

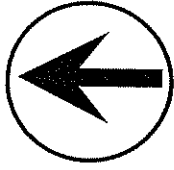
Date: 07/11/11

Count Number: TMC1118

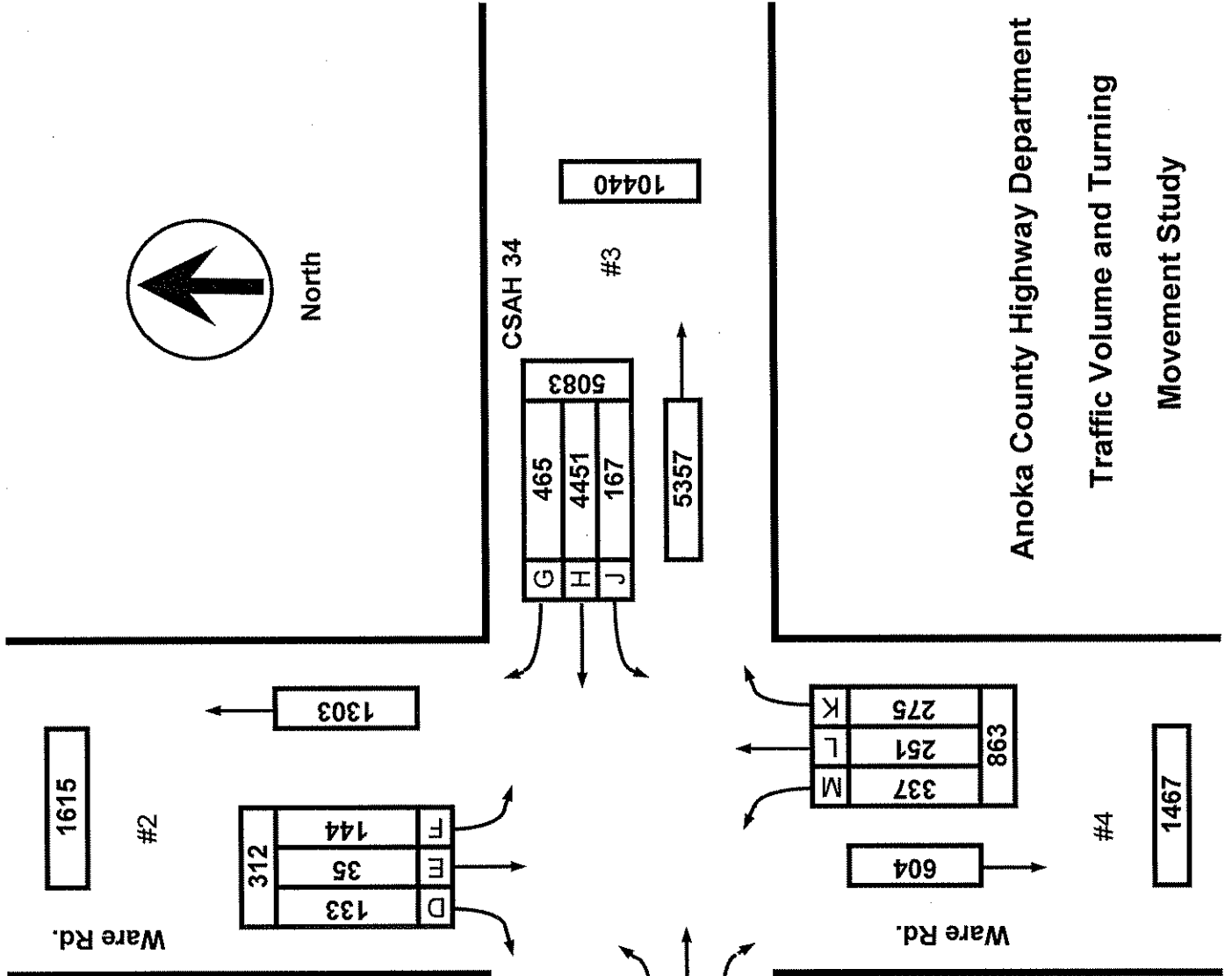
Location: CSAH 34 (Birch St.)

@ Ware Rd.

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



North



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

Anoka County Highway Department  
 Traffic Volume and Turning  
 Movement Study

Date : 07/13/11

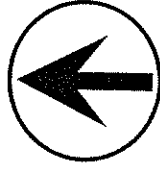
Count Number : TMC1118

Location : CSAH 34 (Birch St.)

