Safety Edge:
Minimizing The Effects of Pavement Edge Drop-off

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36,700 Fatal Crashes per Year
2006-2008 Average – Source: FARS

Average 40,409 Annual Fatalities

2008 Fatal Crashes (Based on FARS)

34,017 U.S. Fatal Crashes
368 Iowa Fatal Crashes
189 Iowa Roadway Departures
17,818 U.S. Roadway Departures
51% Roadway Departures
19% Run-Off-Road Right
10% Run-Off-Road Left
10% Unspecified Run-Off-Road
49% Crossovers
2% Unknown Roadway Departures
59 people will die in a roadway departure crash in the United States today.

1 Fatality Every 24 minutes

13,242 Roadway Departure Fatalities on Two Lane Undivided

Source: 2008 FARS Data

Focused Solution:
- Low cost
- Two Lane roadways
- Roadway Departure

Are Drop-offs a Problem?
Was the drop-off the cause?

- Head-on
- Roll Over
- Opposite Side
- Roadside Hazard
Location of Drop-offs

1. Horizontal Curves
2. Near Mailboxes
3. Turnarounds
4. Shaded Areas
5. Eroded Areas (Drainage)
6. Asphalt Pavement Overlay

Horizontal Curves

Mail Boxes
Shaded Areas

Sunlight = Vegetation

Existing 5" Drop-off = Asphalt Overlay
2" Asphalt Overlay + Extreme Unsafe Condition

The Safety Edge:
A Practical Solution
FHWA Memo: Implementation of Proven Safety Countermeasures

1. Road Safety Audits
2. Rumble Strips and Rumble Stripes
3. Median Barriers
4. Safety Edge
5. Roundabouts
6. Left and Right Turn Lanes at Stop-Controlled Intersections
7. Yellow Change Intervals
8. Medians and Pedestrian Refuge Areas in Urban and Suburban Areas
9. Walkways

http://safety.fhwa.dot.gov/policy/memo071008/
The Hardware

Trans Tech Shoulder Wedge Maker™ Advant-Edger™
www.transtechsys.com www.advantedgepaving.com

Key Features

- Self Adjusting Spring
- ½" Radius Leading Edge
- 30° Forming Edge
- 45° Compound Angle

Construction

- Clip Shoulders
- Construct Overlay
- **Pull Shoulders Flush**
- No Effect on Production
- Minimal Monitoring
- 12.5 mm or 9.5 mm SP
Fillets

- Intersections
- Driveways
- Mailboxes
- Louisa County Fillet

Finished Surface
Increased Edge Compaction?

Without Safety Edge  With Safety Edge

Edge Compaction

Safety Edge  No Safety Edge

Condition After Six In-Service

Durability
Tracy’s Law &
the Texas Maintenance Assessment Program (TxMAP)

TxMAP 2002 Non-Interstate Assessment, District Overall Summary

Tracy’s Law:

“If you lose the edge, you lose the road.”

Tracy Cumby
TxDOT Project Director

Iowa PCCP Safety Edge
Tort Liability

Are Lawyers Familiar with pavement edge tort liability?

IV. Edge Drop Off in Excess of (3) Three Inches is Dangerous.

The "Scrubbing Effect" was considered to occur at edge height levels from one to five inches. Scrubbing is not a safety concern at one inch edge height but is possible. Scrubbing loses safety significance for automobiles as edges exceed five inches, since automobiles are rarely able to mount edges this high. For trucks, however, scrubbing will be important at greater edge heights."

If you or a family member has been injured as a result of a highway defect or if you are an attorney that would like to discuss your client's case for co-counsel or referral opportunities, please feel free to contact Attorney Dan Chamberlain at 1.800.269.XXXX.

Taken from www.tortslaw.com.

Benefits of A Safe Edge

- Temporary safety benefit during construction
- Increase production - shoulder work after overlay complete
- Permanent Solution for future drop-off re-emergence
- Reduce tort liability – Providing “Due Care”
- Aid vehicle re-entry
- Minimal hardware, labor, or material costs
- Increased Pavement Edge durability

Low cost actions to reduce probability of leaving the road

- Pavement Markings
- Pavement Rumble Strips/Stripes
- Delineators
- Signs
As of February 16, 2010

Safety Edge Implementation

Iowa Safety Edge Implementation
- Clinton County Z-36
- Louisa County X-99 – Before
- Iowa DOT IA 143 – Before
- Safety Edge Deployment and Demonstration Project
  - Diverse Advisory Committee
  - At least 7 additional demos
  - Free Loaner Shoes

What can FHWA offer?
- 10-12 demo projects for 2010-2011:
  - Free loaner equipment
  - Technical assistance
  - Project documentation
  - Promotional Material
  - Specifications
  - Tech Drawings
What we will know 1 year from now:

- Best way to write this into a contract
- How to quantify durability
  - Density measurement, permeability
- Safety Edge acceptance measures
  - Method Specification
  - To the satisfaction of the engineer
- Better ways to construct the edge
  - Integral part of the screed
- Best Practices
- Crash Reduction Factor

Challenge

What will you do this year to make our highways safer?

- Low Cost
- Focused
- Proven

More Information

- [www.pooledfund.org](http://www.pooledfund.org)
- TPF-5(097) Evaluation of the Safety Edge
- Specifications and Drawings
- Safety Impacts of Pavement Edge Drop-offs: [www.aaafoundation.org](http://www.aaafoundation.org), September 2006
Any Questions??

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