

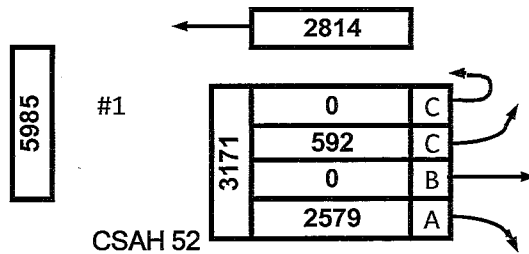
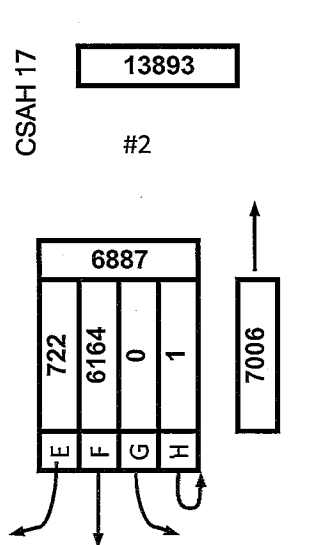
Date : 05/30/19

Count Number : TMC 1902

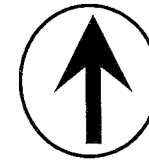
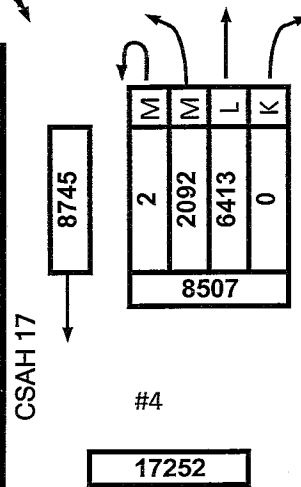
Location : CSAH 17 (Lexington Ave.)

@ CSAH 52 (Lovell Rd.)

Collection Period : 6 AM - 8 PM



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



North

Anoka County Highway Department

Traffic Volume and Turning

Movement Study

Date : 05/30/19

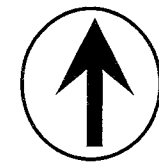
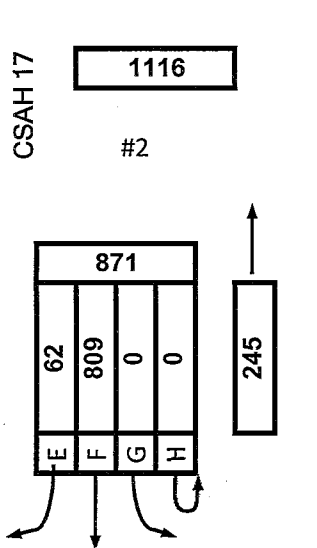
Count Number : TMC 1902

Location : CSAH 17 (Lexington Ave.)

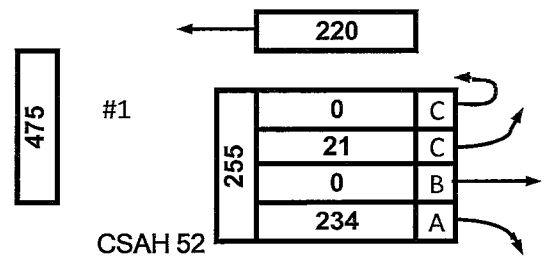
@ CSAH 52 (Lovell Rd.)

