

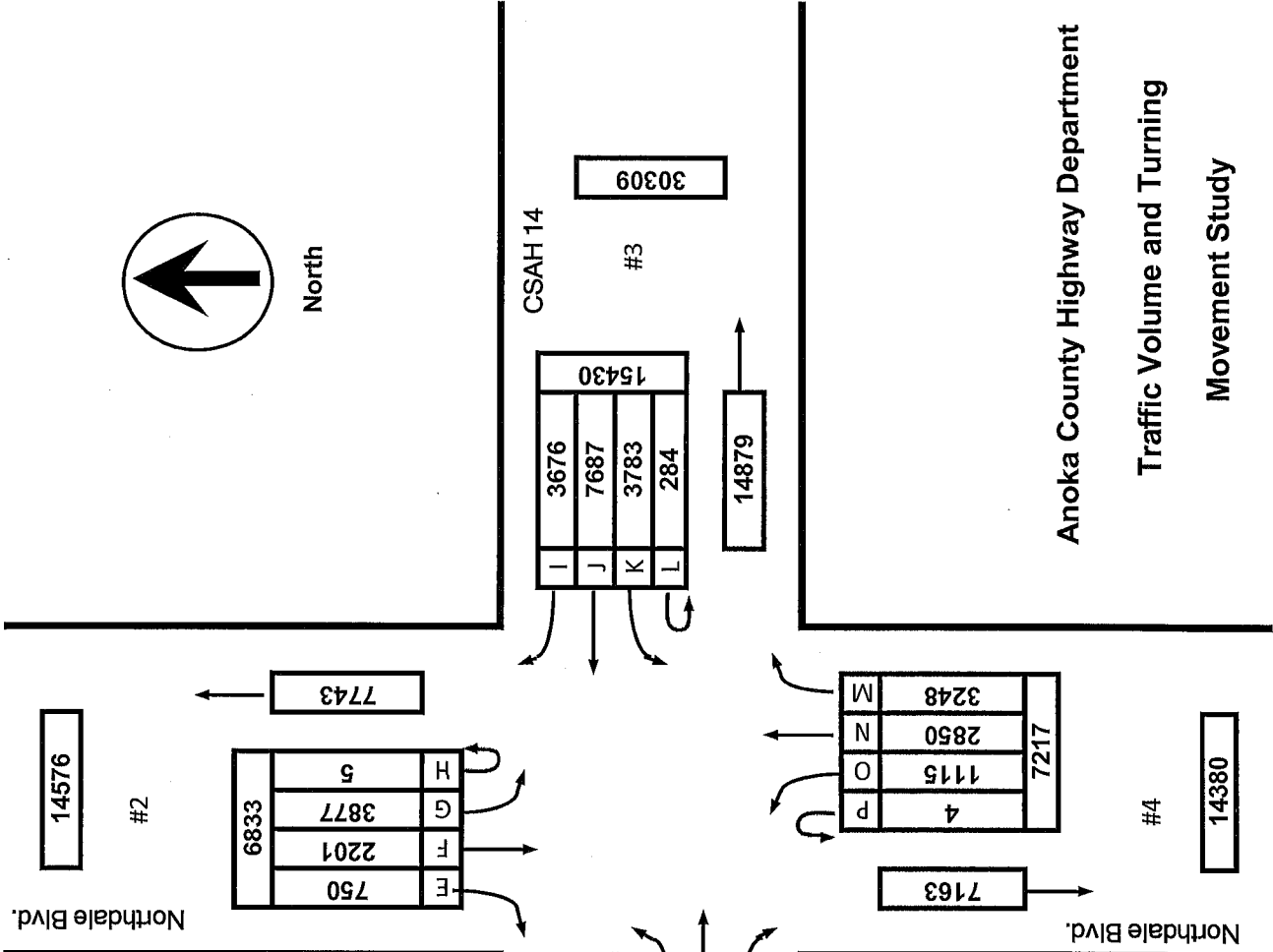
Date : 11/01/18

Count Number : TMC 1826

Location : CSAH 14 (Main St.)

@ Northdale Blvd.

Collection Period : 6 AM - 7 PM



EXISTING LANES OF APPROACH				
	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	TOTAL
#1	1	2	3	6
#2	1	2	2	5
#3	1	2	3	6
#4	1	2	2	5

