Tennessee DOT – Work Zone Improvements

- Work Zone Crash Data
- Standard Drawing / Work Zone Design Manual
- Technology / Smart Work Zone
Work Zone Crash Data

Crash Data

Analysis

Work Zone Data

Tableau

ETRIMS (GIS)
Statewide Map

Map based on Longitude (generated) and Latitude (generated). Size shows sum of Number of Records. The marks are labeled by sum of Number of Records. Details are shown for Project County(s). The data is filtered on Region, which keeps Region 1, Region 2, Region 3 and Region 4.
Projects with Highest Number of Work Zone Crashes

102 or 34% of 2018 Work Zone Crashes

Region 1
- Contract Number: CNR295
- Type of Project: WIDEN
- Number of Crashes: 12
- Total Injured: 3

Region 2
- Contract Number: CNP230
- Type of Project: WIDEN
- Number of Crashes: 35
- Total Injured: 5

Region 3
- Contract Number: CNR273
- Type of Project: RECONSTRUCTION
- Number of Crashes: 25
- Total Injured: 7

Region 4
- Contract Number: CNP083
- Type of Project: RECONSTRUCTION
- Number of Crashes: 25
- Total Injured: 2

Number of Records
- CNP230
- CNR278
- CNR273
- CNP083
- CNR295

Contract Number, sum of Number of Records, Type of Work, Region, sum of Total Inj and Proj. Summary. Color shows details about Contract Number. Size shows sum of Number of Records. The marks are labeled by Contract Number, sum of Number of Records, Type of Work, Region, sum of Total Inj and Proj. Summary. The view is filtered on Contract Number, which keeps CNP083, CNP230, CNR273, CNR278 and CNR295.
2018 Statewide Work Zone Crash Summary

Severity of Crashes

<table>
<thead>
<tr>
<th></th>
<th>Fatal</th>
<th>Suspected Minor Injury</th>
<th>Suspected Serious Injury</th>
<th>Property Damage Over $400</th>
<th>Property Damage Under $400</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>13</td>
<td>161</td>
<td>21</td>
<td>400</td>
<td>61</td>
</tr>
</tbody>
</table>

Projects with the Highest Number of Work Zone Crashes

- Region 4: Shelby County
  - Contract: CMR183
  - Route: SR 14
  - Type of Project: Reconstruction

- Region 3: Shelby County
  - Contract: CMR050
  - Route: I-40
  - Type of Project: Bridge Replacement

- Region 2: Loudon County
  - Contract: CMR295
  - Route: SR 73
  - Type of Project: Widen

- Region 1: Madison County
  - Contract: CMR273
  - Route: SR 109
  - Type of Project: Widening and Reconstruction

- Region 4: Wilson County
  - Contract: CMR230
  - Route: I-24 and SR 029
  - Type of Project: Reconstruction

- Region 3: Hamilton County
  - Contract: CMR230
  - Route: I-24 and SR 029
  - Type of Project: Widen

Last Revised: 2/25/2019
### 2018 Region 1 Work Zone Crash Summary

#### Region 1 Map

[Map showing Region 1 with locations marked]

