

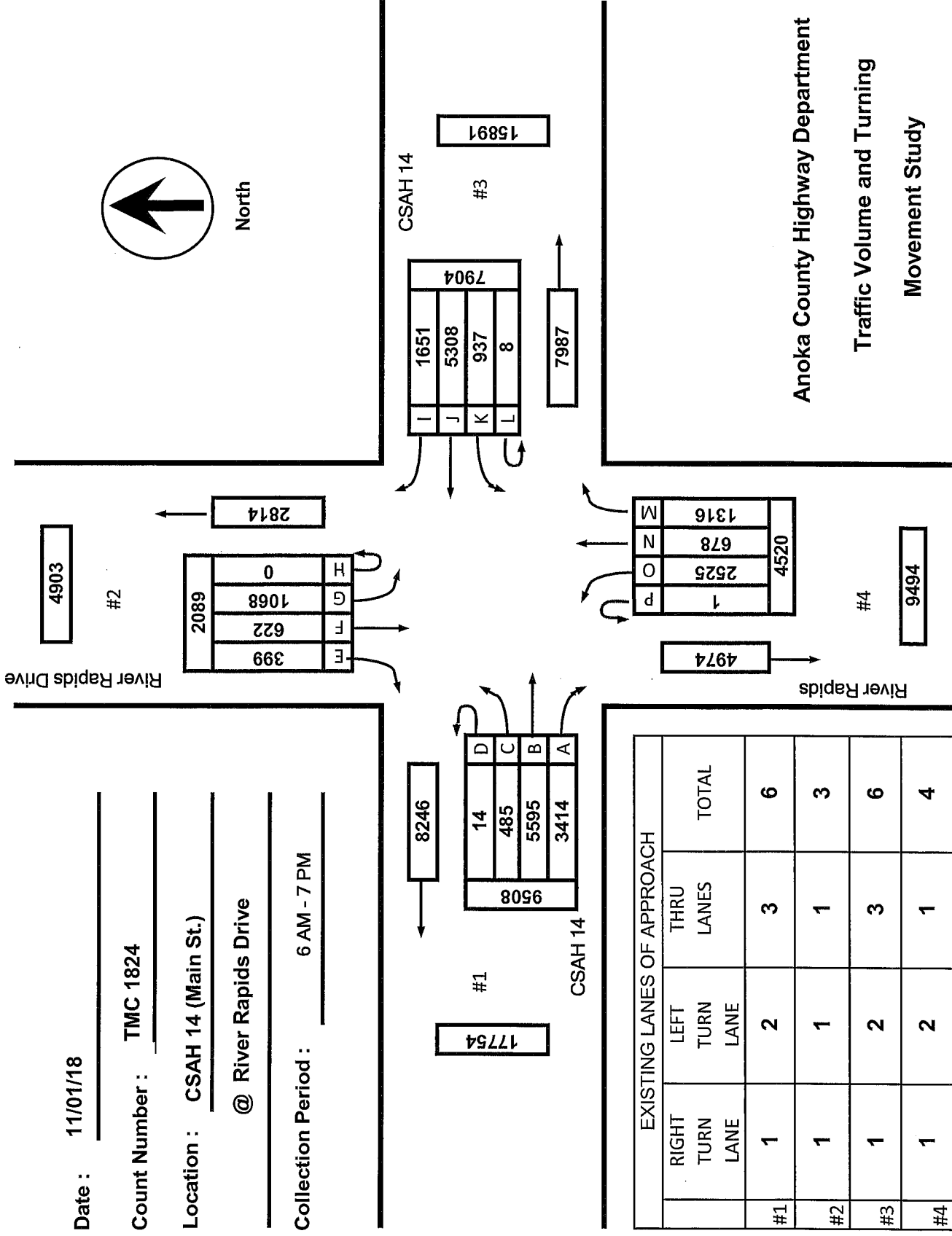
Date : 11/01/18

Count Number : TMC 1824

Location : CSAH 14 (Main St.)