Anoka County Highway Department
Traffic Volume and Turning
Movement Study

Date : 11/01/18

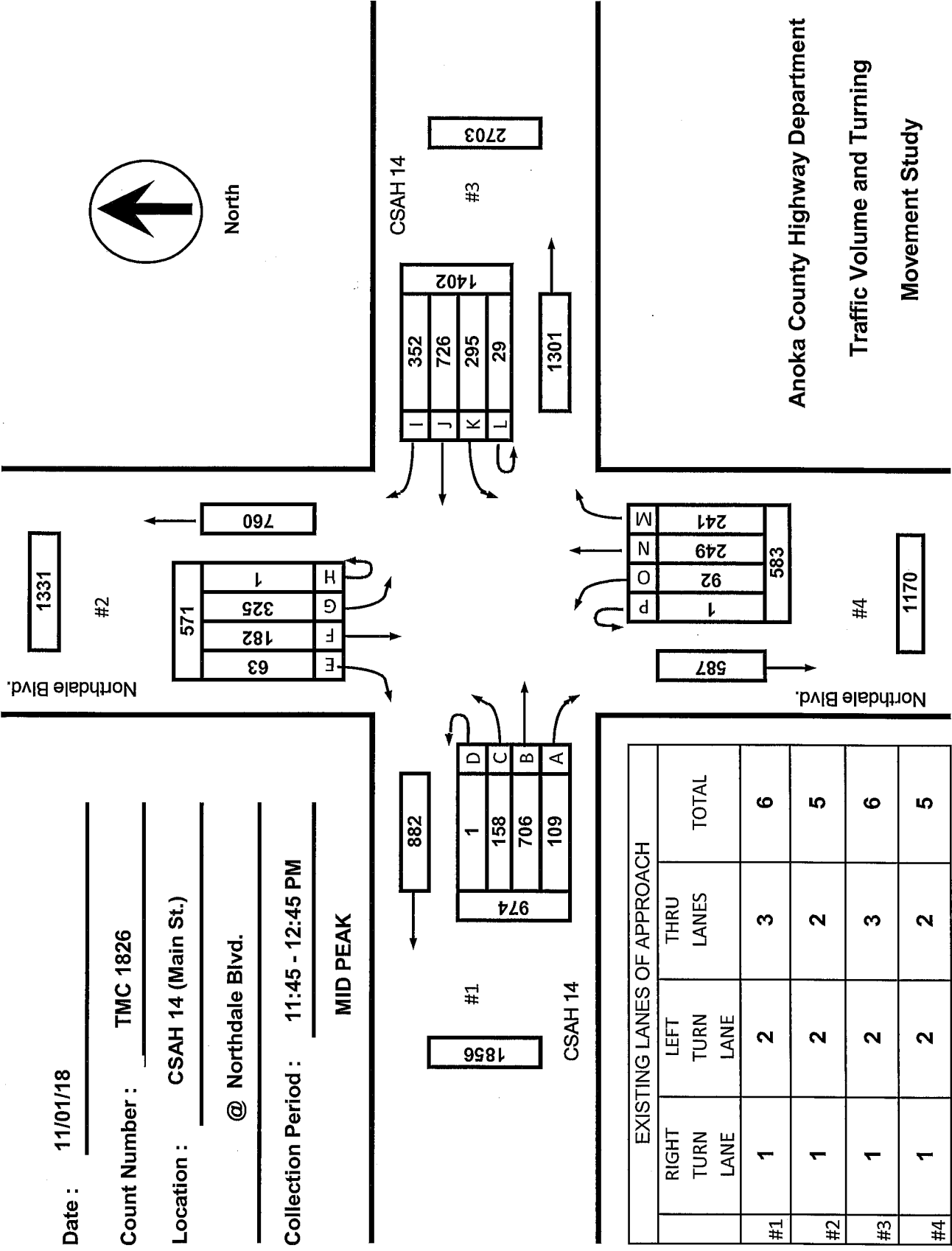
Count Number : TMC 1826

Location : CSAH 14 (Main St.)

@ Northdale Blvd.

Collection Period : 11:45 - 12:45 PM

MID PEAK



Date : 11/01/18

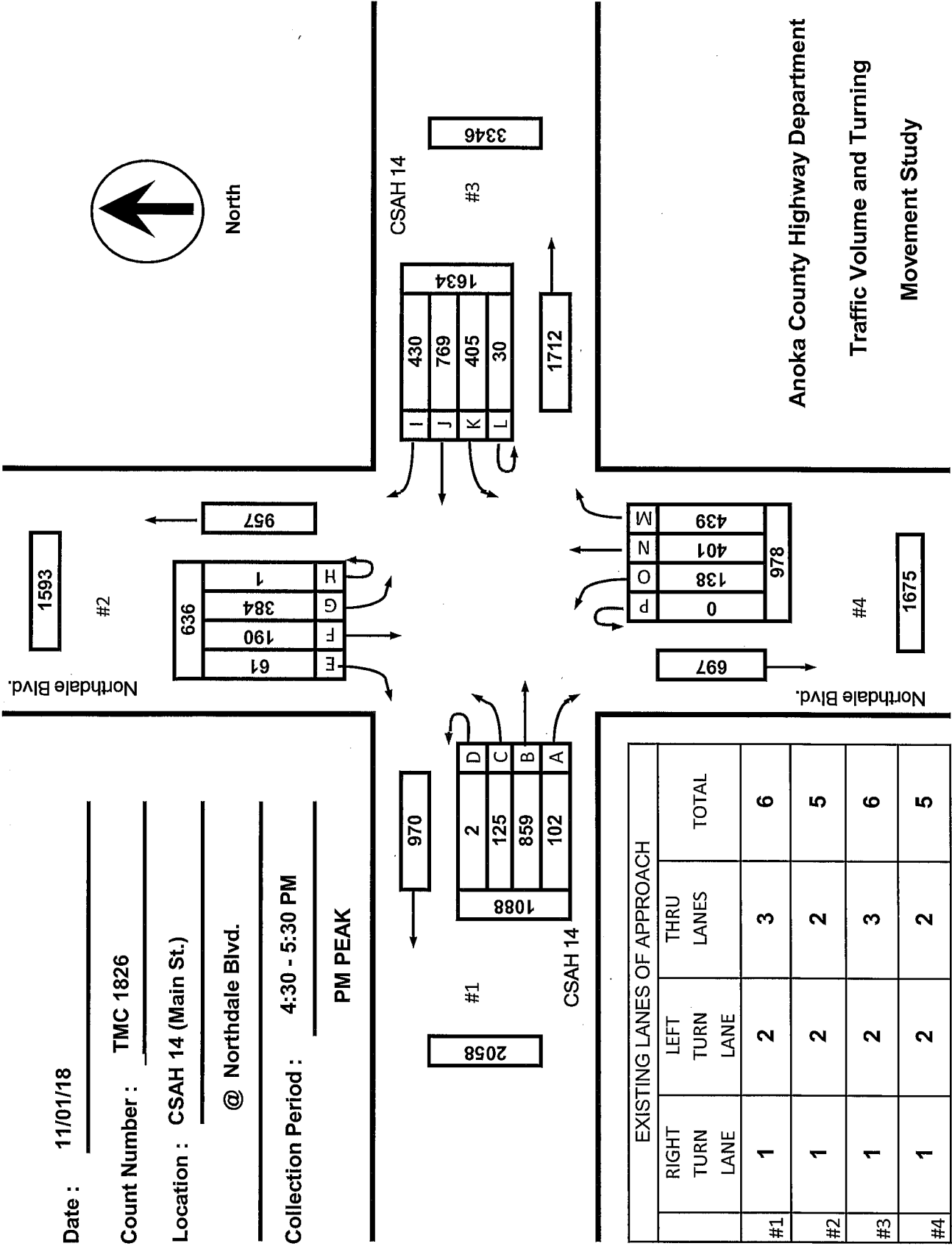
Count Number : TMC 1826

Location : CSAH 14 (Main St.)

