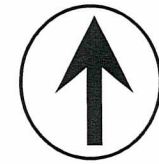


Date : 12/13/17

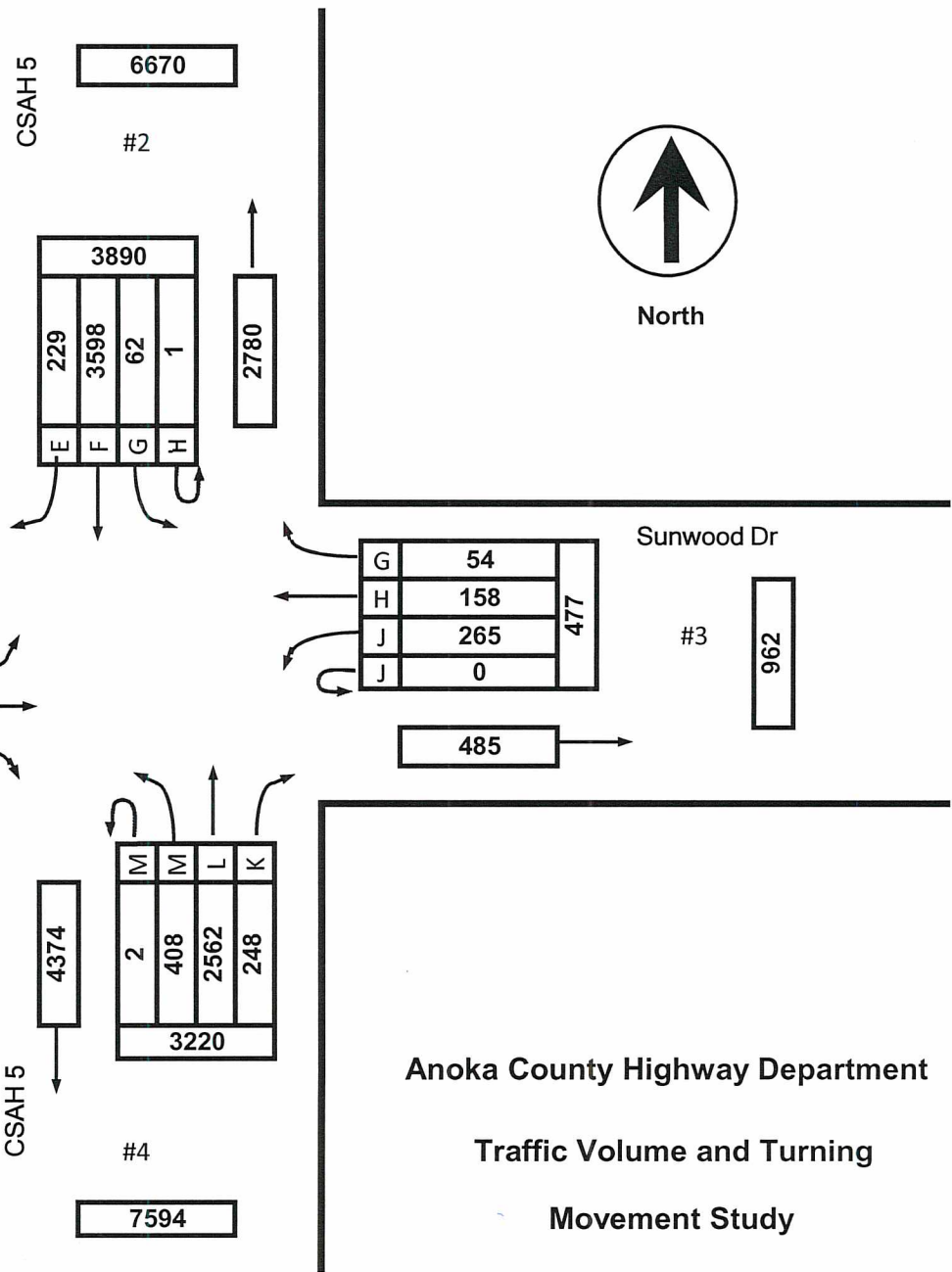
Count Number : TMC 1739

Location : CSAH 5 (Nowthen Blvd.)
@ Sunwood Dr

Collection Period : 05:00AM - 07:00PM



North



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

Anoka County Highway Department
 Traffic Volume and Turning
 Movement Study

Date : 12/13/17

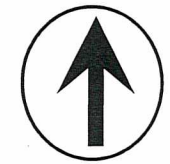
Count Number : TMC 1739

Location : CSAH 5 (Nowthen Blvd.)

