

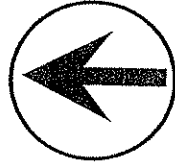
Date : 06/22/12

Count Number : TMC1221

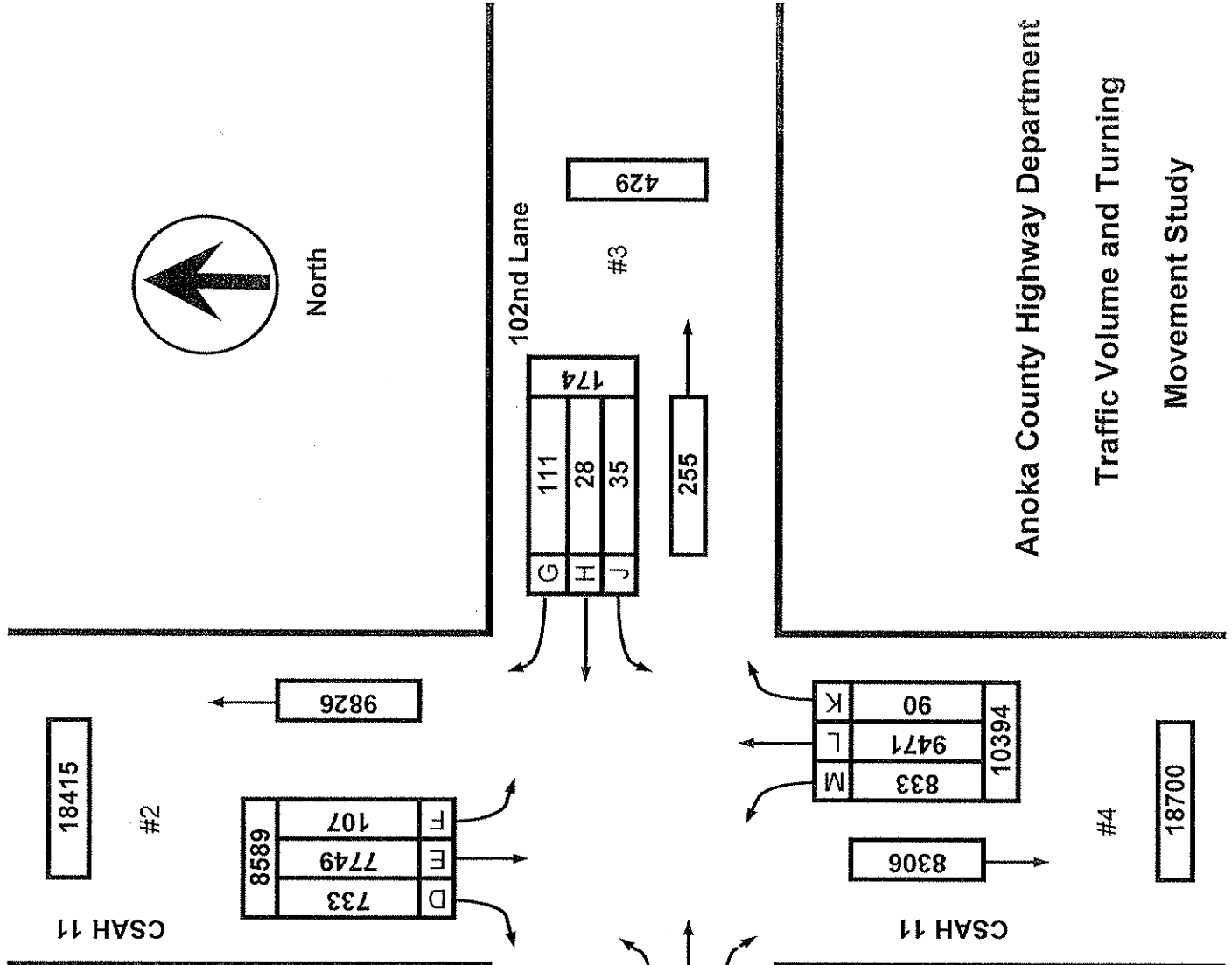
Location : CSAH 11 (Foley Blvd.)

@ 102nd Lane

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	0	0	2	2
#3	0	0	1	1
#4	0	1	2	3

Anoka County Highway Department  
 Traffic Volume and Turning  
 Movement Study

Date : 06/22/12

Count Number : TMC1221

Location : CSAH 11 (Foley Blvd.)