@ Northdale Blvd.

Collection Period : 4:30 - 5:30 PM

PM PEAK





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 1826
Site Code :
Start Date : 11/01/2018
Page No : 1

		Northdale Blvd. Southbound										CSAH 14 Westbound										Northdale Blvd. 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	Exch. Total	Incl. Total	Int. Total													
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	Incl. Total	Int. Total														
06:00	0	56	33	4	0	93	0	30	39	12	0	81	0	2	7	33	0	42	0	6	46	4	0	56	0	272	0	272													
06:15	0	68	45	8	0	121	0	60	69	16	0	145	0	4	12	33	0	49	0	5	46	10	0	61	0	376	0	376													
06:30	0	96	65	6	0	167	2	42	93	17	0	154	0	11	16	43	0	70	0	10	52	11	0	73	0	464	0	464													
06:45	0	83	69	14	0	166	2	63	90	27	0	182	0	10	16	44	0	70	0	5	60	9	0	74	0	492	0	492													
Total	0	303	212	32	0	547	4	195	291	72	0	562	0	27	51	153	0	231	0	26	204	34	0	264	0	1604	0	1604													
07:00	0	61	58	3	0	122	1	79	67	24	0	171	0	3	17	47	0	67	0	1	82	9	0	92	0	452	0	452													
07:15	0	45	43	5	0	93	2	81	117	27	0	227	0	4	24	38	0	66	0	12	91	11	0	114	0	500	0	500													
07:30	0	41	38	11	0	90	0	78	115	36	0	229	0	13	23	64	0	100	0	8	88	6	1	102	1	521	0	522													
07:45	0	50	35	9	0	94	1	58	134	32	0	225	0	14	27	34	0	75	0	10	70	15	0	95	0	489	0	489													
Total	0	197	174	28	0	399	4	296	433	119	0	852	0	34	91	183	0	308	0	31	331	41	1	403	1	1962	0	1963													
08:00	0	41	28	12	0	81	1	44	75	33	0	153	0	16	36	36	0	88	0	15	78	11	0	104	0	426	0	426													
08:15	0	33	28	10	0	71	0	57	90	42	0	189	0	5	26	26	0	57	1	13	59	7	0	80	0	397	0	397													
08:30	1	40	18	15	0	74	1	46	101	50	0	198	0	7	20	32	0	59	0	18	78	7	0	103	0	434	0	434													
08:45	0	54	21	13	0	88	5	66	93	42	0	206	0	12	39	52	0	103	0	14	74	23	1	111	1	508	0	509													
Total	1	168	95	50	0	314	7	213	359	167	0	746	0	40	121	146	0	307	1	60	289	48	1	398	1	1765	0	1766													
09:00	0	55	43	11	0	109	3	71	106	39	0	219	0	15	28	48	0	91	0	21	83	12	0	116	0	535	0	535													
09:15	0	50	29	10	0	89	3	58	130	55	0	246	0	13	50	55	0	118	0	24	89	20	1	133	1	586	0	587													
09:30	0	49	27	21	0	97	5	63	121	45	0	234	0	16	51	41	0	108	0	15	79	14	0	108	0	547	0	547													
09:45	0	43	30	13	0	86	7	66	136	79	1	288	0	16	37	33	0	86	0	20	91	14	0	125	1	585	0	586													
Total	0	197	129	55	0	381	18	258	493	218	1	987	0	60	166	177	0	403	0	80	342	60	1	482	2	2253	0	2255													
10:00	0	59	28	14	0	101	6	51	144	55	1	256	0	15	43	47	0	105	0	20	104	22	1	146	2	608	0	610													
10:15	0	69	34	21	0	124	10	74	115	83	0	282	0	19	41	50	0	110	0	20	104	17	0	141	0	657	0	657													
10:30	0	82	30	6	0	118	8	47	140	62	0	257	0	19	40	51	0	110	0	17	136	22	0	175	0	660	0	660													
10:45	0	59	28	18	0	105	11	65	152	80	0	308	0	20	51	47	0	118	0	32	124	19	0	175	0	706	0	706													
Total	0	269	120	59	0	448	35	237	551	280	1	1103	0	73	175	195	0	443	0	89	468	80	1	637	2	2631	0	2633													
11:00	0	72	41	18	0	131	6	56	153	83	1	298	1	20	54	63	0	138	0	25	147	26	0	198	1	765	0	766													
11:15	0	70	44	19	0	133	6	56	145	82	2	289	0	32	64	48	0	144	0	20	150	28	1	198	3	764	0	767													
11:30	0	66	47	11	0	124	5	81	151	87	0	324	0	27	46	61	0	134	0	30	156	15	0	201	0	783	0	783													
11:45	1	66	46	18	0	131	9	66	184	92	0	351	0	19	54	68	0	141	0	37	172	24	1	233	1	856	0	857													
Total	1	274	178	66	0	519	26	259	633	344	3	1262	1	98	218	240	0	557	0	112	625	93	2	830	5	3168	0	3173													



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 1826
Site Code :
Start Date : 11/01/2018
Page No : 2