Collection Period : 7:00- 8:00 AM

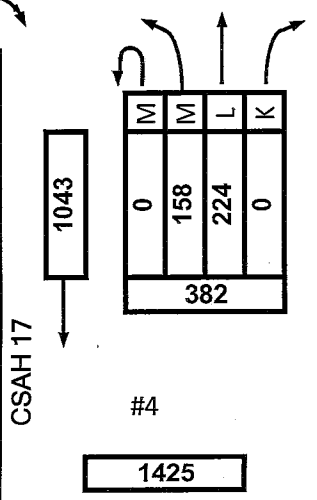
AM PEAK



North



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



Anoka County Highway Department

Traffic Volume and Turning

Movement Study

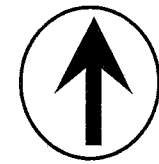
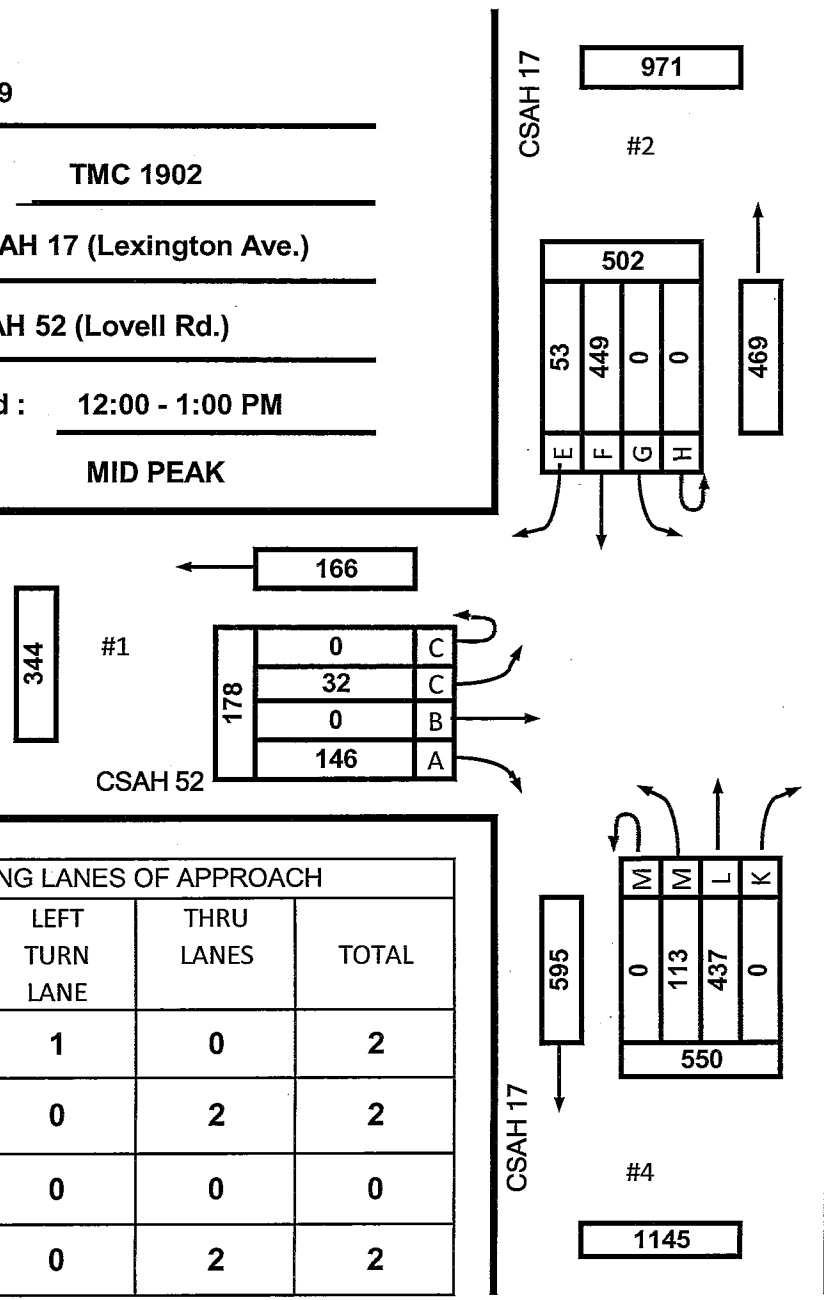
Date : 05/30/19

Count Number : TMC 1902

Location : CSAH 17 (Lexington Ave.)
@ CSAH 52 (Lovell Rd.)

Collection Period : 12:00 - 1:00 PM

MID PEAK



North

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

Anoka County Highway Department
 Traffic Volume and Turning
 Movement Study

Date : 05/30/19

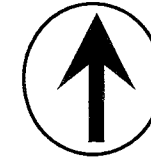
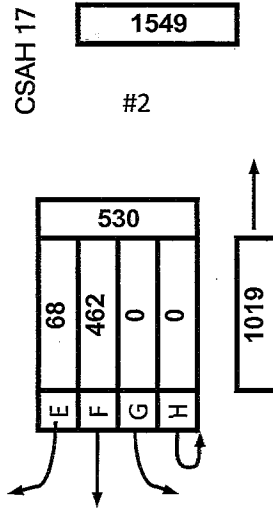
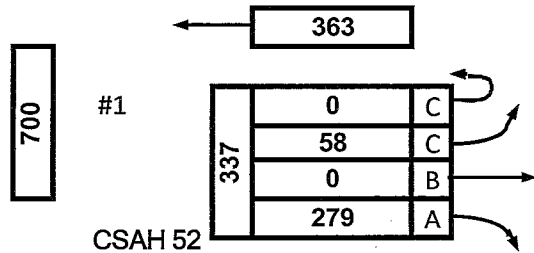
Count Number : TMC 1902

Location : CSAH 17 (Lexington Ave.)

@ CSAH 52 (Lovell Rd.)