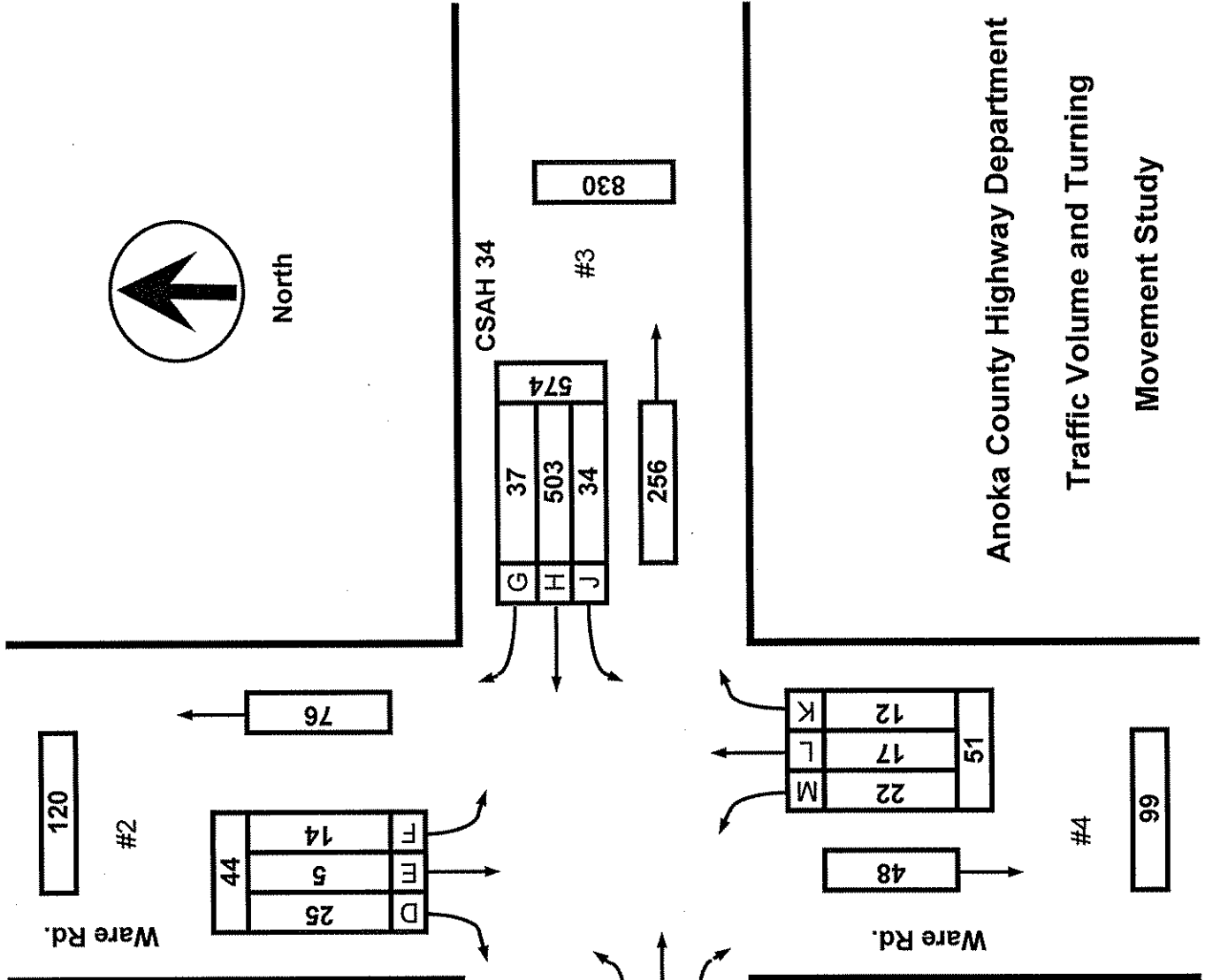
@ Ware Rd.

Collection Period : AM PEAK

Hour : 7:15 AM - 8:15 AM



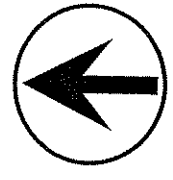
North



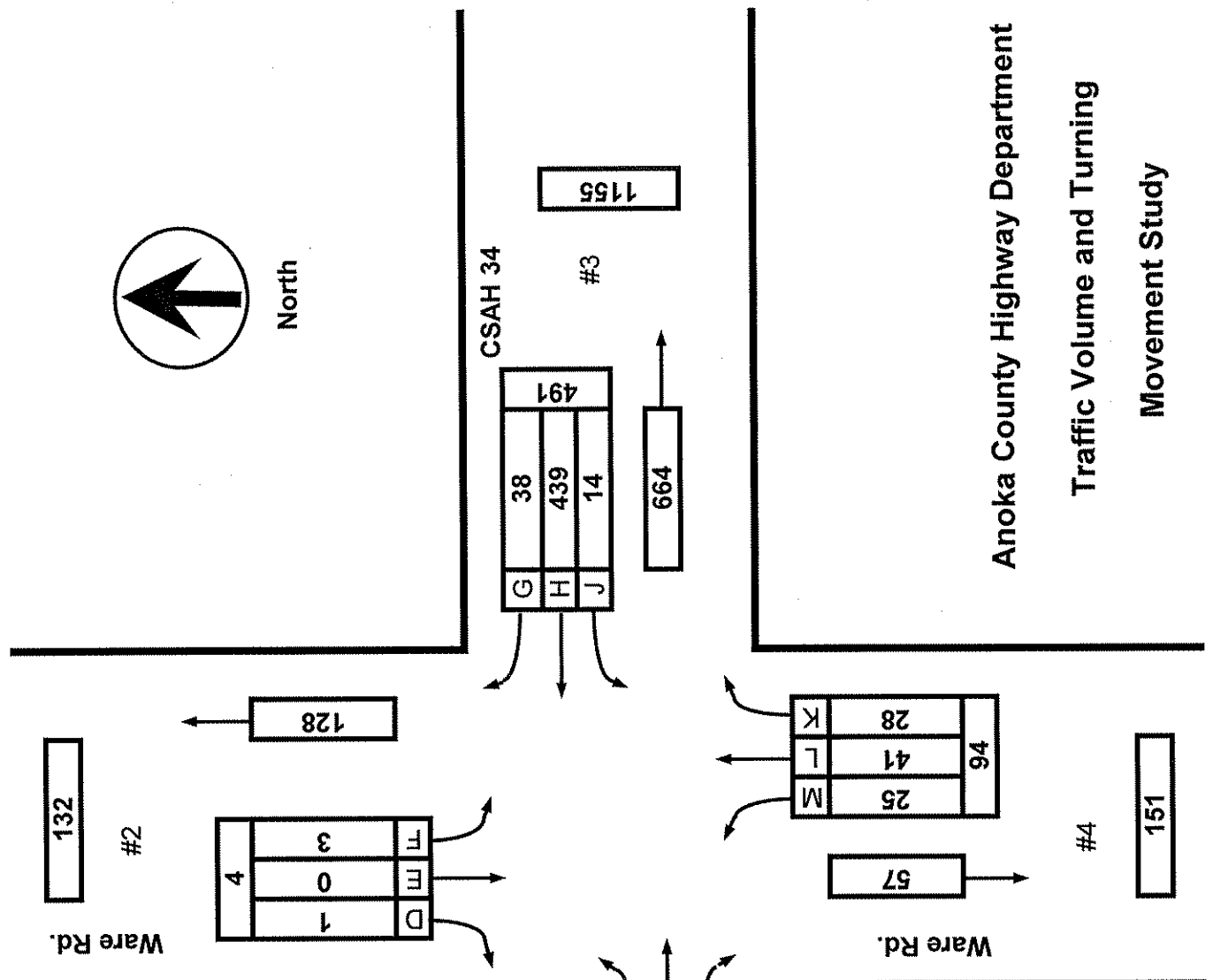
EXISTING LANES OF APPROACH				TOTAL
	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	
#1	1	1	1	3
#2	1	0	1	2
#3	1	1	1	3
#4	0	0	1	1