Groups Printed- Cars + - Trucks																																							
Northdale Blvd.														CSAH 14																									
Southbound														Westbound																									
Start Time	UTM		Left		Thru		Right		Peds		App. Total		UTM		Left		Thru		Right		Peds		App. Total		UTM		Left		Thru		Right		Peds		App. Total				
12:00	0	67	48	16	0	131	0	131	9	68	154	95	0	326	0	30	72	60	0	162	1	38	160	22	0	221	0	221	0	221	0	221	0	221	0	221	0	221	0
12:15	0	90	49	10	1	149	0	149	3	94	201	94	0	392	0	21	56	47	0	124	0	44	171	31	1	246	2	246	0	246	0	246	0	246	0	246	0	246	0
12:30	0	102	39	19	0	160	0	160	8	67	187	71	1	333	1	22	67	66	0	156	0	39	203	32	0	274	1	274	0	274	0	274	0	274	0	274	0	274	0
12:45	0	95	49	19	0	163	0	163	8	67	161	75	0	311	1	34	62	59	0	156	0	38	152	29	0	219	0	219	0	219	0	219	0	219	0	219	0	219	0
Total	0	354	185	64	1	603	0	603	28	296	703	335	1	1362	2	107	257	232	0	598	1	159	686	114	1	960	3	960	0	960	0	960	0	960	0	960	0	960	0
13:00	0	73	52	22	0	147	0	147	7	72	167	81	1	327	0	23	48	57	0	128	0	27	167	34	0	228	1	228	0	228	0	228	0	228	0	228	0	228	0
13:15	0	86	39	14	0	139	0	139	6	62	177	92	0	337	0	22	63	55	1	140	1	27	162	29	1	219	2	219	0	219	0	219	0	219	0	219	0	219	0
13:30	0	94	41	28	0	163	0	163	6	74	162	81	0	323	0	28	58	52	0	138	0	26	176	21	0	223	0	223	0	223	0	223	0	223	0	223	0	223	0
13:45	0	99	62	25	0	186	0	186	7	70	145	71	0	293	0	28	65	58	0	151	0	33	149	30	0	212	0	212	0	212	0	212	0	212	0	212	0	212	0
Total	0	352	194	89	0	635	0	635	26	278	651	325	1	1280	0	101	234	222	1	557	1	113	654	114	1	882	3	882	0	882	0	882	0	882	0	882	0	882	0
14:00	0	77	27	18	0	122	0	122	12	70	145	82	0	309	0	15	56	67	0	138	0	28	178	34	0	240	0	240	0	240	0	240	0	240	0	240	0	240	0
14:15	1	101	36	24	0	162	0	162	9	78	158	96	1	341	0	24	65	59	0	148	0	31	171	27	0	229	1	229	0	229	0	229	0	229	0	229	0	229	0
14:30	0	80	58	25	0	163	0	163	7	75	180	81	0	343	0	30	55	72	0	157	0	19	189	28	0	236	0	236	0	236	0	236	0	236	0	236	0	236	0
14:45	0	79	39	15	0	133	0	133	12	92	200	93	0	397	0	19	59	86	0	164	0	25	175	31	1	231	1	231	0	231	0	231	0	231	0	231	0	231	0
Total	1	337	160	82	0	580	0	580	40	315	683	352	1	1390	0	88	235	284	0	607	0	103	713	120	1	936	2	936	0	936	0	936	0	936	0	936	0	936	0
15:00	0	93	40	9	0	142	0	142	2	83	157	96	0	338	0	38	62	94	1	194	0	20	211	34	1	265	2	265	0	265	0	265	0	265	0	265	0	265	0
15:15	0	77	42	13	0	132	0	132	7	91	190	82	1	370	1	25	67	79	0	172	0	22	196	31	0	249	1	249	0	249	0	249	0	249	0	249	0	249	0
15:30	1	93	53	18	0	165	0	165	9	100	158	74	1	341	0	16	70	81	1	167	1	35	209	36	0	281	2	281	0	281	0	281	0	281	0	281	0	281	0
15:45	0	74	52	15	0	141	0	141	6	77	162	98	0	343	0	34	89	108	0	231	0	34	186	28	0	248	0	248	0	248	0	248	0	248	0	248	0	248	0
Total	1	337	187	55	0	580	0	580	24	351	667	350	2	1392	1	113	288	362	2	764	1	111	802	129	1	1043	5	1043	0	1043	0	1043	0	1043	0	1043	0	1043	0
16:00	0	88	47	19	0	154	0	154	5	72	172	88	0	337	0	29	102	88	0	219	0	29	255	30	0	314	0	314	0	314	0	314	0	314	0	314	0	314	0
16:15	0	85	49	13	0	147	0	147	7	96	143	92	1	338	0	38	110	89	0	237	1	36	172	37	0	246	1	246	0	246	0	246	0	246	0	246	0	246	0
16:30	0	76	47	12	0	135	0	135	8	116	148	127	2	399	0	38	109	112	0	259	1	36	243	28	0	308	2	308	0	308	0	308	0	308	0	308	0	308	0
16:45	0	94	42	23	0	159	0	159	6	87	225	101	1	419	0	34	114	109	1	257	0	27	203	23	0	253	2	253	0	253	0	253	0	253	0	253	0	253	0
Total	0	343	185	67	0	595	0	595	26	371	688	408	4	1493	0	139	435	398	1	972	2	128	873	118	0	1121	5	1121	0	1121	0	1121	0	1121	0	1121	0	1121	0
17:00	1	110	53	15	0	179	0	179	15	114	201	99	1	429	0	29	80	94	1	203	0	29	253	28	1	310	3	310	0	310	0	310	0	310	0	310	0	310	0
17:15	0	104	48	11	0	163	0	163	1	88	195	103	1	387	0	37	98	124	1	259	1	33	160	23	0	217	2	217	0	217	0	217	0	217	0	217	0	217	0
17:30	0	101	48	18	0	167	0	167	3	121	197	109	0	430	0	30	90	76	1	196	0	16	199	36	0	251	1	251	0	251	0	251	0	251	0	251	0	251	0
17:45	0	81	57	9	0	147	0	147	9	85	215	84	0	393	0	36	75	74	1	185	0	24	186	27	0	237	1	237	0	237	0	237	0	237	0	237	0	237	0
Total	1	396	206	53	0	656	0	656	28	408	808	395	2	1639	0	132	343	368	4	843	1	102	798	114	1	1015	7	1015	0	1015	0	1015	0	1015	0	1015	0	1015	0
18:00	0	95	49	18	0	162	0	162	5	87	218	97	0	407	0	25	64	71	0	160	0	26	182	28	0	236	0	236	0	236	0	236	0	236	0	236	0	236	0
18:15	0	87	40	8	0	135	0	135	3	76	169	82	0	330	0	34	73	74	0	181	0	22	169	24	0	215	0	215	0	215	0	215	0	215	0	215	0	215	0
18:30	0	92	49	9	0	150	0	150	5	70	192	71	0	338	0	23	53	74	0	150	0	21	153	28	0	202	0	202	0	202	0	202	0	202	0	202	0	202	0
18:45	0	76	38	15	0	129	0	129	5	73	148	61	0	287	0	21	46	69	0	136	0	29	181	30	0	240	0	240	0	240	0	240	0	240	0	240	0	240	0
Total	0	350	176	50	0	576	0	576	18	306	727	311	0	1362	0	103	236	288	0	627	0	98	685	110	0	893	0	893	0	893	0	893	0	893	0	893	0	893	0