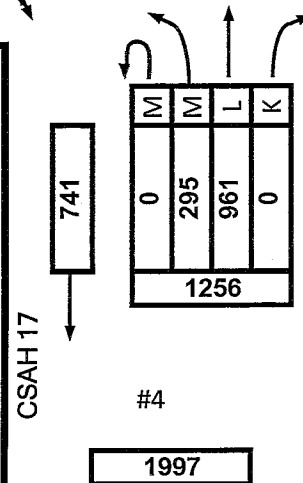
Collection Period : 4:30 - 5:30 PM

PM PEAK



North

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



Anoka County Highway Department

Traffic Volume and Turning

Movement Study



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

Weather: Hot & Cloudy
 CountCam 200
 Study Conducted By: Ethan

File Name : TMC 1902
 Site Code :
 Start Date : 06/24/2019
 Page No : 1

Groups Printed- Cars + - Trucks

Start Time	CSAH 17 Southbound						Westbound						CSAH 17 Northbound						CSAH 52 Eastbound						Exclu. Total	Inclu. Total	Int. Total
	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total			
06:00	0	0	94	9	0	103	0	0	0	0	0	0	0	24	22	0	0	46	0	4	0	26	0	30	0	179	179
06:15	0	0	163	17	0	180	0	0	0	0	0	0	0	26	17	0	0	43	0	3	0	40	0	43	0	266	266
06:30	0	0	192	13	0	205	0	0	0	0	0	0	0	37	38	0	0	75	0	2	0	46	0	48	0	328	328
06:45	0	0	180	15	2	195	0	0	0	0	0	0	0	45	37	0	1	82	0	2	0	55	0	57	3	334	337
Total	0	0	629	54	2	683	0	0	0	0	0	0	0	132	114	0	1	246	0	11	0	167	0	178	3	1107	1110
07:00	0	0	229	15	0	244	0	0	0	0	0	0	0	39	34	0	0	73	0	4	0	59	0	63	0	380	380
07:15	0	0	189	13	0	202	0	0	0	0	0	0	0	35	46	0	0	81	0	4	0	43	0	47	0	330	330
07:30	0	0	231	18	0	249	0	0	0	0	0	0	0	40	67	0	0	107	0	9	0	67	0	76	0	432	432
07:45	0	0	160	16	1	176	0	0	0	0	0	0	0	44	77	0	0	121	0	4	0	65	0	69	1	366	367
Total	0	0	809	62	1	871	0	0	0	0	0	0	0	158	224	0	0	382	0	21	0	234	0	255	1	1508	1509
08:00	0	0	167	20	0	187	0	0	0	0	0	0	1	38	46	0	0	85	0	3	0	63	0	66	0	338	338
08:15	0	0	115	15	0	130	0	0	0	0	0	0	0	25	56	0	0	81	0	5	0	51	0	56	0	267	267
08:30	0	0	112	12	0	124	0	0	0	0	0	0	0	29	41	0	0	70	0	8	0	41	0	49	0	243	243
08:45	0	0	108	10	0	118	0	0	0	0	0	0	0	25	79	0	0	104	0	10	0	65	0	75	0	297	297
Total	0	0	502	57	0	559	0	0	0	0	0	0	1	117	222	0	0	340	0	26	0	220	0	246	0	1145	1145
09:00	0	0	103	12	0	115	0	0	0	0	0	0	0	25	69	0	0	94	0	11	0	34	0	45	0	254	254
09:15	0	0	94	12	0	106	0	0	0	0	0	0	0	27	75	0	0	102	0	19	0	39	0	58	0	266	266
09:30	0	0	66	13	0	79	0	0	0	0	0	0	0	36	76	0	0	112	0	10	0	35	0	45	0	236	236
09:45	0	0	77	9	0	86	0	0	0	0	0	0	0	28	78	0	0	106	0	12	0	33	0	45	0	237	237
Total	0	0	340	46	0	386	0	0	0	0	0	0	0	116	298	0	0	414	0	52	0	141	0	193	0	993	993
10:00	0	0	68	11	0	79	0	0	0	0	0	0	0	13	69	0	0	82	0	10	0	29	0	39	0	200	200
10:15	0	0	79	13	0	92	0	0	0	0	0	0	0	24	75	0	15	99	0	14	0	21	0	35	15	226	241
10:30	0	0	84	10	0	94	0	0	0	0	0	0	0	21	89	0	2	110	0	9	0	30	0	39	2	243	245
10:45	0	0	64	8	0	72	0	0	0	0	0	0	0	25	76	0	0	101	0	15	0	20	0	35	0	208	208
Total	0	0	295	42	0	337	0	0	0	0	0	0	0	83	309	0	17	392	0	48	0	100	0	148	17	877	894
11:00	0	0	96	12	0	108	0	0	0	0	0	0	0	26	63	0	0	89	0	9	0	36	0	45	0	242	242
11:15	0	0	98	20	0	118	0	0	0	0	0	0	0	21	102	0	0	123	0	12	0	38	0	50	0	291	291
11:30	1	0	97	9	0	107	0	0	0	0	0	0	0	23	111	0	0	134	0	10	0	33	0	43	0	284	284
11:45	0	0	88	9	0	97	0	0	0	0	0	0	0	32	103	0	0	135	0	13	0	26	0	39	0	271	271
Total	1	0	379	50	0	430	0	0	0	0	0	0	0	102	379	0	0	481	0	44	0	133	0	177	0	1088	1088