@ River Rapids Drive

Collection Period : 6 AM - 7 PM



Date : 11/01/18

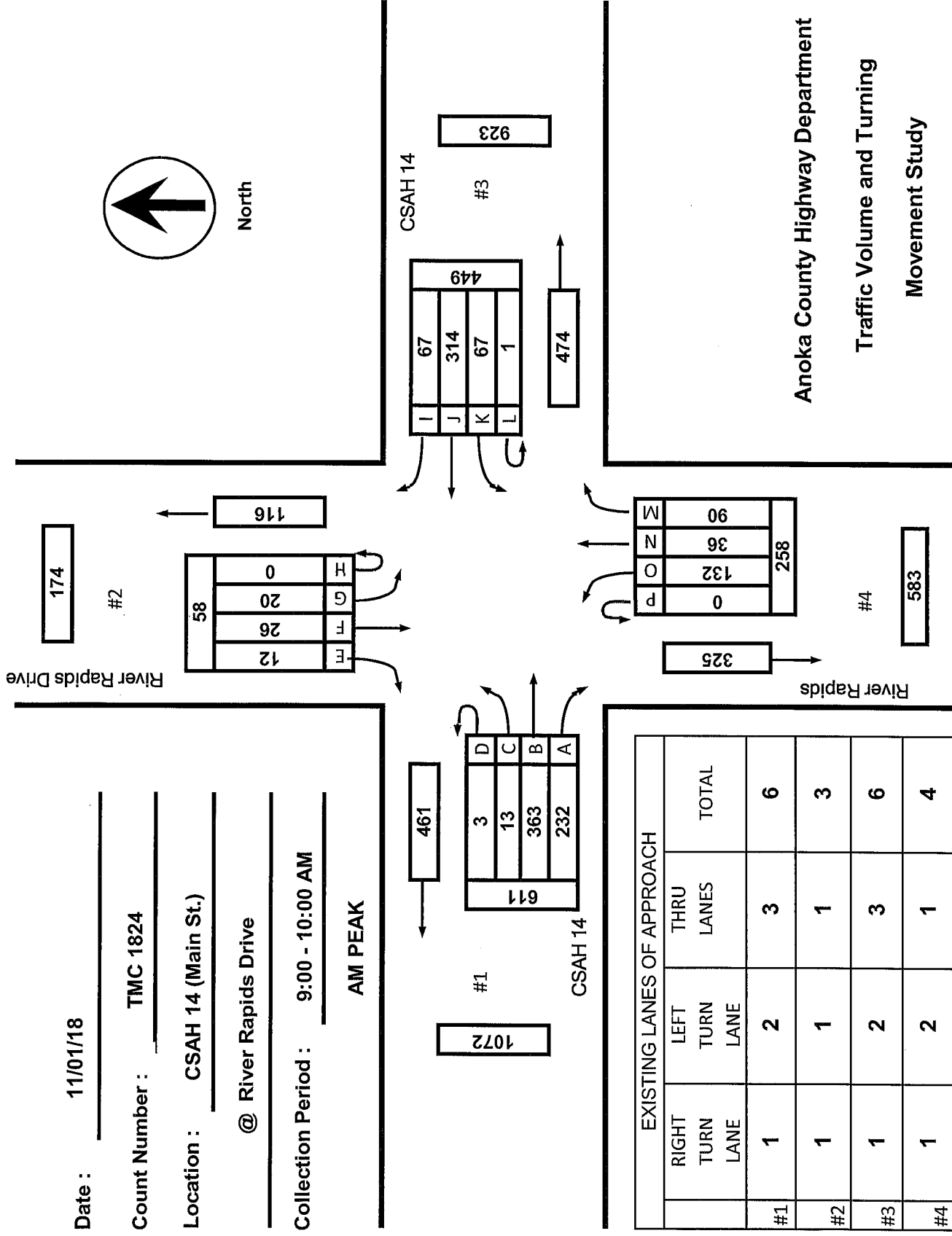
Count Number : TMC 1824

Location : CSAH 14 (Main St.)

@ River Rapids Drive

Collection Period : 9:00 - 10:00 AM

AM PEAK



Date : 11/01/18

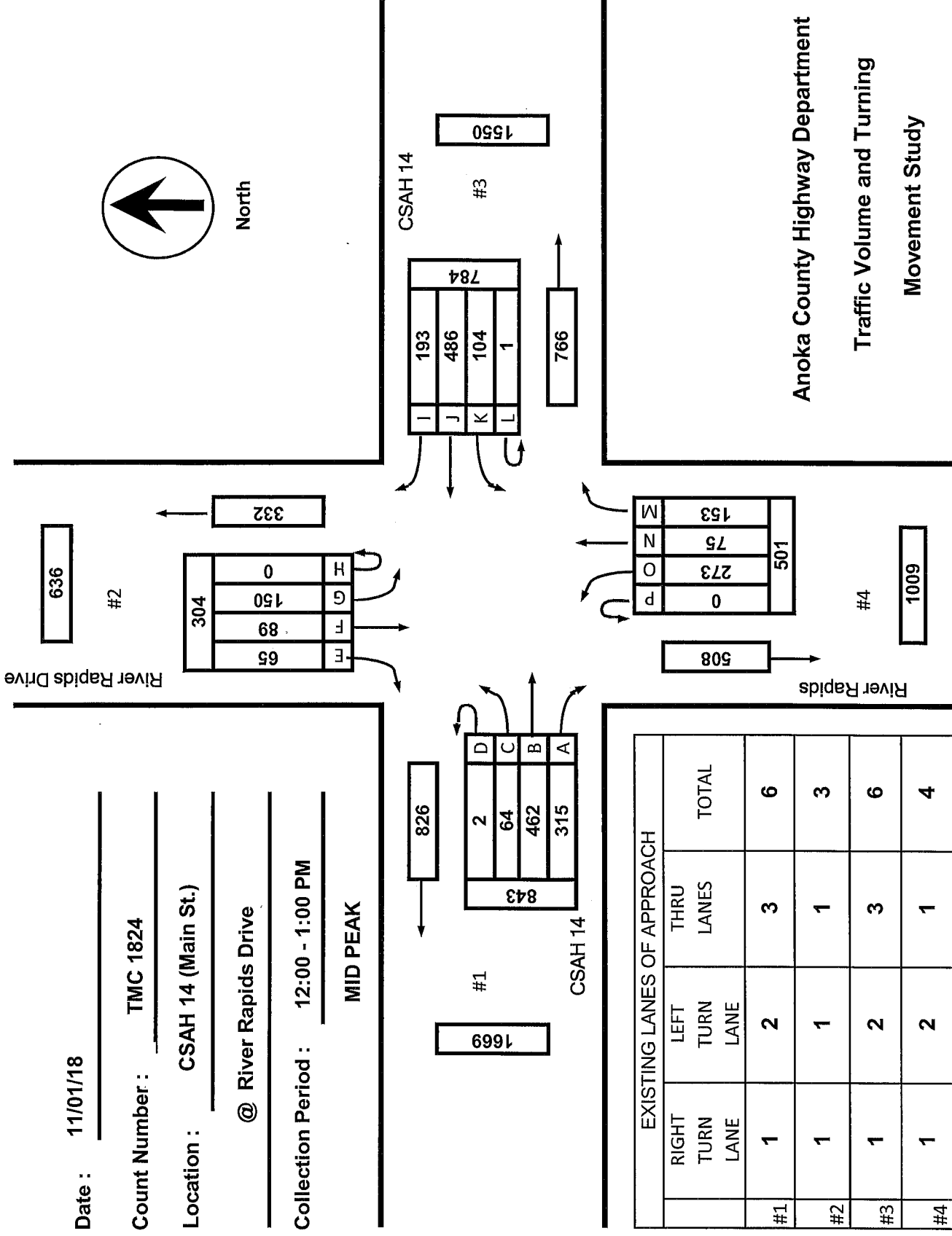
Count Number : TMC 1824

Location : CSAH 14 (Main St.)

@ River Rapids Drive

Collection Period : 12:00 - 1:00 PM

MID PEAK



Anoka County Highway Department
Traffic Volume and Turning
Movement Study

EXISTING LANES OF APPROACH				
	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	TOTAL
#1	1	2	3	6
#2	1	1	1	3
#3	1	2	3	6
#4	1	2	1	4