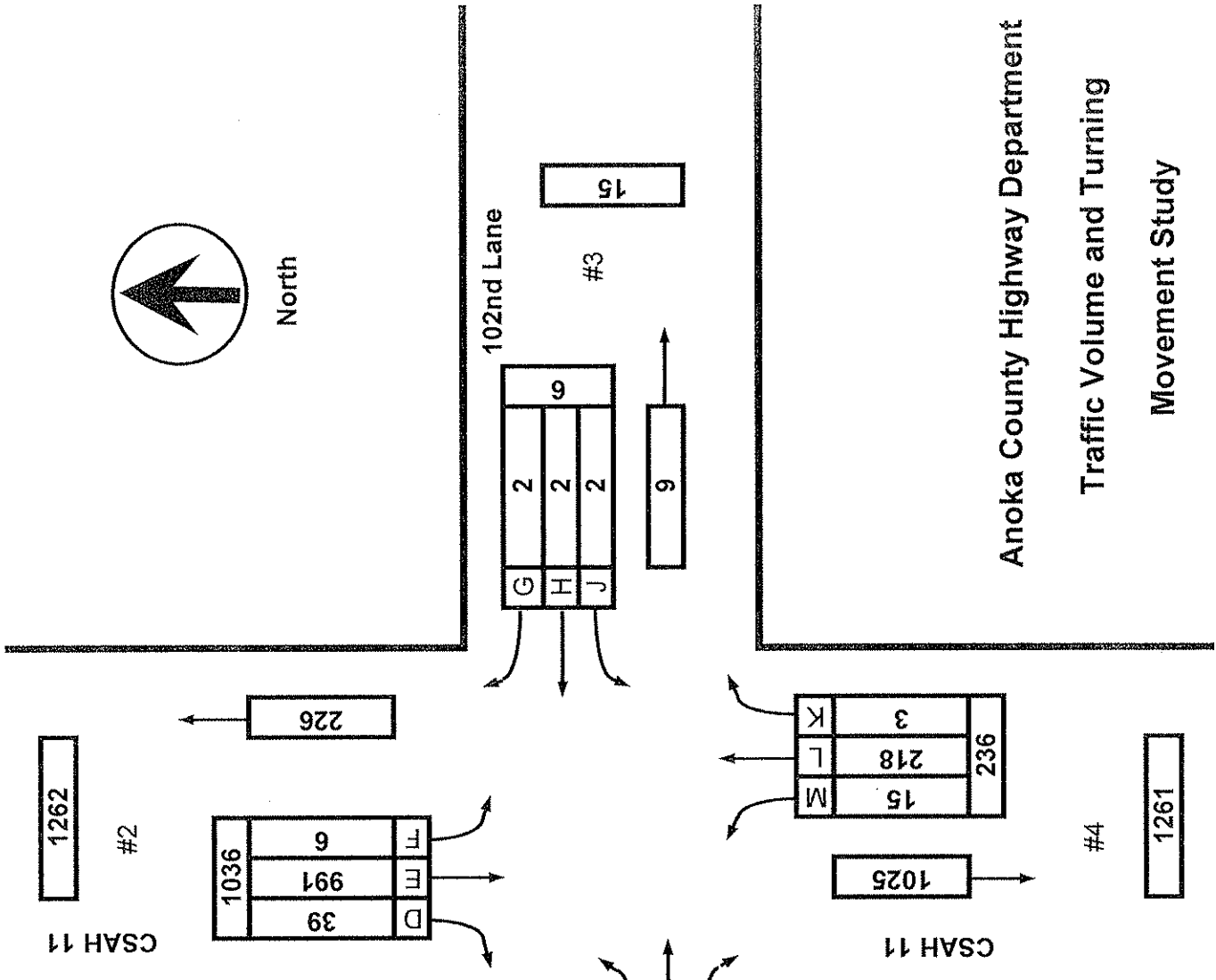
@ 102nd Lane

Collection Period : AM PEAK

Hour : 7:00 AM - 8:00 AM



North



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

Anoka County Highway Department  
 Traffic Volume and Turning  
 Movement Study

Date : 06/20/12

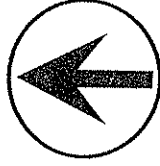
Count Number : TMC1221

Location : CSAH 11 (Foley Blvd.)

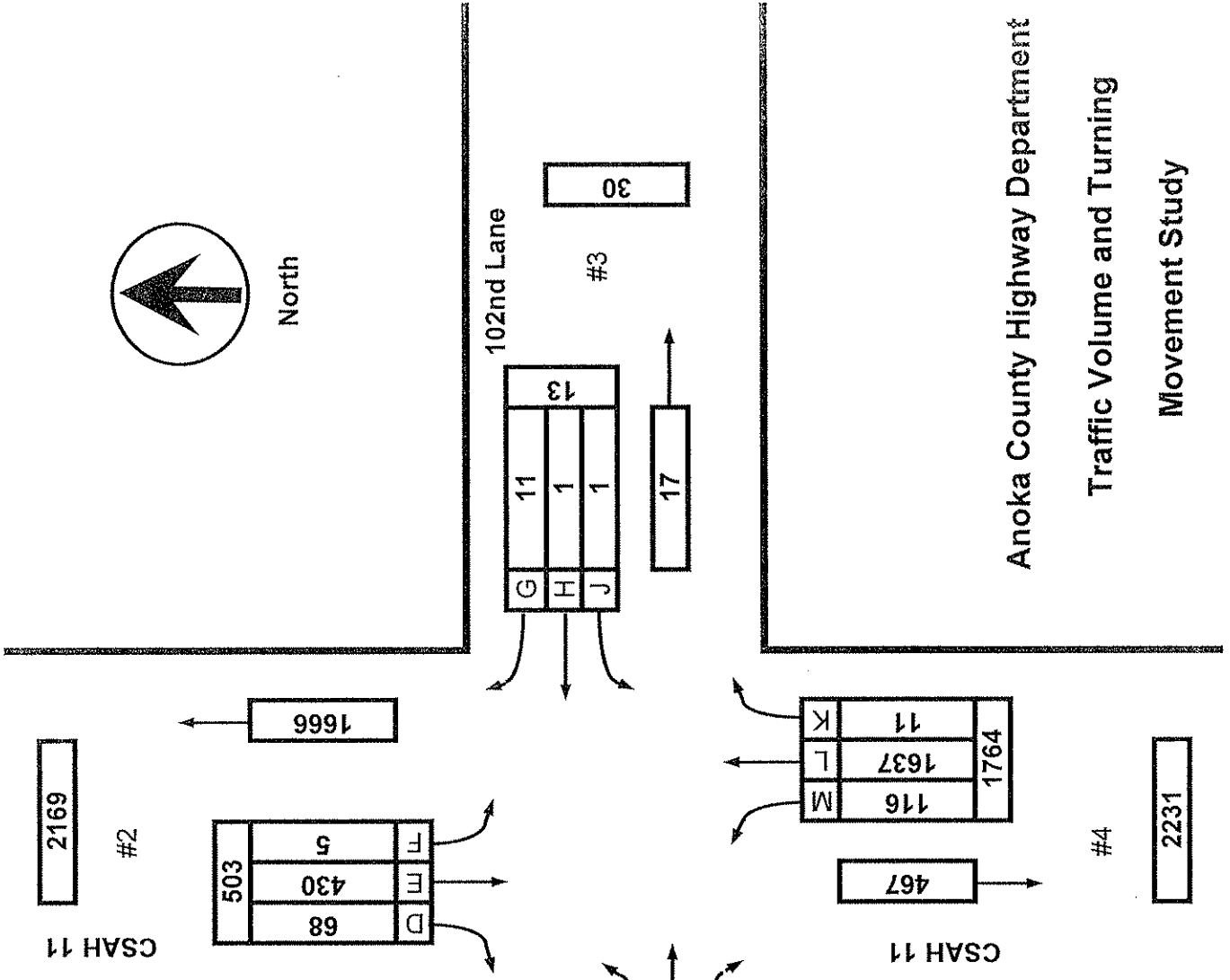
@ 102nd Lane

Collection Period : PM PEAK

Hour : 5:15 PM - 6:15 PM



North



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

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 : TMC1221  
 Site Code : 12210202  
 Start Date : 06/20/2012  
 Page No : 1