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

Weather: Hot & Cloudy
 CountCam 200
 Study Conducted By: Ethan

File Name : TMC 1902
 Site Code :
 Start Date : 06/24/2019
 Page No : 2

Groups Printed- Cars + - Trucks

Start Time	CSAH 17 Southbound						Westbound						CSAH 17 Northbound						CSAH 52 Eastbound						Exclu. Total	Inclu. Total	Int. Total	
	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total				
12:00	0	0	133	18	0	151	0	0	0	0	0	0	0	24	107	0	0	131	0	13	0	40	0	53	0	0	335	335
12:15	0	0	91	8	0	99	0	0	0	0	0	0	0	34	111	0	0	145	0	5	0	34	1	39	1	1	283	284
12:30	0	0	109	10	0	119	0	0	0	0	0	0	0	23	106	0	0	129	0	10	0	37	0	47	0	0	295	295
12:45	0	0	116	17	0	133	0	0	0	0	0	0	0	32	113	0	0	145	0	4	0	35	0	39	0	0	317	317
Total	0	0	449	53	0	502	0	0	0	0	0	0	0	113	437	0	0	550	0	32	0	146	1	178	1	1	1230	1231
13:00	0	0	104	13	0	117	0	0	0	0	0	0	0	19	94	0	0	113	0	9	0	41	0	50	0	0	280	280
13:15	0	0	95	14	0	109	0	0	0	0	0	0	0	35	96	0	0	131	0	12	0	40	0	52	0	0	292	292
13:30	0	0	93	8	0	101	0	0	0	0	0	0	0	33	99	0	0	132	0	8	0	33	0	41	0	0	274	274
13:45	0	0	82	13	0	95	0	0	0	0	0	0	0	32	114	0	0	146	0	9	0	39	0	48	0	0	289	289
Total	0	0	374	48	0	422	0	0	0	0	0	0	0	119	403	0	0	522	0	38	0	153	0	191	0	0	1135	1135
14:00	0	0	88	11	0	99	0	0	0	0	0	0	0	16	112	0	0	128	0	5	0	38	0	43	0	0	270	270
14:15	0	0	76	10	0	86	0	0	0	0	0	0	0	34	108	0	0	142	0	7	0	44	0	51	0	0	279	279
14:30	0	0	88	7	0	95	0	0	0	0	0	0	0	40	143	0	0	183	0	18	0	34	0	52	0	0	330	330
14:45	0	0	112	14	0	126	0	0	0	0	0	0	0	29	132	0	0	161	0	9	0	40	0	49	0	0	336	336
Total	0	0	364	42	0	406	0	0	0	0	0	0	0	119	495	0	0	614	0	39	0	156	0	195	0	0	1215	1215
15:00	0	0	124	22	0	146	0	0	0	0	0	0	1	49	151	0	0	201	0	15	0	51	0	66	0	0	413	413
15:15	0	0	90	8	0	98	0	0	0	0	0	0	0	48	186	0	0	234	0	17	0	58	0	75	0	0	407	407
15:30	0	0	123	19	0	142	0	0	0	0	0	0	0	51	200	0	0	251	0	15	0	60	0	75	0	0	468	468
15:45	0	0	119	22	0	141	0	0	0	0	0	0	0	60	218	0	0	278	0	12	0	61	0	73	0	0	492	492
Total	0	0	456	71	0	527	0	0	0	0	0	0	1	208	755	0	0	964	0	59	0	230	0	289	0	0	1780	1780
16:00	0	0	130	12	0	142	0	0	0	0	0	0	0	61	224	0	0	285	0	11	0	80	0	91	0	0	518	518
16:15	0	0	120	14	0	134	0	0	0	0	0	0	0	49	229	0	0	278	0	14	0	58	0	72	0	0	484	484
16:30	0	0	124	22	0	146	0	0	0	0	0	0	0	74	266	0	0	340	0	13	0	79	0	92	0	0	578	578
16:45	0	0	112	15	0	127	0	0	0	0	0	0	0	79	216	0	0	295	0	15	0	64	0	79	0	0	501	501
Total	0	0	486	63	0	549	0	0	0	0	0	0	0	263	935	0	0	1198	0	53	0	281	0	334	0	0	2081	2081
17:00	0	0	120	12	0	132	0	0	0	0	0	0	0	83	249	0	0	332	0	12	0	77	0	89	0	0	553	553
17:15	0	0	106	19	0	125	0	0	0	0	0	0	0	59	230	0	0	289	0	18	0	59	0	77	0	0	491	491
17:30	0	0	109	19	0	128	0	0	0	0	0	0	0	81	221	0	0	302	0	19	0	70	0	89	0	0	519	519
17:45	0	0	100	8	0	108	0	0	0	0	0	0	0	66	204	0	0	270	0	11	0	54	0	65	0	0	443	443
Total	0	0	435	58	0	493	0	0	0	0	0	0	0	289	904	0	0	1193	0	60	0	260	0	320	0	0	2006	2006
18:00	0	0	73	13	0	86	0	0	0	0	0	0	0	65	160	0	0	225	0	19	0	65	0	84	0	0	395	395
18:15	0	0	85	13	0	98	0	0	0	0	0	0	0	54	164	0	1	218	0	10	0	31	0	41	1	1	357	358
18:30	0	0	71	9	0	80	0	0	0	0	0	0	0	36	153	0	0	189	0	22	0	57	0	79	0	0	348	348



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

Weather: Hot & Cloudy
 CountCam 200
 Study Conducted By: Ethan

File Name : TMC 1902
 Site Code :
 Start Date : 06/24/2019
 Page No : 3

Groups Printed- Cars + - Trucks

Start Time	CSAH 17 Southbound						Westbound						CSAH 17 Northbound						CSAH 52 Eastbound						Exclu. Total	Inclu. Total	Int. Total	
	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total				
18:45	0	0	82	5	0	87	0	0	0	0	0	0	0	26	122	0	0	148	0	12	0	41	0	53	0	0	288	288
Total	0	0	311	40	0	351	0	0	0	0	0	0	0	181	599	0	1	780	0	63	0	194	0	257	1	1388	1389	
19:00	0	0	97	6	0	103	0	0	0	0	0	0	0	28	76	0	0	104	0	14	0	37	0	51	0	258	258	
19:15	0	0	76	11	0	87	0	0	0	0	0	0	0	17	100	0	0	117	0	12	0	41	0	53	0	257	257	
19:30	0	0	78	11	0	89	0	0	0	0	0	0	0	23	93	0	0	116	0	13	0	55	0	68	0	273	273	
19:45	0	0	84	8	0	92	0	0	0	0	0	0	0	24	70	0	0	94	0	7	0	31	0	38	0	224	224	
Total	0	0	335	36	0	371	0	0	0	0	0	0	0	92	339	0	0	431	0	46	0	164	0	210	0	1012	1012	
Grand Total	1	0	6164	722	3	6887	0	0	0	0	0	0	2	2092	6413	0	19	8507	0	592	0	2579	1	3171	23	18565	18588	
Apprch %	0	0	89.5	10.5			0	0	0	0			0	24.6	75.4	0			0	18.7	0	81.3						
Total %	0	0	33.2	3.9		37.1	0	0	0	0			0	11.3	34.5	0		45.8	0	3.2	0	13.9		17.1	0.1	99.9		
Cars +	1	0	6065	688		6757	0	0	0	0			2	2008	6344	0		8373	0	561	0	2496		3058	0	0	18188	
% Cars +	100	0	98.4	95.3	100	98.1	0	0	0	0	0		100	96	98.9	0	100	98.2	0	94.8	0	96.8	100	96.4	0	0	97.8	
Trucks	0	0	99	34		133	0	0	0	0			0	84	69	0		153	0	31	0	83		114	0	0	400	
% Trucks	0	0	1.6	4.7	0	1.9	0	0	0	0	0		0	4	1.1	0	0	1.8	0	5.2	0	3.2	0	3.6	0	0	2.2	