Date : 11/01/18

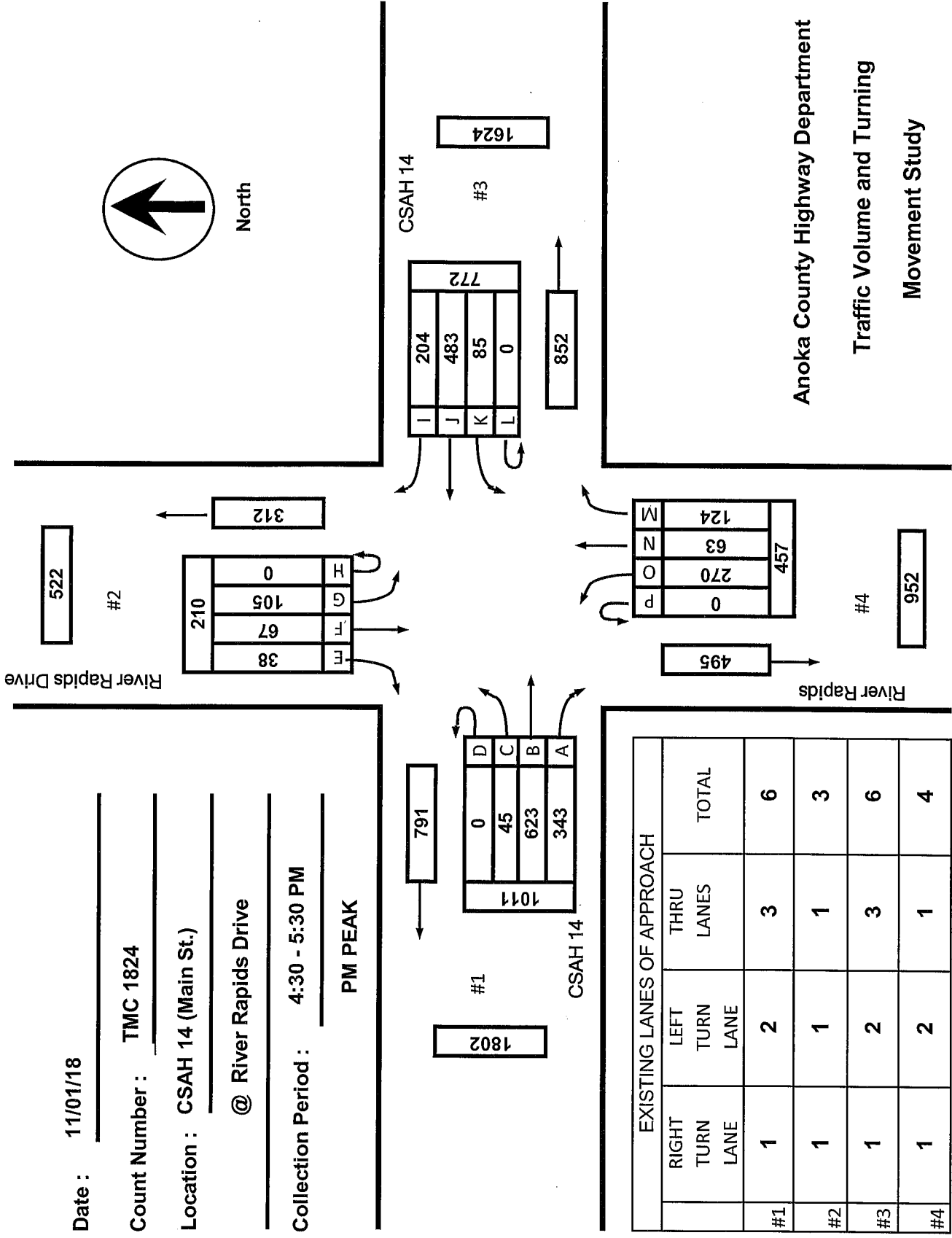
Count Number : TMC 1824

Location : CSAH 14 (Main St.)

@ River Rapids Drive

Collection Period : 4:30 - 5:30 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

Weather: Sunny & Cool
CountCam 200
Study Conducted By: Andrea

File Name : TMC 1824
Site Code :
Start Date : 11/01/2018
Page No : 1

Start Time	River Rapids Drive Southbound										CSAH 14 Westbound										River Rapids Drive Northbound										CSAH 14 Eastbound									
	UTM					Peds					UTM					Peds					UTM					Peds					UTM					Peds				
	Left	Thru	Right	App. Total	UTM	Left	Thru	Right	App. Total	UTM	Left	Thru	Right	App. Total	UTM	Left	Thru	Right	App. Total	UTM	Left	Thru	Right	App. Total	UTM	Left	Thru	Right	App. Total	Exclu. Total	Inclu. Total	Int. Total								
06:00	0	1	2	0	4	0	6	4	2	0	0	10	1	7	0	0	26	0	8	0	0	1	55	16	0	72	0	146	0	146	146									
06:15	0	0	2	0	4	0	7	6	5	0	0	26	0	8	0	0	14	1	5	0	0	0	61	15	0	76	0	195	0	195	195									
06:30	0	3	2	0	7	0	6	8	6	0	0	14	1	5	0	0	20	0	20	0	0	2	44	28	0	74	0	200	0	200	200									
06:45	0	2	0	0	2	0	13	7	12	0	0	12	1	9	0	0	22	0	22	0	0	1	65	28	0	94	0	215	0	215	215									
Total	0	6	5	0	17	0	32	27	25	0	329	0	62	3	29	0	94	0	94	0	0	4	225	87	0	316	0	756	0	756	756									
07:00	0	3	2	0	9	0	13	5	4	0	76	0	15	0	16	0	31	0	31	0	0	2	75	30	0	107	0	223	0	223	223									
07:15	0	3	2	0	7	0	17	10	8	0	127	0	20	1	17	0	38	0	38	0	0	2	93	20	0	115	0	287	0	287	287									
07:30	0	4	2	1	7	0	13	13	12	0	162	0	16	4	13	0	33	0	33	0	0	0	84	34	0	118	0	320	0	320	320									
07:45	0	9	2	1	12	0	10	9	16	0	125	0	13	5	14	0	32	0	32	0	0	0	72	38	0	110	0	279	0	279	279									
Total	0	19	8	0	35	0	53	39	40	0	490	0	64	10	60	0	134	0	134	0	0	4	324	122	0	450	0	1109	0	1109	1109									
08:00	0	3	4	0	11	0	9	7	8	0	87	0	13	0	12	0	25	0	25	0	0	0	72	41	0	113	0	236	0	236	236									
08:15	0	1	5	1	7	0	10	7	2	0	86	0	16	0	15	0	31	0	31	0	0	1	58	40	0	99	0	223	0	223	223									
08:30	0	3	2	0	7	0	10	8	18	0	113	0	19	2	17	0	38	0	38	0	0	3	80	55	0	138	0	296	0	296	296									
08:45	0	4	0	5	9	0	18	8	11	0	117	1	22	7	21	0	51	0	51	0	0	4	90	51	0	145	0	322	0	322	322									
Total	0	11	11	12	34	0	47	37	39	0	403	1	70	9	65	0	145	0	145	0	0	8	300	187	0	495	0	1077	0	1077	1077									
09:00	0	4	5	3	12	0	9	8	15	1	112	0	34	5	27	0	66	1	66	1	1	3	95	53	0	152	2	342	0	342	344									
09:15	0	4	11	1	16	0	20	8	10	0	112	0	28	7	13	0	48	0	48	0	0	3	94	64	0	161	0	337	0	337	337									
09:30	0	4	6	3	13	1	17	7	21	0	113	0	39	11	19	0	69	1	69	1	4	78	55	2	138	2	333	0	333	335										
09:45	0	8	4	5	17	0	21	7	21	0	112	0	31	13	31	0	75	1	75	1	3	96	60	0	160	0	364	0	364	364										
Total	0	20	26	12	58	1	67	34	67	1	449	0	132	36	90	0	258	3	258	3	13	363	232	2	611	4	1376	0	1376	1380										
10:00	0	10	12	4	26	0	14	8	20	0	121	0	35	6	15	0	56	0	56	0	0	4	90	55	0	149	0	352	0	352	352									
10:15	0	16	15	4	35	0	24	7	36	0	139	0	38	10	23	0	71	0	71	0	0	9	95	58	1	162	1	407	0	407	408									
10:30	0	9	10	10	29	0	14	10	18	0	138	0	35	10	29	1	74	1	74	1	11	93	59	2	164	3	405	0	405	408										
10:45	0	10	7	4	21	1	21	9	38	0	158	0	38	12	28	0	78	0	78	0	0	13	117	90	0	220	0	477	0	477	477									
Total	0	45	44	22	111	1	73	37	112	0	556	0	146	38	95	1	279	1	279	1	37	395	262	3	695	4	1641	0	1641	1645										
11:00	0	23	14	9	46	0	18	9	41	0	155	0	62	21	23	0	106	0	106	0	0	12	108	88	0	208	0	515	0	515	515									
11:15	0	27	17	6	50	0	15	9	44	0	158	0	55	26	36	0	117	0	117	0	0	13	113	81	0	207	0	532	0	532	532									
11:30	0	23	19	5	47	1	19	10	40	0	162	0	54	24	25	0	103	0	103	0	0	19	120	80	0	219	0	531	0	531	531									
11:45	0	26	11	13	50	0	26	11	36	0	172	0	65	23	26	0	114	1	114	1	22	132	84	0	239	0	575	0	575	575										
Total	0	99	61	33	193	1	71	41	161	0	647	0	236	94	110	0	440	1	440	1	66	473	333	0	873	0	2153	0	2153	2153										



