American Public Works Association presents…

How Data Can Keep Your Roads Safe
Thursday June 20, 2013:
11:00 am ET/ 10:00 am CT/ 9:00 am MT/ 8:00 am PT

SPEAKERS:

Robert Pollack
FHWA Safety Data Manager
Office of Safety

Current Position:
Federal Highway Administration
Transportation Specialist (since November 2005) in the Office of Safety

Key projects:
Development of the Model Inventory of Roadway Elements (MIRE), Co-Project Manager for the MIRE Management Information System Project, Developer of the Crash Data Improvement Program (CDIP) and currently working on developing the Roadway Data Improvement Program (RDIP)

Pre FHWA Background:
18 years with NHTSA (1987-2005)
16 years in the NHTSA Region 5 office (Chicago)
Traffic Records coordinator for Region 5 office

Pre NHTSA Background:
and Oregon (1985-1987)

Karen Y. Scurry, P.E.
Transportation specialist
Federal Highway Administration’s Office of Safety.

Karen Scurry is a transportation specialist with the Federal Highway Administration’s Office of Safety.

Her primary duties involve activities to support implementation of the Highway Safety Improvement Program and promoting the use of crash modification factors in the decision making process.
Jason Taylor is a senior project manager with the Ascension Parish Engineering Department in Louisiana. Taylor spent the past two years as a safety engineer for Louisiana Transportation Research Center, an effort by LSU and the state Department of Transportation and Development that focuses on improving the state’s transportation systems.

He also worked 12 years as an engineer with the East Baton Rouge Parish government.

MODERATOR:

Moderator: Carla P. Anderson, P.E.
Senior Traffic Engineer (KDOT)

Carla P. Anderson, P.E., is a Senior Traffic Engineer at the Kansas Department of Transportation (KDOT) in the Bureau of Transportation Safety and Technology. Her role at KDOT is to oversee Highway Safety Improvement (HSIP) projects, conducts Road Safety Audits and Traffic Studies.

She also is the American Public Works Association (APWA) Road Safety Sub Committee Chair, working under the APWA National Transportation Committee. Carla received her BS in Civil Engineering from the University of Kansas and is licensed as a Professional Engineer and has approximate 16 years in road and highway design and 5 years of traffic engineering experience.
ROAD SOLUTIONS: SAFETY

HOW DATA CAN KEEP YOUR ROADS SAFE

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ROAD SOLUTIONS: SAFETY

HOW DATA CAN KEEP YOUR ROADS SAFE

Our Moderator

Carla P. Anderson, P.E.
Senior Traffic Engineer
Kansas Department of Transportation (KDOT)
Bureau of Transportation Safety and Technology
Polling Questions

If you are in full screen mode, you will need to minimize the screen to vote

Our Speakers:

Robert Pollack  
FHWA Safety Data Manager  
Office of Safety

Karen Y. Scurry, P.E.  
FHWA  
Office of Safety

Jason Taylor  
Senior Project Manager  
Ascension Parish, LA
Effectively Using and Improving Safety Data

Robert Pollack
FHWA
APWA Presentation March 27, 2013

Outline of Webinar

• MAP – 21 Implications
• Problem Identification Techniques
• Improving Problem ID Techniques
• FHWA Assistance Programs
Major Themes of MAP-21

- Strengthens America’s highway & public transportation systems
- Establishes a performance-based Federal program
- Supports the Department’s aggressive safety agenda
- Simplifies and focuses the Federal program
- Accelerates project delivery and promotes innovation

MAP -21 Highway Safety Improvement Program (HSIP)

- HSIP is the core safety program for FHWA
- Essentially doubles the HSIP funding level ($2.4 B)
- Maintains current structure
- Adds requirement for regular updates of the Strategic Highway Safety Plan (SHSP)
- Secretary to establish performance measures, and States to set targets for number of fatalities and injuries (and number per VMT)
MAP-21 - Safety Data Systems

• States shall have in place a safety data system sufficient to guide the Highway Safety Improvement Program (HSIP) and Strategic Highway Safety Plan (SHSP) processes.