Start Time	CSAH 17 Southbound						Westbound						CSAH 17 Northbound						CSAH 52 Eastbound						Int. Total
	UTrn	Left	Thru	Right	App. Total	UTrn	Left	Thru	Right	App. Total	UTrn	Left	Thru	Right	App. Total	UTrn	Left	Thru	Right	App. Total					
Peak Hour Analysis From 06:00 to 09:45 - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 07:00																									
07:00	0	0	229	15	244	0	0	0	0	0	0	39	34	0	73	0	4	0	59	63	380				
07:15	0	0	189	13	202	0	0	0	0	0	0	35	46	0	81	0	4	0	43	47	330				
07:30	0	0	231	18	249	0	0	0	0	0	0	40	67	0	107	0	9	0	67	76	432				
07:45	0	0	160	16	176	0	0	0	0	0	0	44	77	0	121	0	4	0	65	69	366				
Total Volume	0	0	809	62	871	0	0	0	0	0	0	158	224	0	382	0	21	0	234	255	1508				
% App. Total	0	0	92.9	7.1		0	0	0	0		0	41.4	58.6	0		0	8.2	0	91.8						
PHF	.000	.000	.876	.861	.874	.000	.000	.000	.000	.000	.000	.898	.727	.000	.789	.000	.583	.000	.873	.839	.873				



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

Weather: Hot & Cloudy
 CountCam 200
 Study Conducted By: Ethan

File Name : TMC 1902
 Site Code :
 Start Date : 06/24/2019
 Page No : 4

Start Time	CSAH 17 Southbound					Westbound					CSAH 17 Northbound					CSAH 52 Eastbound					Int. Total
	UTrn	Left	Thru	Right	App. Total	UTrn	Left	Thru	Right	App. Total	UTrn	Left	Thru	Right	App. Total	UTrn	Left	Thru	Right	App. Total	
Peak Hour Analysis From 10:00 to 13:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00																					
12:00	0	0	133	18	151	0	0	0	0	0	0	24	107	0	131	0	13	0	40	53	335
12:15	0	0	91	8	99	0	0	0	0	0	0	34	111	0	145	0	5	0	34	39	283
12:30	0	0	109	10	119	0	0	0	0	0	0	23	106	0	129	0	10	0	37	47	295
12:45	0	0	116	17	133	0	0	0	0	0	0	32	113	0	145	0	4	0	35	39	317
Total Volume	0	0	449	53	502	0	0	0	0	0	0	113	437	0	550	0	32	0	146	178	1230
% App. Total	0	0	89.4	10.6		0	0	0	0	0	0	20.5	79.5	0		0	18	0	82		
PHF	.000	.000	.844	.736	.831	.000	.000	.000	.000	.000	.000	.831	.967	.000	.948	.000	.615	.000	.913	.840	.918

Peak Hour Analysis From 14:00 to 19:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	0	0	124	22	146	0	0	0	0	0	0	74	266	0	340	0	13	0	79	92	578
16:45	0	0	112	15	127	0	0	0	0	0	0	79	216	0	295	0	15	0	64	79	501
17:00	0	0	120	12	132	0	0	0	0	0	0	83	249	0	332	0	12	0	77	89	553
17:15	0	0	106	19	125	0	0	0	0	0	0	59	230	0	289	0	18	0	59	77	491
Total Volume	0	0	462	68	530	0	0	0	0	0	0	295	961	0	1256	0	58	0	279	337	2123
% App. Total	0	0	87.2	12.8		0	0	0	0	0	0	23.5	76.5	0		0	17.2	0	82.8		
PHF	.000	.000	.931	.773	.908	.000	.000	.000	.000	.000	.000	.889	.903	.000	.924	.000	.806	.000	.883	.916	.918



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC 1902
 Site Code :
 Start Date : 06/24/2019
 Page No : 1