Weather: Warm, Rain  
 Counter: DB-400  
 Study Conducted by: Reno/Hannah

Groups Printed- Unshifted

Start Time	CSAH 11 Southbound					102nd Lane Westbound					CSAH 11 Northbound					102nd Lane Eastbound					Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	Heavys	App. Total	Left	Thru	Right	Heavys	App. Total	Left	Thru	Right	Heavys	App. Total	Left	Thru	Right	Heavys	App. Total			
06:00	3	207	6	0	216	0	0	0	0	0	1	28	1	0	30	0	0	7	0	7	0	253	253
06:15	0	225	10	1	235	0	0	0	0	0	6	26	2	7	34	2	0	7	0	9	8	278	286
06:30	1	252	8	2	261	1	0	1	0	2	4	35	1	2	40	0	0	8	0	8	4	311	315
06:45	1	243	6	3	250	1	0	0	0	1	3	41	2	2	46	0	1	3	1	4	6	301	307
<b>Total</b>	<b>5</b>	<b>927</b>	<b>30</b>	<b>6</b>	<b>962</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>14</b>	<b>130</b>	<b>6</b>	<b>11</b>	<b>150</b>	<b>2</b>	<b>1</b>	<b>25</b>	<b>1</b>	<b>28</b>	<b>18</b>	<b>1143</b>	<b>1161</b>
07:00	2	248	4	5	254	1	0	1	0	2	3	48	0	3	51	1	0	8	0	9	8	316	324
07:15	0	297	9	1	306	0	0	1	0	1	5	57	1	1	63	3	0	10	0	13	2	383	385
07:30	1	222	14	2	237	0	1	0	0	1	5	60	2	3	67	2	0	6	0	8	5	313	318
07:45	3	224	12	3	239	1	1	0	0	2	2	53	0	5	55	0	0	8	0	8	8	304	312
<b>Total</b>	<b>6</b>	<b>991</b>	<b>39</b>	<b>11</b>	<b>1036</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>6</b>	<b>15</b>	<b>218</b>	<b>3</b>	<b>12</b>	<b>236</b>	<b>6</b>	<b>0</b>	<b>32</b>	<b>0</b>	<b>38</b>	<b>23</b>	<b>1316</b>	<b>1339</b>
08:00	4	185	10	9	199	1	0	1	1	2	4	70	0	6	74	0	0	4	0	4	16	279	295
08:15	3	138	14	1	155	0	0	2	0	2	5	51	0	2	56	0	0	8	0	8	3	221	224
08:30	2	169	12	3	183	0	0	3	1	3	6	52	1	5	59	1	0	12	1	13	10	258	268
08:45	2	140	16	4	158	1	2	2	1	5	11	66	2	4	79	3	0	11	0	14	9	256	265
<b>Total</b>	<b>11</b>	<b>632</b>	<b>52</b>	<b>17</b>	<b>695</b>	<b>2</b>	<b>2</b>	<b>8</b>	<b>3</b>	<b>12</b>	<b>26</b>	<b>239</b>	<b>3</b>	<b>17</b>	<b>268</b>	<b>4</b>	<b>0</b>	<b>35</b>	<b>1</b>	<b>39</b>	<b>38</b>	<b>1014</b>	<b>1052</b>
09:00	1	115	11	7	127	3	2	1	0	6	7	50	2	2	59	4	1	7	0	12	9	204	213
09:15	4	136	17	1	157	3	0	1	0	4	19	77	2	3	98	3	0	7	0	10	4	269	273
09:30	1	115	24	7	140	0	1	0	0	1	10	85	2	1	97	4	2	12	0	18	8	256	264
09:45	0	109	22	5	131	1	1	5	1	7	16	100	3	1	119	4	0	12	0	16	7	273	280
<b>Total</b>	<b>6</b>	<b>475</b>	<b>74</b>	<b>20</b>	<b>555</b>	<b>7</b>	<b>4</b>	<b>7</b>	<b>1</b>	<b>18</b>	<b>52</b>	<b>312</b>	<b>9</b>	<b>7</b>	<b>373</b>	<b>15</b>	<b>3</b>	<b>38</b>	<b>0</b>	<b>56</b>	<b>28</b>	<b>1002</b>	<b>1030</b>
10:00	5	97	16	3	118	1	1	1	0	3	17	90	0	6	107	6	1	10	0	17	9	245	254
10:15	2	97	27	4	126	0	0	3	1	3	20	70	1	3	91	1	0	7	0	8	8	228	236
10:30	0	118	12	2	130	1	0	3	0	4	19	104	1	7	124	4	0	4	0	8	9	266	275
10:45	1	118	15	8	134	1	0	1	0	2	22	101	1	4	124	1	0	4	0	5	12	265	277
<b>Total</b>	<b>8</b>	<b>430</b>	<b>70</b>	<b>17</b>	<b>508</b>	<b>3</b>	<b>1</b>	<b>8</b>	<b>1</b>	<b>12</b>	<b>78</b>	<b>365</b>	<b>3</b>	<b>20</b>	<b>446</b>	<b>12</b>	<b>1</b>	<b>25</b>	<b>0</b>	<b>38</b>	<b>38</b>	<b>1004</b>	<b>1042</b>
11:00	2	86	12	2	100	2	0	3	0	5	12	109	2	4	123	0	0	5	0	5	6	233	239
11:15	3	117	18	2	138	0	1	1	0	2	11	118	2	5	131	3	0	14	0	17	7	288	295
11:30	2	114	12	1	128	2	0	1	1	3	15	137	1	3	153	2	0	8	0	10	5	294	299
11:45	1	97	11	4	109	0	0	0	0	0	14	108	0	3	122	2	0	5	0	7	7	238	245
