Local Road Safety Programs

29th Annual Regional Local Road Conference
Rapid City, South Dakota
October 23, 2014

The Challenge
• Is there really a problem? (57% of fatal crashes on rural roads)
• Funding is available, But.....
• A different response is required

Local Crash Data

<table>
<thead>
<tr>
<th>State</th>
<th>Rural Principal Arterial</th>
<th>Rural Minor Arterial</th>
<th>Rural Collector</th>
<th>Urban Principal Arterial</th>
<th>Urban Minor Arterial</th>
<th>Urban Collector</th>
<th>Total</th>
<th>Percent Local and Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorado</td>
<td>59</td>
<td>37</td>
<td>52</td>
<td>23</td>
<td>145</td>
<td>47</td>
<td>19</td>
<td>171</td>
</tr>
<tr>
<td>Iowa</td>
<td>77</td>
<td>62</td>
<td>79</td>
<td>58</td>
<td>27</td>
<td>6</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Kansas</td>
<td>121</td>
<td>55</td>
<td>56</td>
<td>61</td>
<td>26</td>
<td>13</td>
<td>9</td>
<td>168</td>
</tr>
<tr>
<td>Missouri</td>
<td>128</td>
<td>79</td>
<td>134</td>
<td>66</td>
<td>388</td>
<td>66</td>
<td>32</td>
<td>760</td>
</tr>
<tr>
<td>Montana</td>
<td>77</td>
<td>29</td>
<td>51</td>
<td>19</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>189</td>
</tr>
<tr>
<td>Nebraska</td>
<td>48</td>
<td>27</td>
<td>24</td>
<td>42</td>
<td>24</td>
<td>14</td>
<td>1</td>
<td>180</td>
</tr>
<tr>
<td>North Dakota</td>
<td>51</td>
<td>33</td>
<td>22</td>
<td>22</td>
<td>34</td>
<td>2</td>
<td>0</td>
<td>167</td>
</tr>
<tr>
<td>South Dakota</td>
<td>36</td>
<td>26</td>
<td>19</td>
<td>40</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>118</td>
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<tr>
<td>Wyoming</td>
<td>21</td>
<td>11</td>
<td>9</td>
<td>11</td>
<td>13</td>
<td>3</td>
<td>3</td>
<td>76</td>
</tr>
<tr>
<td>Total</td>
<td>651</td>
<td>327</td>
<td>497</td>
<td>317</td>
<td>417</td>
<td>117</td>
<td>67</td>
<td>1351</td>
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</tbody>
</table>

Data-Driven Safety Analysis
• The application of two science-based analysis approaches into two common transportation processes
**Systemic Analysis**

- Implements a **system-wide screening** of a roadway network based on the presence of **high-risk roadway features** correlated with **particular severe crash types**, rather than high crash locations.

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**Definitions**

- **Systemic** – Deploying countermeasures at locations with the *greatest* risk
- **Systematic** – Deploying countermeasures at **ALL** locations

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**Systemic Analysis**

- Particularly applicable when a significant number of severe crashes happen over a wide area:
  - Rural Roadways
  - Local Roadways
  - Specific Crash Types
    - Right Angle
    - Pedestrian
    - Lane Departure on curves
- Supplements traditional site analysis
- May include treating locations that haven’t experienced many crashes

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**Systemic Safety Project Selection Tool Guide**

- Identify Target Crash Types and Falls
- Identify Funding Sources
- Screen and Prioritize Candidate Locations
- Select Countermeasures
- Positive Projects
Systemic Safety Planning Process

1. Identify Target Crash Types and Risk Factors
2. Screen and Prioritize Candidate Locations
3. Select Countermeasures
4. Prioritize Projects

Transportation Processes

Safety Management
- Problem Identification
- Countermeasure Selection
- Project Prioritization
- Project List
- Implementation
- Evaluation

Project Development
- Predictive
- Alternatives Identification
- Alternatives Evaluation
- Preliminary Design
- Final Design

Predictive Approaches

ISATe, Spreadsheets

FHWA HSM Training, 2011 - 2014

HSM Activity
- 1 or 2-day Workshop (33)
- % Day HSM Workshop
- HSM Presentation

HSM Training or Presentation delivered more than once
Why the Data-Driven Safety Analysis Initiative?