Benefits of Safety Data

• Use of integrated roadway, traffic, and crash data in analysis can lead to more efficient use of funds and improved safety
Implications for State Safety Data Systems

- Not collecting data for data’s sake
- Improvement in safety programs through the use of improved analysis methods (e.g., HSM)
- More effective deployment of safety resources

Polling Questions

How do you conduct problem identification for your jurisdiction?

a) Count the frequency of crashes at specific locations.
b) Determine the rate at which crashes are occurring on specific roads
c) Use combination of frequency and rates for specific locations
d) Use safety performance functions for specific locations
e) Use anecdotal evidence (e.g. personal knowledge of problem locations, citizen complaints)
f) Use some other method of problem identification
g) Do not conduct any type of problem identification

If you are in full screen mode, you will need to minimize the screen to vote
MAP-21 Guidance

• Types of roadways covered
• Types of data included
• Geolocation of safety data to a common highway basemap
• Analysis and evaluation capabilities
• Subset of Model Inventory of Roadway Data Elements to be collected (referred to as the MIRE Fundamental Data Elements)

Subset of MIRE for Roads > 400 AADT

Roadway Segment

• Segment Identifier
• Route Number
• Route/street Name
• Federal Aid/Route Type
• Rural/Urban Designation
• Surface Type
• Begin Point Segment Descriptor
• End Point Segment Descriptor
• Segment Length

• Direction of Inventory
• Functional Class
• Median Type
• Access Control
• One/Two-Way Operations
• Number of through lanes
• AADT
• AADT Year
• Type of Governmental Ownership
Subset of MIRE for Roads > 400 AADT

**Intersection**
- Unique Junction Identifier
- Location Identifier for Road 1 Crossing Point
- Location Identifier for Road 2 Crossing Point
- Intersection/Junction Geometry
- Intersection/Junction Traffic Control
- AADT [for each Intersection Road]
- AADT Year [for each Intersecting Road]

**Interchange/Ramp**
- Unique Interchange Identifier
- Location Identifier for Roadway at Beginning Ramp Terminal
- Location Identifier for Roadway at Ending Ramp Terminal
- Ramp Length
- Roadway Type at Beginning Ramp Terminal
- Roadway Type at Ending Ramp Terminal
- Interchange Type
- Ramp AADT
- Year of Ramp AADT
- Functional Class
- Type of Governmental Ownership
### Subset of MIRE for Roads < 400 AADT

**Roadway Segment**
- Segment Identifier
- Functional Class
- Surface Type
- Type of Governmental Ownership
- Number of Through Lanes
- AADT
- Begin Point Segment Descriptor
- End Point Segment Descriptor
- Rural/Urban Designation

**Intersection**
- Unique Junction Identifier
- Intersection/Junction Geometry
- Location Identifier for Road 1 Crossing Point
- Location Identifier for Road 2 Crossing Point
- Intersection/Junction Traffic Control

### State Safety Data Guidance Links

- Guidance on State Safety Data Systems

- Question & Answer on State Safety Data Systems
  [http://www.fhwa.dot.gov/map21/qandas/qassds.cfm](http://www.fhwa.dot.gov/map21/qandas/qassds.cfm)
Frequency = \frac{\text{Number of Crashes}}{\text{Number of Years}}

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Total Crashes</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>257</td>
<td>4</td>
</tr>
<tr>
<td>A2</td>
<td>322</td>
<td>2</td>
</tr>
<tr>
<td>A3</td>
<td>119</td>
<td>6</td>
</tr>
<tr>
<td>A4</td>
<td>80</td>
<td>7</td>
</tr>
<tr>
<td>A5</td>
<td>54</td>
<td>8</td>
</tr>
<tr>
<td>A6</td>
<td>315</td>
<td>3</td>
</tr>
<tr>
<td>A7</td>
<td>29</td>
<td>10</td>
</tr>
<tr>
<td>A8</td>
<td>447</td>
<td>1</td>
</tr>
<tr>
<td>A9</td>
<td>214</td>
<td>5</td>
</tr>
<tr>
<td>A10</td>
<td>50</td>
<td>9</td>
</tr>
</tbody>
</table>

Regression-to-Mean (Selection Bias)

- Expected Average Crash Frequency (Without Treatment)
- RTM Reduction
- Site Selected for Treatment due to Short-Term Trend
- Before and After
- Perceived Effectiveness of Treatment
- Actual Reduction due to Treatment
Regression-to-Mean

If we do not account for RTM, we cannot say the crash difference is due to the treatment!