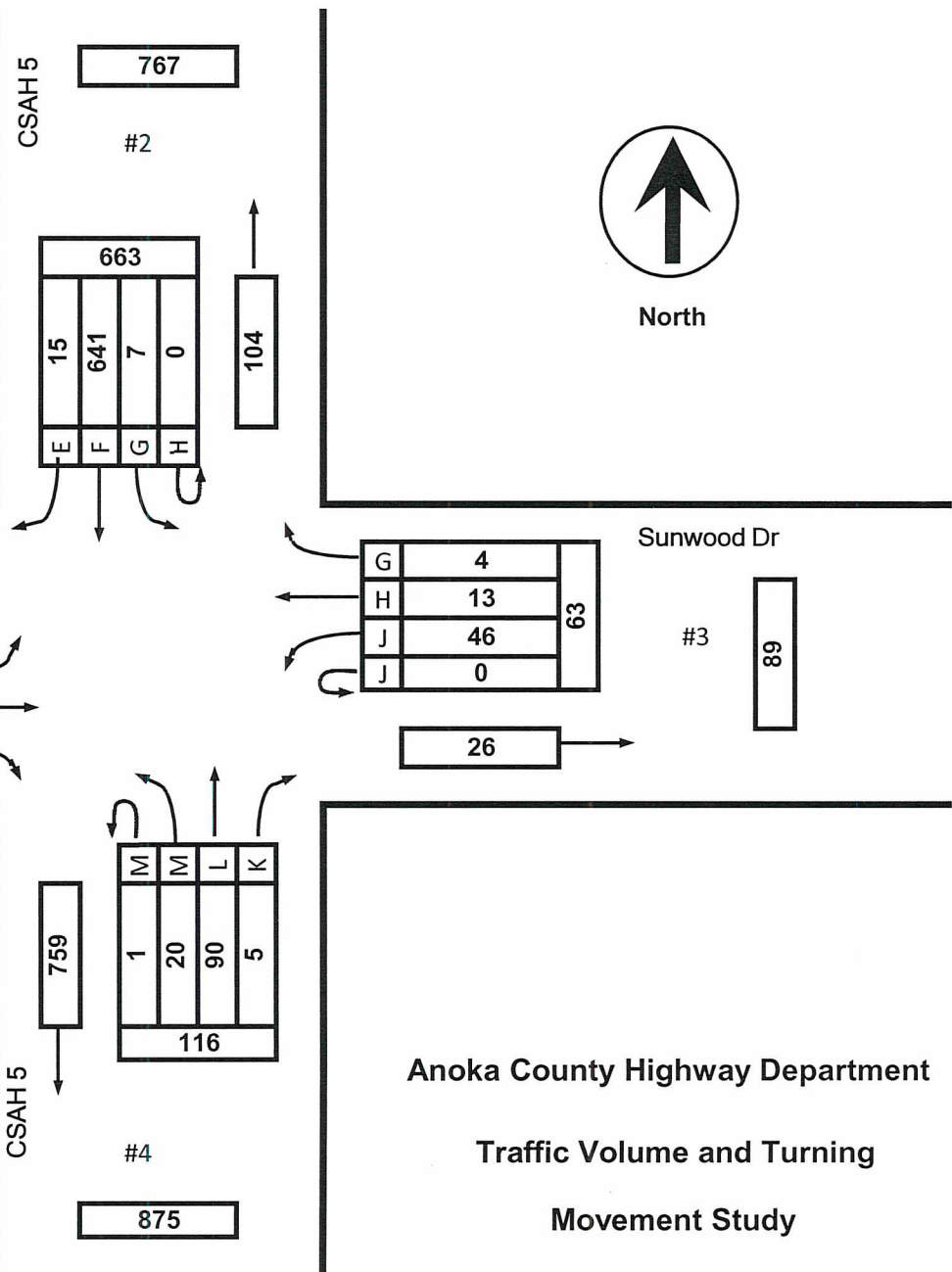
@ Sunwood Dr

Collection Period : 7:15 - 8:15 AM

AM PEAK



North



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

Anoka County Highway Department
Traffic Volume and Turning
Movement Study

Date : 12/13/17

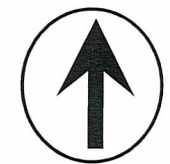
Count Number : TMC 1739

Location : CSAH 5 (Nowthen Blvd.)

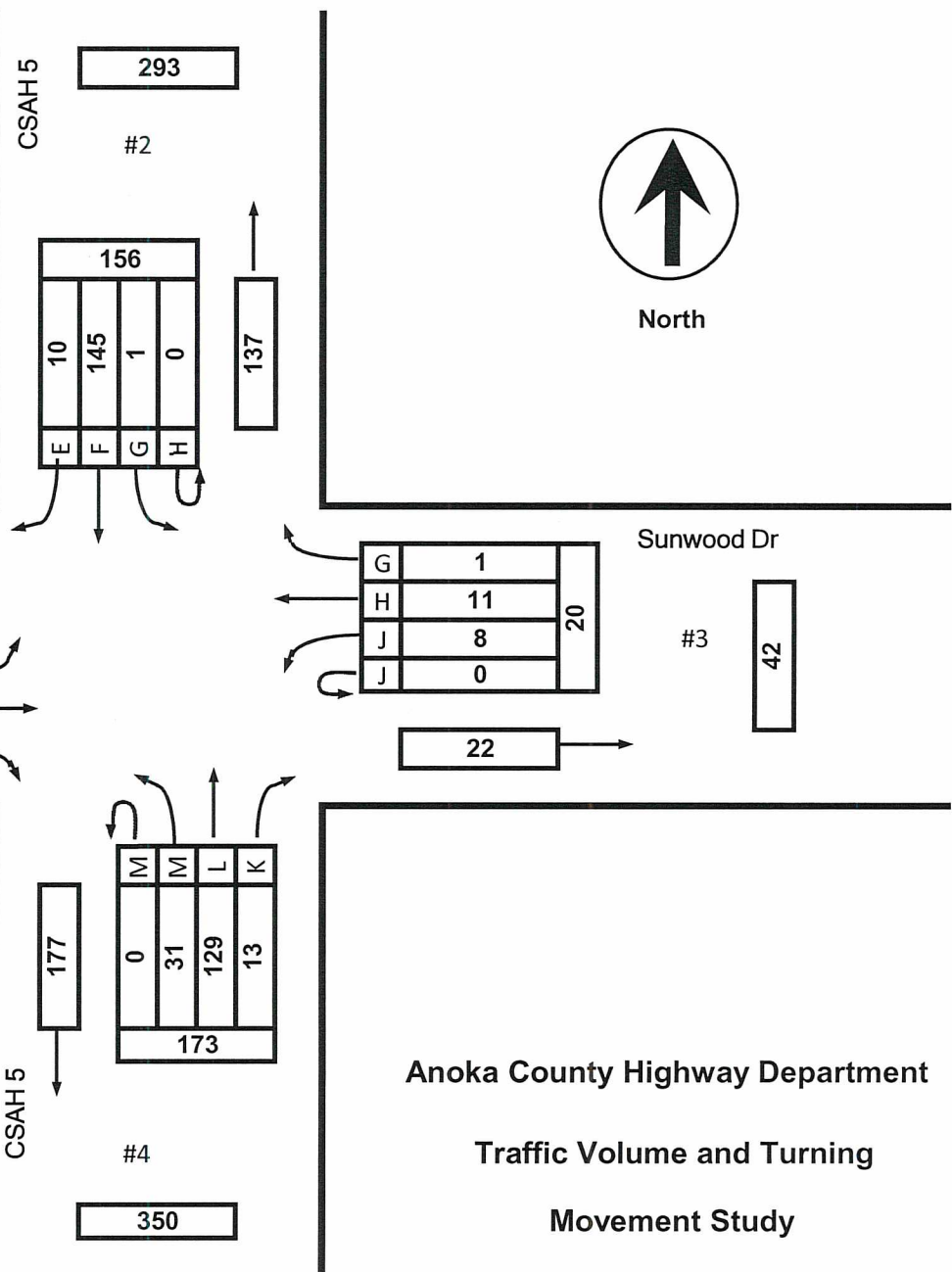
@ Sunwood Dr

Collection Period : 12:30 - 1:30 PM

MID PEAK



North



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

Anoka County Highway Department
 Traffic Volume and Turning
 Movement Study

Date : 12/13/17

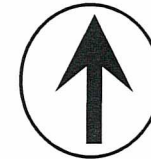
Count Number : TMC 1739

Location : CSAH 5 (Nowthen Blvd.)

