

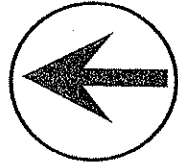
Date : 07/03/12

Count Number : TMC1222

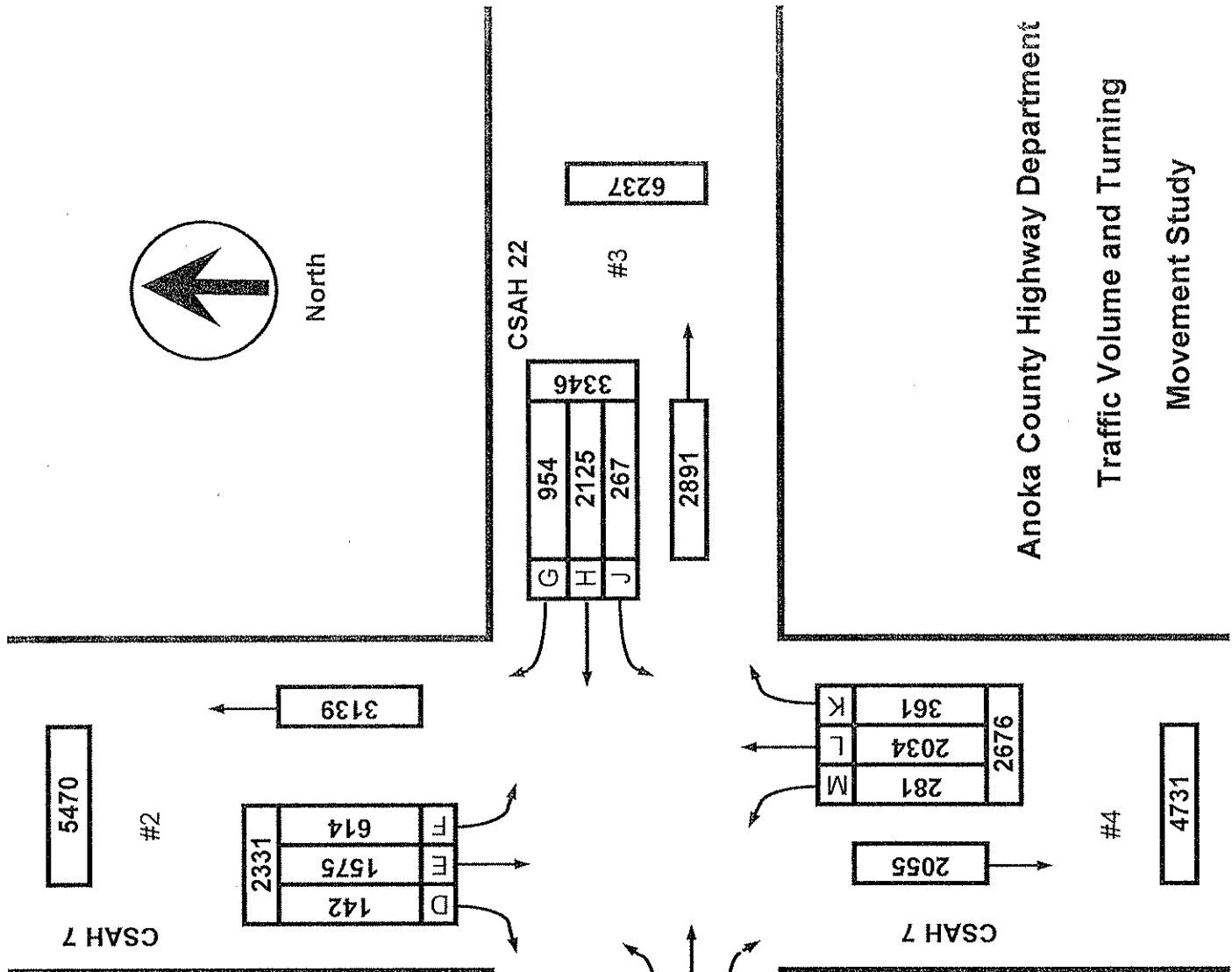
Location : CSAH 22 (Viking Blvd.)

@ CSAH 7 (Rum River Blvd.)

Collection Period : 6:00 AM - 10:00 PM



North



EXISTING LANES OF APPROACH				TOTAL
	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	
#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 : 07/03/12

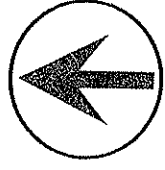
Count Number : TMC1222

Location : CSAH 22 (Viking Blvd.)