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 1826
Site Code :
Start Date : 11/01/2018
Page No : 3

Groups Printed- Cars + - Trucks																																				
Northdale Blvd. Southbound													Northdale Blvd. Northbound													CSAH 14 Eastbound										
Westbound													Eastbound													CSAH 14										
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	Excl. Total	Incl. Total	Int. Total										
Grand Total	5	3877	2201	750	1	6833	284	3783	7687	3676	16	15430	4	1115	2850	3248	8	7217	7	1212	7470	1175	11	9864	36	39344	39380									
Approch %	0.1	56.7	32.2	11			1.8	24.5	49.8	23.8			0.1	15.4	39.5	45			0.1	12.3	75.7	11.9														
Total %	0	9.9	5.6	1.9		17.4	0.7	9.6	19.5	9.3		39.2	0	2.8	7.2	8.3		18.3	0	3.1	19	3		25.1	0.1	99.9										
Cars +	5	3798	2180	737		6721	281	3689	7514	3626		15106	4	1082	2818	3111		7023	7	1201	7241	1132		9592	0	0	38442									
% Cars +	100	98	99	98.3	100	98.3	98.9	97	97.7	98.6	100	97.8	100	97	98.9	95.8	100	97.2	100	99.1	96.9	96.3	100	97.1	0	0	97.6									
Trucks	0	79	21	13		113	3	114	173	50		340	0	33	32	137		202	0	11	229	43		283	0	0	938									
% Trucks	0	2	1	1.7	0	1.7	1.1	3	2.3	1.4	0	2.2	0	3	1.1	4.2	0	2.8	0	0.9	3.1	3.7	0	2.9	0	0	2.4									

	Northdale Blvd. Southbound						CSAH 14 Westbound						Northdale Blvd. Northbound						CSAH 14 Eastbound					
Start Time	UTm	Left	Thru	Right	App. Total	UTm	Left	Thru	Right	App. Total	UTm	Left	Thru	Right	App. Total	UTm	Left	Thru	Right	App. Total	Int. 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	55	43	11	109	3	71	106	39	219	0	15	28	48	91	0	21	83	12	116	535			
09:15	0	50	29	10	89	3	58	130	55	246	0	13	50	55	118	0	24	89	20	133	586			
09:30	0	49	27	21	97	5	63	121	45	234	0	16	51	41	108	0	15	79	14	108	547			
09:45	0	43	30	13	86	7	66	136	79	288	0	16	37	33	86	0	20	91	14	125	585			
Total Volume	0	197	129	55	381	18	258	493	218	987	0	60	166	177	403	0	80	342	60	482	2253			
% App. Total	0	51.7	33.9	14.4		1.8	26.1	49.9	22.1		0	14.9	41.2	43.9		0	16.6	71	12.4					
PHF	.000	.895	.750	.655	.874	.643	.908	.906	.690	.857	.000	.938	.814	.805	.854	.000	.833	.940	.750	.906	.961			

Peak Hour Analysis From 10:00 to 13:45 - Peak 1 of 1																											
Peak Hour for Entire Intersection Begins at 11:45																											
	11:45	1	66	46	18	131	9	66	184	92	351	0	19	54	68	141	0	37	172	24	233	856					
	12:00	0	67	48	16	131	9	68	154	95	326	0	30	72	60	162	1	38	160	22	221	840					
	12:15	0	90	49	10	149	3	94	201	94	392	0	21	56	47	124	0	44	171	31	246	911					
	12:30	0	102	39	19	160	8	67	187	71	333	1	22	67	66	156	0	39	203	32	274	923					
Total Volume		1	325	182	63	571	29	295	726	352	1402	1	92	249	241	583	1	158	706	109	974	3530					
% App. Total		0.2	56.9	31.9	11		2.1	21	51.8	25.1		0.2	15.8	42.7	41.3		0.1	16.2	72.5	11.2							
PHF		.250	.797	.929	.829	.892	.806	.785	.903	.926	.894	.250	.767	.865	.886	.900	.250	.898	.869	.852	.889	.956					



File Name : TMC 1826
Site Code :
Start Date : 11/01/2018
Page No : 4

Northdale Blvd. Southbound					CSAH 14 Westbound					Northdale Blvd. 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	76	47	12	135	8	116	148	127	399	0	38	109	112	259	1	36	243	28	308	1101
16:45	0	94	42	23	159	6	87	225	101	419	0	34	114	109	257	0	27	203	23	253	1088
17:00	1	110	53	15	179	15	114	201	99	429	0	29	80	94	203	0	29	253	28	310	1121
17:15	0	104	48	11	163	1	88	195	103	387	0	37	98	124	259	1	33	160	23	217	1026
Total Volume	1	384	190	61	636	30	405	769	430	1634	0	138	401	439	978	2	125	859	102	1088	4336
% App. Total	0.2	60.4	29.9	9.6		1.8	24.8	47.1	26.3		0	14.1	41	44.9		0.2	11.5	79	9.4		
PHF	.250	.873	.896	.963	.888	.500	.873	.854	.846	.952	.000	.908	.879	.885	.944	.500	.868	.849	.911	.877	.967