<b>Total</b>	<b>8</b>	<b>414</b>	<b>53</b>	<b>9</b>	<b>475</b>	<b>4</b>	<b>1</b>	<b>5</b>	<b>1</b>	<b>10</b>	<b>52</b>	<b>472</b>	<b>5</b>	<b>15</b>	<b>529</b>	<b>7</b>	<b>0</b>	<b>32</b>	<b>0</b>	<b>39</b>	<b>25</b>	<b>1053</b>	<b>1078</b>
12:00	3	110	19	4	132	0	1	4	0	5	21	143	2	2	166	3	0	10	0	13	6	316	322
12:15	1	105	11	2	117	2	0	3	0	5	19	132	3	4	154	4	0	16	0	20	6	296	302
12:30	3	137	10	3	150	0	0	3	0	3	8	115	0	4	123	4	0	8	0	12	7	288	295
12:45	1	115	10	6	126	0	0	0	0	0	19	138	0	3	157	6	0	14	0	20	9	303	312
<b>Total</b>	<b>8</b>	<b>467</b>	<b>50</b>	<b>15</b>	<b>525</b>	<b>2</b>	<b>1</b>	<b>10</b>	<b>0</b>	<b>13</b>	<b>67</b>	<b>528</b>	<b>5</b>	<b>13</b>	<b>600</b>	<b>17</b>	<b>0</b>	<b>48</b>	<b>0</b>	<b>65</b>	<b>28</b>	<b>1203</b>	<b>1231</b>
13:00	2	108	14	2	124	0	0	1	0	1	10	89	3	4	102	4	0	10	0	14	6	241	247
13:15	2	144	14	8	160	0	0	1	0	1	20	121	3	6	144	4	0	10	0	14	14	319	333
13:30	2	116	15	4	133	1	0	2	0	3	19	126	3	1	148	4	1	9	0	14	5	298	303
13:45	0	116	10	3	126	0	0	3	0	3	13	122	1	2	136	3	0	6	0	9	5	274	279
<b>Total</b>	<b>6</b>	<b>484</b>	<b>53</b>	<b>17</b>	<b>543</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>8</b>	<b>62</b>	<b>458</b>	<b>10</b>	<b>13</b>	<b>530</b>	<b>15</b>	<b>1</b>	<b>35</b>	<b>0</b>	<b>51</b>	<b>30</b>	<b>1132</b>	<b>1162</b>
14:00	1	87	10	5	98	1	1	3	1	5	17	115	0	5	132	6	0	7	0	13	11	248	259
14:15	0	108	19	5	127	0	0	2	0	2	21	137	2	3	160	4	0	9	0	13	8	302	310
14:30	1	124	17	1	142	1	0	3	0	4	14	153	2	2	169	5	0	14	0	19	3	334	337
14:45	9	84	5	7	98	1	0	3	0	4	17	178	3	1	198	4	0	12	0	16	8	316	324
<b>Total</b>	<b>11</b>	<b>403</b>	<b>51</b>	<b>18</b>	<b>465</b>	<b>3</b>	<b>1</b>	<b>11</b>	<b>1</b>	<b>15</b>	<b>69</b>	<b>583</b>	<b>7</b>	<b>11</b>	<b>659</b>	<b>19</b>	<b>0</b>	<b>42</b>	<b>0</b>	<b>61</b>	<b>30</b>	<b>1200</b>	<b>1230</b>
15:00	3	84	8	4	95	2	0	2	1	4	12	179	0	5	191	6	0	3	0	9	10	299	309
15:15	2	83	15	4	100	1	2	0	0	3	18	196	2	5	216	7	2	7	0	16	9	335	344
15:30	0	93	11	4	104	1	1	3	0	5	15	255	0	5	270	3	0	2	0	5	9	384	393
15:45	1	87	18	2	106	0	0	1	0	1	18	273	1	4	292	5	0	5	0	10	6	409	415
<b>Total</b>	<b>6</b>	<b>347</b>	<b>52</b>	<b>14</b>	<b>405</b>	<b>4</b>	<b>3</b>	<b>6</b>	<b>1</b>	<b>13</b>	<b>63</b>	<b>903</b>	<b>3</b>	<b>19</b>	<b>969</b>	<b>21</b>	<b>2</b>	<b>17</b>	<b>0</b>	<b>40</b>	<b>34</b>	<b>1427</b>	<b>1461</b>
16:00	1	98	9	1	108	1	0	2	0	3	20	282	3	1	305	10	0	10	0	20	2	436	438
16:15	2	105	15	1	122	0	0	1	1	1	19	291	4	1	314	3	1	13	0	17	3	454	457
16:30	1	100	19	1	120	0	0	2	0	2	24	386	1	2	411	7	0	7	0	14	3	547	550
16:45	2	104	17	1	123	0	0	5	0	5	25	358	1	1	384	4	1	12	0	17	2	529	531
<b>Total</b>	<b>6</b>	<b>407</b>	<b>60</b>	<b>4</b>	<b>473</b>	<b>1</b>	<b>0</b>	<b>10</b>	<b>1</b>	<b>11</b>	<b>88</b>	<b>1317</b>	<b>9</b>	<b>5</b>	<b>1414</b>	<b>24</b>	<b>2</b>	<b>42</b>	<b>0</b>	<b>68</b>	<b>10</b>	<b>1966</b>	<b>1976</b>
17:00	1	70	7	1	78	0	6	3	1	9	24	322	1	4	347	7	42	9	1	58	7	492	499
17:15	0	107	21	4	128	0	0	5	0	5	26	386	3	3	415	4	1	10	0	15	7	563	570
17:30	4	102	14	0	120	1	1	0	0	2	27	469	4	5	500	3	0	6	0	9	5	631	636
17:45	1	93	18	3	112	0	0	3	0	3	34	470	1	3	505	5	0	7	0	12	6	632	638
<b>Total</b>	<b>6</b>	<b>372</b>	<b>60</b>	<b>8</b>	<b>438</b>	<b>1</b>	<b>7</b>	<b>11</b>	<b>1</b>	<b>19</b>	<b>111</b>	<b>1647</b>	<b>9</b>	<b>15</b>	<b>1767</b>	<b>19</b>	<b>43</b>	<b>32</b>	<b>1</b>	<b>94</b>	<b>25</b>	<b>2318</b>	<b>2343</b>



