Work Zone Crashes: Some Additional Insights

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Topics

- Data Inconsistency Between Jurisdictions
- “Influences” of Work Zone Crashes
- Effects of Night Work on Crashes
Transportation Operations Group

Work Zone Identification on Police Crash Report Forms - Explicit

Constr.  ☐ Yes  Speed Zone  ☐ No  Limit _____

Constr.  ☐ Yes  Speed Zone  ☐ No  Limit _____
Work Zone Identification – Indirectly by Road Condition

01 No Defects
02 Obstruction With/Without Warning
03 Road Under Repair/Construction
04 Loose Surface Materials
05 Shoulders – Soft/Low/High
06 Holes/Ruts/Unsafe Paved Edge
07 Standing Water
08 Worn/Polished Road Surface
77 All Other (Explain)
Work Zone Identification-on Report Narrative
### Work Zone Fatalities by Type of Crash Report Form Used (FARS)

<table>
<thead>
<tr>
<th>Type of Crash Report Form Used</th>
<th>% Fatalities Occurring in a Work Zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explicit Work Zone Field on Form (21 states)</td>
<td>2.7 %</td>
</tr>
<tr>
<td>Road Repair/Construction Code in a Road Condition Field (24 states)</td>
<td>2.3%</td>
</tr>
<tr>
<td>Work Zone Identified by Officer in Narrative (5 states)</td>
<td>2.2%</td>
</tr>
</tbody>
</table>
Implications upon Fatal Work Zone Crash Statistics

- 10 percent underreporting per year
- $\approx 100$ additional work zone fatalities annually not being reported
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Work Zone Crash “Influences”

- Work zone features that are in the crash chain-of-events
- Not the same as causation
- Requires work zone details to be collected and collated with crash data
Influence Categories

- No WZ Influence: 71%
- Direct WZ Influence: 6%
- Indirect WZ Influence: 19%
- During WZ Setup/Removal: 4%
Direct WZ Influences

- Pavement edge drop-offs
- Signing and channelizing device deficiencies
  - Missing or misaligned
  - Confusing
Indirect WZ Influences

- Elimination of shoulders
- Converting divided roadways to two-lane, two-way operations
- Loss of edge line guidance during resurfacing
- Creation of dust clouds or other distractions
Working at Night

- Is it more or less dangerous to work at night than during the day?
Work Zone Project Crash Analysis

- 8 projects
  - 6 “hybrid” projects
  - 2 “night only” projects

- Before-During Crash Comparison
  - Daytime – Inactive
  - Daytime – Active
  - Nighttime – Inactive
  - Nighttime - Active
Change in Total Crashes

<table>
<thead>
<tr>
<th></th>
<th>Hybrid</th>
<th>Night Only</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day-Inactive</td>
<td>5.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day-Active</td>
<td>43.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Night-Inactive</td>
<td>42.6</td>
<td>9.9</td>
<td>37.1</td>
</tr>
<tr>
<td>Night-Active</td>
<td>31.7</td>
<td>24.0</td>
<td>51.2</td>
</tr>
</tbody>
</table>

Legend: Hybrid, Night Only, Total
Other Work Zone Crash Trends

- Day-Inactive: 68.3% Severe, 26.4% Rear-End
- Day-Active: 71.0% Severe, 26.6% Rear-End
- Night-Inactive: 61.0% Severe, 21.6% Rear-End
- Night-Active: 64.6% Severe, 19.0% Rear-End
Questions