Anoka County Highway Department
Traffic Engineering Section
Traffic Volume and Turning Movement Study

File Name : TMC 1824
Site Code :
Start Date : 11/01/2018
Page No : 2

Weather: Sunny & Cool
CountCam 200
Study Conducted By: Andrea

Groups Printed- Cars + - Trucks																																									
River Rapids Drive Southbound																River Rapids Drive Northbound																CSAH 14 Eastbound									
		CSAH 14 Westbound										CSAH 14 Eastbound										CSAH 14 Eastbound										CSAH 14 Eastbound									
Start Time	UTM	Left	Thru	Right	Peds	App. Total	UTM	Left	Thru	Right	Peds	App. Total	UTM	Left	Thru	Right	Peds	App. Total	UTM	Left	Thru	Right	Peds	App. Total	Exch. Total	Inclu. Total	Int. Total														
12:00	0	38	20	20	0	78	1	24	107	49	0	181	0	65	13	36	0	114	1	21	136	87	0	245	0	618															
12:15	0	42	28	15	0	85	0	31	110	41	0	182	0	59	16	47	0	122	0	20	120	85	0	225	0	614															
12:30	0	32	21	11	0	64	0	24	131	47	0	202	0	77	22	33	0	132	1	13	111	75	0	200	0	598															
12:45	0	38	20	19	0	77	0	25	138	56	0	219	0	72	24	37	0	133	0	10	95	68	0	173	0	602															
Total	0	150	89	65	0	304	1	104	486	193	0	784	0	273	75	153	0	501	2	64	462	315	0	843	0	2432															
13:00	0	33	30	14	0	77	0	22	112	47	0	181	0	68	24	22	0	114	1	12	121	70	0	204	0	576															
13:15	0	27	16	6	0	49	2	20	106	44	0	172	0	62	15	27	0	104	1	7	107	79	0	194	0	519															
13:30	0	39	19	17	0	75	0	17	113	37	0	167	0	68	25	42	0	135	1	15	106	73	0	195	0	572															
13:45	0	27	13	13	0	53	1	24	127	32	0	184	0	68	14	28	0	110	1	9	136	80	0	226	0	573															
Total	0	126	78	50	0	254	3	83	458	160	0	704	0	266	78	119	0	463	4	43	470	302	0	819	0	2240															
14:00	0	29	17	14	0	60	0	18	119	21	0	158	0	54	16	24	0	94	1	7	119	82	0	209	0	521															
14:15	0	28	15	7	0	50	0	18	137	39	0	194	0	58	19	20	0	97	0	11	121	80	0	212	0	553															
14:30	0	25	13	2	0	40	0	26	135	34	0	195	0	87	18	23	0	128	0	12	120	68	0	200	0	563															
14:45	0	28	20	13	0	61	0	28	130	28	0	186	0	66	12	24	1	102	0	8	136	69	0	213	1	562															
Total	0	110	65	36	0	211	0	90	521	122	0	733	0	265	65	91	1	421	1	38	496	299	0	834	1	2199															
15:00	0	16	11	10	1	37	1	16	106	33	0	156	0	47	20	23	0	90	1	11	158	81	0	251	1	534															
15:15	0	34	15	5	0	54	0	24	105	34	0	163	0	55	24	33	0	112	0	14	144	95	0	253	0	582															
15:30	0	15	16	8	0	39	0	19	111	40	0	170	0	57	15	33	1	105	0	10	157	81	0	248	1	562															
15:45	0	31	11	7	0	49	0	29	109	39	0	177	0	61	8	28	0	97	0	13	149	86	0	248	0	571															
Total	0	96	53	30	1	179	1	88	431	146	0	666	0	220	67	117	1	404	1	48	608	343	0	1000	2	2249															
16:00	0	27	14	12	0	53	0	12	110	32	0	154	0	63	7	41	0	111	0	20	140	83	0	243	0	561															
16:15	0	25	10	10	0	45	0	13	120	47	0	180	0	59	12	37	0	108	0	13	150	74	0	237	0	570															
16:30	0	33	11	7	0	51	0	21	105	43	0	169	0	58	16	33	0	107	0	9	178	80	0	267	0	594															
16:45	0	29	15	6	0	50	0	20	118	55	0	193	0	70	14	32	1	116	0	10	175	89	0	274	1	633															
Total	0	114	50	35	0	199	0	66	453	177	0	696	0	250	49	143	1	442	0	52	643	326	0	1021	1	2358															
17:00	0	19	28	15	0	62	0	19	146	55	1	220	0	59	11	39	0	109	0	13	151	80	1	244	2	635															
17:15	0	24	13	10	0	47	0	25	114	51	0	190	0	83	22	20	0	125	0	13	119	94	0	226	0	588															
17:30	0	36	14	10	0	60	0	21	112	57	0	190	0	62	17	26	0	105	0	10	123	82	0	215	0	570															
17:45	0	31	10	6	0	47	0	18	119	77	0	214	0	56	20	41	1	117	0	16	103	84	0	203	1	581															
Total	0	110	65	41	0	216	0	83	491	240	1	814	0	260	70	126	1	456	0	52	496	340	1	888	3	2374															
18:00	0	35	17	8	0	60	0	27	99	57	0	183	0	60	21	29	0	110	1	21	92	75	0	189	0	542															
18:15	0	42	13	12	0	67	0	21	95	37	0	153	0	80	13	26	0	119	0	14	76	70	0	160	0	499															
18:30	0	44	19	17	0	80	0	22	117	24	0	163	0	79	31	27	0	137	0	8	73	54	0	135	0	515															
18:45	0	41	18	12	0	71	0	10	73	51	0	134	0	62	19	36	0	117	0	13	99	67	0	179	0	501															
Total	0	162	67	49	0	278	0	80	384	169	0	633	0	281	84	118	0	483	1	56	340	266	0	663	0	2057															