Weather: Hot & Cloudy
 CountCam 200
 Study Conducted By: Ethan

Groups Printed- Trucks

Start Time	CSAH 17 Southbound					Westbound					CSAH 17 Northbound					CSAH 52 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	1	1	2	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	4
06:15	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	5
06:30	0	0	1	1	2	0	0	0	0	0	0	2	0	0	2	0	1	0	1	2	6
06:45	0	0	0	0	0	0	0	0	0	0	0	3	1	0	4	0	0	0	3	3	7
Total	0	0	3	2	5	0	0	0	0	0	0	5	3	0	8	0	1	0	8	9	22
07:00	0	0	3	2	5	0	0	0	0	0	0	0	0	0	0	0	1	0	4	5	10
07:15	0	0	1	1	2	0	0	0	0	0	0	1	2	0	3	0	0	0	3	3	8
07:30	0	0	2	2	4	0	0	0	0	0	0	3	3	0	6	0	5	0	5	10	20
07:45	0	0	3	1	4	0	0	0	0	0	0	2	5	0	7	0	0	0	4	4	15
Total	0	0	9	6	15	0	0	0	0	0	0	6	10	0	16	0	6	0	16	22	53
08:00	0	0	1	2	3	0	0	0	0	0	0	1	2	0	3	0	0	0	3	3	9
08:15	0	0	1	1	2	0	0	0	0	0	0	2	3	0	5	0	0	0	3	3	10
08:30	0	0	5	1	6	0	0	0	0	0	0	4	5	0	9	0	1	0	3	4	19
08:45	0	0	3	2	5	0	0	0	0	0	0	2	2	0	4	0	1	0	4	5	14
Total	0	0	10	6	16	0	0	0	0	0	0	9	12	0	21	0	2	0	13	15	52
09:00	0	0	1	1	2	0	0	0	0	0	0	2	1	0	3	0	1	0	3	4	9
09:15	0	0	2	0	2	0	0	0	0	0	0	2	2	0	4	0	1	0	1	2	8
09:30	0	0	2	3	5	0	0	0	0	0	0	1	1	0	2	0	0	0	1	1	8
09:45	0	0	0	1	1	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	3
Total	0	0	5	5	10	0	0	0	0	0	0	6	4	0	10	0	3	0	5	8	28
10:00	0	0	4	0	4	0	0	0	0	0	0	4	0	0	4	0	0	0	2	2	10
10:15	0	0	1	1	2	0	0	0	0	0	0	5	1	0	6	0	1	0	0	1	9
10:30	0	0	4	1	5	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	7
10:45	0	0	0	1	1	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2	4
Total	0	0	9	3	12	0	0	0	0	0	0	9	3	0	12	0	3	0	3	6	30
11:00	0	0	4	0	4	0	0	0	0	0	0	2	2	0	4	0	1	0	3	4	12
11:15	0	0	0	2	2	0	0	0	0	0	0	2	1	0	3	0	1	0	2	3	8
11:30	0	0	4	0	4	0	0	0	0	0	0	1	2	0	3	0	0	0	3	3	10
11:45	0	0	2	0	2	0	0	0	0	0	0	0	3	0	3	0	0	0	1	1	6
Total	0	0	10	2	12	0	0	0	0	0	0	5	8	0	13	0	2	0	9	11	36
12:00	0	0	3	1	4	0	0	0	0	0	0	0	1	0	1	0	1	0	2	3	8
12:15	0	0	4	0	4	0	0	0	0	0	0	3	0	0	3	0	0	0	1	1	8
12:30	0	0	3	0	3	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2	6
12:45	0	0	1	1	2	0	0	0	0	0	0	0	2	0	2	0	1	0	1	2	6
Total	0	0	11	2	13	0	0	0	0	0	0	3	4	0	7	0	3	0	5	8	28
13:00	0	0	4	1	5	0	0	0	0	0	0	0	2	0	2	0	0	0	1	1	8
13:15	0	0	2	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	1	1	4
13:30	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	1	0	0	1	3
13:45	0	0	2	1	3	0	0	0	0	0	0	1	1	0	2	0	0	0	3	3	8
Total	0	0	8	2	10	0	0	0	0	0	0	3	4	0	7	0	1	0	5	6	23
14:00	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	3
14:15	0	0	1	0	1	0	0	0	0	0	0	6	0	0	6	0	0	0	2	2	9
14:30	0	0	2	0	2	0	0	0	0	0	0	4	3	0	7	0	0	0	2	2	11
14:45	0	0	2	2	4	0	0	0	0	0	0	4	0	0	4	0	2	0	2	4	12
Total	0	0	6	2	8	0	0	0	0	0	0	14	4	0	18	0	3	0	6	9	35
15:00	0	0	2	0	2	0	0	0	0	0	0	5	1	0	6	0	1	0	3	4	12



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC 1902
 Site Code :
 Start Date : 06/24/2019
 Page No : 2

Weather: Hot & Cloudy
 CountCam 200
 Study Conducted By: Ethan

Groups Printed- Trucks

Start Time	CSAH 17 Southbound					Westbound					CSAH 17 Northbound					CSAH 52 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	0	1	0	1	0	0	0	0	0	0	3	0	0	3	0	2	0	1	3	7
15:30	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	1	1	3
15:45	0	0	1	2	3	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	5
Total	0	0	5	2	7	0	0	0	0	0	0	10	2	0	12	0	3	0	5	8	27
16:00	0	0	4	0	4	0	0	0	0	0	0	2	4	0	6	0	0	0	3	3	13
16:15	0	0	3	0	3	0	0	0	0	0	0	3	3	0	6	0	0	0	0	0	9
16:30	0	0	5	1	6	0	0	0	0	0	0	3	0	0	3	0	1	0	1	2	11
16:45	0	0	2	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	1	1	4
Total	0	0	14	1	15	0	0	0	0	0	0	8	8	0	16	0	1	0	5	6	37
17:00	0	0	1	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	2	2	5
17:15	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	3
17:30	0	0	1	0	1	0	0	0	0	0	0	2	1	0	3	0	1	0	0	1	5
17:45	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
Total	0	0	3	0	3	0	0	0	0	0	0	6	2	0	8	0	2	0	2	4	15
18:00	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	4
18:15	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
18:30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
18:45	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	5	1	6	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	8
19:00	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
19:15	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
19:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
19:45	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2
Total	0	0	1	0	1	0	0	0	0	0	0	0	4	0	4	0	0	0	1	1	6
Grand Total	0	0	99	34	133	0	0	0	0	0	0	84	69	0	153	0	31	0	83	114	400
Apprch %	0	0	74.4	25.6		0	0	0	0		0	54.9	45.1	0		0	27.2	0	72.8		
Total %	0	0	24.8	8.5	33.2	0	0	0	0	0	0	21	17.2	0	38.2	0	7.8	0	20.8	28.5	

