Maintaining a Safer Roadway

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Indiana Local Technical Assistance Program

- Training
- Technical Assistance
- Resources
- Publications
- Research
- HELPERS
  - Roadway Safety
Agenda

1. Traffic Safety as a Major Concern
2. Promotion of Safety Culture
3. Maintenance Tasks, Safety Concerns, and Potential Responses
Why are we concerned about highway safety?

- A. 99 in 100 people will be involved in a crash
- B. Traffic crashes are the leading cause of death for ages 1 through 34
- C. Economic impact of U.S. traffic crashes is $231 billion
- D. All of the above
Indiana Crash Statistics

• **In 2012**
  - 779 people died
  - 3,810 people incapacitated
  - 188,841 traffic crashes were reported
  - $3.6 billion estimated economic cost to IN

• **On an average day**
  - 2 people die
  - 10 people severely injured
  - 517 crashes occur
  - $4.0 million average daily cost
Indiana Crash Statistics

Rural crashes
- Higher crash rate on rural roads – Why?
  - More severe crashes
  - Higher speeds
  - Longer to discover crash
  - Longer emergency response time
Myth vs. Reality

**Myth:**
Crashes are the driver’s fault and there’s nothing I can do about it.

**Reality:**
Crashes have multiple causes (driver, roadway and vehicle)
Crash Causes

- **Driver**: 93%
- **Roadway**: 34%
- **Vehicle**: 12%

- **Driver** causes:
  - 57%
  - 27%
  - 3%

- **Roadway** causes:
  - 3%
  - 3%

- **Vehicle** causes:
  - 2%
  - 3%
  - 6%
Accommodate Drivers

- Drivers need certain information to make decisions.
- They need time to receive and process that information and arrive at those decisions.
- They sometimes make incorrect decisions.
- Road system should accommodate drivers, not the other way around.
Agenda

1. Traffic Safety as a Major Concern
2. Promotion of a Safety Culture
3. Maintenance Tasks, Safety Concerns, and Potential Responses
Safety Attitude

“Extra Eyes for Safety”
### Policies & Procedures

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<tbody>
<tr>
<td>1. Identify potential issues</td>
<td>2. Identify potential barriers</td>
<td>3. Understand and discuss issues</td>
<td>4. Work together for solution</td>
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- **Tall grass in ditch blocking intersection sight lines**
- **Policy states not to mow ditches**

**Reasons for policy:**
- Economic
- Spreads weeds
- Inhibits native grasses

**Reasons for change:**
- Blocked sightlines reduce safety

Discuss merits of policy vs. safety
Adjust policy to allow mowing near intersections
1. Traffic Safety as a Major Concern
2. Promotion of Safety Culture
3. Maintenance Tasks, Safety Concerns and Potential Responses
Maintenance Issues

• Obstructions in Roadway
• Pavement Condition
• Shoulder Drop-Off
• Signs and Pavement Markings
• Work Zone Safety
• Vegetation Control
• Roadside Hazards
• Drainage
• Guardrail
Obstructions in Roadway
Discussion

• Can cause sudden evasive maneuvers
• Example safety issues to look for:
  – Loose Gravel
  – Branches
  – Mud
  – Debris
Obstructions in Roadway

Action

- Remove
- Sweep if needed
- Dispose of properly
- Follow traffic control
- Report items not immediately removable
Pavement Condition

Discussion

• As pavements age they begin to show distress and fail
• Pavement distress/failure leads to many common safety issues
Pavement Condition

Discussion

- Rutting
- Pot Holes
- Polished Aggregate/Smooth Surface
Pavement Condition

Action

 ✓ If possible, repair with materials/tools in truck (temporary and/or permanent)

 ✓ Use proper temporary work zone traffic control

 ✓ More complicated repairs, notify supervisor of issue and location
Shoulder Drop-Offs

Discussion

• Drivers over-correct and steer into oncoming traffic when shoulders fall off.
Shoulder Drop-Offs

Action

- Re-grade gravel shoulder
- Pave an asphalt wedge
  - Safety Edge
Signs and Pavement Markings

Discussion

• Over time, signs and markings lose visibility and effectiveness

• Significant safety concern for signs
  – Visibility
  – Proper Location
  – Missing/Damaged
  – Retroreflectivity
Signs and Pavement Markings

**Action**

- Replace or Report:
  - Damaged/missing signs
  - Low retroreflectivity signs
  - Incorrect sign locations
  - Signs with visibility issues
Work Zone Safety

Discussion

• Improperly marked work zones can lead to crashes
• Following local guidance or refer to:
  – Indiana MUTCD
  – LTAP Temporary Traffic Control Handbook
Work Zone Safety

Discussion

• View work zone from drivers perspective
  – Is it safe??

• Always follow guidelines:
  – Short, Medium, Long-term

• Set-up may take longer than maintenance task... your safety is important!
Work Zone Safety

Action

- Follow guidelines
- Remove/cover temporary traffic control when no longer needed
  (e.g. lunch, weekends)
Vegetation Control

Discussion

- Vegetation that obscures visibility can lead to crashes
  - Sign Visibility
  - Intersection Sight Lines
- Consider seasonal variations
- Follow local policy
Vegetation Control
Action

- Trim trees/brush and mow grass that obscure:
  - Signs
  - Intersection Sight Lines
- Grade or mow shoulder edge
- Review local agreements
Vegetation Control

Action

✓ Report:
  - Tree canopy (e.g. shadows) can create icy pavement conditions
  - Vegetation creating drainage issues
Roadside Hazards
Discussion

• Can result in a serious crash (e.g. Run Off Road)
• Examples of roadside hazards:
  o Non-Conforming Mailboxes
  o Non-Approved Signs & Posts
  o Head Walls/Retaining Walls
  o Culvert Ends/Driveway Cross Slopes
  o Parked Vehicles
Non-conforming mailboxes:
- Refer to local mailbox policy
- Report to supervisor
Non-approved signs:

✔ Remove from ROW
✔ Report memorials – do not remove
Roadside Hazards

Action

Head walls/retaining walls/planters:

✓ Notify supervisor of private head walls/retaining walls in the right-of-way
Roadside Hazards

Action

Vehicles:

✓ Report parked vehicles
  (if in violation of local ordinance)
Drainage
Discussion

- Drainage issues can impact safety by erosion and flooding on/near the roadway
  - Culvert Maintenance
  - Catch Basin
  - Ditches
Drainage Action

- Clear debris from grate area/catch basins
- Report sedimentation - indicates past flooding
Guardrail Discussion

- Be on the lookout for damaged guardrails
- Look for potential cause to ensure correcting all issues
- Be on the lookout for unnecessary/hazardous guardrail
Guardrail
Discussion
Guardrail
Action

✓ Report hits
✓ If minor damage, schedule repair with routine maintenance
✓ If non-functioning, report and mark appropriately
✓ Follow policy to repair ASAP
Questions?

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