Anoka County Highway Department  
 Traffic Volume and Turning  
 Movement Study

Date : 07/11/11  
 Count Number : TMC1118  
 Location : CSAH 34 (Birch St.)  
 @ Ware Rd.  
 Collection Period : PM PEAK  
 Hour : 4:45 PM - 5:45 PM



North



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

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 : TMC1118  
 Site Code : 11180202  
 Start Date : 07/11/2011  
 Page No : 1

Weather: PCLDY/RAIN  
 Counter: DB-400  
 Study Conducted by: Paige/Rachel

**Groups Printed- Unshifted**

Start Time	Ware Rd. Southbound					CSAH 34 Westbound					Ware Rd. Northbound					CSAH 34 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			
07:00	3	0	5	0	8	2	112	11	1	125	3	0	4	0	7	1	30	2	1	33	2	173	175
07:15	5	0	7	0	12	13	148	11	1	172	2	4	1	0	7	2	50	3	1	55	2	246	248
07:30	3	2	9	0	14	11	129	10	3	150	4	3	7	0	14	7	68	1	3	76	6	254	260
07:45	4	2	5	1	11	4	134	13	3	151	6	6	4	2	16	4	63	5	4	72	10	250	260
<b>Total</b>	<b>15</b>	<b>4</b>	<b>26</b>	<b>1</b>	<b>45</b>	<b>30</b>	<b>523</b>	<b>45</b>	<b>8</b>	<b>598</b>	<b>15</b>	<b>13</b>	<b>16</b>	<b>2</b>	<b>44</b>	<b>14</b>	<b>211</b>	<b>11</b>	<b>9</b>	<b>236</b>	<b>20</b>	<b>923</b>	<b>943</b>
08:00	2	1	4	0	7	6	92	3	0	101	10	4	0	0	14	9	49	0	2	58	2	180	182
08:15	7	1	5	0	13	3	112	8	3	123	3	2	0	0	5	6	56	8	1	70	4	211	215
08:30	2	0	1	0	3	5	91	10	4	106	3	4	2	0	9	10	49	6	1	65	5	183	188
08:45	7	1	4	0	12	2	89	8	0	99	3	3	0	0	6	27	56	4	1	87	1	204	205
<b>Total</b>	<b>18</b>	<b>3</b>	<b>14</b>	<b>0</b>	<b>35</b>	<b>16</b>	<b>384</b>	<b>29</b>	<b>7</b>	<b>429</b>	<b>19</b>	<b>13</b>	<b>2</b>	<b>0</b>	<b>34</b>	<b>52</b>	<b>210</b>	<b>18</b>	<b>5</b>	<b>280</b>	<b>12</b>	<b>778</b>	<b>790</b>
09:00	6	1	5	0	12	0	94	10	1	104	5	2	2	0	9	7	39	4	0	50	1	175	176
09:15	2	1	5	0	8	0	69	5	0	74	2	2	3	0	7	12	48	2	2	62	2	151	153
09:30	4	1	4	1	9	0	65	7	1	72	5	2	5	0	12	8	49	4	1	61	3	154	157
09:45	4	1	5	0	10	1	76	6	0	83	7	4	1	0	12	5	60	7	2	72	2	177	179
<b>Total</b>	<b>16</b>	<b>4</b>	<b>19</b>	<b>1</b>	<b>39</b>	<b>1</b>	<b>304</b>	<b>28</b>	<b>2</b>	<b>333</b>	<b>19</b>	<b>10</b>	<b>11</b>	<b>0</b>	<b>40</b>	<b>32</b>	<b>196</b>	<b>17</b>	<b>5</b>	<b>245</b>	<b>8</b>	<b>657</b>	<b>665</b>
10:00	8	2	4	1	14	3	50	7	0	60	5	0	3	0	8	11	54	7	0	72	1	154	155
10:15	4	2	6	0	12	2	75	5	2	82	3	8	1	0	12	9	59	6	2	74	4	180	184
10:30	4	2	2	0	8	1	51	3	0	55	7	0	1	1	8	5	52	10	2	67	3	138	141
10:45	1	1	1	0	3	4	47	11	1	62	3	5	4	0	12	4	51	3	0	58	1	135	136
<b>Total</b>	<b>17</b>	<b>7</b>	<b>13</b>	<b>1</b>	<b>37</b>	<b>10</b>	<b>223</b>	<b>26</b>	<b>3</b>	<b>259</b>	<b>18</b>	<b>13</b>	<b>9</b>	<b>1</b>	<b>40</b>	<b>29</b>	<b>216</b>	<b>26</b>	<b>4</b>	<b>271</b>	<b>9</b>	<b>607</b>	<b>616</b>
11:00	2	1	2	0	5	0	48	6	1	54	1	1	2	0	4	9	48	5	1	62	2	125	127
11:15	12	2	6	0	20	2	54	15	2	71	2	4	2	0	8	13	50	2	2	65	4	164	168
11:30	3	0	6	1	9	2	60	7	4	69	1	3	2	0	6	9	38	4	5	51	10	135	145
11:45	6	2	3	1	11	1	75	8	6	84	4	2	1	0	7	10	75	7	4	92	11	194	205
<b>Total</b>	<b>23</b>	<b>5</b>	<b>17</b>	<b>2</b>	<b>45</b>	<b>5</b>	<b>237</b>	<b>36</b>	<b>13</b>	<b>278</b>	<b>8</b>	<b>10</b>	<b>7</b>	<b>0</b>	<b>25</b>	<b>41</b>	<b>211</b>	<b>18</b>	<b>12</b>	<b>270</b>	<b>27</b>	<b>618</b>	<b>645</b>
12:00	6	0	2	0	8	0	75	10	1	85	2	1	3	0	6	10	70	10	0	90	1	189	190
12:15	10	2	2	0	14	3	64	9	3	76	5	2	5	0	12	15	79	10	3	104	6	206	212