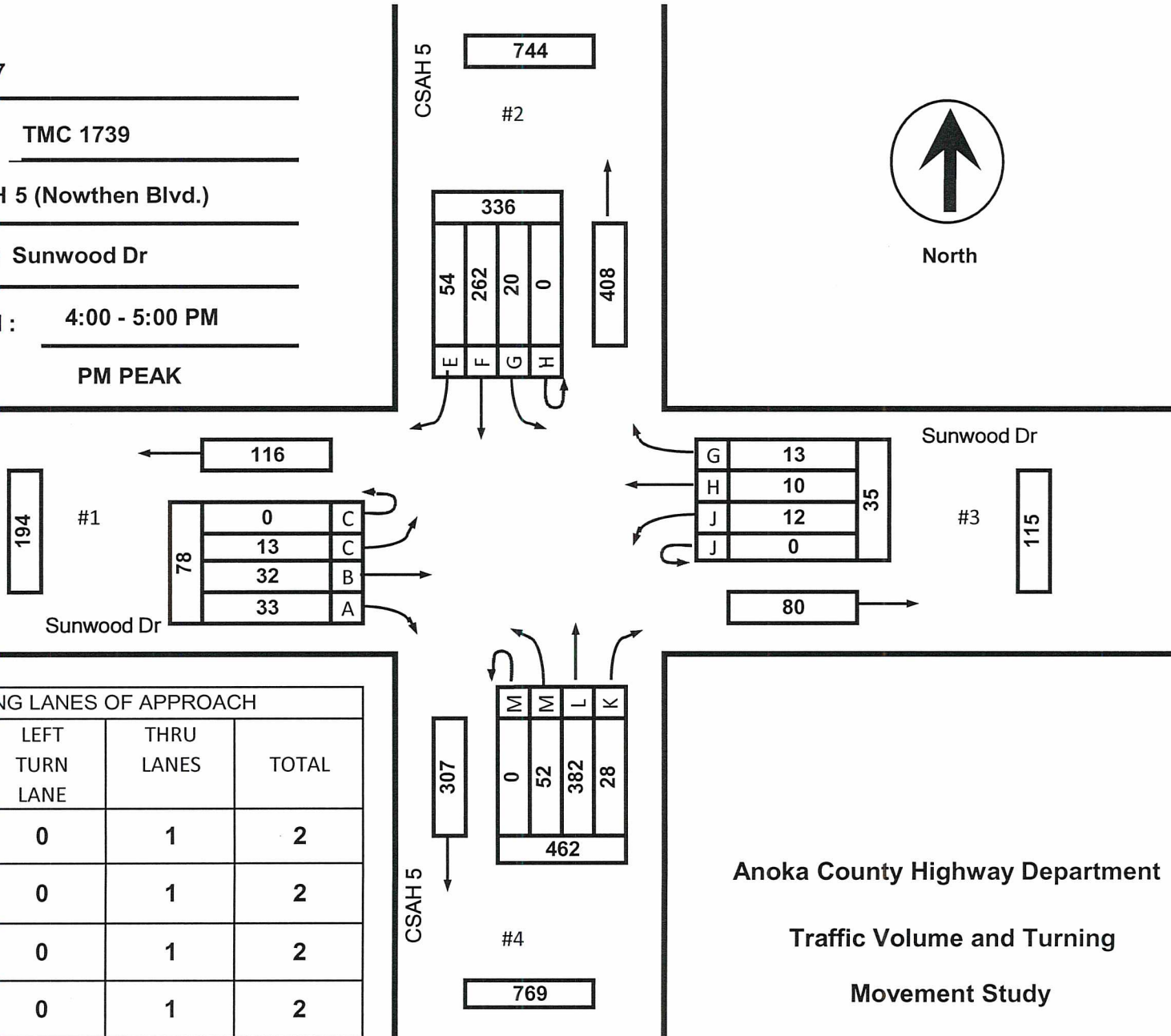
@ Sunwood Dr

Collection Period : 4:00 - 5:00 PM

PM PEAK



North



EXISTING LANES OF APPROACH				
	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	TOTAL
#1	1	0	1	2
#2	1	0	1	2
#3	1	0	1	2
#4	1	0	1	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: Cold & Snowy
 CountCAM 200
 Study Conducted By: Ferin