Anoka County Highway Department
Traffic Engineering Section
Traffic Volume and Turning Movement Study

Weather: Sunny & Cool
CountCam 200
Study Conducted By: Andrea

File Name : TMC 1824
Site Code :
Start Date : 11/01/2018
Page No : 3

Groups Printed- Cars + - Trucks

	River Rapids Drive Southbound						CSAH 14 Westbound						River Rapids Drive Northbound						CSAH 14 Eastbound					
	UTm	Left	Thru	Right	Peds	App. Total	UTm	Left	Thru	Right	Peds	App. Total	UTm	Left	Thru	Right	Peds	App. Total	UTm	Left	Thru	Right	Peds	App. Total
Grand Total	0	1068	622	399	2	2089	8	937	5308	1651	2	7904	1	2525	678	1316	5	4520	14	485	5595	3414	6	9508
Approch %	0	51.1	29.8	19.1			0.1	11.9	67.2	20.9			0	55.9	15	29.1			0.1	5.1	58.8	35.9		
Total %	0	4.4	2.6	1.7		8.7	0	3.9	22.1	6.9		32.9	0	10.5	2.8	5.5		18.8	0.1	2	23.3	14.2		0.1
Cars +	0	1054	615	390		2061	8	917	5148	1634		7709	1	2477	672	1286		4441	14	480	5387	3343		9230
% Cars +	0	98.7	98.9	97.7	100	98.6	100	97.9	97	99	100	97.5	100	98.1	99.1	97.7	100	98.1	100	99	96.3	97.9	100	97
Trucks	0	14	7	9		30	0	20	160	17		197	0	48	6	30		84	0	5	208	71		284
% Trucks	0	1.3	1.1	2.3	0	1.4	0	2.1	3	1	0	2.5	0	1.9	0.9	2.3	0	1.9	0	1	3.7	2.1	0	3

Start Time	River Rapids Drive Southbound						CSAH 14 Westbound						River Rapids Drive Northbound						CSAH 14 Eastbound					
	UTm	Left	Thru	Right	Peds	App. Total	UTm	Left	Thru	Right	Peds	App. Total	UTm	Left	Thru	Right	Peds	App. Total	UTm	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 09:00																								
09:00	0	4	5	3		12	0	9	88	15		112	0	34	5	27		66	1	3	95	53		152
09:15	0	4	11	1		16	0	20	82	10		112	0	28	7	13		48	0	3	94	64		161
09:30	0	4	6	3		13	1	17	74	21		113	0	39	11	19		69	1	4	78	55		138
09:45	0	8	4	5		17	0	21	70	21		112	0	31	13	31		75	1	3	96	60		160
Total Volume	0	20	26	12		58	1	67	314	67		449	0	132	36	90		258	3	13	363	232		611
% App. Total	0	34.5	44.8	20.7		20.7	0.2	14.9	69.9	14.9		44.9	0	51.2	14	34.9		34.9	0.5	2.1	59.4	38		38
PHF	.000	.625	.591	.600		.853	.250	.798	.892	.798		.993	.000	.846	.692	.726		.860	.750	.813	.945	.906		.949

Peak Hour Analysis From 10:00 to 13:45 - Peak 1 of 1																								
Peak Hour for Entire Intersection Begins at 12:00																								
12:00	0	38	20	20		78	1	24	107	49		181	0	65	13	36		114	1	21	136	87		245
12:15	0	42	28	15		85	0	31	110	41		182	0	59	16	47		122	0	20	120	85		225
12:30	0	32	21	11		64	0	24	131	47		202	0	77	22	33		132	1	13	111	75		200
12:45	0	38	20	19		77	0	25	138	56		219	0	72	24	37		133	0	10	95	68		173
Total Volume	0	150	89	65		304	1	104	486	193		784	0	273	75	153		501	2	64	462	315		843
% App. Total	0	49.3	29.3	21.4		21.4	0.1	13.3	62	24.6		78.4	0	54.5	15	30.5		30.5	0.2	7.6	54.8	37.4		37.4
PHF	.000	.893	.795	.813		.894	.250	.839	.880	.862		.895	.000	.886	.781	.814		.942	.500	.762	.849	.905		.860



Anoka County Highway Department
Traffic Engineering Section
Traffic Volume and Turning Movement Study

