Crash Reduction Strategies in Work Zones

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Motorist Safety

In Michigan in 2006 there were:
- 316,899 total crashes statewide
- 1027 total fatalities statewide

Of those numbers:
- 5,234 crashes in work zones (1.6% of all crashes)
- 17 motorist fatalities in work zones (1.7% of all fatalities)
Crashes in Work Zones
In Michigan, when crashes occur in work zones:
- 75% during daylight
- 66% during clear sky
- 84% on dry pavement
- 31% in an interchange
- 36% in an intersection
- 88% on the road
Crashes in Work Zones

In order to determine if the crash data indicates if the crash that occurred was resulting from contributing conditions in the work zone, crash data reports are reviewed to determine cause and effect.

UD-10 data typically does not provide direct answers, but does provide information to determine if the work zone may have contributed to the crash.
Crashes in Work Zones

Review of crash data reports suggests that the majority of fatal crashes in work zones may not be caused by the work zone.

<table>
<thead>
<tr>
<th>Year</th>
<th>W. Z. Related</th>
<th>Non W. Z. Related</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
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<td>12</td>
<td>2</td>
</tr>
<tr>
<td>2006</td>
<td>7</td>
<td>9</td>
<td>1</td>
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<tr>
<td>2007</td>
<td>1</td>
<td>15</td>
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Review of 2007 crash data reports suggests that the many of **Incapacitating crashes** in work zones may not be caused by the work zone.

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<tbody>
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<tr>
<td>WZ Related</td>
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<td>21</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>22</strong></td>
<td><strong>61</strong></td>
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Crashes in Work Zones

In performing analysis of crashes in work zones, it is apparent that many crashes that occur on a roadway are “transferred” to a work zone, simply because the work zone exists, but does not contribute to the crash.
Motorist Behavior

Motorist behavior needs to be affected in a positive manner when driving into or thru a work zone.

Establishing improper traffic control can create inappropriate response from a driver.
Traffic Control Gone Bad
Motorist Safety

In 2006 the three primary types of crashes accounted for the following statewide:

- Rear End - 65,784 crashes (20.76% of all crashes)
- Fixed Object - 39,706 crashes (12.53% of all crashes)
- Side Swipe Same – 25,552 crashes (8.06% of all crashes)

These 3 types of crashes account for 41.35% of all crashes
Motorist Safety

- In 2006 the three primary types of work zone crashes statewide totals:
  - Rear End – 2,117 crashes (40.4% of all crashes in work zones)
  - Fixed Object - 536 crashes (10.2% of all crashes in work zones)
  - Side Swipe Same – 705 crashes (13.5% of all crashes in work zones)

- These 3 types of crashes account for 64.1% of all work zone crashes
# Crashes in Work Zones

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Corrective Strategies
The Future of Work Zones

**It is possible** to reduce crashes in work zones.

**Goals:**
- Identify and create a best practice site where designers can go
- Require certain treatments on certain projects, rather than allow options
- Implement ITS strategies for improved motorist information on destination and delay
Monitor Crashes

Arrange with your enforcement community to retrieve work zone crash data on your project as it happens.

– Getting the information while the project is in place allows you to take corrective action on the project while it is still there.
Best Practice

- Best practices are sometimes simple solutions that have a maximum result with a minimum expense.
  - Shoulder widening to avoid traffic flow next to unpaved shoulders or embankment
  - Signing for objects near the travel path
  - Maintaining reasonable lane widths
In 2007, a pilot project was established with similar characteristics of a 2006 project to determine if certain treatments on the project would reduce work zone crashes.
2007 Pilot Project

On the 2007 project, improvements included:

- Widening the travel path to include a temporary 3 foot paved shoulder
- Application of object markers at fixed object locations within 8 feet of the travel path
- Improvement of lateral offsets to fixed object locations
2007 Pilot Project

The results of the 2007 pilot project?

The 2007 project had a 57% reduction in crashes in the work zone from the previous year.

Similar results continued in the 2008 Construction Season.
Apply work zone treatments consistently.

Do not eliminate the treatment simply because money for the treatment does not exist, plan the treatment into the project during scoping when the level of money for traffic control can be established.
Other Work Zone Strategies

Project’s that continue to have crashes
  – Review the project, crash data.
  – Look for potential solutions to reduce your crashes.
  – Within your organization, ask other staff not involved in your project to perform a peer review.
Other Work Zone Strategies

- If your organization does not have the capability of doing a peer review, ask other organizations to help out.
  - A city could ask another city or county.
  - A county could ask another county.
  - The agency could find a qualified consultant to perform a peer review.

- Don’t let your work zone contribute to the data reviewed at the end of the year after the project is complete.
Safety

- Remember, there is only 1 goal.

- You, the motorist, bicyclist and the pedestrian must go home at the end of each work day.

- There are no other alternatives.
Questions?

If you have more questions, contact me.

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