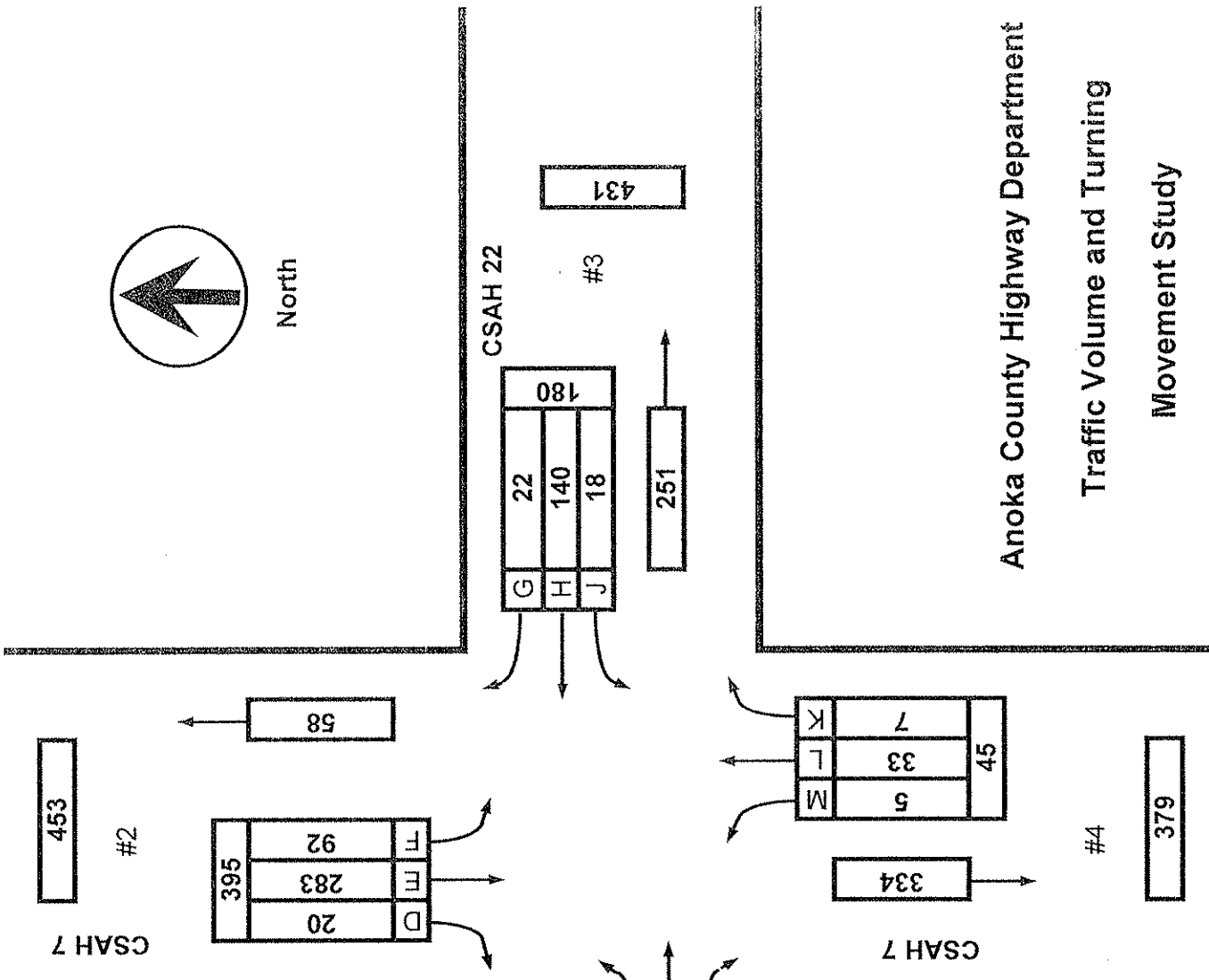
@ CSAH 7 (Rum River Blvd.)

Collection Period : AM PEAK

Hour : 6:30 AM - 7:30 AM



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 : 07/02/12

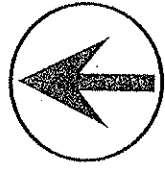
Count Number : TMC1222

Location : CSAH 22 (Viking Blvd.)

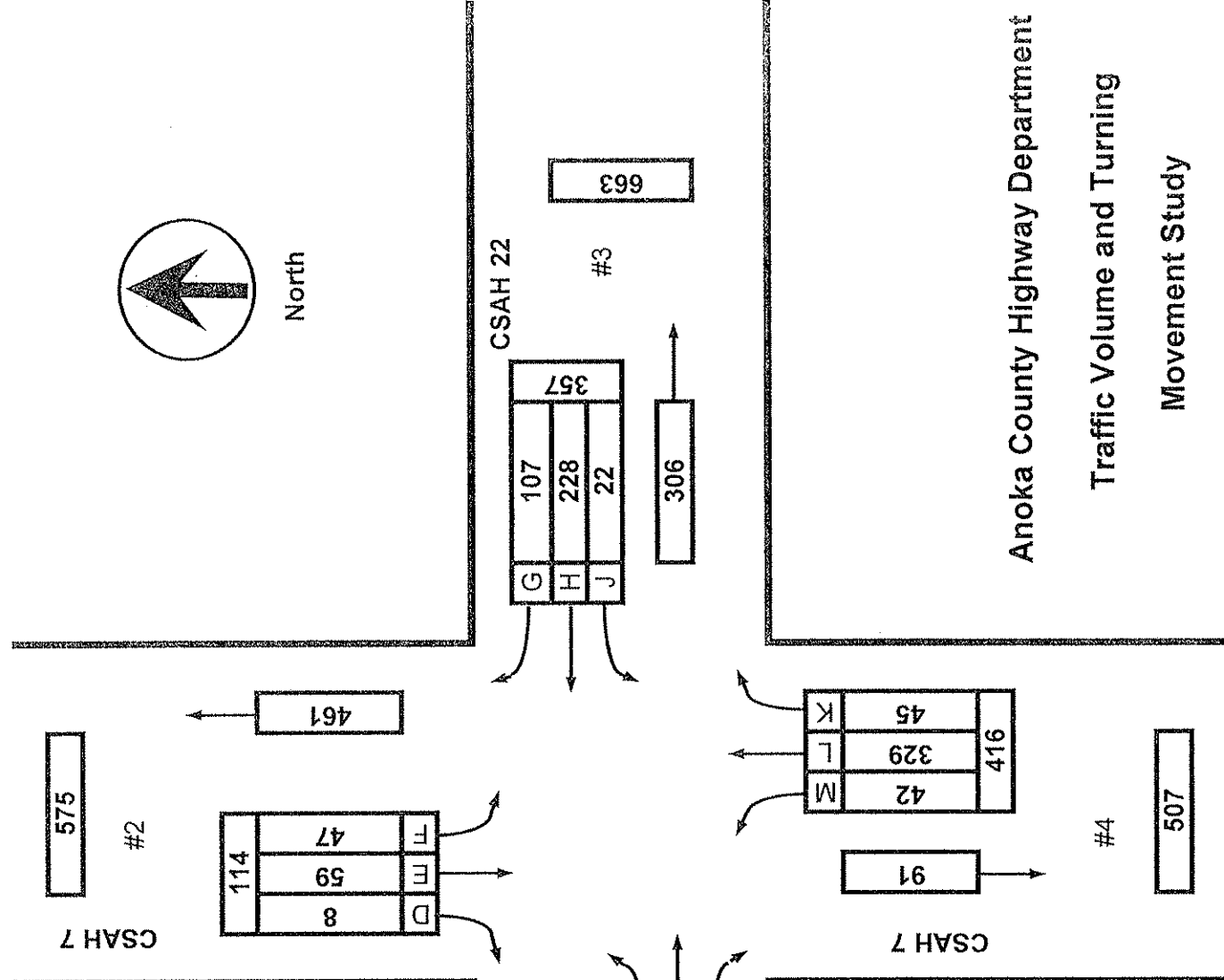
@ CSAH 7 (Rum River Blvd.)

