Improving Large Truck Safety in Work Zones
Large Trucks are Overrepresented in Work Zones...

- 24%
- 26%
- 22%
- 22%
- 27%
- 24%
- 28%
- 30%
- 27%
- 27%

### Fatal Work Zone Crashes per Year

<table>
<thead>
<tr>
<th>Year</th>
<th>Work Zone</th>
<th>Non-Work Zone</th>
<th>Fatal Work Zone Crashes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>11%</td>
<td></td>
<td></td>
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<tr>
<td>2008</td>
<td>11%</td>
<td></td>
<td></td>
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<tr>
<td>2010</td>
<td>9%</td>
<td></td>
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<tr>
<td>2012</td>
<td>11%</td>
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<tr>
<td>2014</td>
<td>11%</td>
<td></td>
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<tr>
<td>2016</td>
<td>11%</td>
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</tbody>
</table>

- 0% - 35%
- 0 - 1000
Why the Overrepresentation?

• More large trucks around work zones
• More work zones when trucks travel more
• Work zones more challenging for trucks to negotiate
Interstate and Freeway Work Zones are Especially Problematic...

Source: 2014-2016 FARS
...But Other Roadway Types Experience It As Well

![Bar Chart]

- **Principal/Minor Arterials**
  - Non-Work Zone: 11.6%
  - Work Zone: 21.7%

- **Collectors/Local Roads**
  - Non-Work Zone: 6.5%
  - Work Zone: 16.1%

Source: 2014-2016 FARS
Large Truck Crashes in Work Zones are Different than Non-Truck Crashes

Fatal Work Zone Crashes on Interstates/Freeways

- **64.3%** Non-Large Truck-Involved
- **57.3%** Large Truck Involved
- **27.6%** Single-Vehicle
- **15.9%** Rear-End
- **2.9%** Sideswipe
- **5.9%** Angle
- **9.7%** Head-On
- **5.2%** 3.0%
- **1.9%** 1.8%

Source: 2014-2016 FARS
Fatal Work Zone Crashes on Collectors and Local Roads

Source: 2014-2016 FARS
So How Can Large Truck Safety in Work Zone be Increased?
Incorporate Large Truck Considerations into Transportation Management Plan

• Traffic control plan

• Traffic operations plan

• Public information and outreach plan
Include Temporal Effects of Large Trucks in Impact Analyses

![Graph showing time of day vs. expected work zone capacity per lane and percent trucks in the traffic stream.](image-url)
Work Zone Design Practices to Better Accommodate Large Trucks
Lane Width Considerations

• 11 ft minimum, 12 ft desirable
• Differential lane widths
• Provide sufficient warning of limited lane width work zones
Encourage Large Truck Diversion

- Ensure that the route can accommodate:
  - Volumes
  - Heights, widths, and weights
  - Turning, off-tracking
- Minimize additional travel distance
- Good outreach is critical
Establish Truck-Only Lane(s) through Work Zone
Maintain Adequate Truck Parking at Nearby Rest Areas
Improve Work Space Access
Construction Access Warnings

Non-Intrusive Detection placed along the roadway as needed for proper system operations. The detection may include radio control devices operated by the truck drivers.

TRUCK HAUL ROAD

TRUCKS Merging 1000 FT BE PREPARED TO STOP OR
Optional Signing

WORK VEHICLE FREQUENT TURNS
Improve Sight Triangles
Other Good Practices

• Establish reasonable design speeds and speed limits

• Maintain good sign, channelizing device, and pavement marking visibility

• Avoid short or no-acceleration lane entrance ramps

• Establish contingencies for hazardous material incidents
Strategies to Help Truck Drivers Traverse Work Zones Safer and More Easily
Truck Driver-Focused Information and Outreach

- Distribute at truck stops, rest areas, dispatching centers, etc.
- General work zone safety outreach
- Targeted project-specific information
Utilize Work Zone ITS Where Appropriate

- Real-time traveler information
- Queue warning
- Dynamic merging
- Construction access warning
- Variable speed limits
- Automated enforcement
- Temporary ramp metering
Portable Rumble Strips
Sequential Warning Light Systems

![Graph showing the percentage of traffic in closed lanes upstream of a closure with and without warning light systems for passenger and truck types.]

- Without Warning Light System:
  - Passenger: 30%
  - Truck: 19%
- With Warning Light System:
  - Passenger: 23%
  - Truck: 7%
Resources

• Large Trucks in Work Zones webpage: https://www.workzonesafety.org/work_zone_topics/heavy-vehicles/
Questions?

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