12:30	6	0	4	2	10	1	65	8	3	74	6	2	3	0	11	8	72	9	0	89	5	184	189
12:45	4	0	12	1	16	2	45	12	1	59	3	1	4	0	8	5	53	7	2	65	4	148	152
<b>Total</b>	<b>26</b>	<b>2</b>	<b>20</b>	<b>3</b>	<b>48</b>	<b>6</b>	<b>249</b>	<b>39</b>	<b>8</b>	<b>294</b>	<b>16</b>	<b>6</b>	<b>15</b>	<b>0</b>	<b>37</b>	<b>38</b>	<b>274</b>	<b>36</b>	<b>5</b>	<b>348</b>	<b>16</b>	<b>727</b>	<b>743</b>
13:00	4	1	6	0	11	4	48	7	3	59	6	1	3	0	10	5	56	8	2	69	5	149	154
13:15	5	0	2	0	7	1	57	13	0	71	4	3	4	0	11	9	75	9	1	93	1	182	183
13:30	9	3	11	1	23	0	70	7	0	77	3	4	0	0	7	4	72	5	2	81	3	188	191
13:45	5	2	2	0	9	0	56	10	0	66	5	4	3	0	12	7	50	4	1	61	1	148	149
<b>Total</b>	<b>23</b>	<b>6</b>	<b>21</b>	<b>1</b>	<b>50</b>	<b>5</b>	<b>231</b>	<b>37</b>	<b>3</b>	<b>273</b>	<b>18</b>	<b>12</b>	<b>10</b>	<b>0</b>	<b>40</b>	<b>25</b>	<b>253</b>	<b>26</b>	<b>6</b>	<b>304</b>	<b>10</b>	<b>667</b>	<b>677</b>
14:00	0	0	0	0	0	0	43	8	2	51	13	5	5	1	23	8	62	7	2	77	5	151	156
14:15	0	0	0	0	0	3	65	11	1	79	8	5	3	0	16	8	65	8	2	81	3	176	179
14:30	0	0	0	0	0	1	67	6	0	74	13	10	6	2	29	7	72	5	2	84	4	187	191
14:45	0	0	0	0	0	2	48	6	1	56	15	12	7	0	34	14	87	5	4	106	5	196	201
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>223</b>	<b>31</b>	<b>4</b>	<b>260</b>	<b>49</b>	<b>32</b>	<b>21</b>	<b>3</b>	<b>102</b>	<b>37</b>	<b>286</b>	<b>25</b>	<b>10</b>	<b>348</b>	<b>17</b>	<b>710</b>	<b>727</b>
15:00	0	0	0	0	0	2	78	8	3	88	16	1	3	0	20	18	96	7	1	121	4	229	233
15:15	0	0	0	0	0	3	73	5	1	81	4	4	8	0	16	11	104	8	2	123	3	220	223
15:30	0	0	0	0	0	2	70	5	1	77	4	3	7	0	14	11	88	8	2	107	3	198	201
15:45	0	0	0	0	0	2	73	10	2	85	11	6	11	0	28	10	104	14	2	128	4	241	245
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>294</b>	<b>28</b>	<b>7</b>	<b>331</b>	<b>35</b>	<b>14</b>	<b>29</b>	<b>0</b>	<b>78</b>	<b>50</b>	<b>392</b>	<b>37</b>	<b>7</b>	<b>479</b>	<b>14</b>	<b>888</b>	<b>902</b>
16:00	0	0	0	0	0	3	83	8	0	94	10	10	2	0	22	26	119	7	0	152	0	268	268
16:15	0	0	0	0	0	8	58	5	0	71	9	1	11	0	21	9	136	9	0	154	0	246	246
16:30	1	0	0	0	1	4	86	9	0	99	8	4	10	0	22	13	150	6	0	169	0	291	291
16:45	1	0	0	0	1	7	125	7	1	139	3	5	7	0	15	12	171	13	2	196	3	351	354
<b>Total</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>22</b>	<b>352</b>	<b>29</b>	<b>1</b>	<b>403</b>	<b>30</b>	<b>20</b>	<b>30</b>	<b>0</b>	<b>80</b>	<b>60</b>	<b>576</b>	<b>35</b>	<b>2</b>	<b>671</b>	<b>3</b>	<b>1156</b>	<b>1159</b>
17:00	1	0	1	0	2	4	110	3	4	117	6	3	2	0	11	6	151	12	2	169	6	299	305
17:15	0	0	0	0	0	3	103	13	0	119	3	10	7	0	20	17	161	12	0	190	0	329	329
17:30	1	0	0	0	1	0	101	15	0	116	13	23	12	0	48	14	150	6	1	170	1	335	336
17:45	0	0	0	0	0	2	125	7	0	134	10	7	7	0	24	11	143	4	0	158	0	316	316
<b>Total</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>9</b>	<b>439</b>	<b>38</b>	<b>4</b>	<b>486</b>	<b>32</b>	<b>43</b>	<b>28</b>	<b>0</b>	<b>103</b>	<b>48</b>	<b>605</b>	<b>34</b>	<b>3</b>	<b>687</b>	<b>7</b>	<b>1279</b>	<b>1286</b>
18:00	0	0	0	0	0	3	98	6	3	107	0	3	10	0	13	17	131	10	1	158	4	278	282
18:15	0	0	0	0	0	6	111	12	1	129	6	13	12	0	31	12	120	3	0	135	1	295	296
18:30	0	0	0	0	0	4	97	5	0	106	7	7	6	0	20	11	125	8	0	144	0	270	270
18:45	0	0	0	0	0	3	112	6	0	121	8	4	1	0	13	15	102	6	4	123	4	257	261
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>418</b>	<b>29</b>	<b>4</b>	<b>463</b>	<b>21</b>	<b>27</b>	<b>29</b>	<b>0</b>	<b>77</b>	<b>55</b>	<b>478</b>	<b>27</b>	<b>5</b>	<b>560</b>	<b>9</b>	<b>1100</b>	<b>1109</b>