Collection Period : PM PEAK

Hour : 4:15 PM - 5:15 PM



North



#1

527	278
249	25
	214
	10
	C
	B
	A

CSAH 22

#2

114	47	8
	59	
	461	
	D	
	E	
	F	

CSAH 7

#3

107	228	22
	357	
	306	
	G	
	H	
	J	

CSAH 22

#4

42	329	45
	416	
	91	
	M	
	L	
	K	

CSAH 7

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

File Name : TMC1222  
 Site Code : 12220202  
 Start Date : 07/02/2012  
 Page No : 1

Weather: Hot, Sunny  
 Counter: DB-400  
 study conducted by: Reno/Hannah

Groups Printed- Unshifted

Start Time	CSAH 7 Southbound					CSAH 22 Westbound					CSAH 7 Northbound					CSAH 22 Eastbound					Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	Heavy	App. Total	Left	Thru	Right	Heavy	App. Total	Left	Thru	Right	Heavy	App. Total	Left	Thru	Right	Heavy	App. Total			
06:00	17	94	6	5	117	4	24	3	2	31	1	0	2	0	3	0	17	11	3	28	10	179	189
06:15	18	91	4	5	113	7	36	2	0	45	1	6	1	1	8	3	19	13	4	35	10	201	211
06:30	29	87	4	4	120	9	42	6	3	57	3	2	0	0	5	1	40	8	5	49	12	231	243
06:45	16	62	3	4	81	7	40	6	1	53	0	3	3	0	6	0	31	6	3	37	8	177	185
Total	80	334	17	18	431	27	142	17	6	186	5	11	6	1	22	4	107	38	15	149	40	788	828
07:00	24	57	9	3	90	1	32	4	0	37	2	8	2	1	12	1	40	11	9	52	13	191	204
07:15	23	77	4	5	104	1	26	6	4	33	0	20	2	1	22	1	41	8	5	50	15	209	224
07:30	19	76	2	1	97	7	63	2	5	72	2	11	3	1	16	0	32	10	2	42	9	227	236
07:45	9	57	2	4	68	8	29	8	6	45	1	8	3	1	12	3	30	3	9	36	20	161	181
Total	75	267	17	13	359	17	150	20	15	187	5	47	10	4	62	5	143	32	25	180	57	788	845
08:00	6	53	0	2	59	1	34	5	2	40	3	8	0	0	11	2	37	2	6	41	10	151	161
08:15	2	55	2	0	59	6	28	8	7	42	4	6	3	2	13	1	28	3	5	32	14	146	160
08:30	9	39	1	1	49	3	32	7	3	42	3	10	3	1	16	3	21	3	3	27	8	134	142
08:45	12	36	3	0	51	2	21	10	6	33	2	10	6	1	18	3	35	5	10	43	17	145	162
Total	29	183	6	3	218	12	115	30	18	157	12	34	12	4	58	9	121	13	24	143	49	576	625
09:00	3	28	2	1	33	9	24	12	2	45	6	9	5	4	20	3	28	7	7	38	14	136	150
09:15	6	27	5	2	38	4	24	4	2	32	4	11	3	1	18	0	15	2	4	17	9	105	114
09:30	7	27	2	0	36	6	29	8	5	43	2	10	8	0	20	1	25	1	1	27	6	126	132
09:45	9	22	3	1	34	3	25	6	2	34	4	17	9	4	30	0	33	1	5	34	12	132	144
Total	25	104	12	4	141	22	102	30	11	154	16	47	25	9	88	4	101	11	17	116	41	499	540
10:00	8	27	2	2	37	5	27	6	8	38	6	14	3	2	23	1	14	3	3	18	15	116	131
10:15	10	25	2	1	37	4	24	4	1	32	3	13	7	1	23	0	30	4	8	34	11	126	137
10:30	6	13	0	1	19	6	36	10	5	52	2	12	4	1	18	1	19	3	0	23	7	112	119
10:45	6	14	0	1	20	4	21	6	6	31	0	22	4	2	26	0	22	5	3	27	12	104	116
Total	30	79	4	5	113	19	108	26	20	153	11	61	18	6	90	2	85	15	14	102	45	458	503