- from FHWA State Data Capabilities Assessment:
  - Use of data analysis varies from state-to-state
  - All states want to improve their data capability
  - States are excited about implementing the HSM and upgrading their existing analysis practices
  - Many states noted that the introduction of the HSM was a major advance for the transportation safety profession

What is the Key Message regarding Data-Driven Safety Analysis?

- More Informed Decision Making
- Better Targeted Investments
- Fewer Fatalities & Serious Injuries

States Implementing Systemic Safety Improvements through the HSIP

Systemic Safety Implementation Peer Exchanges
Local HSIP Expenditures 2012

<table>
<thead>
<tr>
<th>State</th>
<th>% HSIP Funds to Locals</th>
<th>% Local Road Fatalities by Route Signing</th>
<th>% Local Road Mileage by Ownership</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO</td>
<td>30-50%</td>
<td>41%</td>
<td>82%</td>
</tr>
<tr>
<td>IA</td>
<td>0</td>
<td>52%</td>
<td>92%</td>
</tr>
<tr>
<td>KS</td>
<td>45%</td>
<td>44%</td>
<td>92%</td>
</tr>
<tr>
<td>MO</td>
<td>0</td>
<td>30%</td>
<td>73%</td>
</tr>
<tr>
<td>MT</td>
<td>6%</td>
<td>25%</td>
<td>63%</td>
</tr>
<tr>
<td>NE</td>
<td>7-11%</td>
<td>45%</td>
<td>89%</td>
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<td>ND</td>
<td>UK</td>
<td>35%</td>
<td>90%</td>
</tr>
<tr>
<td>SD</td>
<td>25%</td>
<td>44%</td>
<td>86%</td>
</tr>
<tr>
<td>WY</td>
<td>20%</td>
<td>14%</td>
<td>60%</td>
</tr>
</tbody>
</table>

Federal-aid Essentials

- Three main components of the Web site:
  - Vast library of videos
  - Printable takeaways
  - Additional resources/contacts

- Other features
  - Subscriber alerts
  - Feedback mechanism

Web site

www.fhwa.dot.gov/federal-aidessentials

What is Working?

- Cable Median Barrier
- Rumble Strips and Stripes
- Edge Line Pavement Markings
- Chevrons on Curves
- Signal Upgrades
- Countdown Pedestrian Indications
What is Trending?
- High Friction Surfaces
- Safety Edge
- Alternative Intersection Design
- Data
- Improved Analysis Tools

What is Missing?
- Enforcement Countermeasures
- Fewer Signals
- Pedestrian/Bicycle Countermeasures
- Better Roadway Data
- Better Crash Data
- Public/Political/Management Support

Benefits of Systemic Safety Planning
- Proactive program to address fatalities and serious injuries that seemingly occurred at “random” locations
- Greater knowledge regarding severe crashes, including contributing factors and location characteristics
  - Improve planning, design, and maintenance practices
  - Risk management for tort liability

Introduction to the Guidebook
Systemic Approach to Safety: Using Risk to Drive Action

Systemic Safety Resources

- Systemic Approach to Safety Website
  - [http://safety.fhwa.dot.gov/systemic](http://safety.fhwa.dot.gov/systemic)
- Training Materials
  - One-hour Overview Presentation
  - Four-hour Workshop
- Systemic Training & Technical Assistance Program
- Systemic Safety Implementation P2P Events (*coming soon*)

HSM Companion Software

<table>
<thead>
<tr>
<th>HSM Part</th>
<th>Supporting Tool</th>
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<tbody>
<tr>
<td>PART C: Predictive Methods</td>
<td>IHSDM <a href="http://www.ihsdm.org">www.ihsdm.org</a></td>
</tr>
<tr>
<td>PART D: Crash Modification Factors</td>
<td>FHWA CMF Clearinghouse <a href="http://www.cmfclearinghouse.org">www.cmfclearinghouse.org</a></td>
</tr>
</tbody>
</table>

Technical Assistance

- Project level reviews
- Road Safety Audits
- Process/Policy Reviews
- Training
  - Training is available at no charge
    - Funding for travel
    - Requestor provides site, prints materials, administers event
    - Prioritized based upon need
**Training**

- Almost anything safety related
  - Customization is possible (Washington State)
- Workshops related to local jurisdictions (Based on
  Guidebooks developed by FHWA Headquarters)
  - Safety Planning
  - Data and Analysis
  - Intersections
  - Roadway Departure
  - Non-Motorized Users
  - Speed Management

**Questions?**

Thanks for your attention

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708-283-3545