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 1902

Study Date: 07/01/2019

Page No: 1

Signal Warrants - Summary

Major Street Approaches

Northbound: CSAH 17

Number of Lanes : 2

Total Approach Volume: 8,507

Southbound: CSAH 17

Number of Lanes : 2

Total Approach Volume: 6,887

Minor Street Approaches

Eastbound: CSAH 52

Number of Lanes : 1

Total Approach Volume: 3,171

Westbound:

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 13 hours, 8 are needed

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

Required volumes reached for 10 hours, 8 are needed

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

Required 1A volumes reached for 14 hours, 8 are needed

Required 1B volumes reached for 14 hours, 8 are needed

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

Number of hours (12) volumes exceed minimum \geq 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 1902**
 Study Date: **07/01/2019**
 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 = **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 CSAH 17				Total	Minor Road CSAH 52		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
16:15 - 17:15	1245	+	539	=	1784	332	0	Yes
15:15 - 16:15	1048	+	523	=	1571	314	0	Yes
17:15 - 18:15	1086	+	447	=	1533	315	0	Yes
07:00 - 08:00	382	+	871	=	1253	255	0	Yes
14:15 - 15:15	687	+	453	=	1140	218	0	Yes
18:15 - 19:15	659	+	368	=	1027	224	0	Yes
12:15 - 13:15	532	+	468	=	1000	175	0	Yes
11:15 - 12:15	523	+	473	=	996	185	0	Yes
13:15 - 14:15	537	+	404	=	941	184	0	Yes
06:00 - 07:00	246	+	683	=	929	178	0	Yes
08:00 - 09:00	340	+	559	=	899	246	0	Yes
09:00 - 10:00	414	+	386	=	800	193	0	Yes
10:15 - 11:15	399	+	366	=	765	154	0	Yes
10:00 - 11:00	392	+	337	=	729	148	0	No
05:45 - 06:45	164	+	488	=	652	121	0	No
19:15 - 20:15	327	+	268	=	595	159	0	No
19:30 - 20:30	210	+	181	=	391	106	0	No
05:30 - 06:30	89	+	283	=	372	73	0	No
19:45 - 20:45	94	+	92	=	186	38	0	No
05:15 - 06:15	46	+	103	=	149	30	0	No
23:45 - 00:45	0	+	0	=	0	0	0	No
22:30 - 23:30	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
23:15 - 00:15	0		0		0	0	0	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: **TMC 1902**

Study Date: **07/01/2019**

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

10 hours 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 = **900**

Veh/Hr Minor = **75**

Time	Major Road CSAH 17				=	Total	Minor Road CSAH 52		Met?
	Major NB	+	Major SB				Minor EB	Minor WB	
16:00 - 17:00	1198	+	549	=	1747	334	0	Yes	
17:00 - 18:00	1193	+	493	=	1686	320	0	Yes	
15:00 - 16:00	964	+	527	=	1491	289	0	Yes	
07:00 - 08:00	382	+	871	=	1253	255	0	Yes	
18:00 - 19:00	780	+	351	=	1131	257	0	Yes	
12:00 - 13:00	550	+	502	=	1052	178	0	Yes	
14:00 - 15:00	614	+	406	=	1020	195	0	Yes	
13:00 - 14:00	522	+	422	=	944	191	0	Yes	
06:00 - 07:00	246	+	683	=	929	178	0	Yes	
11:00 - 12:00	481	+	430	=	911	177	0	Yes	
08:00 - 09:00	340	+	559	=	899	246	0	No	
10:45 - 11:45	447	+	405	=	852	173	0	No	
08:15 - 09:15	349	+	487	=	836	225	0	No	
08:30 - 09:30	370	+	463	=	833	227	0	No	
08:45 - 09:45	412	+	418	=	830	223	0	No	
10:30 - 11:30	423	+	392	=	815	169	0	No	
19:00 - 20:00	431	+	371	=	802	210	0	No	
09:00 - 10:00	414	+	386	=	800	193	0	No	
10:15 - 11:15	399	+	366	=	765	154	0	No	
09:15 - 10:15	402	+	350	=	752	187	0	No	
09:45 - 10:45	397	+	351	=	748	158	0	No	
09:30 - 10:30	399	+	336	=	735	164	0	No	
10:00 - 11:00	392	+	337	=	729	148	0	No	
05:45 - 06:45	164	+	488	=	652	121	0	No	
19:15 - 20:15	327		268		595	159	0	No	

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: **TMC 1902**

Study Date: **07/01/2019**

Page No: **4**

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

14 hours meet 1A minimums.
14 hours meet 1B 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