11:00	9	19	0	0	28	3	23	10	0	36	3	12	4	2	19	1	21	2	1	24	3	107	110
11:15	4	26	2	0	32	5	24	14	7	43	5	25	8	3	38	2	18	4	3	24	13	137	150
11:30	10	18	2	1	30	3	32	15	2	50	1	19	4	1	24	1	24	8	5	33	9	137	146
11:45	9	22	4	4	35	3	35	19	5	57	1	12	5	1	18	1	25	2	7	28	17	138	155
Total	32	85	8	5	125	14	114	58	14	186	10	68	21	7	99	5	88	16	16	109	42	519	561
12:00	12	10	2	1	24	6	26	19	2	51	2	25	3	0	30	1	29	5	6	35	9	140	149
12:15	6	13	2	1	21	2	26	16	8	44	9	31	12	1	52	3	24	3	1	30	11	147	158
12:30	8	12	4	2	24	9	39	19	9	67	5	40	5	1	50	0	38	2	4	40	16	181	197
12:45	6	9	1	0	16	5	31	18	7	54	2	28	4	1	34	7	39	1	4	47	12	151	163
Total	32	44	9	4	85	22	122	72	26	216	18	124	24	3	166	11	130	11	15	152	48	619	667
13:00	7	22	1	4	30	3	28	19	4	50	4	33	3	1	40	4	22	0	5	26	14	146	160
13:15	12	19	2	1	33	8	41	2	5	51	0	38	11	6	49	1	33	6	3	40	15	173	188
13:30	9	22	3	2	34	1	34	23	3	58	4	28	6	1	38	2	40	4	3	46	9	176	185
13:45	16	18	2	1	36	4	34	20	5	58	1	29	8	1	38	5	34	0	5	39	12	171	183
Total	44	81	8	8	133	16	137	64	17	217	9	128	28	9	165	12	129	10	16	151	50	666	716
14:00	7	23	4	2	34	6	28	10	9	44	4	25	2	2	31	3	28	5	5	36	18	145	163
14:15	6	19	3	2	28	7	34	15	7	56	11	51	9	4	71	2	32	0	3	34	16	189	205
14:30	8	21	4	3	33	5	39	15	3	59	7	32	9	1	48	0	31	4	3	35	10	175	185
14:45	8	17	1	5	26	3	26	24	7	53	7	40	18	1	65	6	40	5	4	51	17	195	212
Total	29	80	12	12	121	21	127	64	26	212	29	148	38	8	215	11	131	14	15	156	61	704	765
15:00	10	15	2	1	27	4	45	22	7	71	8	36	3	5	47	3	35	2	1	40	14	185	199
15:15	9	15	1	0	25	8	43	22	6	73	10	65	9	1	84	2	36	4	4	42	11	224	235
15:30	16	13	5	0	34	3	49	22	5	74	8	76	12	1	96	2	32	4	1	38	7	242	249
15:45	8	10	2	1	20	6	62	33	11	101	6	69	10	3	85	1	50	2	5	53	20	259	279
Total	43	53	10	2	106	21	199	99	29	319	32	246	34	10	312	8	153	12	11	173	52	910	962
16:00	17	6	2	0	25	4	40	36	6	80	4	79	9	3	92	7	53	0	2	60	11	257	268
16:15	8	13	2	2	23	5	50	28	7	83	10	72	16	4	98	3	60	1	2	64	15	268	283
16:30	14	17	2	3	33	6	56	31	4	93	17	73	6	1	96	6	54	3	3	63	11	285	296
16:45	10	20	2	2	32	4	65	21	2	90	7	98	16	2	121	7	58	3	1	68	7	311	318
Total	49	56	8	7	113	19	211	116	19	346	38	322	47	10	407	23	225	7	8	255	44	1121	1165
17:00	15	9	2	1	26	7	57	27	2	91	8	86	7	3	101	9	42	3	5	54	11	272	283
17:15	8	9	1	0	18	1	37	23	4	61	12	77	7	2	96	6	52	3	1	61	7	236	243
17:30	11	17	2	0	30	6	40	35	2	81	11	78	13	2	102	1	44	3	1	48	5	261	266
17:45	10	18	0	1	28	3	25	35	2	63	7	76	9	1	92	1	28	3	0	32	4	215	219
Total	44	53	5	2	102	17	159	120	10	296	38	317	36	8	391	17	166	12	7	195	27	984	1011