# Anoka County Highway Department

## Traffic Engineering Section

### Traffic Volume and Turning Movement Study

Weather: PCLDY/RAIN  
 Counter: DB-400  
 Study Conducted by: Paige/Rachel

File Name : TMC1118  
 Site Code : 11180202  
 Start Date : 07/11/2011  
 Page No : 2

#### Groups Printed- Unshifted

Start Time	Ware Rd. Southbound					CSAH 34 Westbound					Ware Rd. Northbound					CSAH 34 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			
19:00	0	2	2	0	4	5	65	11	0	81	10	3	7	0	20	9	114	4	2	127	2	232	234
19:15	0	0	0	0	0	1	61	8	0	70	4	7	15	0	26	7	102	7	0	116	0	212	212
19:30	0	0	0	0	0	1	54	0	0	55	7	3	3	0	13	8	94	7	0	109	0	177	177
19:45	0	1	0	0	1	3	33	6	0	42	2	3	2	0	7	11	89	12	0	112	0	162	162
<b>Total</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>5</b>	<b>10</b>	<b>213</b>	<b>25</b>	<b>0</b>	<b>248</b>	<b>23</b>	<b>16</b>	<b>27</b>	<b>0</b>	<b>66</b>	<b>35</b>	<b>399</b>	<b>30</b>	<b>2</b>	<b>464</b>	<b>2</b>	<b>783</b>	<b>785</b>
20:00	0	1	0	0	1	2	55	6	1	63	7	6	4	0	17	13	85	7	0	105	1	186	187
20:15	1	0	0	0	1	1	36	6	2	43	2	0	6	0	8	9	75	2	0	86	2	136	140
20:30	0	0	0	0	0	7	53	7	0	67	4	3	2	0	9	5	92	7	0	104	0	180	180
20:45	0	0	0	0	0	3	57	9	0	69	6	2	5	0	13	7	115	8	0	130	0	212	212
<b>Total</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>13</b>	<b>201</b>	<b>28</b>	<b>3</b>	<b>242</b>	<b>19</b>	<b>11</b>	<b>17</b>	<b>0</b>	<b>47</b>	<b>34</b>	<b>367</b>	<b>24</b>	<b>0</b>	<b>425</b>	<b>3</b>	<b>716</b>	<b>719</b>
21:00	0	0	0	0	0	1	65	3	0	69	5	4	8	0	17	14	89	15	0	118	0	204	204
21:15	0	0	0	0	0	4	39	4	1	47	6	5	11	0	22	7	74	7	1	88	2	157	159
21:30	0	0	0	0	0	4	28	7	0	39	4	0	0	0	4	5	43	8	0	56	0	99	99
21:45	1	0	0	0	1	0	28	3	0	31	0	2	5	0	7	11	58	8	0	77	0	116	116
<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>9</b>	<b>160</b>	<b>17</b>	<b>1</b>	<b>186</b>	<b>15</b>	<b>11</b>	<b>24</b>	<b>0</b>	<b>50</b>	<b>37</b>	<b>264</b>	<b>38</b>	<b>1</b>	<b>339</b>	<b>2</b>	<b>576</b>	<b>578</b>
<b>Grand Total</b>	<b>144</b>	<b>35</b>	<b>133</b>	<b>9</b>	<b>312</b>	<b>167</b>	<b>4451</b>	<b>465</b>	<b>68</b>	<b>5083</b>	<b>337</b>	<b>251</b>	<b>275</b>	<b>6</b>	<b>863</b>	<b>587</b>	<b>4938</b>	<b>402</b>	<b>76</b>	<b>5927</b>	<b>159</b>	<b>12185</b>	<b>12344</b>
Apprch %	46.2	11.2	42.6			3.3	87.6	9.1			39	29.1	31.9			9.9	83.3	6.8					
Total %	1.2	0.3	1.1		2.6	1.4	36.5	3.8		41.7	2.8	2.1	2.3		7.1	4.8	40.5	3.3		48.6	1.3	98.7	

Start Time	Ware Rd. Southbound				App. Total	CSAH 34 Westbound				App. Total	Ware Rd. Northbound				App. Total	CSAH 34 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 07:00 to 11:45 - Peak 1 of 1																				
Peak Hour for Entire Intersection Begins at 07:15																				
07:15	5	0	7	12	13	148	11	172	2	4	1	7	2	50	3	55	246			
07:30	3	2	9	14	11	129	10	150	4	3	7	14	7	68	1	76	254			
07:45	4	2	5	11	4	134	13	151	6	6	4	16	4	63	5	72	250			
08:00	2	1	4	7	6	92	3	101	10	4	0	14	9	49	0	58	180			
<b>Total Volume</b>	<b>14</b>	<b>5</b>	<b>25</b>	<b>44</b>	<b>34</b>	<b>503</b>	<b>37</b>	<b>574</b>	<b>22</b>	<b>17</b>	<b>12</b>	<b>51</b>	<b>22</b>	<b>230</b>	<b>9</b>	<b>261</b>	<b>930</b>			
<b>% App. Total</b>	<b>31.8</b>	<b>11.4</b>	<b>56.8</b>		<b>5.9</b>	<b>87.6</b>	<b>6.4</b>		<b>43.1</b>	<b>33.3</b>	<b>23.5</b>		<b>8.4</b>	<b>88.1</b>	<b>3.4</b>					
PHF	.700	.625	.694	.786	.654	.850	.712	.834	.550	.708	.429	.797	.611	.846	.450	.859	.915			