Weather: Sunny & Cool
CountCam 200
Study Conducted By: Andrea

File Name : TMC 1824
Site Code :
Start Date : 11/01/2018
Page No : 4

River Rapids Drive Southbound					CSAH 14 Westbound					River Rapids Drive Northbound					CSAH 14 Eastbound						
Start Time	UTrn	Left	Thru	Right	App. Total	UTrn	Left	Thru	Right	App. Total	UTrn	Left	Thru	Right	App. Total	UTrn	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 14:00 to 18:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	0	33	11	7	51	0	21	105	43	169	0	58	16	33	107	0	9	178	80	267	594
16:45	0	29	15	6	50	0	20	118	55	193	0	70	14	32	116	0	10	175	89	274	633
17:00	0	19	28	15	62	0	19	146	55	220	0	59	11	39	109	0	13	151	80	244	635
17:15	0	24	13	10	47	0	25	114	51	190	0	83	22	20	125	0	13	119	94	226	588
Total Volume	0	105	67	38	210	0	85	483	204	772	0	270	63	124	457	0	45	623	343	1011	2450
% App. Total	0	50	31.9	18.1		0	11	62.6	26.4		0	59.1	13.8	27.1		0	4.5	61.6	33.9		
PHF	.000	.795	.598	.633	.847	.000	.850	.827	.927	.877	.000	.813	.716	.795	.914	.000	.865	.875	.912	.922	.965



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

Weather: Sunny & Cool
CountCam 200
Study Conducted By: Andrea

File Name : TMC 1824
Site Code :
Start Date : 11/01/2018
Page No : 1

Groups Printed- Trucks

Start Time	River Rapids Drive Southbound					CSAH 14 Westbound					River Rapids Drive Northbound					CSAH 14 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	1	1	0	1	1	0	2	0	1	1	0	2	0	0	2	1	3	8
06:15	0	0	0	1	1	0	0	0	1	1	0	0	0	1	1	0	0	7	1	8	11
06:30	0	0	0	1	1	0	0	0	1	1	0	1	0	0	1	0	0	4	3	7	10
06:45	0	0	0	0	0	0	2	3	0	5	0	0	0	1	1	0	0	5	1	6	12
Total	0	0	0	3	3	0	3	4	2	9	0	2	1	2	5	0	0	18	6	24	41
07:00	0	0	0	0	0	0	1	2	0	3	0	0	0	2	2	0	0	6	2	8	13
07:15	0	0	0	0	0	0	1	4	0	5	0	3	0	3	6	0	0	5	1	6	17
07:30	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2	0	2	3
07:45	0	0	0	1	1	0	0	5	0	5	0	0	1	0	1	0	0	2	1	3	10
Total	0	0	0	1	1	0	2	12	0	14	0	3	1	5	9	0	0	15	4	19	43
08:00	0	0	0	0	0	0	0	3	1	4	0	0	0	0	0	0	0	5	3	8	12
08:15	0	0	0	0	0	0	1	8	0	9	0	1	0	0	1	0	0	6	2	8	18
08:30	0	0	0	0	0	0	1	5	0	6	0	0	0	0	0	0	0	10	1	11	17
08:45	0	0	0	0	0	0	1	5	1	7	0	0	1	0	1	0	1	3	1	5	13
Total	0	0	0	0	0	0	3	21	2	26	0	1	1	0	2	0	1	24	7	32	60
09:00	0	0	0	1	1	0	0	5	0	5	0	0	0	1	1	0	0	4	3	7	14
09:15	0	0	0	0	0	0	2	5	0	7	0	1	0	0	1	0	0	7	3	10	18
09:30	0	0	0	0	0	0	0	6	1	7	0	4	0	0	4	0	0	0	4	4	15
09:45	0	0	0	0	0	0	0	3	0	3	0	1	0	0	1	0	0	7	3	10	14
Total	0	0	0	1	1	0	2	19	1	22	0	6	0	1	7	0	0	18	13	31	61
10:00	0	0	0	1	1	0	0	1	0	1	0	2	0	2	4	0	0	2	1	3	9
10:15	0	0	0	0	0	0	0	1	1	2	0	2	0	0	2	0	1	4	3	8	12
10:30	0	0	0	0	0	0	0	4	1	5	0	0	0	0	0	0	1	5	2	8	13
10:45	0	1	1	0	2	0	0	1	0	1	0	0	0	0	0	0	0	4	0	4	7
Total	0	1	1	1	3	0	0	7	2	9	0	4	0	2	6	0	2	15	6	23	41
11:00	0	0	1	0	1	0	0	3	1	4	0	1	0	0	1	0	0	3	2	5	11
11:15	0	2	1	1	4	0	0	3	2	5	0	2	0	2	4	0	0	3	4	7	20
11:30	0	0	0	0	0	0	0	7	1	8	0	2	0	1	3	0	0	4	0	4	15
11:45	0	3	1	0	4	0	2	2	0	4	0	0	0	1	1	0	1	8	3	12	21
Total	0	5	3	1	9	0	2	15	4	21	0	5	0	4	9	0	1	18	9	28	67
12:00	0	1	0	0	1	0	0	2	1	3	0	3	0	2	5	0	0	1	1	2	11
12:15	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	4	3	7	9
12:30	0	0	0	1	1	0	1	3	0	4	0	1	0	0	1	0	0	4	1	5	11
12:45	0	0	0	0	0	0	0	5	0	5	0	2	0	1	3	0	0	3	1	4	12
Total	0	1	0	1	2	0	1	10	1	12	0	8	0	3	11	0	0	12	6	18	43
13:00	0	0	0	0	0	0	0	3	0	3	0	2	0	0	2	0	0	3	0	3	8
13:15	0	0	1	0	1	0	0	3	1	4	0	1	0	0	1	0	0	4	1	5	11
13:30	0	0	0	0	0	0	2	2	0	4	0	1	0	1	2	0	0	2	2	4	10
13:45	0	0	0	1	1	0	0	3	0	3	0	0	1	2	3	0	0	7	3	10	17
Total	0	0	1	1	2	0	2	11	1	14	0	4	1	3	8	0	0	16	6	22	46
14:00	0	0	0	0	0	0	1	5	0	6	0	1	0	1	2	0	0	4	0	4	12
14:15	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2	0	0	5	2	7	10
14:30	0	0	0	0	0	0	0	3	0	3	0	1	0	0	1	0	0	2	2	4	8
14:45	0	0	0	0	0	0	2	1	1	4	0	0	0	1	1	0	0	5	0	5	10
Total	0	0	0	0	0	0	3	10	1	14	0	3	0	3	6	0	0	16	4	20	40
15:00	0	0	0	0	0	0	0	3	1	4	0	1	0	1	2	0	0	7	1	8	14