# Anoka County Highway Department

## Traffic Engineering Section

### Traffic Volume and Turning Movement Study

File Name : TMC1222  
 Site Code : 12220202  
 Start Date : 07/02/2012  
 Page No : 2

Weather: Hot, Sunny  
 Counter: DB-400  
 study conducted by: Reno/Hannah

#### Groups Printed- Unshifted

Start Time	CSAH 7 Southbound					CSAH 22 Westbound					CSAH 7 Northbound					CSAH 22 Eastbound					Excl. Total	Inclu. Total	Int. Total
	Left	Thru	Right	Heavy	App. Total	Left	Thru	Right	Heavy	App. Total	Left	Thru	Right	Heavy	App. Total	Left	Thru	Right	Heavy	App. Total			
18:00	8	12	1	2	21	3	49	28	5	80	7	57	9	2	73	4	27	1	1	32	10	206	216
18:15	5	19	2	1	26	8	40	17	1	65	4	59	7	1	70	6	38	1	2	45	5	206	211
18:30	11	7	1	0	19	5	37	23	2	65	5	39	4	1	48	1	29	3	2	33	5	165	170
18:45	4	6	3	1	13	2	34	20	2	56	5	34	6	0	45	3	22	2	2	27	5	141	146
<b>Total</b>	<b>28</b>	<b>44</b>	<b>7</b>	<b>4</b>	<b>79</b>	<b>18</b>	<b>160</b>	<b>88</b>	<b>10</b>	<b>266</b>	<b>21</b>	<b>189</b>	<b>26</b>	<b>4</b>	<b>236</b>	<b>14</b>	<b>116</b>	<b>7</b>	<b>7</b>	<b>137</b>	<b>25</b>	<b>718</b>	<b>743</b>
19:00	11	9	3	0	23	2	22	16	0	40	3	40	3	1	46	2	21	3	1	26	2	135	137
19:15	7	11	0	0	18	2	28	17	1	47	7	49	4	0	60	5	31	1	1	37	2	162	164
19:30	8	7	3	0	18	0	26	16	1	42	5	22	6	0	33	1	21	1	1	23	2	116	118
19:45	3	9	1	0	13	1	27	15	0	43	5	38	3	0	46	5	22	3	0	30	0	132	132
<b>Total</b>	<b>29</b>	<b>36</b>	<b>7</b>	<b>0</b>	<b>72</b>	<b>5</b>	<b>103</b>	<b>64</b>	<b>2</b>	<b>172</b>	<b>20</b>	<b>149</b>	<b>16</b>	<b>1</b>	<b>185</b>	<b>13</b>	<b>95</b>	<b>8</b>	<b>3</b>	<b>116</b>	<b>6</b>	<b>545</b>	<b>551</b>
20:00	11	15	4	1	30	2	37	13	2	52	5	20	1	0	26	3	11	2	0	16	3	124	127
20:15	12	11	3	0	26	2	28	11	2	41	3	31	1	0	35	3	11	2	0	16	2	118	120
20:30	6	6	1	0	13	3	16	13	1	32	0	18	4	1	22	0	24	0	0	24	2	91	93
20:45	6	12	0	0	18	2	12	14	0	28	3	13	7	1	23	1	12	0	0	13	1	82	83
<b>Total</b>	<b>35</b>	<b>44</b>	<b>8</b>	<b>1</b>	<b>87</b>	<b>9</b>	<b>93</b>	<b>51</b>	<b>5</b>	<b>153</b>	<b>11</b>	<b>82</b>	<b>13</b>	<b>2</b>	<b>106</b>	<b>7</b>	<b>58</b>	<b>4</b>	<b>0</b>	<b>69</b>	<b>8</b>	<b>415</b>	<b>423</b>
21:00	2	8	2	0	12	4	22	11	0	37	2	17	2	0	21	2	11	1	0	14	0	84	84
21:15	3	6	0	1	9	2	23	10	1	35	0	15	3	0	18	0	24	1	0	25	2	87	89
21:30	4	12	1	0	17	1	16	7	0	24	1	17	0	1	18	3	16	0	0	19	1	78	79
21:45	1	6	1	0	8	1	22	7	0	30	3	12	2	0	17	1	17	1	0	19	0	74	74
<b>Total</b>	<b>10</b>	<b>32</b>	<b>4</b>	<b>1</b>	<b>46</b>	<b>8</b>	<b>83</b>	<b>35</b>	<b>1</b>	<b>126</b>	<b>6</b>	<b>61</b>	<b>7</b>	<b>1</b>	<b>74</b>	<b>6</b>	<b>68</b>	<b>3</b>	<b>0</b>	<b>77</b>	<b>3</b>	<b>323</b>	<b>326</b>
<b>Grand Total</b>	<b>614</b>	<b>1575</b>	<b>142</b>	<b>89</b>	<b>2331</b>	<b>267</b>	<b>2125</b>	<b>954</b>	<b>229</b>	<b>3346</b>	<b>281</b>	<b>2034</b>	<b>361</b>	<b>87</b>	<b>2676</b>	<b>151</b>	<b>1916</b>	<b>213</b>	<b>193</b>	<b>2280</b>	<b>598</b>	<b>10633</b>	<b>11231</b>
Apprch %	26.3	67.6	6.1			8	63.5	28.5			10.5	76	13.5			6.6	84	9.3					
Total %	5.8	14.8	1.3		21.9	2.5	20	9		31.5	2.6	19.1	3.4		25.2	1.4	18	2		21.4	5.3	94.7	

Start Time	CSAH 7 Southbound				CSAH 22 Westbound				CSAH 7 Northbound				CSAH 22 Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 to 11:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 06:30																	
06:30	29	87	4	120	9	42	6	57	3	2	0	5	1	40	8	49	231
06:45	16	62	3	81	7	40	6	53	0	3	3	6	0	31	6	37	177
07:00	24	57	9	90	1	32	4	37	2	8	2	12	1	40	11	52	191
07:15	23	77	4	104	1	26	6	33	0	20	2	22	1	41	8	50	209
<b>Total Volume</b>	<b>92</b>	<b>283</b>	<b>20</b>	<b>395</b>	<b>18</b>	<b>140</b>	<b>22</b>	<b>180</b>	<b>5</b>	<b>33</b>	<b>7</b>	<b>45</b>	<b>3</b>	<b>152</b>	<b>33</b>	<b>188</b>	<b>808</b>
<b>% App. Total</b>	<b>23.3</b>	<b>71.6</b>	<b>5.1</b>		<b>10</b>	<b>77.8</b>	<b>12.2</b>		<b>11.1</b>	<b>73.3</b>	<b>15.6</b>		<b>1.6</b>	<b>80.9</b>	<b>17.6</b>		
PHF	.793	.813	.556	.823	.500	.833	.917	.789	.417	.413	.583	.511	.750	.927	.750	.904	.874

Start Time	CSAH 7 Southbound				CSAH 22 Westbound				CSAH 7 Northbound				CSAH 22 Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 12:00 to 21:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:15																	
16:15	8	13	2	23	5	50	28	83	10	72	16	98	3	60	1	64	268
16:30	14	17	2	33	6	56	31	93	17	73	6	96	6	54	3	63	285
16:45	10	20	2	32	4	65	21	90	7	98	16	121	7	58	3	68	311
17:00	15	9	2	26	7	57	27	91	8	86	7	101	9	42	3	54	272
<b>Total Volume</b>	<b>47</b>	<b>59</b>	<b>8</b>	<b>114</b>	<b>22</b>	<b>228</b>	<b>107</b>	<b>357</b>	<b>42</b>	<b>329</b>	<b>45</b>	<b>416</b>	<b>25</b>	<b>214</b>	<b>10</b>	<b>249</b>	<b>1136</b>
<b>% App. Total</b>	<b>41.2</b>	<b>51.8</b>	<b>7</b>		<b>6.2</b>	<b>63.9</b>	<b>30</b>		<b>10.1</b>	<b>79.1</b>	<b>10.8</b>		<b>10</b>	<b>85.9</b>	<b>4</b>		
PHF	.783	.738	1.00	.864	.786	.877	.863	.960	.618	.839	.703	.860	.694	.892	.833	.915	.913



