Highway Safety Improvements for Your Roads

Rick O. Drumm, P.E.
Road School 2015
March 11, 2015
Safety for Your Roads

• Kahoot It!
• “Just the facts.”
• Fed Notes
• More Countermeasures than...
• Actions to Take
Safety for Your Roads

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kahoot.it

• Go to website:  kahoot.it
• Enter Game pin
• Enter Your Name or Nickname
• Answer the Questions!
  –Time matters
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Fatalities for 16-20 year-olds, 2008-2009

- Highway Crashes
- All other causes
UN Decade of Action for Roadway Safety

• 2011-2020

• Based on:
  – Road Safety Management
  – Safer Roads and Mobility
  – Safer Vehicles
  – Safer Road Users
  – Post-crash Response
### Leading Causes of Death - World

#### 2004

<table>
<thead>
<tr>
<th>Rank</th>
<th>Disease or injury</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ischaemic heart disease</td>
</tr>
<tr>
<td>2</td>
<td>Cerebrovascular disease</td>
</tr>
<tr>
<td>3</td>
<td>Lower respiratory infections</td>
</tr>
<tr>
<td>4</td>
<td>Chronic obstructive pulmonary disease</td>
</tr>
<tr>
<td>5</td>
<td>Diarrhoeal diseases</td>
</tr>
<tr>
<td>6</td>
<td>HIV/AIDS</td>
</tr>
<tr>
<td>7</td>
<td>Tuberculosis</td>
</tr>
<tr>
<td>8</td>
<td>Trachea, bronchus, lung cancers</td>
</tr>
<tr>
<td>9</td>
<td>Road traffic injuries</td>
</tr>
<tr>
<td>10</td>
<td>Prematurity &amp; low-birth weight</td>
</tr>
</tbody>
</table>

#### 2030 (projected)

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<td>Diabetes mellitus</td>
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<td>Hypertensive heart disease</td>
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“Highway Safety is a good thing.”

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Fed Notes

• Rulemaking from MAP-21
• Reauthorization
Rulemaking from MAP-21
Safety in MAP-21

• FY12 to FY13 - >76% increase in funding
• Special Rules for HRRR and Older Driver/Ped
• SHSP revisions – cycle decided by “Secretary”
• More requirements, emphasis, and allowance for HSIP funds in data collection (crash and roadway) and analysis
• All public roads, all types of crashes
• Closer working with education and enforcement
• Safety Performance Measures initiated*
• Transfer still allowed
Rulemaking – the very basics

Law (or new circumstances, technology, problem, etc.)

Notice of Proposed Rulemaking (NPRM)

1. HSIP
2. Performance Measures

Comment Period (min. 30, typically 60 days, maybe 90*)

Final Rule or Supplemental NPRM (SNPRM)
Safety Performance Measures of MAP-21

- Fatalities – number
- Fatality Rate – (number per vehicle miles traveled)
- Serious Injuries – number
- Serious Injury Rate (number per vehicle miles traveled)

— Option for Rural vs. Urban
Performance Measures in Highway Safety

Performance Measures important, but what rules is....

TARGET
Possible/ Tentative Timeline for Safety Performance Measures in MAP-21

- MAP-21 goes into effect: October, 2012
- PM Rules Proposed: Spring, 2014
- PM Rules Finalized: ???(Spring, 2015)????
- State Selects TARGET: 1 Year after Final Rule
- MPOs Select TARGET: 6 months after State sets
- Did State meet* TARGET: Two years after Target set
  * or make significant progress toward...
- Consequences If...: next FY
Performance Measures in Highway Safety – MAP-21

• Performance Measures are named
• Details described in Proposed Regulations
• Comment Period closed—Waiting, Waiting, Waiting...
• Target to be set by State, then MPOs
• Communication and Coordination between partners is essential
• Consequences may be ones States consider “unpleasant”

*Stay tuned. Stay informed.*
Reauthorization

- MAP-21
  - Began in FY2013
  - Two-Year Bill
  - Ended September 30, 2014
  - Presently in Extension
  - Extension ends May 31, 2015
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Overarching Tool for State Safety Programs: SHSP
Approaches to Highway Safety

• Find High Crash Locations (HCLs)
  – Specific locations
  – Relatively low number
  – Generally larger fixes

