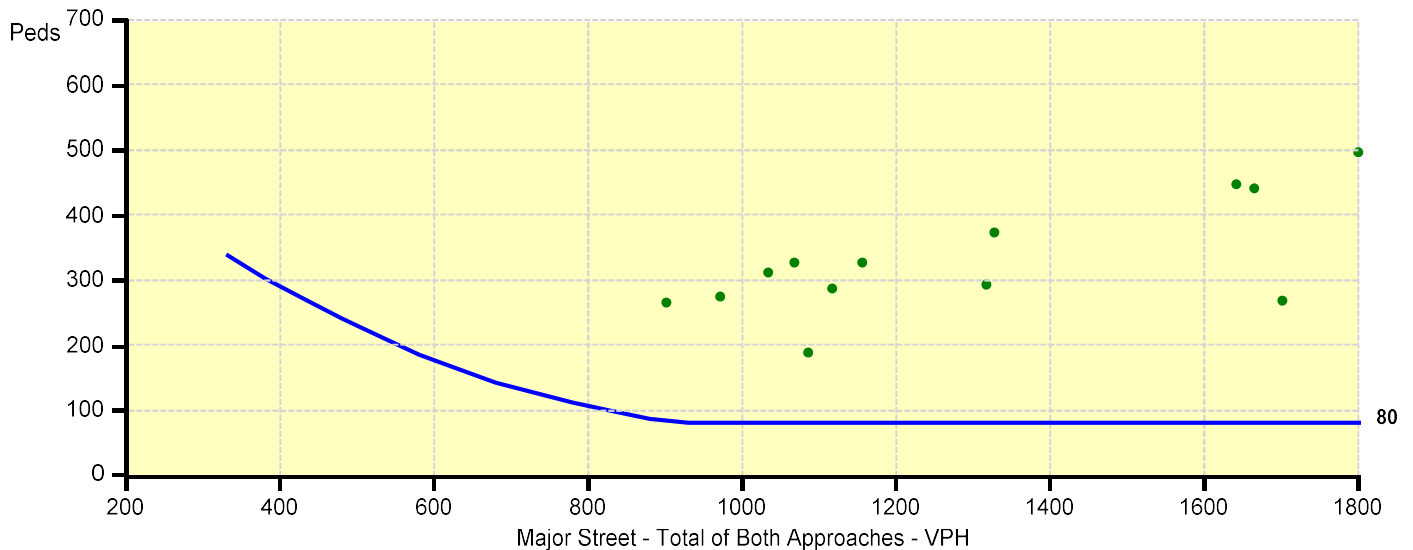
Summary

15 one hour periods meet minimums.
Warrant IS met.

Site Data Required

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

Time	Major Road CSAH 17 (Lexington Ave)					Minor Road CSAH 12 (109th Ave)		Met?
	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	
16:00 - 17:00	1297	+	547	=	1844	498	363	Yes
07:00 - 08:00	452	+	1248	=	1700	267	248	Yes
15:00 - 16:00	1193	+	473	=	1666	440	315	Yes
17:00 - 18:00	1039	+	602	=	1641	448	263	Yes
14:00 - 15:00	839	+	488	=	1327	372	237	Yes
08:00 - 09:00	501	+	816	=	1317	294	198	Yes
18:00 - 19:00	732	+	424	=	1156	326	207	Yes
09:00 - 10:00	469	+	647	=	1116	286	192	Yes
06:00 - 07:00	239	+	846	=	1085	189	145	Yes
12:00 - 13:00	611	+	456	=	1067	326	211	Yes
13:00 - 14:00	590	+	445	=	1035	311	217	Yes
11:00 - 12:00	546	+	426	=	972	273	185	Yes



ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name:

Study Date : 11/17/2022

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

53 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 17 (Lexington Ave)					Minor Road CSAH 12 (109th Ave)		Met?
	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	
16:15 - 17:15	1282	+	591	=	1873	498	341	Yes
16:00 - 17:00	1297	+	547	=	1844	498	363	Yes
16:30 - 17:30	1221	+	600	=	1821	532	330	Yes
15:45 - 16:45	1289	+	529	=	1818	455	371	Yes
15:30 - 16:30	1288	+	513	=	1801	446	356	Yes
07:15 - 08:15	498	+	1249	=	1747	284	260	Yes
15:15 - 16:15	1249	+	487	=	1736	458	338	Yes
16:45 - 17:45	1103	+	606	=	1709	513	300	Yes
07:00 - 08:00	452	+	1248	=	1700	267	248	Yes
15:00 - 16:00	1193	+	473	=	1666	440	315	Yes
17:00 - 18:00	1039	+	602	=	1641	448	263	Yes
06:45 - 07:45	401	+	1240	=	1641	271	218	Yes