**ANOKA COUNTY HIGHWAY  
PC-WARRANTS  
TRAFFIC SIGNAL WARRANT ANALYSIS**

Study Name : TMC1222  
Study Date : 07/03/12  
Page No. : 1

**Signal Warrants - Summary**

**Major Street Approaches**

**Eastbound: CSAH 22**  
Number of Lanes: 2  
85% Speed > 40 MPH.  
Total Approach Volume: 2,280

**Westbound: CSAH 22**  
Number of Lanes: 2  
85% Speed > 40 MPH.  
Total Approach Volume: 3,346

**Minor Street Approaches**

**Northbound: CSAH 7**  
Number of Lanes: 2  
  
Total Approach Volume: 2,676

**Southbound: CSAH 7**  
Number of Lanes: 2  
  
Total Approach Volume: 2,331

**Warrant Summary (Rural values apply.)**

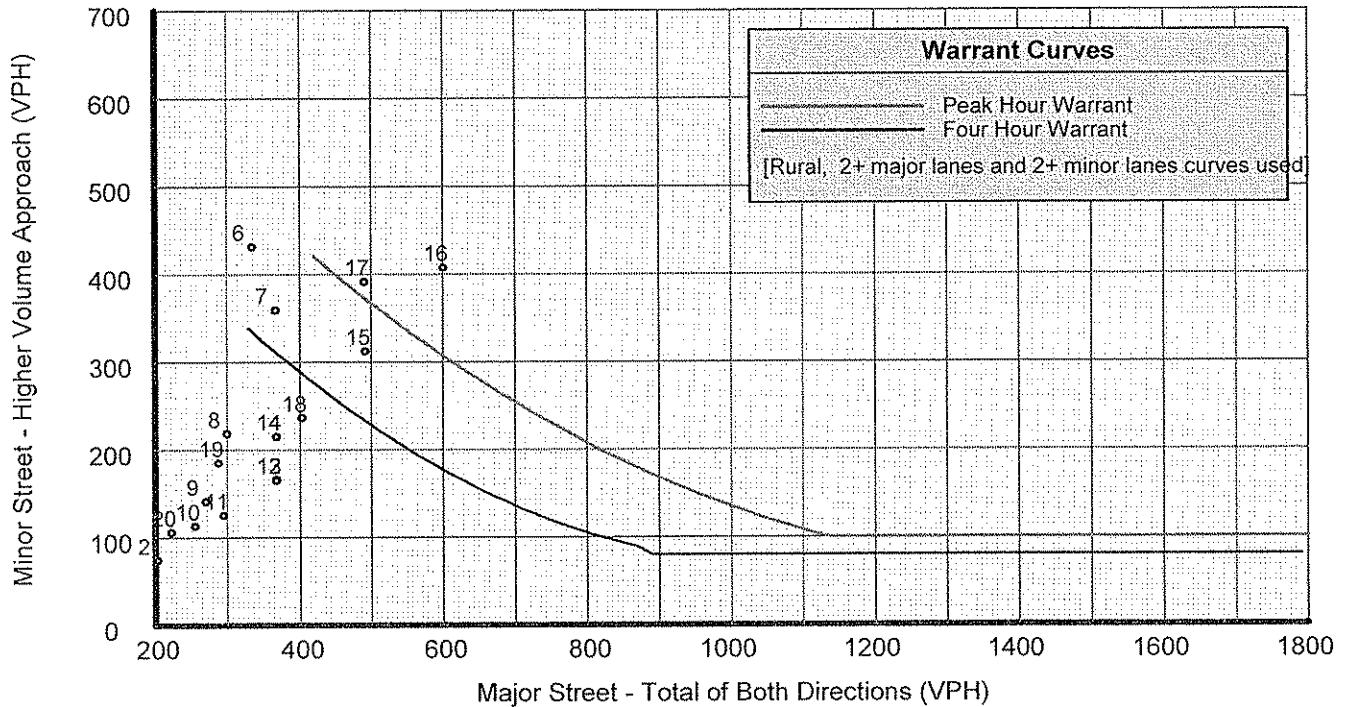
<b>Warrant 1 - Eight Hour Vehicular Volumes</b> .....	<b>Not Satisfied</b>
<b>Warrant 1A - Minimum Vehicular Volume</b> .....	<b>Not Satisfied</b>
Required volumes reached for 3 hours, 8 are needed	
<b>Warrant 1B - Interruption of Continuous Traffic</b> .....	<b>Not Satisfied</b>
Required volumes reached for 0 hours, 8 are needed	
<b>Warrant 1 A&amp;B - Combination of Warrants</b> .....	<b>Not Satisfied</b>
Required volumes reached for 1 hours, 8 are needed	
<b>Warrant 2 - Four Hour Volumes</b> .....	<b>Satisfied</b>
Number of hours (5) volumes exceed minimum >= minimum required (4).	
<b>Warrant 3 - Peak Hour</b> .....	<b>Satisfied</b>
<b>Warrant 3A - Peak Hour Delay</b> .....	<b>Satisfied</b>
Number of hours (12) volumes exceed minimum >= required (1). Delay data not evaluated.	
<b>Warrant 3B - Peak Hour Volumes</b> .....	<b>Satisfied</b>
Volumes exceed minimums for at least one hour.	
<b>Warrant 4 - Pedestrian Volumes</b> .....	<b>Not Evaluated</b>
<b>Warrant 5 - School Crossing</b> .....	<b>Not Evaluated</b>
<b>Warrant 6 - Coordinated Signal System</b> .....	<b>Not Evaluated</b>
<b>Warrant 7 - Crash Experience</b> .....	<b>Not Evaluated</b>
<b>Warrant 8 - Roadway Network</b> .....	<b>Not Evaluated</b>
<b>Warrant 9 - Intersection Near a Grade Crossing</b> .....	<b>Not Evaluated</b>



# ANOKA COUNTY HIGHWAY PC-WARRANTS TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name : TMC1222  
Study Date : 07/03/12  
Page No. : 2