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

Weather: Sunny & Cool
 CountCam 200
 Study Conducted By: Andrea

File Name : TMC 1824
 Site Code :
 Start Date : 11/01/2018
 Page No : 2

Groups Printed- Trucks

Start Time	River Rapids Drive Southbound					CSAH 14 Westbound					River Rapids Drive Northbound					CSAH 14 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	
15:15	0	1	2	0	3	0	0	1	0	1	0	1	1	0	2	0	0	5	0	5	11
15:30	0	0	0	0	0	0	0	8	0	8	0	2	0	0	2	0	0	3	2	5	15
15:45	0	0	0	0	0	0	1	1	2	4	0	2	0	1	3	0	0	3	1	4	11
Total	0	1	2	0	3	0	1	13	3	17	0	6	1	2	9	0	0	18	4	22	51
16:00	0	2	0	0	2	0	0	10	0	10	0	0	0	0	0	0	0	8	0	8	20
16:15	0	1	0	0	1	0	0	6	0	6	0	0	0	0	0	0	0	2	1	3	10
16:30	0	0	0	0	0	0	1	3	0	4	0	1	0	0	1	0	0	3	1	4	9
16:45	0	1	0	0	1	0	0	7	0	7	0	0	0	2	2	0	0	6	0	6	16
Total	0	4	0	0	4	0	1	26	0	27	0	1	0	2	3	0	0	19	2	21	55
17:00	0	1	0	0	1	0	0	5	0	5	0	0	0	1	1	0	0	2	0	2	9
17:15	0	0	0	0	0	0	0	3	0	3	0	2	0	0	2	0	0	4	1	5	10
17:30	0	0	0	0	0	0	0	1	0	1	0	1	1	1	3	0	0	4	1	5	9
17:45	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2	0	0	2	1	3	6
Total	0	1	0	0	1	0	0	10	0	10	0	4	1	3	8	0	0	12	3	15	34
18:00	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1	2
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
18:30	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	3	1	5	6
18:45	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1	3
Total	0	1	0	0	1	0	0	2	0	2	0	1	0	0	1	0	1	7	1	9	13
Grand Total	0	14	7	9	30	0	20	160	17	197	0	48	6	30	84	0	5	208	71	284	595
Apprch %	0	46.7	23.3	30		0	10.2	81.2	8.6		0	57.1	7.1	35.7		0	1.8	73.2	25		
Total %	0	2.4	1.2	1.5	5	0	3.4	26.9	2.9	33.1	0	8.1	1	5	14.1	0	0.8	35	11.9	47.7	

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: **TMC 1824**

Study Date: **01/09/2019**

Page No: **1**

Signal Warrants - Summary

Major Street Approaches

Eastbound: CSAH 14

Number of Lanes : 2

Total Approach Volume: 9,508

Westbound: CSAH 14

Number of Lanes : 2

Total Approach Volume: 7,904

Minor Street Approaches

Northbound: River Rapids Drive

Number of Lanes : 1

Total Approach Volume: 4,520

Southbound: River Rapids Drive

Number of Lanes : 1

Total Approach Volume: 2,089

Warrant Summary (Rural Values Apply)

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

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

Required volumes reached for 13 hours, 8 are needed

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

Required volumes reached for 13 hours, 8 are needed

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

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

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

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

Number of hours (13) volumes exceed minimum >= minimum required (4).

Warrant 3 - Peak Hour.....Satisfied

Warrant 3A - Peak Hour Delay.....Not Satisfied

Approach volumes on minor street don't exceed minimums for any hour. Delay data not evaluated.

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

Volumes exceed minimums for at least one hour.

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

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

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

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

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

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

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: **TMC 1824**

Study Date: **01/09/2019**

Page No: **2**

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

13 hours 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 = **420**

Veh/Hr Minor = **105**

Major Road CSAH 14						Minor Road River Rapids Drive		
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met?
16:15 - 17:15	1022	+	762	=	1784	440	208	Yes
15:15 - 16:15	992	+	664	=	1656	425	195	Yes
17:15 - 18:15	833	+	777	=	1610	457	214	Yes
14:15 - 15:15	876	+	731	=	1607	417	188	Yes
12:15 - 13:15	802	+	784	=	1586	501	303	Yes
11:15 - 12:15	910	+	673	=	1583	448	225	Yes
13:15 - 14:15	824	+	681	=	1505	443	237	Yes
10:15 - 11:15	754	+	590	=	1344	329	131	Yes
09:15 - 10:15	608	+	458	=	1066	248	72	Yes
08:15 - 09:15	534	+	428	=	962	186	35	Yes
07:15 - 08:15	456	+	501	=	957	128	37	Yes
18:15 - 19:15	474	+	450	=	924	373	218	Yes
06:15 - 07:15	351	+	353	=	704	107	22	Yes
06:00 - 07:00	316	+	329	=	645	94	17	No
05:45 - 06:45	222	+	232	=	454	72	15	No
05:30 - 06:30	148	+	133	=	281	52	8	No
05:15 - 06:15	72	+	52	=	124	18	4	No
23:45 - 00:45	0	+	0	=	0	0	0	No
23:30 - 00:30	0	+	0	=	0	0	0	No
22:00 - 23:00	0	+	0	=	0	0	0	No
22:15 - 23:15	0	+	0	=	0	0	0	No
21:30 - 22:30	0	+	0	=	0	0	0	No
21:45 - 22:45	0	+	0	=	0	0	0	No
23:00 - 00:00	0	+	0	=	0	0	0	No
23:15 - 00:15	0		0		0	0	0	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: **TMC 1824**

Study Date: **01/09/2019**

Page No: **3**

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

13 hours 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**

Major Road CSAH 14						Minor Road River Rapids Drive		
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met?
16:00 - 17:00	1021	+	696	=	1717	442	199	Yes
17:00 - 18:00	888	+	814	=	1702	456	216	Yes
15:00 - 16:00	1000	+	666	=	1666	404	179	Yes
12:00 - 13:00	843	+	784	=	1627	501	304	Yes
14:00 - 15:00	834	+	733	=	1567	421	211	Yes
13:00 - 14:00	819	+	704	=	1523	463	254	Yes
11:00 - 12:00	873	+	647	=	1520	440	193	Yes
18:00 - 19:00	663	+	633	=	1296	483	278	Yes
10:00 - 11:00	695	+	556	=	1251	279	111	Yes
09:00 - 10:00	611	+	449	=	1060	258	58	Yes
07:00 - 08:00	450	+	490	=	940	134	35	Yes
08:00 - 09:00	495	+	403	=	898	145	34	Yes
06:00 - 07:00	316	+	329	=	645	94	17	Yes
05:45 - 06:45	222	+	232	=	454	72	15	No
05:30 - 06:30	148	+	133	=	281	52	8	No
05:15 - 06:15	72	+	52	=	124	18	4	No
23:45 - 00:45	0	+	0	=	0	0	0	No
23:30 - 00:30	0	+	0	=	0	0	0	No
19:00 - 20:00	0	+	0	=	0	0	0	No
22:00 - 23:00	0	+	0	=	0	0	0	No
22:15 - 23:15	0	+	0	=	0	0	0	No
21:30 - 22:30	0	+	0	=	0	0	0	No
21:45 - 22:45	0	+	0	=	0	0	0	No
23:00 - 00:00	0	+	0	=	0	0	0	No
23:15 - 00:15	0		0		0	0	0	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: **TMC 1824**