File Name : tmc 1739
 Site Code :
 Start Date : 12/13/2017
 Page No : 1

Groups Printed- Cars + - Trucks

Start Time	CSAH 5 Southbound						Sunwood DR Westbound						CSAH 5 Northbound						Sunwood DR 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			
05:00	0	0	40	1	0	41	0	3	1	0	0	4	0	0	0	0	0	0	0	1	0	4	0	5	0	50	50
05:15	0	0	56	0	0	56	0	4	0	0	0	4	0	0	3	0	0	3	0	0	0	6	0	6	0	69	69
05:30	0	1	53	0	0	54	0	5	1	1	0	7	0	1	7	1	0	9	0	0	1	9	0	10	0	80	80
05:45	0	0	77	0	0	77	0	6	3	0	0	9	0	2	6	2	0	10	0	1	1	10	0	12	0	108	108
Total	0	1	226	1	0	228	0	18	5	1	0	24	0	3	16	3	0	22	0	2	2	29	0	33	0	307	307
06:00	0	1	100	1	0	102	0	8	6	1	0	15	0	1	7	1	0	9	0	0	1	13	0	14	0	140	140
06:15	0	0	94	1	0	95	0	6	3	0	0	9	0	1	16	0	0	17	0	2	0	6	0	8	0	129	129
06:30	0	0	135	4	0	139	0	9	3	1	0	13	0	4	12	2	0	18	0	3	3	16	0	22	0	192	192
06:45	0	0	157	3	0	160	0	7	6	1	0	14	0	3	21	2	0	26	0	3	6	15	0	24	0	224	224
Total	0	1	486	9	0	496	0	30	18	3	0	51	0	9	56	5	0	70	0	8	10	50	0	68	0	685	685
07:00	0	1	132	4	0	137	0	13	5	3	0	21	0	1	17	2	0	20	0	5	4	17	0	26	0	204	204
07:15	0	4	149	7	0	160	0	12	1	1	0	14	0	3	19	1	0	23	0	4	7	12	0	23	0	220	220
07:30	0	1	170	3	0	174	0	16	3	2	0	21	0	6	19	2	0	27	0	1	4	16	0	21	0	243	243
07:45	0	1	161	4	0	166	0	10	7	1	0	18	0	7	23	1	0	31	0	4	1	23	0	28	0	243	243
Total	0	7	612	18	0	637	0	51	16	7	0	74	0	17	78	6	0	101	0	14	16	68	0	98	0	910	910
08:00	0	1	161	1	0	163	0	8	2	0	0	10	1	4	29	1	0	35	0	1	2	20	0	23	0	231	231
08:15	0	0	114	4	0	118	0	10	3	3	0	16	0	8	45	2	0	55	0	3	2	19	0	24	0	213	213
08:30	0	0	69	3	4	72	0	6	2	0	1	8	0	6	40	3	0	49	0	1	4	6	0	11	5	140	145
08:45	0	3	74	2	0	79	0	3	4	1	0	8	0	2	41	2	0	45	0	3	2	12	0	17	0	149	149
Total	0	4	418	10	4	432	0	27	11	4	1	42	1	20	155	8	0	184	0	8	10	57	0	75	5	733	738
09:00	0	4	82	12	0	98	0	3	1	3	0	7	0	4	60	1	0	65	0	17	0	12	0	29	0	199	199
09:15	1	4	122	26	0	153	0	3	2	3	0	8	0	6	39	0	0	45	0	16	2	8	0	26	0	232	232
09:30	0	0	55	3	0	58	0	4	2	1	0	7	0	2	21	2	0	25	0	1	2	11	0	14	0	104	104
09:45	0	0	43	1	0	44	0	1	1	0	0	2	0	5	15	3	0	23	0	0	1	2	0	3	0	72	72
Total	1	8	302	42	0	353	0	11	6	7	0	24	0	17	135	6	0	158	0	34	5	33	0	72	0	607	607
10:00	0	0	40	0	0	40	0	2	2	0	0	4	0	2	16	4	0	22	0	0	1	8	0	9	0	75	75
10:15	0	0	43	1	0	44	0	2	1	0	0	3	0	5	15	8	0	28	0	0	0	9	0	9	0	84	84
10:30	0	2	47	2	0	51	0	1	0	0	0	1	0	2	27	2	0	31	0	2	4	4	0	10	0	93	93
10:45	0	1	41	0	0	42	0	5	1	0	0	6	0	1	29	3	0	33	0	1	0	11	0	12	0	93	93
Total	0	3	171	3	0	177	0	10	4	0	0	14	0	10	87	17	0	114	0	3	5	32	0	40	0	345	345
11:00	0	0	34	0	0	34	0	3	0	1	0	4	0	4	41	3	0	48	0	1	3	4	0	8	0	94	94



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : tmc 1739
 Site Code :
 Start Date : 12/13/2017
 Page No : 2

Weather: Cold & Snowy
 CountCAM 200
 Study Conducted By: Ferin

Groups Printed- Cars + - Trucks

Start Time	CSAH 5 Southbound						Sunwood DR Westbound						CSAH 5 Northbound						Sunwood DR 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				
11:15	0	0	43	0	0	43	0	9	6	0	0	15	0	2	25	1	0	28	0	2	3	6	0	11	0	0	97	97
11:30	0	0	41	4	0	45	0	1	2	1	0	4	1	6	30	4	0	41	0	1	2	6	0	9	0	0	99	99
11:45	0	0	41	1	0	42	0	3	4	0	0	7	0	2	23	2	0	27	0	0	1	11	0	12	0	0	88	88
Total	0	0	159	5	0	164	0	16	12	2	0	30	1	14	119	10	0	144	0	4	9	27	0	40	0	0	378	378
12:00	0	0	26	2	0	28	0	2	2	0	0	4	0	8	27	3	0	38	1	3	0	6	0	10	0	0	80	80
12:15	0	1	40	3	0	44	0	1	1	2	0	4	0	7	25	3	0	35	0	8	2	7	0	17	0	0	100	100
12:30	0	0	33	3	0	36	0	3	4	0	0	7	0	3	23	2	0	28	0	2	2	7	0	11	0	0	82	82
12:45	0	0	36	3	0	39	0	1	3	1	0	5	0	8	32	5	1	45	0	2	4	7	1	13	2	2	102	104
Total	0	1	135	11	0	147	0	7	10	3	0	20	0	26	107	13	1	146	1	15	8	27	1	51	2	2	364	366
13:00	0	1	35	2	0	38	0	2	1	0	0	3	0	7	39	4	0	50	0	0	1	7	0	8	0	0	99	99
13:15	0	0	41	2	0	43	0	2	3	0	0	5	0	13	35	2	0	50	0	3	1	3	0	7	0	0	105	105
13:30	0	0	29	2	0	31	0	5	2	0	0	7	0	3	23	5	0	31	0	2	1	2	0	5	0	0	74	74
13:45	0	0	30	0	0	30	0	2	1	0	0	3	0	6	36	3	0	45	0	1	4	3	0	8	0	0	86	86
Total	0	1	135	6	0	142	0	11	7	0	0	18	0	29	133	14	0	176	0	6	7	15	0	28	0	0	364	364
14:00	0	0	28	4	0	32	0	2	2	0	0	4	0	6	59	7	0	72	0	2	2	3	0	7	0	0	115	115
14:15	0	0	40	4	0	44	0	4	3	0	0	7	0	11	55	3	0	69	0	4	2	9	0	15	0	0	135	135
14:30	0	0	29	4	0	33	0	1	6	1	0	8	0	14	61	9	0	84	0	4	4	6	0	14	0	0	139	139
14:45	0	0	36	7	0	43	0	6	2	1	0	9	0	8	55	5	0	68	0	3	2	13	0	18	0	0	138	138
Total	0	0	133	19	0	152	0	13	13	2	0	28	0	39	230	24	0	293	0	13	10	31	0	54	0	0	527	527
15:00	0	3	29	6	0	38	0	4	5	1	0	10	0	5	69	4	0	78	0	3	6	10	0	19	0	0	145	145
15:15	0	0	33	4	0	37	0	2	5	1	0	8	0	11	98	14	0	123	0	2	5	10	0	17	0	0	185	185
15:30	0	1	42	3	0	46	0	2	3	1	0	6	0	12	90	9	0	111	0	5	7	11	0	23	0	0	186	186
15:45	0	1	37	4	0	42	0	3	2	0	0	5	0	15	108	4	0	127	0	11	5	8	0	24	0	0	198	198
Total	0	5	141	17	0	163	0	11	15	3	0	29	0	43	365	31	0	439	0	21	23	39	0	83	0	0	714	714
16:00	0	11	84	34	1	129	0	1	0	4	1	5	0	14	85	4	0	103	0	2	5	10	0	17	2	2	254	256
16:15	0	4	62	8	0	74	0	0	4	1	0	5	0	9	92	8	0	109	0	2	5	8	0	15	0	0	203	203
16:30	0	2	59	7	0	68	0	8	3	3	0	14	0	19	111	5	0	135	0	3	13	8	0	24	0	0	241	241
16:45	0	3	57	5	0	65	0	3	3	5	0	11	0	10	94	11	0	115	0	6	9	7	0	22	0	0	213	213
Total	0	20	262	54	1	336	0	12	10	13	1	35	0	52	382	28	0	462	0	13	32	33	0	78	2	2	911	913
17:00	0	4	61	3	0	68	0	3	6	2	0	11	0	24	101	12	0	137	0	2	5	8	0	15	0	0	231	231
17:15	0	1	51	5	0	57	0	6	1	0	0	7	0	14	95	14	0	123	0	2	8	10	0	20	0	0	207	207
17:30	0	4	61	6	0	71	0	9	3	3	1	15	0	19	102	14	0	135	1	1	2	11	0	15	1	1	236	237
17:45	0	2	49	5	0	56	0	7	4	1	0	12	0	19	111	13	0	143	0	4	4	7	0	15	0	0	226	226
Total	0	11	222	19	0	252	0	25	14	6	1	45	0	76	409	53	0	538	1	9	19	36	0	65	1	1	900	901