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 1826
 Site Code :
 Start Date : 11/01/2018
 Page No : 1

Groups Printed- Trucks

Start Time	Northdale Blvd. Southbound					CSAH 14 Westbound					Northdale Blvd. 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	0	0	0	3	3	0	6	0	0	0	0	0	0	0	1	0	1	7
06:15	0	2	0	0	2	0	5	1	3	9	0	1	2	0	3	0	0	5	4	9	23
06:30	0	12	0	0	12	0	5	1	0	6	0	1	1	2	4	0	0	5	0	5	27
06:45	0	1	0	0	1	1	3	3	1	8	0	0	0	0	0	0	1	8	0	9	18
Total	0	15	0	0	15	1	16	8	4	29	0	2	3	2	7	0	1	19	4	24	75
07:00	0	5	2	0	7	0	4	2	3	9	0	0	0	1	1	0	0	9	0	9	26
07:15	0	6	1	0	7	0	2	4	1	7	0	1	2	0	3	0	1	7	1	9	26
07:30	0	1	2	1	4	0	4	0	4	8	0	1	0	5	6	0	0	3	0	3	21
07:45	0	1	1	1	3	0	1	3	2	6	0	0	1	3	4	0	0	2	0	2	15
Total	0	13	6	2	21	0	11	9	10	30	0	2	3	9	14	0	1	21	1	23	88
08:00	0	2	0	0	2	0	1	7	1	9	0	0	3	1	4	0	0	8	0	8	23
08:15	0	1	2	1	4	0	3	5	2	10	0	1	0	2	3	0	0	2	2	4	21
08:30	0	3	0	1	4	0	0	7	3	10	0	1	1	1	3	0	1	7	0	8	25
08:45	0	0	0	0	0	0	2	4	5	11	0	0	0	4	4	0	0	2	1	3	18
Total	0	6	2	2	10	0	6	23	11	40	0	2	4	8	14	0	1	19	3	23	87
09:00	0	3	0	0	3	0	4	7	1	12	0	0	0	7	7	0	0	8	1	9	31
09:15	0	1	0	0	1	0	2	7	0	9	0	1	0	4	5	0	0	6	2	8	23
09:30	0	2	1	0	3	0	4	7	2	13	0	1	1	2	4	0	0	2	0	2	22
09:45	0	0	1	0	1	0	0	5	2	7	0	0	0	3	3	0	0	3	1	4	15
Total	0	6	2	0	8	0	10	26	5	41	0	2	1	16	19	0	0	19	4	23	91
10:00	0	2	0	2	4	0	2	1	1	4	0	0	1	4	5	0	0	5	0	5	18
10:15	0	1	1	1	3	0	1	0	0	1	0	2	0	2	4	0	0	2	1	3	11
10:30	0	2	0	0	2	0	4	3	0	7	0	2	1	3	6	0	0	3	1	4	19
10:45	0	2	0	0	2	0	5	4	2	11	0	0	0	4	4	0	1	3	0	4	21
Total	0	7	1	3	11	0	12	8	3	23	0	4	2	13	19	0	1	13	2	16	69
11:00	0	2	0	0	2	0	1	2	0	3	0	1	2	2	5	0	0	6	2	8	18
11:15	0	2	3	2	7	0	5	1	1	7	0	1	3	1	5	0	1	9	2	12	31
11:30	0	0	0	2	2	0	4	6	2	12	0	2	1	4	7	0	0	4	0	4	25
11:45	0	1	1	0	2	0	1	3	0	4	0	0	0	3	3	0	1	8	2	11	20
Total	0	5	4	4	13	0	11	12	3	26	0	4	6	10	20	0	2	27	6	35	94
12:00	0	1	1	0	2	1	1	3	0	5	0	0	1	3	4	0	1	7	1	9	20
12:15	0	1	0	0	1	0	4	1	1	6	0	0	0	1	1	0	0	2	1	3	11
12:30	0	2	1	0	3	0	0	4	2	6	0	2	0	4	6	0	0	4	2	6	21
12:45	0	3	0	1	4	0	1	4	0	5	0	0	2	5	7	0	0	1	1	2	18
Total	0	7	2	1	10	1	6	12	3	22	0	2	3	13	18	0	1	14	5	20	70
13:00	0	1	0	0	1	0	4	1	0	5	0	0	1	2	3	0	0	4	2	6	15
13:15	0	2	1	0	3	0	4	7	1	12	0	0	1	5	6	0	0	5	1	6	27
13:30	0	0	0	0	0	1	5	4	2	12	0	2	0	4	6	0	0	3	0	3	21
13:45	0	1	1	0	2	0	4	1	0	5	0	0	1	3	4	0	0	7	2	9	20
Total	0	4	2	0	6	1	17	13	3	34	0	2	3	14	19	0	0	19	5	24	83
14:00	0	1	1	0	2	0	3	6	1	10	0	0	1	3	4	0	0	5	2	7	23
14:15	0	2	0	0	2	0	4	3	0	7	0	0	1	7	8	0	0	5	1	6	23
14:30	0	0	0	0	0	0	2	2	0	4	0	2	0	4	6	0	0	5	2	7	17
14:45	0	1	0	0	1	0	2	4	0	6	0	0	0	3	3	0	0	2	0	2	12
Total	0	4	1	0	5	0	11	15	1	27	0	2	2	17	21	0	0	17	5	22	75
15:00	0	2	0	0	2	0	1	1	0	2	0	2	1	4	7	0	0	5	1	6	17



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 1826
 Site Code :
 Start Date : 11/01/2018
 Page No : 2