Study Date: **01/09/2019**

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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.
13 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 = **1**

Volume Requirements

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

Veh/Hr Minor = **84 42**

Major Road CSAH 14

Minor Road River Rapids Drive

Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met1A?
16:00 - 17:00	1021	+	696	=	1717	442	199	Yes
17:00 - 18:00	888	+	814	=	1702	456	216	Yes
15:00 - 16:00	1000	+	666	=	1666	404	179	Yes
12:00 - 13:00	843	+	784	=	1627	501	304	Yes
14:00 - 15:00	834	+	733	=	1567	421	211	Yes
13:00 - 14:00	819	+	704	=	1523	463	254	Yes
11:00 - 12:00	873	+	647	=	1520	440	193	Yes
18:00 - 19:00	663	+	633	=	1296	483	278	Yes
10:00 - 11:00	695	+	556	=	1251	279	111	Yes
09:00 - 10:00	611	+	449	=	1060	258	58	Yes
07:00 - 08:00	450	+	490	=	940	134	35	Yes
08:00 - 09:00	495	+	403	=	898	145	34	Yes

Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met1B?
16:00 - 17:00	1021	+	696	=	1717	442	199	Yes
17:00 - 18:00	888	+	814	=	1702	456	216	Yes
15:00 - 16:00	1000	+	666	=	1666	404	179	Yes
12:00 - 13:00	843	+	784	=	1627	501	304	Yes
14:00 - 15:00	834	+	733	=	1567	421	211	Yes
13:00 - 14:00	819	+	704	=	1523	463	254	Yes
11:00 - 12:00	873	+	647	=	1520	440	193	Yes
18:00 - 19:00	663	+	633	=	1296	483	278	Yes
10:00 - 11:00	695	+	556	=	1251	279	111	Yes
09:00 - 10:00	611	+	449	=	1060	258	58	Yes
07:00 - 08:00	450	+	490	=	940	134	35	Yes
08:00 - 09:00	495	+	403	=	898	145	34	Yes

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: **TMC 1824**

Study Date: **01/09/2019**

Page No: **5**

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.

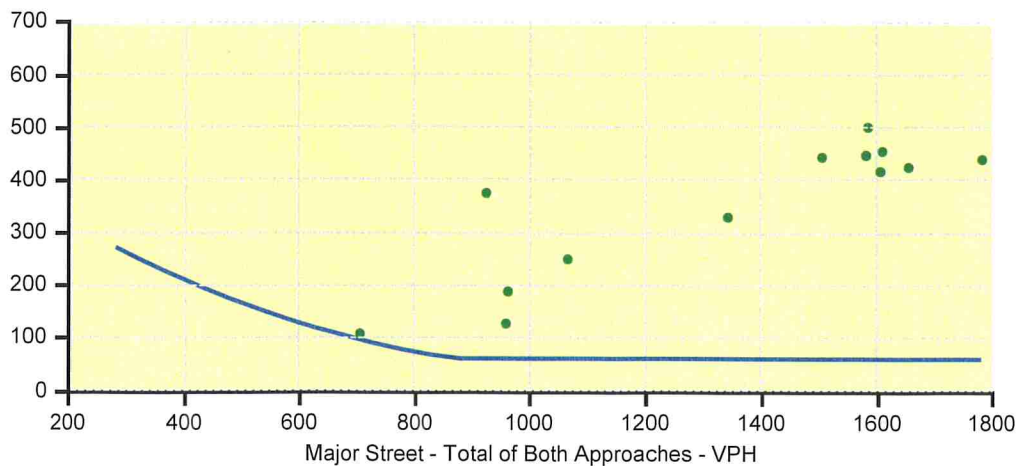
Summary

13 hours meet minimums.
Warrant IS met.

Site Data Required

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

	Major Road				Minor Road			
	CSAH 14				River Rapids Drive			
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met?
16:15 - 17:15	1022	+	762	=	1784	440	208	Yes
15:15 - 16:15	992	+	664	=	1656	425	195	Yes
17:15 - 18:15	833	+	777	=	1610	457	214	Yes
14:15 - 15:15	876	+	731	=	1607	417	188	Yes
12:15 - 13:15	802	+	784	=	1586	501	303	Yes
11:15 - 12:15	910	+	673	=	1583	448	225	Yes
13:15 - 14:15	824	+	681	=	1505	443	237	Yes
10:15 - 11:15	754	+	590	=	1344	329	131	Yes
09:15 - 10:15	608	+	458	=	1066	248	72	Yes
08:15 - 09:15	534	+	428	=	962	186	35	Yes
07:15 - 08:15	456	+	501	=	957	128	37	Yes
							218	Yes



ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: **TMC 1824**

Study Date: **01/09/2019**

Page No: **6**

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

45 hours meet minimums.
Warrant IS met.

Site Data Required

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

Major Road CSAH 14						Minor Road River Rapids Drive		Met?
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	
16:15 - 17:15	1022	+	762	=	1784	440	208	Yes
16:30 - 17:30	1011	+	772	=	1783	457	210	Yes
16:45 - 17:45	959	+	793	=	1752	455	219	Yes
16:00 - 17:00	1021	+	696	=	1717	442	199	Yes
17:00 - 18:00	888	+	814	=	1702	456	216	Yes
15:45 - 16:45	995	+	680	=	1675	423	198	Yes
15:00 - 16:00	1000	+	666	=	1666	404	179	Yes
15:30 - 16:30	976	+	681	=	1657	421	186	Yes
15:15 - 16:15	992	+	664	=	1656	425	195	Yes
11:45 - 12:45	909	+	737	=	1646	482	277	Yes
14:45 - 15:45	965	+	675	=	1640	409	191	Yes
							304	Yes

