Local & Rural Road Projects

Types of Technical Assistance

• Training
• Data Collection and Analysis
• Local Road Safety Plans
• Road Safety Audits
• Curve Crash Analysis and Countermeasure Identification
Local Road Safety Plans (LRSPs)

- Twenty-five counties from six states were engaged in first pilot. Currently completing final LRSP plans.

- A second pilot has begun—Sixteen counties from three states. Just completed in-person workshop. Series of webinars will take place in the next few months and another workshop at NACE Conference, April 2019.
Local Road Safety Plans - Minnesota Results

Source: Mark Vizecky, MnDOT
Videos targeting Local Rural and Tribal Practitioners

- Unpaved Road Safety
- Enhanced Delineation on Horizontal Curves
- Speed management
- Systemic Approach for Stop-Controlled Intersections
- Longitudinal pavement markings
- Multi-modal
Human Factors Primer for Local Agencies

• To provide direction on the use of human factors elements to consider in the design and implementation of safety projects

• To use as a complement to existing roadway design and operations documents
Unpaved Road Safety

In 2017, 567 Fatal Crashes on Unpaved Roads occurred.

Soliciting for Unpaved Road Pooled Fund Study

http://www.pooledfund.org/Details/Solicitation/1419
Every Day Counts - Round 5

Reducing Rural Roadway Departure Crashes
Rural Roadway Departure Fatalities
by Most Harmful Event

- **Head-On**: 3,354 (28%)
- **Rollover**: 3,609 (30%)
- **Trees**: 2,312 (19%)

2014-2016 Annual Average of Rural RwDs by MHE

Source: FARS
All public roads approach is needed

State Roads = 55% of Rural RwD fatalities

Local Roads = 45% of Rural RwD fatalities

Source: FARS
Systemic Safety Improvements

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

Roadway Departure Objectives

1st - Keep vehicles on the road

2nd - Reduce the potential for crashes

3rd - Minimize the severity
1st - Keep vehicles on the road

Improved curve delineation

Friction treatments in curves and other spot locations

Edge line, shoulder & center line rumble strips.
2\textsuperscript{nd} - Reduce the potential for crashes

SafetyEdge\textsuperscript{SM}

Maintained clear zones

Traversable roadside slopes
3rd - Minimize the severity

**Breakaway Features**
- Signs and luminaire supports
- Utility poles

**Barriers to shield obstacles including:**
- Trees and shrubbery
- Other fixed objects
- Slopes
Version 3.0 of Proven Safety Countermeasures (PSCI)

1. Systemic Application of Multiple Low-Cost Countermeasures at Stop-Controlled Intersections
2. Reduced Left-Turn Conflict Intersections
3. Roadside Design Improvements at Curves
4. Leading Pedestrian Intervals
5. Local Road Safety Plans
6. USLIMITS2
PSC\textsubscript{i} - Intersections

- Left- and Right-Turn Lanes at Two-Way Stop-Controlled Intersections
- Backplates with Retroreflective Borders
- Corridor Access Management
- Yellow Change Interval
- Roundabouts
- Systemic Application of Multiple Low-Cost Countermeasures at Stop-Controlled Intersections
- Reduced Left-Turn Conflict Intersections
New PSCi - Intersections

Systemic Application of Multiple Low Cost Countermeasures at Stop-Controlled Intersections

• Mostly signing & pavement marking enhancements.
• Strategy relies on cost economy and treatment saturation.

Average Benefit/Cost Ratio
12:1
Systemic Approach for Stop Intersections

Recommended CMFs from FHWA-HRT-17-086

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Fatal &amp; Injury</th>
<th>Rear End</th>
<th>Right Angle</th>
<th>Nighttime</th>
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</table>
New PSC$^i$ - Intersections

Reduced Left-Turn Conflict Intersections (MUT and RCUT)

- Geometric designs that alter how left-turn movements occur.
- Simplify and reduce or modify conflicts related to turning.
- Proven safety and operational benefits.

Source: FHWA
## Restricted Crossing U-Turn

### RCUT Safety Performance

- **54% decrease F&I Crashes.**
- **35% decrease All Crashes.**

### Table: Vehicle-Vehicle Conflict Points

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<thead>
<tr>
<th>Vehicle-Vehicle Conflict Points</th>
<th>Conventional</th>
<th>RCUT</th>
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<tbody>
<tr>
<td>Crossing</td>
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<tr>
<td>Merging</td>
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<td>6</td>
</tr>
<tr>
<td>Diverging</td>
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<td>6</td>
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<tr>
<td>Total</td>
<td>32</td>
<td>14</td>
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</table>

Sources: FHWA-SA-14-069, FHWA-SA-14-070
PSC<sup>i</sup> - Roadway Departure

Longitudinal Rumble Strips and Stripes along Two-Lane Highways

Median Barrier

SafetyEdge<sup>SM</sup>

Enhanced Delineation and Friction for Horizontal Curves

Roadside Design Improvements at Curves

<table>
<thead>
<tr>
<th>SafetyEdge&lt;sup&gt;SM&lt;/sup&gt; CMFs</th>
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<tr>
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<tr>
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<tr>
<td>F+I</td>
</tr>
<tr>
<td>Total</td>
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</tbody>
</table>
New PSCi - Roadway Departure

Roadside Design Improvements at Curves

Increase clear zone at curves.
- Recommended by AASHTO RDG.
- Proven to reduce crashes.

Improve traversability.
- Adding or widening shoulders in curves.
- Flatter slopes at curves than in tangent sections.

Reconsider when to install barrier
- Reduce severity.
New PSC$i$ - Crosscutting Strategies

Local Road Safety Plans

- Developing an LRSP is an effective strategy to improve local road safety.
- Local roads experience 3X the fatality rate of the Interstate Highway System.
• 1-pager marketing flyers.
• Slides from webinar and link to recorded session.
• Links to additional FHWA resources for each item.
THANK YOU!