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

Weather: Cold & Snowy
CountCAM 200
Study Conducted By: Ferin

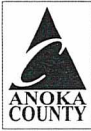
File Name : tmc 1739
Site Code :
Start Date : 12/13/2017
Page No : 3

Groups Printed- Cars + - Trucks

Start Time	CSAH 5 Southbound						Sunwood DR Westbound						CSAH 5 Northbound						Sunwood DR 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			
18:00	0	0	67	5	0	72	0	8	3	0	1	11	0	10	81	9	0	100	0	4	4	11	0	19	1	202	203
18:15	0	0	52	4	0	56	0	7	4	1	0	12	0	17	83	2	0	102	0	3	8	7	0	18	0	188	188
18:30	0	0	37	4	0	41	0	6	3	0	0	9	0	13	63	10	0	86	0	5	1	5	0	11	0	147	147
18:45	0	0	40	2	0	42	0	2	7	2	0	11	0	13	63	9	0	85	0	1	6	9	0	16	0	154	154
Total	0	0	196	15	0	211	0	23	17	3	1	43	0	53	290	30	0	373	0	13	19	32	0	64	1	691	692
Grand Total	1	62	3598	229	5	3890	0	265	158	54	4	477	2	408	2562	248	1	3220	2	163	175	509	1	849	11	8436	8447
Apprch %	0	1.6	92.5	5.9			0	55.6	33.1	11.3			0.1	12.7	79.6	7.7			0.2	19.2	20.6	60					
Total %	0	0.7	42.7	2.7		46.1	0	3.1	1.9	0.6		5.7	0	4.8	30.4	2.9		38.2	0	1.9	2.1	6		10.1	0.1	99.9	
Cars +	1	58	3420	216		3700	0	258	150	52		464	1	397	2421	240		3060	2	155	167	498		823	0	0	8047
% Cars +	100	93.5	95.1	94.3	100	95	0	97.4	94.9	96.3	100	96.5	50	97.3	94.5	96.8	100	95	100	95.1	95.4	97.8	100	96.8	0	0	95.3
Trucks	0	4	178	13		195	0	7	8	2		17	1	11	141	8		161	0	8	8	11		27	0	0	400
% Trucks	0	6.5	4.9	5.7	0	5	0	2.6	5.1	3.7	0	3.5	50	2.7	5.5	3.2	0	5	0	4.9	4.6	2.2	0	3.2	0	0	4.7

Start Time	CSAH 5 Southbound						Sunwood DR Westbound						CSAH 5 Northbound						Sunwood DR 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 05:00 to 09:45 - Peak 1 of 1																											
Peak Hour for Entire Intersection Begins at 07:15																											
07:15	0	4	149	7	160	0	12	1	1	14	0	3	19	1	23	0	4	7	12	23							220
07:30	0	1	170	3	174	0	16	3	2	21	0	6	19	2	27	0	1	4	16	21							243
07:45	0	1	161	4	166	0	10	7	1	18	0	7	23	1	31	0	4	1	23	28							243
08:00	0	1	161	1	163	0	8	2	0	10	1	4	29	1	35	0	1	2	20	23							231
Total Volume	0	7	641	15	663	0	46	13	4	63	1	20	90	5	116	0	10	14	71	95							937
% App. Total	0	1.1	96.7	2.3		0	73	20.6	6.3		0.9	17.2	77.6	4.3		0	10.5	14.7	74.7								
PHF	.000	.438	.943	.536	.953	.000	.719	.464	.500	.750	.250	.714	.776	.625	.829	.000	.625	.500	.772	.848							.964

Start Time	CSAH 5 Southbound						Sunwood DR Westbound						CSAH 5 Northbound						Sunwood DR 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 12:30																											
12:30	0	0	33	3	36	0	3	4	0	7	0	3	23	2	28	0	2	2	7	11							82
12:45	0	0	36	3	39	0	1	3	1	5	0	8	32	5	45	0	2	4	7	13							102
13:00	0	1	35	2	38	0	2	1	0	3	0	7	39	4	50	0	0	1	7	8							99
13:15	0	0	41	2	43	0	2	3	0	5	0	13	35	2	50	0	3	1	3	7							105
Total Volume	0	1	145	10	156	0	8	11	1	20	0	31	129	13	173	0	7	8	24	39							388
% App. Total	0	0.6	92.9	6.4		0	40	55	5		0	17.9	74.6	7.5		0	17.9	20.5	61.5								
PHF	.000	.250	.884	.833	.907	.000	.667	.688	.250	.714	.000	.596	.827	.650	.865	.000	.583	.500	.857	.750							.924



