Session 1: Introduction and Pre-assessment
FAST Act Guardrail Safety Training – Highway Barrier Design Training

Session 1: Introduction and Pre-assessment

Disclaimer

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Guidance Presented
Ground Rules

- Be on time
- Participate
- Restrict sidebar conversations
- Turn off cellphones

Objectives of Course

At the end of this 1-day session you will be able to:

- Identify when a traffic barrier is the best treatment to use at a specific site.
- Select a barrier that will adequately shield the identified hazard(s).
- Assess the topography of the site to provide for an optimal barrier system installation.

Course Overview

- Session One – Introduction and Pre-Assessment.
- Session Two – Clear Zone and Guidelines for Barrier Need.
Session 1: Introduction and Pre-assessment

Course Overview (cont’d)

- Session Five – Design Principles
- Session Six – Length of Need and Special Considerations
- Session Seven – Design Workshop

Session 1 Learning Outcomes

At the end of this session, you will be able to:
- Identify the primary Roadside Safety Concerns in Montana.
- Assess your current knowledge of Barrier Design Principles.

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Roadway Departure Fatalities

(Single Vehicle Fatal Crashes 2016)
National (Montana)
19,285 (142)

- Rollover/Overturn, 8,935, 46% (131, 84%)
- Trees, 4,956, 26% (3, 2%)
- Utility Poles, 1,143, 6% (1, 1%)
- Embankment/Ditch/Culvert/Curb, 1,524, 8% (14, 9%)
- Barrier, 924, 5% (2, 1%)
- Other, 1,639, 8% (2, 1%)
- Barrier Ends, 164, 1% (3, 2%)

Ref: FARS Data – Most Harmful 2016

Montana Crash Data Trend

~75% Roadway Departure Crashes (average)

Ref: FARS Data – 2016

Montana Total Fatalities vs. Lane-Departure Fatalities

- Total Fatalities
- Lane Departure Fatalities


Fatalities

0 50 100 150 200 250

Session 1
2016 Montana Roadside Fatalities

<table>
<thead>
<tr>
<th></th>
<th>FIRST HARMFUL</th>
<th>MOST HARMFUL</th>
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<tbody>
<tr>
<td>Rollover</td>
<td>98</td>
<td>131</td>
</tr>
<tr>
<td>Utility Poles</td>
<td>24</td>
<td>1</td>
</tr>
<tr>
<td>Embankment, Ditches, Curbs and Culverts</td>
<td>21</td>
<td>9</td>
</tr>
<tr>
<td>Guardrail Face/Ends</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Trees</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Traffic Sign Support</td>
<td>1</td>
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</tbody>
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Ref: FARS Crash Data 2016
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Data-Driven Problem Identification

Crash factors contributing to the largest numbers of severe crashes and how these factors overlap were carefully considered to identify Emphasis Areas. This process helps identify the critical crash factors or crash trends that may have the biggest influence on reducing crash frequency or severity. The three Emphasis Areas are:

• Roadway Departure and Intersection Crashes;
• Impaired Driving Crashes; and
• Occupant Protection.

Roadway Departure and Intersection Crashes

Roadway departure crashes occur when a vehicle leaves the travel lane, either crossing into an opposing lane, or leaving the roadway. These crashes often occur at high speeds so are likely to be severe. The crash may include impact with an object on the side of the road or overturning. Almost all, 96 percent, of roadway departure fatalities and serious injuries occur in rural areas, making this type of severe crash the most common in Montana during the time period of 2004 to 2013. These crashes accounted for 67 percent of all fatalities and 55 percent of serious injuries.
Need for Training

Potential consequences of poorly designed barrier systems include:
- Systems may not function as designed.
- Crash severities may be increased.
Need for Training

The next 11 slides show locations where barrier was installed. For each photo, decide at a glance whether you believe it to be:
1. Good example,
2. Bad example, or
3. Cannot decide without more information.

We will discuss these slides in further detail in later applicable sessions, so please record and save your responses.
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Nice 6:1 slope

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### Session 1: Introduction and Pre-assessment

**Review Learning Outcomes**

- Identify the primary Roadside Safety Concerns in Montana.
- Assess your current knowledge of Barrier Design Principles.

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