#### Region 1 Project Summary and Number of Crashes

<table>
<thead>
<tr>
<th>Contract Number</th>
<th>County</th>
<th>Route</th>
<th>Type of Work</th>
<th>Proj. Desc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNQ0203</td>
<td>KNOX</td>
<td>SR115</td>
<td>WIDEN</td>
<td>From North of Maloney Road to Woodson Drive</td>
</tr>
<tr>
<td>CNR1296</td>
<td>LOUDON</td>
<td>SR273</td>
<td>WIDEN</td>
<td>From Simpson Road East to North of SR-273 in Loudon</td>
</tr>
<tr>
<td>CNQ4091</td>
<td>KNOX</td>
<td>10440</td>
<td>MODIFY INTERCHANGE</td>
<td>Interchange at North Broadway (Phase 1) in Knoxville</td>
</tr>
<tr>
<td>CNQ1977</td>
<td>KNOX</td>
<td>5066</td>
<td>RECONSTRUCTION</td>
<td>Western Avenue, from Texas Avenue to Major Avenue in Knoxville</td>
</tr>
<tr>
<td>CN5161</td>
<td>WASHINGTON</td>
<td>10245</td>
<td>RESURFACING</td>
<td>From SR-284 to SR-67</td>
</tr>
<tr>
<td>CN5449</td>
<td>SEVIER</td>
<td>9071</td>
<td>RESURFACE &amp; SAFETY</td>
<td>From north of Cane Creek Road to near Bridge over West Prong of Little Pigeon River</td>
</tr>
<tr>
<td>CNR1491</td>
<td>SEVIER</td>
<td>9071</td>
<td>RECONSTRUCTION</td>
<td>From north of Cane Creek Road to near Bridge over West Prong of Little Pigeon River</td>
</tr>
<tr>
<td>CN9915</td>
<td>ROANE</td>
<td>10440</td>
<td>MISCELLANEOUS SAFETY IMPROVEMENTS</td>
<td>From near MT 342 to near MT 342 in Roane County</td>
</tr>
<tr>
<td>100469.00</td>
<td>LOUDON</td>
<td>SR673</td>
<td>RECONSTRUCTION</td>
<td>From SR-206 to Turn of Little Tennessee River (Piney Run Bridge)</td>
</tr>
<tr>
<td>CN5034</td>
<td>ROANE</td>
<td>5021</td>
<td>WIDEN</td>
<td>From East of Kingston Avenue to SR-282</td>
</tr>
<tr>
<td>CNR238</td>
<td>WASHINGTON</td>
<td>SR30</td>
<td>INTERSECTION IMPROVEMENTS AND SIGNALS</td>
<td>Intersection at SR-384 (Boones Creek Road), UM 13.07 in JONESBOROUGH</td>
</tr>
<tr>
<td>CN5145</td>
<td>SULLIVAN</td>
<td>9037</td>
<td>INTERSECTION IMPROVEMENTS AND SIGNALS</td>
<td>From Hospitality Place/Freight Drive to I-40 Nails Ramps</td>
</tr>
<tr>
<td>121728.00</td>
<td>KNOX</td>
<td>502</td>
<td>RECONSTRUCTION</td>
<td>From SR-75 (Wilson Springs) to South of I-40</td>
</tr>
<tr>
<td>CNP903</td>
<td>COCHISE</td>
<td>5029</td>
<td>INTERSECTION IMPROVEMENTS AND SIGNALS</td>
<td>From SR-384 (Boones Creek Road), UM 13.07 in JONESBOROUGH</td>
</tr>
<tr>
<td>CNQ0206</td>
<td>MORGAN</td>
<td>5029</td>
<td>RECONSTRUCTION</td>
<td>From South of Westgate Road to North of SR-220</td>
</tr>
<tr>
<td>CNQ3084</td>
<td>SULLIVAN</td>
<td>10961</td>
<td>WIDEN</td>
<td>Eastbound Truck Climbing Lane at Mile Marker 60</td>
</tr>
<tr>
<td>CN5105</td>
<td>KNOX</td>
<td>5066</td>
<td>RESURFACE &amp; SAFETY</td>
<td>From SR-62 to near Centerpoint Boulevard</td>
</tr>
<tr>
<td>CN5135</td>
<td>KNOX</td>
<td>5066</td>
<td>RESURFACE &amp; SAFETY</td>
<td>From near Hardin Valley Drive to near SR-9</td>
</tr>
<tr>
<td>CN5220</td>
<td>ANDERSON</td>
<td>5029</td>
<td>RESURFACING</td>
<td>From near Lynnwood Street to Knox County Line</td>
</tr>
<tr>
<td>CNQ228</td>
<td>WASHINGTON</td>
<td>5001</td>
<td>INTERSECTION IMPROVEMENTS</td>
<td>Intersection at Parsonson Ridge Road, UM 12.02 in Jonesborough</td>
</tr>
<tr>
<td>CN5985</td>
<td>CLAIBORNE</td>
<td>5033</td>
<td>TURN LANES WITH SIGNAL</td>
<td>From Main Street to Youngstown Road</td>
</tr>
</tbody>
</table>

#### Manner of Collision

<table>
<thead>
<tr>
<th>ANGLE</th>
<th>HEAD-ON</th>
<th>NO COLLISION W/ VEHICLE</th>
<th>SIDEWALK, OPPOSITE DIR</th>
<th>SIDEWALK, SAME DIR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>16</td>
<td>11</td>
<td>2</td>
<td>11</td>
</tr>
</tbody>
</table>

Number of Records: 1-35

Last Revised: 2/25/2019
### Tennessee DOT – Standard Drawing Updates

- Previous versions were written with flexibility
- Mandatory Buffer Space
- Merge and Shifting Taper is min of L
- Increasing our design speed to 10mph over permanent speed
- Consideration for off-tracking
- Design Deviation – HQ approval required when min standards cannot be met
Tennessee DOT – Variable Speed Limit

- Interstate night resurfacing projects – 5 projects total for this year
- Initial function will be basic, speed lowered only when active work zone
- Similar standards to Ohio and North Carolina
- Wireless control, weekly logs generated to insure proper usage
- Future uses could be used in queue warning and other smart work zone
Tennessee DOT – Portable Queue Warning System

Queue Protection Truck with attenuator, message board, lighting

Microwave radar sensors, message boards

Positioned approx. 3 miles in advance of work zone

Weekly logs, real time text alerts.
ITS Smart Work Zone

• System
  • Traffic Sensors
  • Changeable Message Boards
  • CCTV Cameras
  • Software

• I-40 Exit 407 SWZS
  • Detect Real Time Vehicle Speed and Volume
  • Queue Detection
  • Disseminate Information
  • Alert TMC
Alcoa Highway Smart Work Zone
Portable CCTV
Portable DMS and connected radar detector
JamLogic software
View travel speeds and travel times in real time
Archived data
Placement
Questions?