Limitations of Frequency

• Biased toward high volume sites
• Does not account for regression-to-mean
• Subject to random variation
Rate = \frac{\text{Average Crash Frequency in a Period}}{\text{Exposure in the Same Period}}

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Total Crashes</th>
<th>Million Entering Vehicles</th>
<th>Crash Rate (CR)</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>257</td>
<td>85</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>A2</td>
<td>322</td>
<td>127</td>
<td>2.5</td>
<td>4</td>
</tr>
<tr>
<td>A3</td>
<td>119</td>
<td>85</td>
<td>1.4</td>
<td>7</td>
</tr>
<tr>
<td>A4</td>
<td>80</td>
<td>55</td>
<td>1.5</td>
<td>6</td>
</tr>
<tr>
<td>A5</td>
<td>54</td>
<td>60</td>
<td>0.9</td>
<td>9</td>
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<tr>
<td>A6</td>
<td>315</td>
<td>78</td>
<td>4</td>
<td>2</td>
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<td>A7</td>
<td>29</td>
<td>69</td>
<td>0.4</td>
<td>10</td>
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<td>A8</td>
<td>447</td>
<td>106</td>
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<td>A9</td>
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<td>A10</td>
<td>50</td>
<td>47</td>
<td>1.1</td>
<td>8</td>
</tr>
</tbody>
</table>

Comparing Rate and Frequency Ranks

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Rank (Rate)</th>
<th>Rank (Frequency)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>A2</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>A3</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>A4</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>A5</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>A6</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>A7</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>A8</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>A9</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>A10</td>
<td>8</td>
<td>9</td>
</tr>
</tbody>
</table>
Rate Example

<table>
<thead>
<tr>
<th>Year</th>
<th>No. Crashes</th>
<th>AADT</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1988</td>
<td>13</td>
<td>2,900</td>
<td>2.11</td>
</tr>
<tr>
<td>1989</td>
<td>11</td>
<td>2,900</td>
<td>1.79</td>
</tr>
<tr>
<td>1990</td>
<td>13</td>
<td>3,050</td>
<td>2.01</td>
</tr>
<tr>
<td>1991</td>
<td>23</td>
<td>3,400</td>
<td>3.19</td>
</tr>
</tbody>
</table>

Average Rate = 2.28

Gambling Introduced in 1992

<table>
<thead>
<tr>
<th>Year</th>
<th>No. Crashes</th>
<th>AADT</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>30</td>
<td>10,618</td>
<td>1.33</td>
</tr>
<tr>
<td>1993</td>
<td>30</td>
<td>13,200</td>
<td>1.07</td>
</tr>
<tr>
<td>1994</td>
<td>36</td>
<td>14,300</td>
<td>1.19</td>
</tr>
<tr>
<td>1995</td>
<td>40</td>
<td>13,900</td>
<td>1.36</td>
</tr>
</tbody>
</table>

Average Rate = 1.24

Rankings from Frequency vs Rate

- 57,606 Rural 2-Lane Segments and 75,242 Crashes

<table>
<thead>
<tr>
<th>Segment ID</th>
<th>Crash Rate Rank</th>
<th>Frequency Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>B15130548052</td>
<td>1</td>
<td>225</td>
</tr>
<tr>
<td>B03520420004</td>
<td>2</td>
<td>728</td>
</tr>
<tr>
<td>B03520420011</td>
<td>3</td>
<td>2,213</td>
</tr>
<tr>
<td>B23320182077</td>
<td>4</td>
<td>91</td>
</tr>
<tr>
<td>B29113480002</td>
<td>5</td>
<td>6,654</td>
</tr>
<tr>
<td>B05510337034</td>
<td>6</td>
<td>3,053</td>
</tr>
<tr>
<td>B10330593056</td>
<td>7</td>
<td>2,198</td>
</tr>
</tbody>
</table>

Example Provided by Jake Kononov, Ph.D., P.E., Colorado DOT
Rates and Segmentation