## Signal Warrants - Summary



### Analysis of 8-Hour Volume Warrants:

Hour Begin	Major Total	Higher Minor		War 1A			War 1B			War 1A&B		
		Vol	Dir	Major Crit	Minor Crit	Meets?	Major Crit	Minor Crit	Meets?	Major Crit	Minor Crit	Meets?
00:00	0	0	NB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
01:00	0	0	NB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
02:00	0	0	NB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
03:00	0	0	NB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
04:00	0	0	NB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
05:00	0	0	NB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
06:00	335	431	SB	420-No	140-Yes	Minor	630-No	70-Yes	Minor	504-No	112-Yes	Minor
07:00	367	359	SB	420-No	140-Yes	Minor	630-No	70-Yes	Minor	504-No	112-Yes	Minor
08:00	300	218	SB	420-No	140-Yes	Minor	630-No	70-Yes	Minor	504-No	112-Yes	Minor
09:00	270	141	SB	420-No	140-Yes	Minor	630-No	70-Yes	Minor	504-No	112-Yes	Minor
10:00	255	113	SB	420-No	140-No	---	630-No	70-Yes	Minor	504-No	112-Yes	Minor
11:00	295	125	SB	420-No	140-No	---	630-No	70-Yes	Minor	504-No	112-Yes	Minor
12:00	368	166	NB	420-No	140-Yes	Minor	630-No	70-Yes	Minor	504-No	112-Yes	Minor
13:00	368	165	NB	420-No	140-Yes	Minor	630-No	70-Yes	Minor	504-No	112-Yes	Minor
14:00	368	215	NB	420-No	140-Yes	Minor	630-No	70-Yes	Minor	504-No	112-Yes	Minor
15:00	492	312	NB	420-Yes	140-Yes	Both	630-No	70-Yes	Minor	504-No	112-Yes	Minor
16:00	601	407	NB	420-Yes	140-Yes	Both	630-No	70-Yes	Minor	504-Yes	112-Yes	Both
17:00	491	391	NB	420-Yes	140-Yes	Both	630-No	70-Yes	Minor	504-No	112-Yes	Minor
18:00	403	236	NB	420-No	140-Yes	Minor	630-No	70-Yes	Minor	504-No	112-Yes	Minor
19:00	288	185	NB	420-No	140-Yes	Minor	630-No	70-Yes	Minor	504-No	112-Yes	Minor
20:00	222	106	NB	420-No	140-No	---	630-No	70-Yes	Minor	504-No	112-No	---
21:00	203	74	NB	420-No	140-No	---	630-No	70-Yes	Minor	504-No	112-No	---
22:00	0	0	NB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---
23:00	0	0	NB	420-No	140-No	---	630-No	70-No	---	504-No	112-No	---



**ANOKA COUNTY HIGHWAY  
PC-WARRANTS  
TRAFFIC SIGNAL WARRANT ANALYSIS**

Study Name : TMC1222  
Study Date : 07/09/12  
Page No. : 1

**Multi-Way Stop Warrant Report**

**Major Street Approaches**

**Eastbound: CSAH 22**  
Total Approach Volume: 2,280  
85% Speed > 40 MPH.

**Westbound: CSAH 22**  
Total Approach Volume: 3,346  
85% Speed > 40 MPH.

**Minor Street Approaches**

**Northbound: CSAH 7**  
Total Approach Volume: 2,676

**Southbound: CSAH 7**  
Total Approach Volume: 2,331

**Warrant Summary**

**Criteria A - Interim Measure** ..... Not Evaluated  
If traffic signals are justified, stop signs can be installed as an interim measure.

**Criteria B - Crash Experience** ..... Not Evaluated

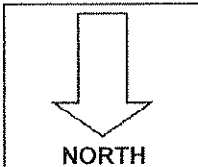
**Criteria C - Minimum Volumes and Delays** ..... Satisfied  
Delay data not evaluated  
Required volumes reached for 15 hours, 8 are needed

**Criteria D - 80% of Volumes, Delays, and Crashes** ..... Not Evaluated  
Delay data not evaluated  
Number of crashes (-1) is less than the minimum required (4).  
Required volumes reached for 0 hours, 8 are needed

**Analysis of 8 Hour Volume Warrants:**

Time	Major Total	Minor Total	Crit C			Crit D		
			Major	Minor Crit	Meets?	Major Crit	Minor Crit	Meets?
05:45 - 06:45	245	366	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
06:45 - 07:45	376	428	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
07:45 - 08:45	305	287	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
08:45 - 09:45	278	234	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
09:45 - 10:45	265	221	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
10:45 - 11:45	268	217	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
11:45 - 12:45	352	254	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
12:45 - 13:45	372	274	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
13:45 - 14:45	361	319	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
14:45 - 15:45	442	404	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
15:45 - 16:45	597	472	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
16:45 - 17:45	554	526	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
17:45 - 18:45	415	377	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
18:45 - 19:45	298	256	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
19:45 - 20:45	254	211	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
00:00 - 01:00	0	0	210-No	140-No	No	240-No	160-No	No
00:15 - 01:15	0	0	210-No	140-No	No	240-No	160-No	No
00:30 - 01:30	0	0	210-No	140-No	No	240-No	160-No	No
00:45 - 01:45	0	0	210-No	140-No	No	240-No	160-No	No
01:00 - 02:00	0	0	210-No	140-No	No	240-No	160-No	No
01:15 - 02:15	0	0	210-No	140-No	No	240-No	160-No	No
01:30 - 02:30	0	0	210-No	140-No	No	240-No	160-No	No
01:45 - 02:45	0	0	210-No	140-No	No	240-No	160-No	No
02:00 - 03:00	0	0	210-No	140-No	No	240-No	160-No	No





COUNT LOCATION:

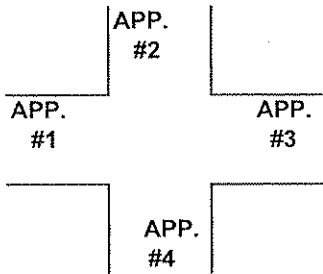
CSAH 22 (Viking Blvd.)