Peak Hour Analysis From 12:00 to 21:45 - Peak 1 of 1																				
Peak Hour for Entire Intersection Begins at 16:45																				
16:45	1	0	0	1	7	125	7	139	3	5	7	15	12	171	13	196	351			
17:00	1	0	1	2	4	110	3	117	6	3	2	11	6	151	12	169	299			
17:15	0	0	0	0	3	103	13	119	3	10	7	20	17	161	12	190	329			
17:30	1	0	0	1	0	101	15	116	13	23	12	48	14	150	6	170	335			
<b>Total Volume</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>4</b>	<b>14</b>	<b>439</b>	<b>38</b>	<b>491</b>	<b>25</b>	<b>41</b>	<b>28</b>	<b>94</b>	<b>49</b>	<b>633</b>	<b>43</b>	<b>725</b>	<b>1314</b>			
<b>% App. Total</b>	<b>75</b>	<b>0</b>	<b>25</b>		<b>2.9</b>	<b>89.4</b>	<b>7.7</b>		<b>26.6</b>	<b>43.6</b>	<b>29.8</b>		<b>6.8</b>	<b>87.3</b>	<b>5.9</b>					
PHF	.750	.000	.250	.500	.500	.878	.633	.883	.481	.446	.563	.490	.721	.925	.827	.925	.936			



**Anoka County Highway**  
**PC-WARRANTS**  
 Traffic Signal Warrant Analysis

Study Name : TMC1118  
 Study Date : 07/15/11  
 Page No. : 1

**Signal Warrants - Summary**

**Major Street Approaches**

**Eastbound: CSAH 34**  
 Number of Lanes: 2  
 Approach Speed: 50  
 Total Approach Volume: 5,927

**Westbound: CSAH 34**  
 Number of Lanes: 2  
 Approach Speed: 50  
 Total Approach Volume: 5,083

**Minor Street Approaches**

**Northbound: Ware Rd.**  
 Number of Lanes: 1  
 Total Approach Volume: 863

**Southbound: Ware Rd.**  
 Number of Lanes: 2  
 Total Approach Volume: 312

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

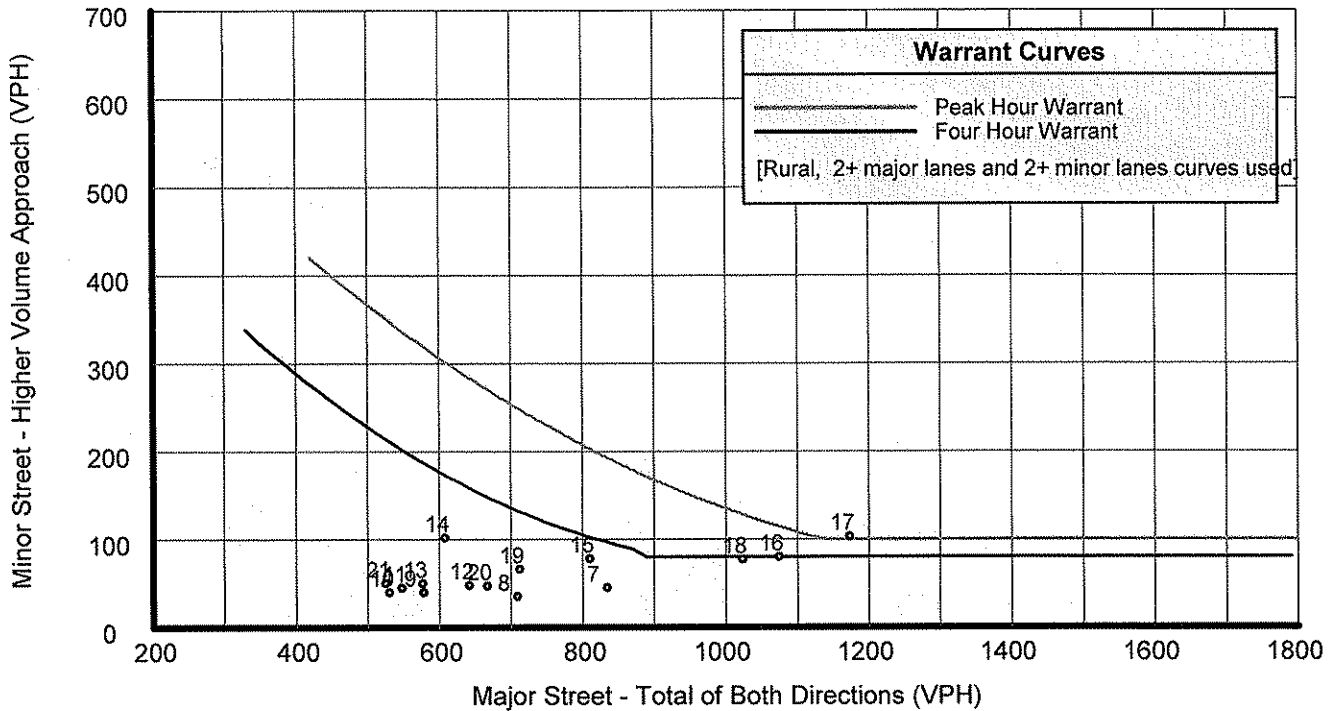
- Warrant 1 - Eight Hour Vehicular Volumes ..... Not Satisfied**
  - Warrant 1A - Minimum Vehicular Volume ..... Not Satisfied**  
 Required volumes reached for 0 hours, 8 are needed
  - Warrant 1B - Interruption of Continuous Traffic ..... Not Satisfied**  
 Required volumes reached for 4 hours, 8 are 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 (2) 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**