Rate = 1/(1000*365*1/1000000) = **2.739** crashes/mile/year

Rate = 1/(1000*365*0.01/1000000) = **273.9** crashes/mile/year

Limitations of Rates

- Biased toward shorter segments
- Biased toward lower traffic volumes
- Incorrectly assumes linear relationship
- Does not account for regression-to-mean
- No predictive capability
Safety Performance Functions

SPF = Mathematical relationship between crash frequency per unit of time (and road length) and traffic volumes (AADT)

Highway Safety Manual

- HSM Part C predictive methods are intended for application in the project development process for individual projects, but could be used network-wide if sufficient data were available
Roadway Safety Data Program

• Roadway Safety Data Capability Assessment
• Model Inventory of Roadway Elements (MIRE) Management Information System (MIS)
• Safety Data Technical Assistance Programs
• Benefit-Cost Analysis Methodology for Safety Data Investments

http://safety.fhwa.dot.gov/rsdp/

Thank You!

Contact information:

Bob Pollack, FHWA
Robert.Pollack@dot.gov
(202) 366-5019
QUESTIONS ???

To Ask A Question
Type It In The Question Pod At The Bottom Of Your Screen And Hit Submit

If You Are In Full Screen Mode You Must Minimize Your Screen To Access The Question Pod.

A Systemic Approach to Safety:
Using Risk to Drive Action

APWA Click Listen & Learn Webinar Series
“How Data Can Keep Your Roads Safe”

June 20, 2013
The Challenge

- 57% of fatal crashes on rural roads
- Substantial number of fatal crashes on local roads
- Low density on rural and local roadways

State Highway Safety Improvement Program

- Planning:
  - Problem Identification
  - Countermeasure Identification
  - Project Prioritization
- HSIP Project List
- STIP
- Implementation:
  - Schedule and implement projects
- Evaluation:
  - Determine Effects of Highway Safety Improvements

Data/Design Standards

Feedback

Systemic Approach

Site Analysis Approach

Implementation Schedule and Implement projects

Evaluation

Determine Effects of Highway Safety Improvements
What do we mean by “systemic safety improvement”?

An improvement that is widely implemented based on high-risk roadway features that are correlated with particular severe crash types.
Factors Influencing Approach

- Data availability
- Resources
- Established priorities
- State/local agency relationship

Systemic Safety Planning Process

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

- Crash data
  - Law enforcement
  - State database
  - FARS
- Roadway data
  - Video logs
  - Online Arial imagery
  - Windshield surveys
- Exposure data
  - AADT

Identify Target Crash Types and Risk Factors

- System-wide crash analysis
- Crash characteristics at the system level
Statewide Data by Safety Emphasis Area

<table>
<thead>
<tr>
<th>Emphasis Area</th>
<th>Statewide Percentage</th>
<th>State System</th>
<th>County System</th>
<th>City, Township &amp; Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total fatality and serious injury crashes</td>
<td>8,300</td>
<td>2,990</td>
<td>3,379</td>
<td>1,923</td>
</tr>
</tbody>
</table>

### Drivers

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young driver (under 21)</td>
<td>24%</td>
</tr>
<tr>
<td>Unlicensed driver</td>
<td>0%</td>
</tr>
<tr>
<td>Older drivers (over 64)</td>
<td>14%</td>
</tr>
<tr>
<td>Aggressive driving &amp; speed-related</td>
<td>20%</td>
</tr>
<tr>
<td>Drug &amp; alcohol-related</td>
<td>26%</td>
</tr>
<tr>
<td>Inattentive, distracted, asleepdrivers</td>
<td>20%</td>
</tr>
<tr>
<td>Unsecured vehicle occupants</td>
<td>25%</td>
</tr>
</tbody>
</table>

### Special Users

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedestrian crashes</td>
<td>0%</td>
</tr>
<tr>
<td>Bicycle crashes</td>
<td>4%</td>
</tr>
</tbody>
</table>

### Vehicles

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor vehicle crashes</td>
<td>14%</td>
</tr>
<tr>
<td>Heavy vehicle crashes</td>
<td>15%</td>
</tr>
</tbody>
</table>

### Highway

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Train vehicle collisions</td>
<td>0%</td>
</tr>
<tr>
<td>Road departure &amp; derailed</td>
<td>23%</td>
</tr>
<tr>
<td>Intersection crashes</td>
<td>42%</td>
</tr>
<tr>
<td>Head-on &amp; side-wipe opposite crashes</td>
<td>15%</td>
</tr>
<tr>
<td>Work zone crashes</td>
<td>2%</td>
</tr>
</tbody>
</table>

Example: All = %, Severe = %

Source: MnCMAT Crash Data, 2006-2010
Severe is fatal and serious injury crashes (K+A).