Groups Printed- Trucks

	Northdale Blvd. Southbound					CSAH 14 Westbound					Northdale Blvd. 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
15:15	0	0	0	0	0	0	1	2	0	3	0	1	1	2	4	0	0	5	0	5	12
15:30	0	1	0	1	2	0	3	7	1	11	0	0	1	2	3	0	0	4	1	5	21
15:45	0	1	0	0	1	0	1	1	1	3	0	3	0	2	5	0	2	5	0	7	16
Total	0	4	0	1	5	0	6	11	2	19	0	6	3	10	19	0	2	19	2	23	66
16:00	0	3	0	0	3	0	1	4	0	5	0	2	0	4	6	0	0	11	0	11	25
16:15	0	0	0	0	0	0	2	7	1	10	0	0	0	4	4	0	0	2	0	2	16
16:30	0	1	0	0	1	0	1	6	0	7	0	0	0	4	4	0	0	4	1	5	17
16:45	0	1	0	0	1	0	0	5	0	5	0	1	1	2	4	0	0	4	1	5	15
Total	0	5	0	0	5	0	4	22	1	27	0	3	1	14	18	0	0	21	2	23	73
17:00	0	1	0	0	1	0	2	5	1	8	0	0	0	4	4	0	1	6	0	7	20
17:15	0	0	0	0	0	0	0	4	2	6	0	0	0	2	2	0	0	1	1	2	10
17:30	0	0	0	0	0	0	0	0	0	0	0	0	1	3	4	0	0	4	1	5	9
17:45	0	0	1	0	1	0	0	0	0	0	0	1	0	1	2	0	0	4	0	4	7
Total	0	1	1	0	2	0	2	9	3	14	0	1	1	10	12	0	1	15	2	18	46
18:00	0	1	0	0	1	0	1	2	0	3	0	0	0	1	1	0	0	0	0	0	5
18:15	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	4	1	5	6
18:30	0	1	0	0	1	0	1	1	0	2	0	0	0	0	0	0	0	1	1	2	5
18:45	0	0	0	0	0	0	0	2	0	2	0	1	0	0	1	0	1	1	0	2	5
Total	0	2	0	0	2	0	2	5	1	8	0	1	0	1	2	0	1	6	2	9	21
Grand Total	0	79	21	13	113	3	114	173	50	340	0	33	32	137	202	0	11	229	43	283	938
Apprch %	0	69.9	18.6	11.5		0.9	33.5	50.9	14.7		0	16.3	15.8	67.8		0	3.9	80.9	15.2		
Total %	0	8.4	2.2	1.4	12	0.3	12.2	18.4	5.3	36.2	0	3.5	3.4	14.6	21.5	0	1.2	24.4	4.6	30.2	

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 1826

Study Date: 02/13/2019

Page No: 1

Signal Warrants - Summary

Major Street Approaches

Eastbound: CSAH 14

Number of Lanes : 2

Total Approach Volume: 9,864

Westbound: CSAH 14

Number of Lanes : 2

Total Approach Volume: 15,430

Minor Street Approaches

Northbound: Northdale Blvd.

Number of Lanes : 2

Total Approach Volume: 7,217

Southbound: Northdale Blvd.

Number of Lanes : 2

Total Approach Volume: 6,833

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 14 hours, 8 are needed

Required 1B volumes reached for 14 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 1826**

Study Date: **02/13/2019**

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 = **2 or more**

Volume Requirements

Rural Factor of 70 % applied
Veh/Hr Major = **420**

Veh/Hr Minor = **140**

	Major Road					Minor Road		
	CSAH 14					Northdale Blvd.		
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met?
16:45 - 17:45	1031	+	1665	=	2696	915	668	Yes
15:45 - 16:45	1116	+	1417	=	2533	946	577	Yes
14:45 - 15:45	1026	+	1446	=	2472	697	572	Yes
11:45 - 12:45	974	+	1402	=	2376	583	571	Yes
17:45 - 18:45	890	+	1468	=	2358	676	594	Yes
13:45 - 14:45	917	+	1286	=	2203	594	633	Yes
12:45 - 13:45	889	+	1298	=	2187	562	612	Yes
10:45 - 11:45	772	+	1219	=	1991	534	493	Yes
09:45 - 10:45	587	+	1083	=	1670	411	429	Yes
08:45 - 09:45	468	+	905	=	1373	420	383	Yes
06:45 - 07:45	382	+	809	=	1191	303	471	Yes
07:45 - 08:45	382	+	765	=	1147	279	320	Yes
05:45 - 06:45	190	+	380	=	570	161	381	Yes
18:45 - 19:45	240	+	287	=	527	136	129	No
05:30 - 06:30	117	+	226	=	343	91	214	No
05:15 - 06:15	56	+	81	=	137	42	93	No
22:30 - 23:30	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
19:30 - 20:30	0	+	0	=	0	0	0	No
00:00 - 01:00	0	+	0	=	0	0	0	No
23:30 - 00:30	0	+	0	=	0	0	0	No
23:00 - 00:00	0	+	0	=	0	0	0	No
23:45 - 00:45	0	+	0	=	0	0	0	No
22:45 - 23:45	0		0		0	0	0	No

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: **TMC 1826**

Study Date: **02/13/2019**

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 = **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 EB	+	Major WB	=		Minor NB	Minor SB	
17:00 - 18:00	1015	+	1639	=	2654	843	656	Yes
16:00 - 17:00	1121	+	1493	=	2614	972	595	Yes
15:00 - 16:00	1043	+	1392	=	2435	764	580	Yes
14:00 - 15:00	936	+	1390	=	2326	607	580	Yes
12:00 - 13:00	960	+	1362	=	2322	598	603	Yes
18:00 - 19:00	893	+	1362	=	2255	627	576	Yes
13:00 - 14:00	882	+	1280	=	2162	557	635	Yes
11:00 - 12:00	830	+	1262	=	2092	557	519	Yes
10:00 - 11:00	637	+	1103	=	1740	443	448	Yes
09:00 - 10:00	482	+	987	=	1469	403	381	Yes
07:00 - 08:00	403	+	852	=	1255	308	399	Yes
08:00 - 09:00	398	+	746	=	1144	307	314	Yes
06:00 - 07:00	264	+	562	=	826	231	547	Yes
05:45 - 06:45	190	+	380	=	570	161	381	No
05:30 - 06:30	117	+	226	=	343	91	214	No
05:15 - 06:15	56	+	81	=	137	42	93	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 1826**