# Anoka County Highway Department

## Traffic Engineering Section

### Traffic Volume and Turning Movement Study

Weather: Warm, Rain  
 Counter: DB-400  
 Study Conducted by: Reno/Hannah

File Name : TMC1221  
 Site Code : 12210202  
 Start Date : 06/20/2012  
 Page No : 2

#### Groups Printed- Unshifted

Start Time	CSAH 11 Southbound					102nd Lane Westbound					CSAH 11 Northbound					102nd Lane Eastbound					Excl. Total	Inclu. Total	Int. Total
	Left	Thru	Right	Heavys	App. Total	Left	Thru	Right	Heavys	App. Total	Left	Thru	Right	Heavys	App. Total	Left	Thru	Right	Heavys	App. Total			
18:00	0	128	15	3	143	0	0	3	0	3	29	312	3	2	344	6	0	13	0	19	5	509	514
18:15	2	105	9	2	116	0	0	4	0	4	7	257	0	0	264	4	0	6	0	10	2	394	396
18:30	0	117	7	0	124	1	0	1	0	2	6	183	1	0	190	4	0	1	0	5	0	321	321
18:45	4	92	10	0	106	0	1	0	0	1	16	185	0	0	201	4	1	6	0	11	0	319	319
<b>Total</b>	<b>6</b>	<b>442</b>	<b>41</b>	<b>5</b>	<b>489</b>	<b>1</b>	<b>1</b>	<b>8</b>	<b>0</b>	<b>10</b>	<b>58</b>	<b>937</b>	<b>4</b>	<b>2</b>	<b>999</b>	<b>18</b>	<b>1</b>	<b>26</b>	<b>0</b>	<b>45</b>	<b>7</b>	<b>1543</b>	<b>1550</b>
19:00	1	84	4	0	89	0	1	4	0	5	8	138	0	0	146	10	0	10	0	20	0	260	260
19:15	1	93	7	0	101	1	1	2	0	4	7	131	4	0	142	2	0	11	0	13	0	260	260
19:30	1	87	8	0	96	0	1	2	0	3	11	127	1	1	139	5	0	3	0	8	1	246	247
19:45	5	65	5	0	75	0	1	1	0	2	15	101	0	0	116	5	0	9	0	14	0	207	207
<b>Total</b>	<b>8</b>	<b>329</b>	<b>24</b>	<b>0</b>	<b>361</b>	<b>1</b>	<b>4</b>	<b>9</b>	<b>0</b>	<b>14</b>	<b>41</b>	<b>497</b>	<b>5</b>	<b>1</b>	<b>543</b>	<b>22</b>	<b>0</b>	<b>33</b>	<b>0</b>	<b>55</b>	<b>1</b>	<b>973</b>	<b>974</b>
20:00	2	81	5	1	88	0	0	3	1	3	11	111	3	1	125	21	2	17	0	40	3	256	259
20:15	1	134	3	0	138	0	0	1	0	1	4	132	1	1	137	3	1	12	0	16	1	292	293
20:30	0	107	3	3	110	0	0	1	0	1	6	133	1	0	140	3	0	14	0	17	3	268	271
20:45	1	68	3	0	72	0	0	0	0	0	4	104	2	0	110	8	1	8	0	17	0	199	199
<b>Total</b>	<b>4</b>	<b>390</b>	<b>14</b>	<b>4</b>	<b>408</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>5</b>	<b>25</b>	<b>480</b>	<b>7</b>	<b>2</b>	<b>512</b>	<b>35</b>	<b>4</b>	<b>51</b>	<b>0</b>	<b>90</b>	<b>7</b>	<b>1015</b>	<b>1022</b>
21:00	0	70	6	0	76	1	1	0	0	2	2	101	0	0	103	4	0	3	0	7	0	188	188
21:15	1	67	1	2	69	0	0	0	0	0	6	109	2	1	117	2	0	4	0	6	3	192	195
21:30	1	69	1	1	71	0	0	1	0	1	2	96	0	0	98	1	0	1	0	2	1	172	173
21:45	0	33	2	0	35	0	0	2	0	2	2	79	0	0	81	1	0	1	0	2	0	120	120
<b>Total</b>	<b>2</b>	<b>239</b>	<b>10</b>	<b>3</b>	<b>251</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>5</b>	<b>12</b>	<b>385</b>	<b>2</b>	<b>1</b>	<b>399</b>	<b>8</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>17</b>	<b>4</b>	<b>672</b>	<b>676</b>
<b>Grand Total</b>	<b>107</b>	<b>7749</b>	<b>733</b>	<b>168</b>	<b>8589</b>	<b>35</b>	<b>28</b>	<b>111</b>	<b>11</b>	<b>174</b>	<b>833</b>	<b>9471</b>	<b>90</b>	<b>164</b>	<b>10394</b>	<b>244</b>	<b>58</b>	<b>522</b>	<b>3</b>	<b>824</b>	<b>346</b>	<b>19981</b>	<b>20327</b>
Apprch %	1.2	90.2	8.5			20.1	16.1	63.8			8	91.1	0.9			29.6	7	63.3					
Total %	0.5	38.8	3.7		43	0.2	0.1	0.6		0.9	4.2	47.4	0.5		52	1.2	0.3	2.6		4.1	1.7	98.3	