Greater Minnesota Crash Tree Diagram

-Region’s 1, 2, 3, 4, 6, 7, and 8 – 292 Metro

Example: All = %, Severe = %

Source: MnCMAT Crash Data, 2006-2010
Severe is fatal and serious injury crashes (K+A).
Potential Risk Factors

<table>
<thead>
<tr>
<th>Road Features</th>
<th>Traffic Volume</th>
<th>Other Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shoulder Width/Type</td>
<td>ADT</td>
<td>Presence of Commercial Development</td>
</tr>
<tr>
<td>Horizontal Curvature</td>
<td></td>
<td>Proximity to Rail Crossing</td>
</tr>
<tr>
<td>Access Density</td>
<td></td>
<td>Distance from Previous Stop</td>
</tr>
<tr>
<td>Roadside Rating</td>
<td></td>
<td>Operating Speed</td>
</tr>
<tr>
<td>Intersection Skew</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Data screened by:
- Agency Experience
- Availability

Facility | Potential Risk Factors
---------|-----------------------------
Rural Segment | ADT, Curve Density, Access Density, Edge Rating
Rural Curves   | ADT, Radius, Intersection, Visual Trap
Rural Intersections | ADT, Geometry, Railroad Crossing, Commercial Development, Distance from Previous Stop
Urban Signals  | Speed, Geometry, Commercial Development

Evaluation of Segment Traffic Volume as Potential Risk Factor

Road Departure Crashes

- Length (1,434 miles)
- Severe Run-Off Road Crashes ($5,650)

Average Daily Traffic (ADT)
Screen and Prioritize Candidate Locations

- Risk Assessment
  - Identify similar facilities
  - Document crash history and patterns
  - Document physical and traffic characteristics
  - Conduct evaluation of system
  - Prioritize elements of system

---

### Example County Segment Prioritization

<table>
<thead>
<tr>
<th>Rank</th>
<th>Corridor</th>
<th>Route #</th>
<th>Start</th>
<th>End</th>
<th>Length</th>
<th>ADT</th>
<th>ADT Range</th>
<th>RID Density</th>
<th>Access Density</th>
<th>Curve Critical Radius Density</th>
<th>Edge Density</th>
<th>Edge Risk</th>
<th>Totals</th>
<th>Tiebreakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CSAH 36</td>
<td>CNTY 89</td>
<td>CSAH-30</td>
<td>CSAH-30</td>
<td>0.4</td>
<td>402</td>
<td>* * * * * *</td>
<td>2.0</td>
<td>0.14</td>
<td>2.0</td>
<td>0.14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>CSAH 36</td>
<td>CSAH-30</td>
<td>CSAH-2</td>
<td>CSAH-2</td>
<td>5.9</td>
<td>450</td>
<td>* * * * * *</td>
<td>2.17</td>
<td>0.29</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>CSAH 86</td>
<td>CSAH-30</td>
<td>CSAH-2</td>
<td>CSAH-2</td>
<td>0.7</td>
<td>145</td>
<td>* * * * * *</td>
<td>2.29</td>
<td>0.29</td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>4</td>
<td>CSAH 92</td>
<td>CSAH-10</td>
<td>CSAH-30</td>
<td>CSAH-30</td>
<td>5.9</td>
<td>450</td>
<td>* * * * * *</td>
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<tr>
<td>5</td>
<td>CSAH 5</td>
<td>CSAH-1</td>
<td>CSAH-1</td>
<td>CSAH-1</td>
<td>10.1</td>
<td>628</td>
<td>* * * * * *</td>
<td>1.33</td>
<td>0.17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>CSAH 31</td>
<td>CSAH-30</td>
<td>CSAH-10</td>
<td>CSAH-10</td>
<td>1.6</td>
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Is the County's entire system at-risk?