# Anoka County Highway PC-WARRANTS Traffic Signal Warrant Analysis

Study Name : TMC1118  
Study Date : 07/15/11  
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	NB	420-No	105-No	---	630-No	52-No	---	504-No	84-No	---
01:00	0	0	NB	420-No	105-No	---	630-No	52-No	---	504-No	84-No	---
02:00	0	0	NB	420-No	105-No	---	630-No	52-No	---	504-No	84-No	---
03:00	0	0	NB	420-No	105-No	---	630-No	52-No	---	504-No	84-No	---
04:00	0	0	NB	420-No	105-No	---	630-No	52-No	---	504-No	84-No	---
05:00	0	0	NB	420-No	105-No	---	630-No	52-No	---	504-No	84-No	---
06:00	0	0	NB	420-No	105-No	---	630-No	52-No	---	504-No	84-No	---
07:00	834	45	SB	420-Yes	105-No	Major	630-Yes	52-No	Major	504-Yes	84-No	Major
08:00	709	35	SB	420-Yes	105-No	Major	630-Yes	52-No	Major	504-Yes	84-No	Major
09:00	578	40	NB	420-Yes	140-No	Major	630-No	70-No	---	504-Yes	112-No	Major
10:00	530	40	NB	420-Yes	140-No	Major	630-No	70-No	---	504-Yes	112-No	Major
11:00	548	45	SB	420-Yes	105-No	Major	630-No	52-No	---	504-Yes	84-No	Major
12:00	642	48	SB	420-Yes	105-No	Major	630-Yes	52-No	Major	504-Yes	84-No	Major
13:00	577	50	SB	420-Yes	105-No	Major	630-No	52-No	---	504-Yes	84-No	Major
14:00	608	102	NB	420-Yes	140-No	Major	630-No	70-Yes	Minor	504-Yes	112-No	Major
15:00	810	78	NB	420-Yes	140-No	Major	630-Yes	70-Yes	Both	504-Yes	112-No	Major
16:00	1,074	80	NB	420-Yes	140-No	Major	630-Yes	70-Yes	Both	504-Yes	112-No	Major
17:00	1,173	103	NB	420-Yes	140-No	Major	630-Yes	70-Yes	Both	504-Yes	112-No	Major
18:00	1,023	77	NB	420-Yes	140-No	Major	630-Yes	70-Yes	Both	504-Yes	112-No	Major
19:00	712	66	NB	420-Yes	140-No	Major	630-Yes	70-No	Major	504-Yes	112-No	Major
20:00	667	47	NB	420-Yes	140-No	Major	630-Yes	70-No	Major	504-Yes	112-No	Major
21:00	525	50	NB	420-Yes	140-No	Major	630-No	70-No	---	504-Yes	112-No	Major
22:00	0	0	NB	420-No	105-No	---	630-No	52-No	---	504-No	84-No	---
23:00	0	0	NB	420-No	105-No	---	630-No	52-No	---	504-No	84-No	---



**Anoka County Highway**  
**PC-WARRANTS**  
 Traffic Signal Warrant Analysis

Study Name : TMC1118  
 Study Date : 07/15/11  
 Page No. : 1

**Multi-Way Stop Warrant Report**

**Major Street Approaches**

**Eastbound: CSAH 34**  
 Total Approach Volume: 5,927  
 Approach Speed: 50

**Westbound: CSAH 34**  
 Total Approach Volume: 5,083  
 Approach Speed: 50

**Minor Street Approaches**

**Northbound: Ware Rd.**  
 Total Approach Volume: 863

**Southbound: Ware Rd.**  
 Total Approach Volume: 312

**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

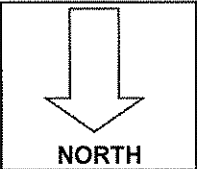
**Criteria C - Minimum Volumes and Delays** ..... Not Satisfied  
 Delay data not evaluated  
 Required volumes reached for 0 hours, 8 are needed

**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 Crit	Meets?	Major Crit	Minor Crit	Meets?
06:30 - 07:30	385	34	210-Yes	140-No	Major	240-Yes	160-No	Major
06:45 - 07:45	611	62	210-Yes	140-No	Major	240-Yes	160-No	Major
07:00 - 08:00	834	89	210-Yes	140-No	Major	240-Yes	160-No	Major
07:15 - 08:15	835	95	210-Yes	140-No	Major	240-Yes	160-No	Major
07:30 - 08:30	801	94	210-Yes	140-No	Major	240-Yes	160-No	Major
07:45 - 08:45	746	78	210-Yes	140-No	Major	240-Yes	160-No	Major
08:00 - 09:00	709	69	210-Yes	140-No	Major	240-Yes	160-No	Major
08:15 - 09:15	704	69	210-Yes	140-No	Major	240-Yes	160-No	Major
08:30 - 09:30	647	66	210-Yes	140-No	Major	240-Yes	160-No	Major
08:45 - 09:45	609	75	210-Yes	140-No	Major	240-Yes	160-No	Major
09:00 - 10:00	578	79	210-Yes	140-No	Major	240-Yes	160-No	Major
09:15 - 10:15	556	80	210-Yes	140-No	Major	240-Yes	160-No	Major
09:30 - 10:30	576	89	210-Yes	140-No	Major	240-Yes	160-No	Major
09:45 - 10:45	565	84	210-Yes	140-No	Major	240-Yes	160-No	Major
10:00 - 11:00	530	77	210-Yes	140-No	Major	240-Yes	160-No	Major
10:15 - 11:15	514	64	210-Yes	140-No	Major	240-Yes	160-No	Major
10:30 - 11:30	494	68	210-Yes	140-No	Major	240-Yes	160-No	Major
10:45 - 11:45	492	67	210-Yes	140-No	Major	240-Yes	160-No	Major
11:00 - 12:00	548	70	210-Yes	140-No	Major	240-Yes	160-No	Major
11:15 - 12:15	607	75	210-Yes	140-No	Major	240-Yes	160-No	Major
11:30 - 12:30	651	73	210-Yes	140-No	Major	240-Yes	160-No	Major
11:45 - 12:45	694	79	210-Yes	140-No	Major	240-Yes	160-No	Major
12:00 - 13:00	642	85	210-Yes	140-No	Major	240-Yes	160-No	Major
12:15 - 13:15	595	92	210-Yes	140-No	Major	240-Yes	160-No	Major





COUNT LOCATION:

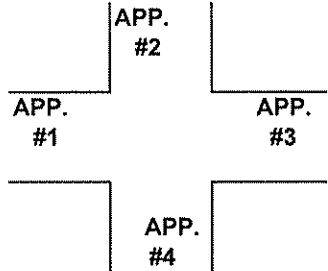
CSAH 34 (Birch St.)