Start Time	CSAH 11 Southbound				102nd Lane Westbound				CSAH 11 Northbound				102nd Lane 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 07:00																	
07:00	2	248	4	254	1	0	1	2	3	48	0	51	1	0	8	9	316
07:15	0	297	9	306	0	0	1	1	5	57	1	63	3	0	10	13	383
07:30	1	222	14	237	0	1	0	1	5	60	2	67	2	0	6	8	313
07:45	3	224	12	239	1	1	0	2	2	53	0	55	0	0	8	8	304
<b>Total Volume</b>	<b>6</b>	<b>991</b>	<b>39</b>	<b>1036</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>6</b>	<b>15</b>	<b>218</b>	<b>3</b>	<b>236</b>	<b>6</b>	<b>0</b>	<b>32</b>	<b>38</b>	<b>1316</b>
<b>% App. Total</b>	<b>0.6</b>	<b>95.7</b>	<b>3.8</b>		<b>33.3</b>	<b>33.3</b>	<b>33.3</b>		<b>6.4</b>	<b>92.4</b>	<b>1.3</b>		<b>15.8</b>	<b>0</b>	<b>84.2</b>		
PHF	.500	.834	.696	.846	.500	.500	.500	.750	.750	.908	.375	.881	.500	.000	.800	.731	.859
Peak Hour Analysis From 12:00 to 21:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:15																	
17:15	0	107	21	128	0	0	5	5	26	386	3	415	4	1	10	15	563
17:30	4	102	14	120	1	1	0	2	27	469	4	500	3	0	6	9	631
17:45	1	93	18	112	0	0	3	3	34	470	1	505	5	0	7	12	632
18:00	0	128	15	143	0	0	3	3	29	312	3	344	6	0	13	19	509
<b>Total Volume</b>	<b>5</b>	<b>430</b>	<b>68</b>	<b>503</b>	<b>1</b>	<b>1</b>	<b>11</b>	<b>13</b>	<b>116</b>	<b>1637</b>	<b>11</b>	<b>1764</b>	<b>18</b>	<b>1</b>	<b>36</b>	<b>55</b>	<b>2335</b>
<b>% App. Total</b>	<b>1</b>	<b>85.5</b>	<b>13.5</b>		<b>7.7</b>	<b>7.7</b>	<b>84.6</b>		<b>6.6</b>	<b>92.8</b>	<b>0.6</b>		<b>32.7</b>	<b>1.8</b>	<b>65.5</b>		
PHF	.313	.840	.810	.879	.250	.250	.550	.650	.853	.871	.688	.873	.750	.250	.692	.724	.924



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

Study Name : TMC1221  
Study Date : 06/26/12  
Page No. : 1

**Signal Warrants - Summary**

**Major Street Approaches**

**Northbound: CSAH 11**  
Number of Lanes: 2  
85% Speed < 40 MPH.  
Total Approach Volume: **10,394**

**Southbound: CSAH 11**  
Number of Lanes: 2  
85% Speed < 40 MPH.  
Total Approach Volume: **8,589**

**Minor Street Approaches**

**Eastbound: 102nd Lane**  
Number of Lanes: 2  
  
Total Approach Volume: **824**

**Westbound: 102nd Lane**  
Number of Lanes: 1  
  
Total Approach Volume: **174**

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

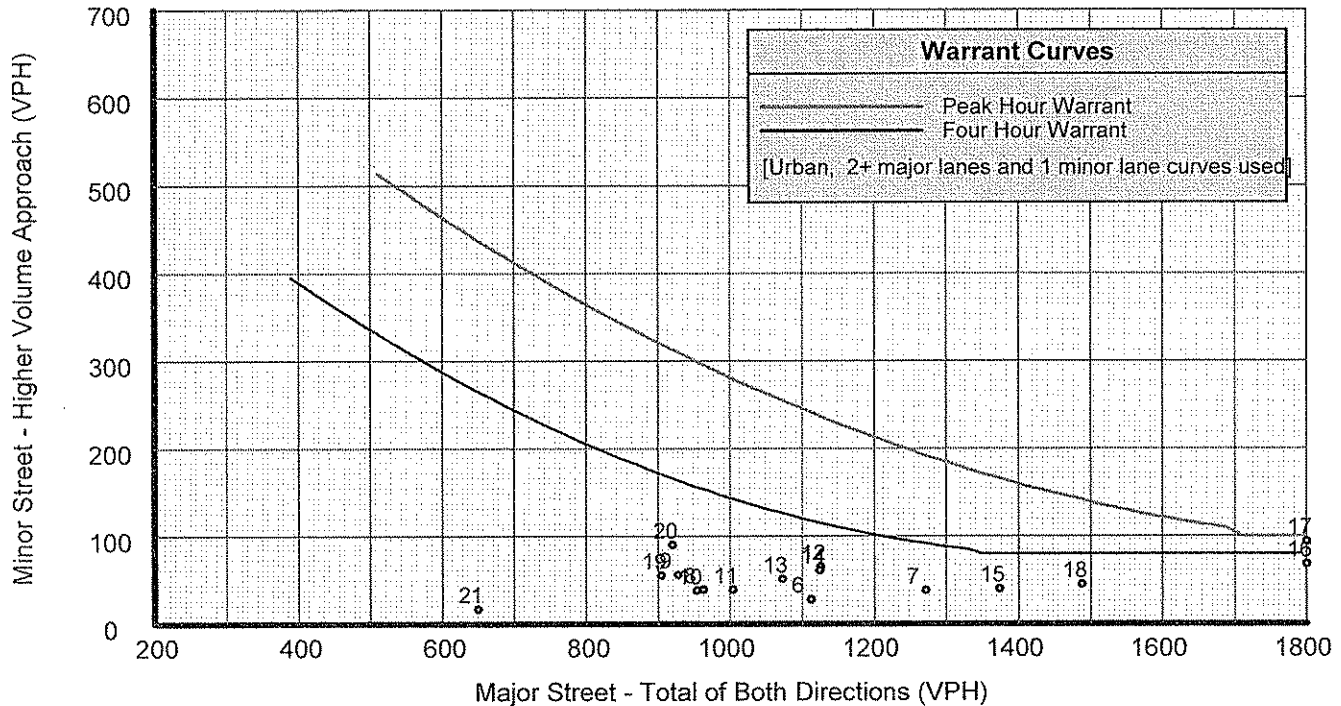
- Warrant 1 - Eight Hour Vehicular Volumes** ..... **Not Satisfied**  
  - Warrant 1A - Minimum Vehicular Volume** ..... **Not Satisfied**  
Required volumes reached for 0 hours, 8 are needed
  - Warrant 1B - Interruption of Continuous Traffic** ..... **Not Satisfied**  
Required volumes reached for 0 hours, 8 are needed
  - Warrant 1 A&B - Combination of Warrants** ..... **Not Satisfied**  
Required volumes reached for 0 hours, 8 are needed
  
- Warrant 2 - Four Hour Volumes** ..... **Not Satisfied**  
Number of hours (1) volumes exceed minimum < minimum required (4).
  