- No – about 25% of their system is High Priority
Select Countermeasures

• Initial list of strategies
  – Low cost
  – Significant crash reduction

• Evaluation
  – Effectiveness
  – Implementation costs
  – Policies/practices/experiences

Run-Off Road Countermeasures

Lane Departure Crashes

Key Objectives:
Keep Vehicles in Their Lane

Key Strategies:
• Improved curve delineation
• Improved lane markings

Key Objectives:
Improve Shoulders

Key Strategies:
• Safety edge
• Paved shoulders
• Shoulder rumble strips
Intersection Countermeasures

- Change Intersection Type
- Dynamic Warning Signs
- Improved Sight Distance
- Street Lighting
- Enhanced Signing and Delineation
- Indirect Turns

Pedestrian Countermeasures

- Countdown Timers and Advanced Pedestrian Intervals
- Curb Extensions and Medians
- Median Refuge
- Curb Extensions and Medians
Polling Questions

Where do you find safety countermeasure information?

a) Crash Modification Factors Clearinghouse  
b) FHWA’s Local Rural Road Owners Manuals  
c) Highway Safety Manual  
d) NCHRP 500 Series  
e) NHTSA’s Countermeasures that Work  
f) State or Regional Strategic Highway Safety Plan  
g) Other (tell us where using the chat pod!)

If you are in full screen mode, you will need to minimize the screen to vote

Prioritize Projects

Task 1 – Create a Decision Process for Project Selection
Outcomes of Systemic Safety Planning

- Candidate locations for safety investment are identified and prioritized using selected risk factors

- Selected countermeasures for candidate locations are efficiently bundled into projects and design packages for contract letting

- Effective, low cost countermeasures are applied at the candidate locations to reduce the potential for focus crash types to occur
Systemic Safety Project Selection Tool

Distribution of Safety Investments
Systemic Program Evaluation

• Consistency in Implementation
• Trend Analysis
  – Program level trends
  – Treated facilities only
• Countermeasure performance

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
Systemic Approach to Safety: Using Risk to Drive Action

http://safety.fhwa.dot.gov/systemic

Questions???

Karen Y. Scurry, P.E.
609-637-4207
karen.scurry@dot.gov

http://safety.fhwa.dot.gov
QUESTIONS ???

To Ask A Question
Type It In The Question Pod At The Bottom Of Your Screen And Hit Submit

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Louisiana
Local Technical Assistance Program

Horizontal Curve Crash Identification Overview

CONFIDENTIAL INFORMATION - This document is exempt from discovery or admission under 23 U.S.C. 409. Contact the Traffic Safety Office at (225)379-1871 before releasing any information.
Background (The Why)

- Roadway departures happen in and around curves
- 7.6% of all local road crashes
- 49% of all local road fatalities
- 6.5 times more fatal than a normal local road crash
Difficulties Encountered

- Lack of road data
- Incomplete crash data
- Limited exposure data
- No AADT

How do we identify these curves?

Black Spot
Systematic
Focus Points
Preliminary Attempts

- Exported X Y data into a 3 point circle calculations

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- Compass Heading Change
- SAS program to remove straight segments

- Current method involves visual curve identification
- System wide identified curves overlaid in GIS
• Overlapped Crashes with Identified Curves

How?

Road Assessments  Engineering

Recommendations
QUESTIONS ???

To Ask A Question
Type It In The Question Pod At The Bottom Of Your Screen And Hit Submit

If You Are In Full Screen Mode You Must Minimize Your Screen To Access The Question Pod.

Our Speakers:

Robert Pollack
FHWA Safety Data Manager
Office of Safety

Karen Y. Scurry, P.E.
FHWA
Office of Safety

Jason Taylor
Senior Project Manager
Ascension Parish, LA
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**APWA Education Calendar**

- **An Introduction to MicroPAVER**  
  July 18  
  CLL

- **Stormwater Green Infrastructure Maintenance**  
  August 1  
  CLL

- **MicroPAVER FIELDINSPECTOR Overview**  
  August 15  
  CLL

- **2013-International-Public-Works-Congress-and-Exposition**  
  August 25 - 28  
  McCormick Place, Chicago, IL

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