DATE:

07/13/2011

Ware Rd.

APP. #1 = CSAH 34
APP. #2 = Ware Rd.
APP. #3 = CSAH 34
APP. #4 = Ware Rd.



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

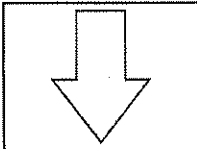
A. TRUCKS- A HEAVY VEHICLE INVOLVED PRIMARILY IN THE TRANSPORT OF GOODS OR IN THE DELIVERY OF A SERVICE.

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								
6:15-6:30								
6:30-6:45								
6:45-7:00								
<b>HOURLY TOTAL</b>						<b>HOURLY TOTAL</b>		
7:00-7:15						1		1
7:15-7:30		2			2	1		
7:30-7:45						4		2
7:45-8:00						2		6
<b>HOURLY TOTAL</b>					<b>2</b>	<b>HOURLY TOTAL</b>		<b>17</b>
8:00-8:15						2		
8:15-8:30				2	2	4		1
8:30-8:45				3	3	3		1
8:45-9:00		2		3	5			1
<b>HOURLY TOTAL</b>					<b>10</b>	<b>HOURLY TOTAL</b>		<b>12</b>
9:00-9:15	1				1			1
9:15-9:30	1			6	7	1		
9:30-9:45		1		4	5	4		
9:45-10:00				2	2	1		
<b>HOURLY TOTAL</b>					<b>15</b>	<b>HOURLY TOTAL</b>		<b>7</b>
10:00-10:15		1			1	1		
10:15-10:30	2	1		4	7	2		1
10:30-10:45						3		
10:45-11:00	2	1			3	1		
<b>HOURLY TOTAL</b>					<b>11</b>	<b>HOURLY TOTAL</b>		<b>8</b>
11:00-11:15	1		1	1	3	1	1	
11:15-11:30				4	4	2		2
11:30-11:45						7		2
11:45-12:00						7		4
<b>HOURLY TOTAL</b>					<b>7</b>	<b>HOURLY TOTAL</b>		<b>26</b>
12:00-12:15	1			2	3	1		
12:15-12:30				3	3	4		2
12:30-12:45	3	1			4	5		
12:45-1:00	2				2	3		1
<b>HOURLY TOTAL</b>					<b>12</b>	<b>HOURLY TOTAL</b>		<b>16</b>
1:00-1:15	1			3	4	5		
1:15-1:30						1		
1:30-1:45	7			1	8	3		
1:45-2:00						1		
<b>HOURLY TOTAL</b>					<b>12</b>	<b>HOURLY TOTAL</b>		<b>10</b>
<b>TOTAL</b>					<b>69</b>	<b>TOTAL</b>		<b>96</b>

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**NORTH**

APP. #1 = CSAH 34
APP. #2 = Ware Rd.
APP. #3 = CSAH 34
APP. #4 = Ware Rd.

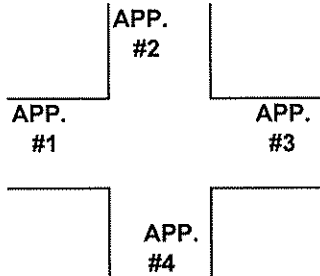
**COUNT LOCATION:**

CSAH 34 (Birch St.)

**DATE:**

07/11/2011

Ware Rd.



- 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	3	2	4	1	10	4		1	
2:15-2:30	1			3	4	4			
2:30-2:45				3	3	6			
2:45-3:00	2	1	1		4	2		1	
<b>HOURLY TOTAL</b>					<b>21</b>	<b>HOURLY TOTAL</b>	<b>18</b>		
3:00-3:15						3		1	
3:15-3:30	3	1		2	6	2		2	
3:30-3:45	4	3			7	3			
3:45-4:00	2				2	1	1	2	
<b>HOURLY TOTAL</b>					<b>15</b>	<b>HOURLY TOTAL</b>	<b>15</b>		
4:00-4:15				1	1				
4:15-4:30	1	1			2				
4:30-4:45				1	1				
4:45-5:00	2			3	5	3			
<b>HOURLY TOTAL</b>					<b>9</b>	<b>HOURLY TOTAL</b>	<b>3</b>		
5:00-5:15	1	2		2	5	3		3	
5:15-5:30									
5:30-5:45				2	2	1			
5:45-6:00									
<b>HOURLY TOTAL</b>					<b>7</b>	<b>HOURLY TOTAL</b>	<b>7</b>		
6:00-6:15		1		1	2	4			
6:15-6:30				2	2	1			
6:30-6:45				3	3				
6:45-7:00				3	3	4			
<b>HOURLY TOTAL</b>					<b>10</b>	<b>HOURLY TOTAL</b>	<b>9</b>		
7:00-7:15				8	8	3			
7:15-7:30		2		2	4	1			
7:30-7:45	2	1		1	4				
7:45-8:00		2	1	5	8				
<b>HOURLY TOTAL</b>					<b>24</b>	<b>HOURLY TOTAL</b>	<b>4</b>		
8:00-8:15	3	2		4	9	2			
8:15-8:30		1	1	3	5				
8:30-8:45				4	4				
8:45-9:00	1	2		2	5				
<b>HOURLY TOTAL</b>					<b>23</b>	<b>HOURLY TOTAL</b>	<b>2</b>		
9:00-9:15	1	2			3				
9:15-9:30				1	1	1			
9:30-9:45				1	1				
9:45-10:00									
<b>HOURLY TOTAL</b>					<b>5</b>	<b>HOURLY TOTAL</b>	<b>1</b>		
					<b>TOTAL</b>	<b>183</b>	<b>TOTAL</b>	<b>155</b>	

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