- Warrant 3 - Peak Hour** ..... **Satisfied**  
  - Warrant 3A - Peak Hour Delay** ..... **Satisfied**  
Number of hours (2) volumes exceed minimum >= required (1). 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 : TMC1221  
Study Date : 06/26/12  
Page No. : 2

## Signal Warrants - Summary



### Analysis of 8-Hour Volume Warrants:

Hour Begin	Major Total	Higher Minor Vol	Dir	War 1A			War 1B			War 1A&B		
				Major Crit	Minor Crit	Meets?	Major Crit	Minor Crit	Meets?	Major Crit	Minor Crit	Meets?
00:00	0	0	EB	600-No	150-No	---	900-No	75-No	---	720-No	120-No	---
01:00	0	0	EB	600-No	150-No	---	900-No	75-No	---	720-No	120-No	---
02:00	0	0	EB	600-No	150-No	---	900-No	75-No	---	720-No	120-No	---
03:00	0	0	EB	600-No	150-No	---	900-No	75-No	---	720-No	120-No	---
04:00	0	0	EB	600-No	150-No	---	900-No	75-No	---	720-No	120-No	---
05:00	0	0	EB	600-No	150-No	---	900-No	75-No	---	720-No	120-No	---
06:00	1,112	28	EB	600-Yes	200-No	Major	900-Yes	100-No	Major	720-Yes	160-No	Major
07:00	1,272	38	EB	600-Yes	200-No	Major	900-Yes	100-No	Major	720-Yes	160-No	Major
08:00	963	39	EB	600-Yes	200-No	Major	900-Yes	100-No	Major	720-Yes	160-No	Major
09:00	928	56	EB	600-Yes	200-No	Major	900-Yes	100-No	Major	720-Yes	160-No	Major
10:00	954	38	EB	600-Yes	200-No	Major	900-Yes	100-No	Major	720-Yes	160-No	Major
11:00	1,004	39	EB	600-Yes	200-No	Major	900-Yes	100-No	Major	720-Yes	160-No	Major
12:00	1,125	65	EB	600-Yes	200-No	Major	900-Yes	100-No	Major	720-Yes	160-No	Major
13:00	1,073	51	EB	600-Yes	200-No	Major	900-Yes	100-No	Major	720-Yes	160-No	Major
14:00	1,124	61	EB	600-Yes	200-No	Major	900-Yes	100-No	Major	720-Yes	160-No	Major
15:00	1,374	40	EB	600-Yes	200-No	Major	900-Yes	100-No	Major	720-Yes	160-No	Major
16:00	1,887	68	EB	600-Yes	200-No	Major	900-Yes	100-No	Major	720-Yes	160-No	Major
17:00	2,205	94	EB	600-Yes	200-No	Major	900-Yes	100-No	Major	720-Yes	160-No	Major
18:00	1,488	45	EB	600-Yes	200-No	Major	900-Yes	100-No	Major	720-Yes	160-No	Major
19:00	904	55	EB	600-Yes	200-No	Major	900-Yes	100-No	Major	720-Yes	160-No	Major
20:00	920	90	EB	600-Yes	200-No	Major	900-Yes	100-No	Major	720-Yes	160-No	Major
21:00	650	17	EB	600-Yes	200-No	Major	900-No	100-No	---	720-No	160-No	---
22:00	0	0	EB	600-No	150-No	---	900-No	75-No	---	720-No	120-No	---
23:00	0	0	EB	600-No	150-No	---	900-No	75-No	---	720-No	120-No	---



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

Study Name : TMC1221  
Study Date : 06/26/12  
Page No. : 1

**Multi-Way Stop Warrant Report**

**Major Street Approaches**

**Northbound: CSAH 11**  
Total Approach Volume: 10,394  
85% Speed < 40 MPH.

**Southbound: CSAH 11**  
Total Approach Volume: 8,589  
85% Speed < 40 MPH.

**Minor Street Approaches**

**Eastbound: 102nd Lane**  
Total Approach Volume: 824

**Westbound: 102nd Lane**  
Total Approach Volume: 174

**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** ..... Not Satisfied  
Delay data not evaluated  
Required volumes reached for 0 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	Meets?	Major	Minor	Meets?
05:30 - 06:30	515	16	300-Yes	200-No	Major	240-Yes	160-No	Major
05:45 - 06:45	816	26	300-Yes	200-No	Major	240-Yes	160-No	Major
06:00 - 07:00	1,112	31	300-Yes	200-No	Major	240-Yes	160-No	Major
06:15 - 07:15	1,171	35	300-Yes	200-No	Major	240-Yes	160-No	Major
06:30 - 07:30	1,271	40	300-Yes	200-No	Major	240-Yes	160-No	Major
06:45 - 07:45	1,274	39	300-Yes	200-No	Major	240-Yes	160-No	Major
07:00 - 08:00	1,272	44	300-Yes	200-No	Major	240-Yes	160-No	Major
07:15 - 08:15	1,240	39	300-Yes	200-No	Major	240-Yes	160-No	Major
07:30 - 08:30	1,082	35	300-Yes	200-No	Major	240-Yes	160-No	Major
07:45 - 08:45	1,020	42	300-Yes	200-No	Major	240-Yes	160-No	Major
08:00 - 09:00	963	51	300-Yes	200-No	Major	240-Yes	160-No	Major
08:15 - 09:15	876	63	300-Yes	200-No	Major	240-Yes	160-No	Major
08:30 - 09:30	920	67	300-Yes	200-No	Major	240-Yes	160-No	Major
08:45 - 09:45	915	70	300-Yes	200-No	Major	240-Yes	160-No	Major
09:00 - 10:00	928	74	300-Yes	200-No	Major	240-Yes	160-No	Major
09:15 - 10:15	967	76	300-Yes	200-No	Major	240-Yes	160-No	Major
09:30 - 10:30	929	73	300-Yes	200-No	Major	240-Yes	160-No	Major
09:45 - 10:45	946	66	300-Yes	200-No	Major	240-Yes	160-No	Major
10:00 - 11:00	954	50	300-Yes	200-No	Major	240-Yes	160-No	Major
10:15 - 11:15	952	40	300-Yes	200-No	Major	240-Yes	160-No	Major
10:30 - 11:30	1,004	48	300-Yes	200-No	Major	240-Yes	160-No	Major
10:45 - 11:45	1,031	49	300-Yes	200-No	Major	240-Yes	160-No	Major
11:00 - 12:00	1,004	49	300-Yes	200-No	Major	240-Yes	160-No	Major
11:15 - 12:15	1,079	57	300-Yes	200-No	Major	240-Yes	160-No	Major





COUNT LOCATION:

CSAH 11 (Foley Blvd.)