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

Weather: Cold & Snowy
CountCAM 200
Study Conducted By: Ferin

File Name : tmc 1739
Site Code :
Start Date : 12/13/2017
Page No : 4

Start Time	CSAH 5 Southbound					Sunwood DR Westbound					CSAH 5 Northbound					Sunwood DR 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 14:00 to 18:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:00																					
16:00	0	11	84	34	129	0	1	0	4	5	0	14	85	4	103	0	2	5	10	17	254
16:15	0	4	62	8	74	0	0	4	1	5	0	9	92	8	109	0	2	5	8	15	203
16:30	0	2	59	7	68	0	8	3	3	14	0	19	111	5	135	0	3	13	8	24	241
16:45	0	3	57	5	65	0	3	3	5	11	0	10	94	11	115	0	6	9	7	22	213
Total Volume	0	20	262	54	336	0	12	10	13	35	0	52	382	28	462	0	13	32	33	78	911
% App. Total	0	6	78	16.1		0	34.3	28.6	37.1		0	11.3	82.7	6.1		0	16.7	41	42.3		
PHF	.000	.455	.780	.397	.651	.000	.375	.625	.650	.625	.000	.684	.860	.636	.856	.000	.542	.615	.825	.813	.897



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

Weather: Cold & Snowy
 CountCAM 200
 Study Conducted By: Ferin

File Name : tmc 1739
 Site Code :
 Start Date : 12/13/2017
 Page No : 1

Groups Printed- Trucks

Start Time	CSAH 5 Southbound					Sunwood DR Westbound					CSAH 5 Northbound					Sunwood DR 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			
05:00	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
05:15	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
05:30	0	0	2	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	3	
05:45	0	0	3	0	3	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	4	
Total	0	0	9	0	9	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	11	
06:00	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	
06:15	0	0	9	0	9	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	12	
06:30	0	0	3	0	3	0	0	0	0	0	0	0	3	1	4	0	0	0	0	0	0	7	
06:45	0	0	8	0	8	0	1	1	0	2	0	0	2	1	3	0	0	0	1	1	1	14	
Total	0	0	25	0	25	0	1	1	0	2	0	0	8	2	10	0	0	0	1	1	1	38	
07:00	0	0	9	1	10	0	0	0	0	0	0	0	4	0	4	0	0	1	0	1	1	15	
07:15	0	1	10	0	11	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	13	
07:30	0	0	4	0	4	0	1	0	0	1	0	1	3	0	4	0	0	1	1	2	2	11	
07:45	0	0	6	0	6	0	0	0	0	0	0	0	2	0	2	0	0	0	1	1	1	9	
Total	0	1	29	1	31	0	1	0	0	1	0	1	11	0	12	0	0	2	2	4	4	48	
08:00	0	0	2	0	2	0	0	0	0	0	1	1	1	0	3	0	0	0	0	0	0	5	
08:15	0	0	1	0	1	0	0	0	0	0	0	0	3	1	4	0	0	0	0	0	0	5	
08:30	0	0	3	1	4	0	0	0	0	0	0	0	3	0	3	0	0	1	1	2	2	9	
08:45	0	2	5	0	7	0	1	1	0	2	0	1	5	0	6	0	0	0	0	0	0	15	
Total	0	2	11	1	14	0	1	1	0	2	1	2	12	1	16	0	0	1	1	2	2	34	
09:00	0	0	2	0	2	0	0	0	0	0	0	0	5	0	5	0	1	0	0	1	1	8	
09:15	0	0	22	0	22	0	0	0	0	0	0	0	8	0	8	0	2	0	0	2	2	32	
09:30	0	0	5	0	5	0	0	0	1	1	0	0	1	0	1	0	0	0	0	0	0	7	
09:45	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	2	
Total	0	0	29	0	29	0	0	0	1	1	0	1	15	0	16	0	3	0	0	3	3	49	
10:00	0	0	3	0	3	0	0	0	0	0	0	0	2	0	2	0	0	1	0	1	1	6	
10:15	0	0	3	0	3	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	6	
10:30	0	0	5	1	6	0	0	0	0	0	0	0	1	0	1	0	0	2	1	3	3	10	
10:45	0	0	2	0	2	0	0	1	0	1	0	0	1	0	1	0	1	0	0	1	1	5	
Total	0	0	13	1	14	0	0	1	0	1	0	0	7	0	7	0	1	3	1	5	5	27	
11:00	0	0	2	0	2	0	0	0	0	0	0	1	8	0	9	0	0	0	0	0	0	11	
11:15	0	0	3	0	3	0	0	1	0	1	0	0	1	0	1	0	0	1	0	1	1	6	
11:30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	1	2	
11:45	0	0	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	
Total	0	0	11	0	11	0	0	1	0	1	0	1	10	0	11	0	1	1	0	2	2	25	
12:00	0	0	1	0	1	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	4	
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:30	0	0	2	0	2	0	0	1	0	1	0	0	3	0	3	0	0	0	0	0	0	6	
12:45	0	0	1	0	1	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	3	
Total	0	0	4	0	4	0	0	1	0	1	0	0	7	1	8	0	0	0	0	0	0	13	
13:00	0	0	5	0	5	0	1	0	0	1	0	0	1	0	1	0	0	0	1	1	1	8	
13:15	0	0	2	1	3	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	5	
13:30	0	0	1	0	1	0	1	0	0	1	0	0	1	1	2	0	0	0	0	0	0	4	
13:45	0	0	1	0	1	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	4	
Total	0	0	9	1	10	0	2	0	0	2	0	1	6	1	8	0	0	0	1	1	1	21	
14:00	0	0	3	0	3	0	0	0	0	0	0	0	8	0	8	0	0	0	0	0	0	11	
14:15	0	0	1	1	2	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	5	



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : tmc 1739
 Site Code :
 Start Date : 12/13/2017
 Page No : 2