Study Date: **02/13/2019**

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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

14 hours meet 1A minimums.
14 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 14						Minor Road Northdale Blvd.		
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met1A?
16:30 - 17:30	1088	+	1634	=	2722	978	636	Yes
17:30 - 18:30	939	+	1560	=	2499	722	611	Yes
15:30 - 16:30	1089	+	1359	=	2448	854	607	Yes
14:30 - 15:30	981	+	1448	=	2429	687	570	Yes
11:30 - 12:30	901	+	1393	=	2294	561	535	Yes
12:30 - 13:30	940	+	1308	=	2248	580	609	Yes
13:30 - 14:30	904	+	1266	=	2170	575	633	Yes
10:30 - 11:30	746	+	1152	=	1898	510	487	Yes
09:30 - 10:30	520	+	1060	=	1580	409	408	Yes
08:30 - 09:30	463	+	869	=	1332	371	360	Yes
07:30 - 08:30	381	+	796	=	1177	320	336	Yes
06:30 - 07:30	353		734		1087	273	548	Yes

Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	Met1B?
16:45 - 17:45	1031	+	1665	=	2696	915	668	Yes
15:45 - 16:45	1116	+	1417	=	2533	946	577	Yes
14:45 - 15:45	1026	+	1446	=	2472	697	572	Yes
11:45 - 12:45	974	+	1402	=	2376	583	571	Yes
17:45 - 18:45	890	+	1468	=	2358	676	594	Yes
13:45 - 14:45	917	+	1286	=	2203	594	633	Yes
12:45 - 13:45	889	+	1298	=	2187	562	612	Yes
10:45 - 11:45	772	+	1219	=	1991	534	493	Yes
09:45 - 10:45	587	+	1083	=	1670	411	429	Yes
08:45 - 09:45	468	+	905	=	1373	420	383	Yes
06:45 - 07:45	382	+	809	=	1191	303	471	Yes
07:45 - 08:45	382		765		1147	279	320	Yes

ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: **TMC 1826**

Study Date: **02/13/2019**

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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.

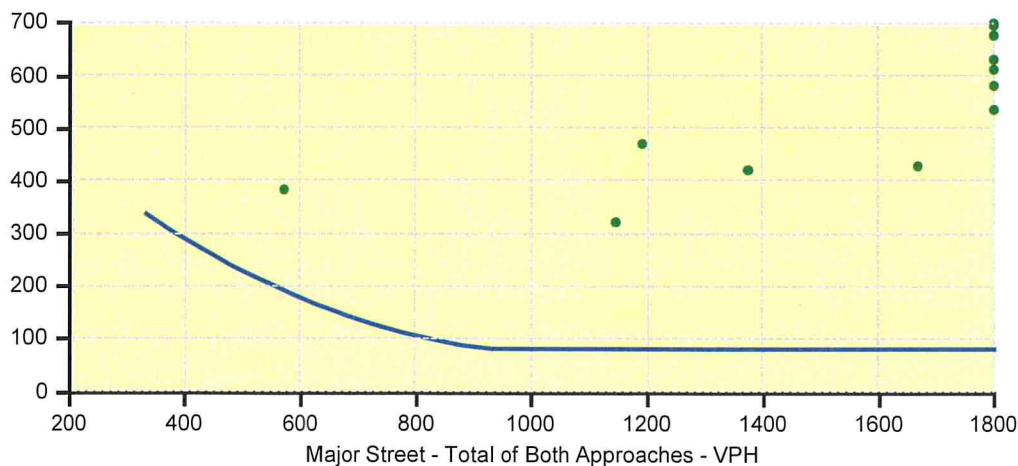
Summary

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 = **2 or more**

Major Road CSAH 14						Minor Road Northdale Blvd.		Met?
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	
16:45 - 17:45	1031	+	1665	=	2696	915	668	Yes
15:45 - 16:45	1116	+	1417	=	2533	946	577	Yes
14:45 - 15:45	1026	+	1446	=	2472	697	572	Yes
11:45 - 12:45	974	+	1402	=	2376	583	571	Yes
17:45 - 18:45	890	+	1468	=	2358	676	594	Yes
13:45 - 14:45	917	+	1286	=	2203	594	633	Yes
12:45 - 13:45	889	+	1298	=	2187	562	612	Yes
10:45 - 11:45	772	+	1219	=	1991	534	493	Yes
09:45 - 10:45	587	+	1083	=	1670	411	429	Yes
08:45 - 09:45	468	+	905	=	1373	420	383	Yes
06:45 - 07:45	382	+	809	=	1191	303	471	Yes
							320	Yes



ANOKA COUNTY HIGHWAY

PC-WARRANTS

TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 1826

Study Date: 02/13/2019

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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

52 hours 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

Major Road CSAH 14						Minor Road Northdale Blvd.		Met?
Time	Major EB	+	Major WB	=	Total	Minor NB	Minor SB	
16:30 - 17:30	1088	+	1634	=	2722	978	636	Yes
16:15 - 17:15	1117	+	1585	=	2702	956	620	Yes
16:45 - 17:45	1031	+	1665	=	2696	915	668	Yes
17:00 - 18:00	1015	+	1639	=	2654	843	656	Yes
16:00 - 17:00	1121	+	1493	=	2614	972	595	Yes
17:15 - 18:15	941	+	1617	=	2558	800	639	Yes
15:45 - 16:45	1116	+	1417	=	2533	946	577	Yes
17:30 - 18:30	939	+	1560	=	2499	722	611	Yes
15:15 - 16:15	1092	+	1391	=	2483	789	592	Yes
14:45 - 15:45	1026	+	1446	=	2472	697	572	Yes
15:30 - 16:30	1089	+	1359	=	2448	854	607	Yes
							580	Yes