DATE:

06/22/2012

@ 102nd Lane

NORTH

APP. #1 = CSAH 11
APP. #2 = 102nd Lane
APP. #3 = CSAH 11
APP. #4 = 102nd Lane

APP. #2

APP. #1

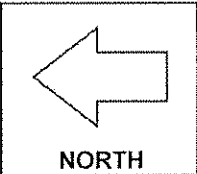
APP. #3

APP. #4

- 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		1			1				
6:15-6:30		1			1	7		1	
6:30-6:45						3		1	
6:45-7:00						5			
<b>HOURLY TOTAL</b>					<b>2</b>	<b>HOURLY TOTAL</b>		<b>17</b>	
7:00-7:15						6		2	
7:15-7:30						2			
7:30-7:45				1	1	4		1	
7:45-8:00						7			
<b>HOURLY TOTAL</b>					<b>1</b>	<b>HOURLY TOTAL</b>		<b>22</b>	
8:00-8:15						14		2	
8:15-8:30		1	1	1	3	2		1	
8:30-8:45						8		2	
8:45-9:00						7		1	
<b>HOURLY TOTAL</b>					<b>3</b>	<b>HOURLY TOTAL</b>		<b>37</b>	
9:00-9:15		2			2	8	1		
9:15-9:30		1			1	3		1	
9:30-9:45		1			1	4		4	
9:45-10:00						4	2	1	
<b>HOURLY TOTAL</b>					<b>4</b>	<b>HOURLY TOTAL</b>		<b>28</b>	
10:00-10:15						10	1		
10:15-10:30				5	5	5	1		
10:30-10:45						6		3	
10:45-11:00	1				1	13			
<b>HOURLY TOTAL</b>					<b>6</b>	<b>HOURLY TOTAL</b>		<b>39</b>	
11:00-11:15	1				1	6			
11:15-11:30				2	2	6			
11:30-11:45	1			1	2	4			
11:45-12:00		1			1	7			
<b>HOURLY TOTAL</b>					<b>6</b>	<b>HOURLY TOTAL</b>		<b>23</b>	
12:00-12:15						6			
12:15-12:30		2			2	6			
12:30-12:45		1			1	7			
12:45-1:00						10			
<b>HOURLY TOTAL</b>					<b>3</b>	<b>HOURLY TOTAL</b>		<b>29</b>	
1:00-1:15		1			1	5			
1:15-1:30						9		4	
1:30-1:45						6		1	
1:45-2:00						5			
<b>HOURLY TOTAL</b>					<b>1</b>	<b>HOURLY TOTAL</b>		<b>30</b>	
					<b>TOTAL</b>	<b>26</b>		<b>TOTAL</b>	<b>225</b>

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COUNT LOCATION:

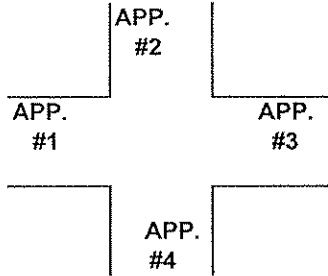
CSAH 11 (Foley Blvd.)

DATE:

06/20/2012

@ 102nd Lane

APP. #1 = CSAH 11
APP. #2 = 102nd Lane
APP. #3 = CSAH 11
APP. #4 = 102nd Lane



- 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.
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  - 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		3			3	12		2	
2:15-2:30						5			
2:30-2:45						2		2	
2:45-3:00						6	1	1	
<b>HOURLY TOTAL</b>					<b>3</b>	<b>HOURLY TOTAL</b>		<b>31</b>	
3:00-3:15				3	3	10		1	
3:15-3:30			2		2	8		1	
3:30-3:45						8		2	
3:45-4:00						4		1	
<b>HOURLY TOTAL</b>					<b>5</b>	<b>HOURLY TOTAL</b>		<b>35</b>	
4:00-4:15						1			
4:15-4:30						3			
4:30-4:45		2			2	2	1		
4:45-5:00						2			
<b>HOURLY TOTAL</b>					<b>2</b>	<b>HOURLY TOTAL</b>		<b>9</b>	
5:00-5:15		2			2	7		1	
5:15-5:30		1			1	4		1	
5:30-5:45				2	2	8			
5:45-6:00						3			
<b>HOURLY TOTAL</b>					<b>5</b>	<b>HOURLY TOTAL</b>		<b>24</b>	
6:00-6:15						3		2	
6:15-6:30						1		1	
6:30-6:45									
6:45-7:00									
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		<b>7</b>	
7:00-7:15									
7:15-7:30		1			1				
7:30-7:45		2			2	1			
7:45-8:00		2			2				
<b>HOURLY TOTAL</b>					<b>5</b>	<b>HOURLY TOTAL</b>		<b>1</b>	
8:00-8:15		2			2		1	1	
8:15-8:30		1			1			1	
8:30-8:45		2			2	2		1	
8:45-9:00									
<b>HOURLY TOTAL</b>					<b>5</b>	<b>HOURLY TOTAL</b>		<b>6</b>	
9:00-9:15		2			2				
9:15-9:30						1		2	
9:30-9:45						1			
9:45-10:00									
<b>HOURLY TOTAL</b>					<b>2</b>	<b>HOURLY TOTAL</b>		<b>4</b>	
					<b>TOTAL</b>	<b>53</b>		<b>TOTAL</b>	<b>342</b>

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