Weather: Cold & Snowy
 CountCAM 200
 Study Conducted By: Ferin

Groups Printed- Trucks

Start Time	CSAH 5 Southbound					Sunwood DR Westbound					CSAH 5 Northbound					Sunwood DR 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	
14:30	0	0	6	0	6	0	0	0	0	0	0	0	4	0	4	0	0	0	1	1	11
14:45	0	0	3	0	3	0	1	0	0	1	0	1	6	1	8	0	0	0	1	1	13
Total	0	0	13	1	14	0	1	0	0	1	0	1	21	1	23	0	0	0	2	2	40
15:00	0	0	1	0	1	0	0	0	0	0	0	1	5	0	6	0	0	0	0	0	7
15:15	0	0	5	0	5	0	0	0	0	0	0	0	3	2	5	0	0	0	0	0	10
15:30	0	0	2	0	2	0	0	0	0	0	0	1	5	0	6	0	0	0	0	0	8
15:45	0	0	1	0	1	0	0	0	0	0	0	0	7	0	7	0	3	1	0	4	12
Total	0	0	9	0	9	0	0	0	0	0	0	2	20	2	24	0	3	1	0	4	37
16:00	0	1	6	5	12	0	1	0	0	1	0	0	4	0	4	0	0	0	0	0	17
16:15	0	0	1	0	1	0	0	1	0	1	0	0	1	0	1	0	0	0	1	1	4
16:30	0	0	1	1	2	0	0	1	1	2	0	1	0	0	1	0	0	0	2	2	7
16:45	0	0	4	1	5	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	6
Total	0	1	12	7	20	0	1	2	1	4	0	1	6	0	7	0	0	0	3	3	34
17:00	0	0	3	0	3	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	4
17:15	0	0	0	1	1	0	0	0	0	0	0	0	7	0	7	0	0	0	0	0	8
17:30	0	0	0	0	0	0	0	1	0	1	0	0	4	0	4	0	0	0	0	0	5
17:45	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	2
Total	0	0	3	1	4	0	0	1	0	1	0	1	13	0	14	0	0	0	0	0	19
18:00	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
18:15	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	0	1	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	4
Grand Total	0	4	178	13	195	0	7	8	2	17	1	11	141	8	161	0	8	8	11	27	400
Apprch %	0	2.1	91.3	6.7		0	41.2	47.1	11.8		0.6	6.8	87.6	5		0	29.6	29.6	40.7		
Total %	0	1	44.5	3.2	48.8	0	1.8	2	0.5	4.2	0.2	2.8	35.2	2	40.2	0	2	2	2.8	6.8	

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 1739

Study Date : 01/11/2018

Signal Warrants - Summary

Major Street Approaches

Northbound: CSAH 5

Number of Lanes : 1

Total Approach Volume: 3,220

Southbound: CSAH 5

Number of Lanes : 1

Total Approach Volume: 3,890

Minor Street Approaches

Eastbound: Sunwood DR

Number of Lanes : 1

Total Approach Volume: 849

Westbound: Sunwood DR

Number of Lanes : 1

Total Approach Volume: 477

Warrant Summary (Rural Values Apply)

Warrant 1 - Eight Hour Vehicular Volumes.....Not Satisfied

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

Required volumes reached for 0 hours, 8 are needed

Warrant 1B - Interruption of Continuous Traffic.....Not Satisfied

Required volumes reached for 7 hours, 8 are needed

Warrant 1C - Combination of Warrants.....Not Satisfied

Required 1A volumes reached for 3 hours, 8 are needed

Required 1B volumes reached for 9 hours, 8 are needed

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

Number of hours (5) volumes exceed minimum >= minimum required (4).

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

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

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

Warrant 3B - Peak Hour Volumes.....Not Satisfied

Volumes do not exceed minimums for any 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: TMC 1739
Study Date : 01/11/2018

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 0 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

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

Volume Requirements

Rural Factor of 70 % applied
Veh/Hr Major = **350**

Veh/Hr Minor = **105**

Time	Major Road CSAH 5				Total	Minor Road Sunwood DR		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
16:00 - 17:00	462	+	336	=	798	78	35	No
17:00 - 18:00	538	+	252	=	790	65	45	No
15:45 - 16:45	474	+	313	=	787	80	29	No
07:15 - 08:15	116	+	663	=	779	95	63	No
16:45 - 17:45	510	+	261	=	771	72	44	No
16:15 - 17:15	496	+	275	=	771	76	41	No
07:30 - 08:30	148	+	621	=	769	96	65	No
16:30 - 17:30	510	+	258	=	768	81	43	No
17:15 - 18:15	501	+	256	=	757	69	45	No
15:30 - 16:30	450	+	291	=	741	79	21	No
07:00 - 08:00	101	+	637	=	738	98	74	No
17:30 - 18:30	480	+	255	=	735	67	50	No
06:45 - 07:45	96	+	631	=	727	94	70	No
15:15 - 16:15	464	+	254	=	718	81	24	No
07:45 - 08:45	170	+	519	=	689	86	52	No
06:30 - 07:30	87	+	596	=	683	95	62	No
17:45 - 18:45	431	+	225	=	656	63	44	No
08:00 - 09:00	184	+	432	=	616	75	42	No
06:15 - 07:15	81	+	531	=	612	80	57	No
08:30 - 09:30	204	+	402	=	606	83	31	No
15:00 - 16:00	439	+	163	=	602	83	29	No
18:00 - 19:00	373	+	211	=	584	64	43	No
08:15 - 09:15	214	+	367	=	581	81	39	No
08:45 - 09:45	180	+	388	=	568	86	30	No
06:00 - 07:00	70	+	496	=	566	68	51	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 1739

Study Date : 01/11/2018

Warrant 1B - Interruption of Continuous Traffic

Description

Intended for sites where the volume of the major street is so heavy that traffic on the minor street suffers excessive delay or hazard.

Summary

Only 7 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

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

Volume Requirements

Rural Factor of 70 % applied
 Veh/Hr Major = **525**
 Veh/Hr Minor = **52**

Time	Major Road CSAH 5				Total	Minor Road Sunwood DR		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
15:45 - 16:45	474	+	313	=	787	80	29	Yes
16:45 - 17:45	510	+	261	=	771	72	44	Yes
07:00 - 08:00	101	+	637	=	738	98	74	Yes
17:45 - 18:45	431	+	225	=	656	63	44	Yes
08:00 - 09:00	184	+	432	=	616	75	42	Yes
06:00 - 07:00	70	+	496	=	566	68	51	Yes
14:45 - 15:45	380	+	164	=	544	77	33	Yes
09:00 - 10:00	158	+	353	=	511	72	24	No
14:30 - 15:30	353	+	151	=	504	68	35	No
05:45 - 06:45	54	+	413	=	467	56	46	No
14:15 - 15:15	299	+	158	=	457	66	34	No
14:00 - 15:00	293	+	152	=	445	54	28	No
09:15 - 10:15	115	+	295	=	410	52	21	No
13:45 - 14:45	270	+	139	=	409	44	22	No
05:30 - 06:30	45	+	328	=	373	44	40	No
13:30 - 14:30	217	+	137	=	354	35	21	No
13:15 - 14:15	198	+	136	=	334	27	19	No
12:30 - 13:30	173	+	156	=	329	39	20	No
12:45 - 13:45	176	+	151	=	327	33	20	No
05:15 - 06:15	31	+	289	=	320	42	35	No
13:00 - 14:00	176	+	142	=	318	28	18	No
12:15 - 13:15	158	+	157	=	315	49	19	No
10:45 - 11:45	150	+	164	=	314	40	29	No
10:15 - 11:15	140	+	171	=	311	39	14	No
10:30 - 11:30	140	+	170	=	310	41	26	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 1739

Study Date : 01/11/2018

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 3 hours meet 1A minimums.
9 hours meet 1B minimums.
Warrant is NOT met.