DATE:

07/03/2012

@ CSAH 7 (Rum River Blvd.)

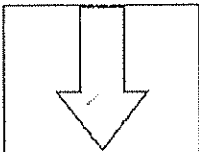
<b>NORTH</b>
APP. #1 = CSAH 22
APP. #2 = CSAH 7
APP. #3 = CSAH 22
APP. #4 = CSAH 7



- HEAVY VEHICLE- ANY VEHICLE HAVING MORE THAN FOUR TIRES TOUCHING THE PAVEMENT
- A. TRUCKS- A HEAVY VEHICLE INVOLVED PRIMARILY IN THE TRANSPORT OF GOODS OR IN THE DELIVERY OF A SERVICE.
  - B. RV- A HEAVY VEHICLE OPERATED BY A PRIVATE MOTORIST AND INVOLVED IN THE TRANSPORT OF RECREATIONAL EQUIPMENT OR FACILITIES.
  - C. BUSES- A HEAVY VEHICLE INVOLVED IN THE TRANSPORTATION OF GROUPS OF PEOPLE.

TIME	PEDESTRIANS					HEAVY VEHICLES		
	APP. #1	APP. #2	APP. #3	APP. #4	15 MIN TOT	TRUCKS	RV	BUS
6:00-6:15AM						9		1
6:15-6:30						10		1
6:30-6:45						11		1
6:45-7:00						8		
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>41</b>
7:00-7:15						13		
7:15-7:30						15		
7:30-7:45						9		
7:45-8:00						19		1
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>57</b>
8:00-8:15						10		
8:15-8:30		1			1	12		2
8:30-8:45						7		1
8:45-9:00	1				1	15		2
<b>HOURLY TOTAL</b>					<b>2</b>	<b>HOURLY TOTAL</b>		<b>49</b>
9:00-9:15			1		1	14		
9:15-9:30	1				1	8		1
9:30-9:45	1		1	1	3	6		
9:45-10:00			1		1	12		
<b>HOURLY TOTAL</b>					<b>6</b>	<b>HOURLY TOTAL</b>		<b>41</b>
10:00-10:15						18		
10:15-10:30						11		
10:30-10:45						6	1	
10:45-11:00						11	1	
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>48</b>
11:00-11:15	1	1	1		3	3		
11:15-11:30						11	1	1
11:30-11:45		1			1	9		
11:45-12:00						16	1	
<b>HOURLY TOTAL</b>					<b>4</b>	<b>HOURLY TOTAL</b>		<b>42</b>
12:00-12:15						9		
12:15-12:30						9		2
12:30-12:45						16		
12:45-1:00						12		
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>48</b>
1:00-1:15						14		
1:15-1:30						14		1
1:30-1:45						9		
1:45-2:00						12		
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>50</b>
<b>TOTAL</b>					<b>12</b>	<b>TOTAL</b>		<b>376</b>

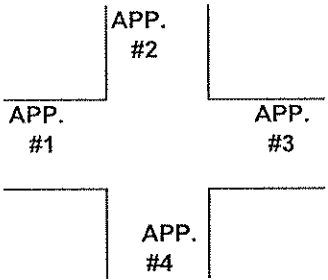
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NORTH

APP. #1 = CSAH 22
APP. #2 = CSAH 7
APP. #3 = CSAH 22
APP. #4 = CSAH 7

COUNT LOCATION: CSAH 22 (Viking Blvd.) DATE: 07/02/2012  
@ CSAH 7 (Rum River Blvd.)



HEAVY VEHICLE- ANY VEHICLE HAVING MORE THAN FOUR TIRES TOUCHING THE PAVEMENT

A. TRUCKS- A HEAVY VEHICLE INVOLVED PRIMARILY IN THE TRANSPORT OF GOODS OR IN THE DELIVERY OF A SERVICE.

B. RV- A HEAVY VEHICLE OPERATED BY A PRIVATE MOTORIST AND INVOLVED IN THE TRANSPORT OF RECREATIONAL EQUIPMENT OR FACILITIES.

C. BUSES- A HEAVY VEHICLE INVOLVED IN THE TRANSPORTATION OF GROUPS OF PEOPLE.

TIME	PEDESTRIANS					HEAVY VEHICLES		
	APP. #1	APP. #2	APP. #3	APP. #4	15 MIN TOT	TRUCKS	RV	BUS
2:00-2:15PM						17	1	
2:15-2:30						14		
2:30-2:45						9	1	
2:45-3:00						17		
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>59</b>
3:00-3:15						13		1
3:15-3:30						11		
3:30-3:45						7		
3:45-4:00						20		
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>52</b>
4:00-4:15						11		
4:15-4:30						13		2
4:30-4:45						11		
4:45-5:00						7		
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>44</b>
5:00-5:15						9	1	1
5:15-5:30						6		1
5:30-5:45						4		
5:45-6:00						4		
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>26</b>
6:00-6:15			1		1	8	1	
6:15-6:30						3		
6:30-6:45	1				1	5		1
6:45-7:00						3	1	1
<b>HOURLY TOTAL</b>					<b>2</b>	<b>HOURLY TOTAL</b>		<b>23</b>
7:00-7:15						2		
7:15-7:30						2		
7:30-7:45						2		
7:45-8:00								
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>6</b>
8:00-8:15						2	1	
8:15-8:30						2		
8:30-8:45						2		
8:45-9:00						1		
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>8</b>
9:00-9:15						2		
9:15-9:30								
9:30-9:45						1		
9:45-10:00								
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>3</b>
					<b>TOTAL</b>		<b>TOTAL</b>	<b>597</b>
					<b>14</b>			

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