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

Veh/Hr Minor = **120** **60**

Major Road CSAH 17

Minor Road CSAH 52

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1A?
15:45 - 16:45	1181	+	563	=	1744	328	0	Yes
16:45 - 17:45	1218	+	512	=	1730	334	0	Yes
14:45 - 15:45	847	+	512	=	1359	265	0	Yes
17:45 - 18:45	902	+	372	=	1274	269	0	Yes
06:45 - 07:45	343	+	890	=	1233	243	0	Yes
11:45 - 12:45	540	+	466	=	1006	178	0	Yes
12:45 - 13:45	521	+	460	=	981	182	0	Yes
07:45 - 08:45	357	+	617	=	974	240	0	Yes
13:45 - 14:45	599	+	375	=	974	194	0	Yes
10:45 - 11:45	447	+	405	=	852	173	0	Yes
18:45 - 19:45	485	+	366	=	851	225	0	Yes
08:45 - 09:45	412		418		830	223	0	Yes

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1B?
16:00 - 17:00	1198	+	549	=	1747	334	0	Yes
17:00 - 18:00	1193	+	493	=	1686	320	0	Yes
15:00 - 16:00	964	+	527	=	1491	289	0	Yes
07:00 - 08:00	382	+	871	=	1253	255	0	Yes
18:00 - 19:00	780	+	351	=	1131	257	0	Yes
12:00 - 13:00	550	+	502	=	1052	178	0	Yes
14:00 - 15:00	614	+	406	=	1020	195	0	Yes
13:00 - 14:00	522	+	422	=	944	191	0	Yes
06:00 - 07:00	246	+	683	=	929	178	0	Yes
11:00 - 12:00	481	+	430	=	911	177	0	Yes
08:00 - 09:00	340	+	559	=	899	246	0	Yes
19:00 - 20:00	431		371		802	210	0	Yes

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: **TMC 1902**

Study Date: **07/01/2019**

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.

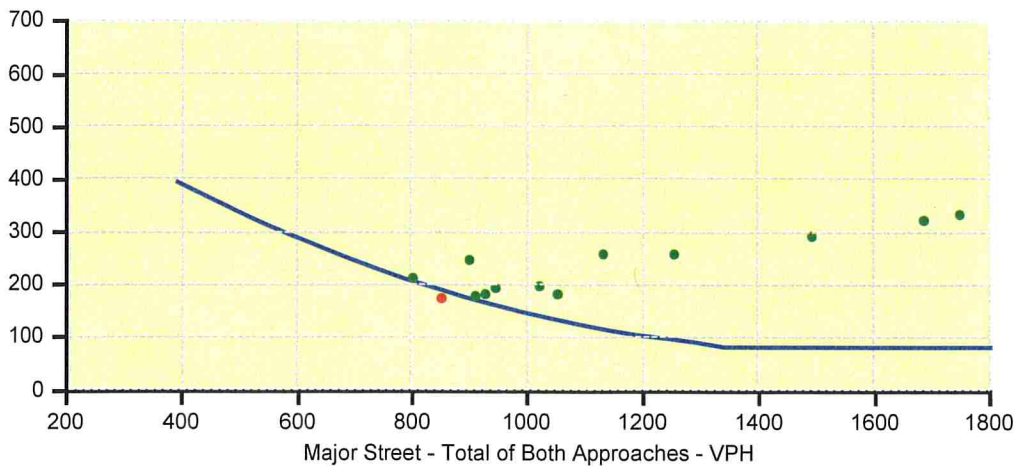
Summary

12 hours 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 17				Total	Minor Road CSAH 52		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
16:00 - 17:00	1198	+	549	=	1747	334	0	Yes
17:00 - 18:00	1193	+	493	=	1686	320	0	Yes
15:00 - 16:00	964	+	527	=	1491	289	0	Yes
07:00 - 08:00	382	+	871	=	1253	255	0	Yes
18:00 - 19:00	780	+	351	=	1131	257	0	Yes
12:00 - 13:00	550	+	502	=	1052	178	0	Yes
14:00 - 15:00	614	+	406	=	1020	195	0	Yes
13:00 - 14:00	522	+	422	=	944	191	0	Yes
06:00 - 07:00	246	+	683	=	929	178	0	Yes
11:00 - 12:00	481	+	430	=	911	177	0	Yes
08:00 - 09:00	340	+	559	=	899	246	0	Yes
							0	Yes



ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: **TMC 1902**

Study Date: **07/01/2019**

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

19 hours 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 17				Total	Minor Road CSAH 52		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
16:30 - 17:30	1256	+	530	=	1786	337	0	Yes
16:15 - 17:15	1245	+	539	=	1784	332	0	Yes
16:00 - 17:00	1198	+	549	=	1747	334	0	Yes
15:45 - 16:45	1181	+	563	=	1744	328	0	Yes
16:45 - 17:45	1218	+	512	=	1730	334	0	Yes
17:00 - 18:00	1193	+	493	=	1686	320	0	Yes
15:30 - 16:30	1092	+	559	=	1651	311	0	Yes
15:15 - 16:15	1048	+	523	=	1571	314	0	Yes
17:15 - 18:15	1086	+	447	=	1533	315	0	Yes
15:00 - 16:00	964	+	527	=	1491	289	0	Yes
17:30 - 18:30	1015	+	420	=	1435	279	0	Yes