Site Data Required

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

Volume Requirements

Rural Factor of 70% applied
Warrant 1A 1B
Veh/Hr Major = **280 420**

Veh/Hr Minor = **84 42**

Major Road CSAH 5

Minor Road Sunwood DR

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1A?
07:30 - 08:30	148	+	621	=	769	96	65	Yes
06:30 - 07:30	87	+	596	=	683	95	62	Yes
08:45 - 09:45	180	+	388	=	568	86	30	Yes
16:00 - 17:00	462	+	336	=	798	78	35	No
17:00 - 18:00	538	+	252	=	790	65	45	No
15:45 - 16:45	474	+	313	=	787	80	29	No
16:15 - 17:15	496	+	275	=	771	76	41	No
16:45 - 17:45	510	+	261	=	771	72	44	No
16:30 - 17:30	510	+	258	=	768	81	43	No
17:15 - 18:15	501	+	256	=	757	69	45	No
15:30 - 16:30	450	+	291	=	741	79	21	No
17:30 - 18:30	480	+	255	=	735	67	50	No

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1B?
16:00 - 17:00	462	+	336	=	798	78	35	Yes
17:00 - 18:00	538	+	252	=	790	65	45	Yes
06:45 - 07:45	96	+	631	=	727	94	70	Yes
07:45 - 08:45	170	+	519	=	689	86	52	Yes
15:00 - 16:00	439	+	163	=	602	83	29	Yes
18:00 - 19:00	373	+	211	=	584	64	43	Yes
08:45 - 09:45	180	+	388	=	568	86	30	Yes
05:45 - 06:45	54	+	413	=	467	56	46	Yes
14:00 - 15:00	293	+	152	=	445	54	28	Yes
13:45 - 14:45	270	+	139	=	409	44	22	No
05:30 - 06:30	45	+	328	=	373	44	40	No
13:30 - 14:30	217	+	137	=	354	35	21	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 1739

Study Date : 01/11/2018

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.

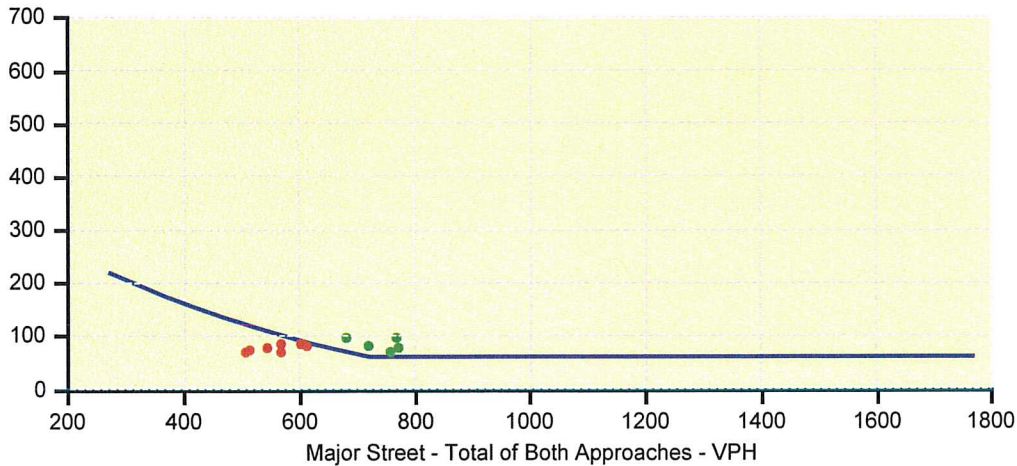
Summary

5 one hour periods meet minimums.
Warrant IS met.

Site Data Required

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

Time	Major Road CSAH 5				=	Total	Minor Road Sunwood DR		Met?
	Major NB	+	Major SB	Minor EB			Minor WB		
16:15 - 17:15	496	+	275	=	771	76	41	Yes	
07:30 - 08:30	148	+	621	=	769	96	65	Yes	
17:15 - 18:15	501	+	256	=	757	69	45	Yes	
15:15 - 16:15	464	+	254	=	718	81	24	Yes	
06:30 - 07:30	87	+	596	=	683	95	62	Yes	
06:15 - 07:15	81	+	531	=	612	80	57	No	
08:30 - 09:30	204	+	402	=	606	83	31	No	
15:00 - 16:00	439	+	163	=	602	83	29	No	
08:45 - 09:45	180	+	388	=	568	86	30	No	
06:00 - 07:00	70	+	496	=	566	68	51	No	
14:45 - 15:45	380	+	164	=	544	77	33	No	
							24	No	



ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 1739

Study Date : 01/11/2018

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

Only 0 one hour periods meet minimums.
Warrant is NOT met.

Site Data Required

Rural Settings Apply = True
 Number of Major Lanes = 1
 Number of Minor Lanes = 1

Time	Major Road CSAH 5				Total	Minor Road Sunwood DR		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
16:00 - 17:00	462	+	336	=	798	78	35	No
17:00 - 18:00	538	+	252	=	790	65	45	No
15:45 - 16:45	474	+	313	=	787	80	29	No
07:15 - 08:15	116	+	663	=	779	95	63	No
16:45 - 17:45	510	+	261	=	771	72	44	No
16:15 - 17:15	496	+	275	=	771	76	41	No
07:30 - 08:30	148	+	621	=	769	96	65	No
16:30 - 17:30	510	+	258	=	768	81	43	No
17:15 - 18:15	501	+	256	=	757	69	45	No
15:30 - 16:30	450	+	291	=	741	79	21	No
07:00 - 08:00	101	+	637	=	738	98	74	No
							50	No