• Systemic Improvements
  – Wide range of locations
  – Relatively large number
  – Focus on low-cost fixes
Fed List of Safety Countermeasures Lists

- EDC – Every Day Counts (Yes, Every Day)
- PSC – Proven Safety Countermeasures (These have been Proven!)
- Focus Areas (Like a laser beam)
- Other Good Safety Measures (my adds)
EDC

- EDC-1 (2011-2012)
- EDC-2 (2013-2014)
- EDC-3 (2015-2016)
EDC

• EDC-1 (2011-2012)
  – Safety Edge
EDC

- EDC-2 (2013-2014)
  - High Friction Surfaces
  - Intersection and Interchange Geometrics*
EDC

- EDC-3 (2015-2016)
  - Road Diets*
  - Smarter Work Zones*
  - Data-Driven Safety Analysis
EDC-3 Road Diets

Before

After
Proven Safety
Countermeasures

• 2008 PSC List – 9 Countermeasures

• 2012 PSC List – 9 Countermeasures
2008 PCS List

- Rumble Strips and Rumble Stripes*
- Median Barriers
- Walkways
- Left and Right Turn Lanes at Stop-Controlled Intersections
- Yellow Change Intervals
- Roadway Safety Audit**
- Roundabouts
- Medians and Pedestrian Refuge Areas
- Safety Edge
2012 PSC List

• Safety Edge
• Roundabouts
• Corridor Access Management
• Backplates with Retroreflective Borders
• Longitudinal Rumble Strips and Stripes on 2-Lane Roads
• Enhanced Delineation and Friction for Horizontal Curves
• Medians and Pedestrian Crossing Islands in Urban and Suburban Areas
• Pedestrian Hybrid Beacon
• "Road Diets" (Roadway Reconfiguration)
2012 PSC – Corridor Access Management
2012 PSC – Backplates with Retroreflective Borders
2012 PSC – Longitudinal Rumble Strips and Stripes on 2-Lane Roads
2012 PSC – Enhanced Delineation and Friction for Horizontal Curves
2012 PSC – Medians and Pedestrian Crossing Islands in Urban and Suburban Areas
2012 PSC – Pedestrian Hybrid Beacon
2012 PSC – Road Diets
Focus Areas

• Intersections
• Roadway Departure
• Pedestrians
• And
  – Local Road Safety
  – Speed
Other Good Safety Countermeasures
Median Cable Guardrail
Oversize Signs
...and Double Them Up
In-Ground Flashers for Pedestrian Crossing
Countdown Ped Signals
The Previous Does Not Include Traditional, Effective Countermeasures:

- Left-turn lanes
- Right-turn lanes
- Passing “Blisters”
- Signal Updates
- Guardrail
- Tree Removal
- Delineation
- Pavement Markings
- Curve Correction
- Crosswalk Improvements
- Sight Line Clearing
- Improve Clearzone
Systemic Improvements
Systemic

• Smaller countermeasures
• Far less cost per site
• Wider area
• More locations
• Applied to system – corridor, area, type of location
Systemic Safety Improvements for INDIANA

- Retroreflectivity/Signs
- Signal Head Per Lane
- Backing Plates w/ rrb
- Yellow Interval Timing or Interconnect
- Ped Push-Button/Countdown
- Ped Crosswalk Warning/Flashing Beacons
- Refuge Areas and Curb Ramps for Peds
- Intersection Visibility
- Active/Modern Warning Devices at RR Crossings
- Centerline/Edgeline Pavement Markings
- Centerline/Edgeline Rumbles
- High-Friction Surface
- Curve Visibility
- Median Cable Barriers
- Upgrade GR End Treatments to Standards
- Install GR at Unprotected Locations
- Roadside Safety Obstructions
- Intersection Lighting
Please let me know of safety countermeasures in your area
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Actions to Take

• Know Your Numbers (ARIES)

• Know Your Crashes
  – locations
  – severities
  – types

Hire a Digital Native
Actions to Take

• Know Your Numbers (ARIES)
• Know Your Crashes
  – locations
  – severities
  – types
• Select Locations or Systemics
• Conduct RSAs
• Program and Implement Projects
Let me explain. No, there is too much. Let me sum up...

• “Highway Safety is a good thing.”
• Keep track of Federal rulemaking and reauthorization.
• Consider all countermeasures.
• Take Action.
Cause Safety