

# American Traffic Safety Services Association (ATSSA)

## High Friction Surfacing

### Speaker Information:

Robert N. Dingess  
Chair, *ATSSA High Friction  
Surface Working Group*



# What is a High Friction Surface?



- $F_N \geq 60$
- Aggregate with resistance to polishing

# Aggregates That Meet High Friction



**Calcined Bauxite**

# High Friction Polymer Binders



# Why Install High Friction Surfacing?

## Different Friction Demand



# Why High Friction Surfacing?

## Fatal Crashes

Horizontal Curves:  
Intersections:



# Speed Mitigation



# Skid related crashes are determined by many factors:

- Road Geometry
- Driver Actions
- Weather Conditions
- Traffic Characteristics
- Vehicle Speeds



# Can Pavement Characteristics Improve Safety at Intersections and Curves?



# Where Can High Friction Surfaces Benefit Roadway Safety?

1. Horizontal curves
2. Approach to intersections

When the pavement has:

- a) low friction
- b) marginal friction effected by weather
- c) Friction values not compatible with approach speeds and geometrics

# High Friction Surfacing – Curves/Intersections Results

Bellevue, Wash: 45 crashes, four rollovers

Oldham County, KY: 8/1/07 thru 8/1/09: 59 Crashes  
1 Fatal and 23 Injury crashes

Pennsylvania SR 611: 1997 thru 2006: 22 crashes

# Intersection/Curve: Bellevue, Washington



# Provide Skid Resistant Pavement Surfaces

Intersection/Curve: Bellevue, Wash.

Installation of a Microtexture surface on a horizontal curve. Prior to the installation, this location had 45 accidents.



# Rural Curve - Bridge Hill – Oldham County, KY 22



# Bridge Hill - Oldham County, KY 22



# June 26, 2008 Oldham Era

## Rain Increases Danger on KY. 22



Crews work to clear the roadway after a head-on collision during rush hour Friday on KY- 22 at Bridge Hill. The crash left four people injured. Another crash took place Sunday afternoon.

## Bridge Hill - Oldham County, KY 22

# Since HFS Installation

Oldham County, KY 22,  
8/1/07 thru 8/1/09: **59 total crashes**

1 Fatal and 23 Injury crashes

**5 crashes since**

As of April 10, 2012

# Pennsylvania SR 611

## 1997 thru 2006: 22 crashes

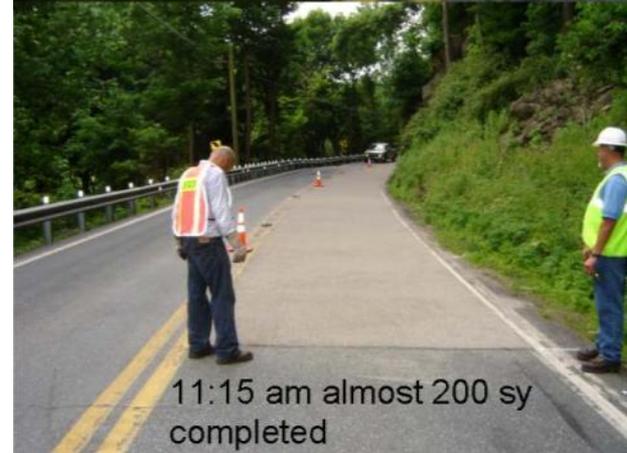
“Three Deaths  
and Four  
Injuries in  
eight years...”



# Pennsylvania SR 611



1:00 pm install complete  
& 60% power swept



11:15 am almost 200 sy  
completed

# Since Installation – Zero Crashes



# NTPEP Test Deck (Summer 2012)



National Transportation Product  
Evaluation Program

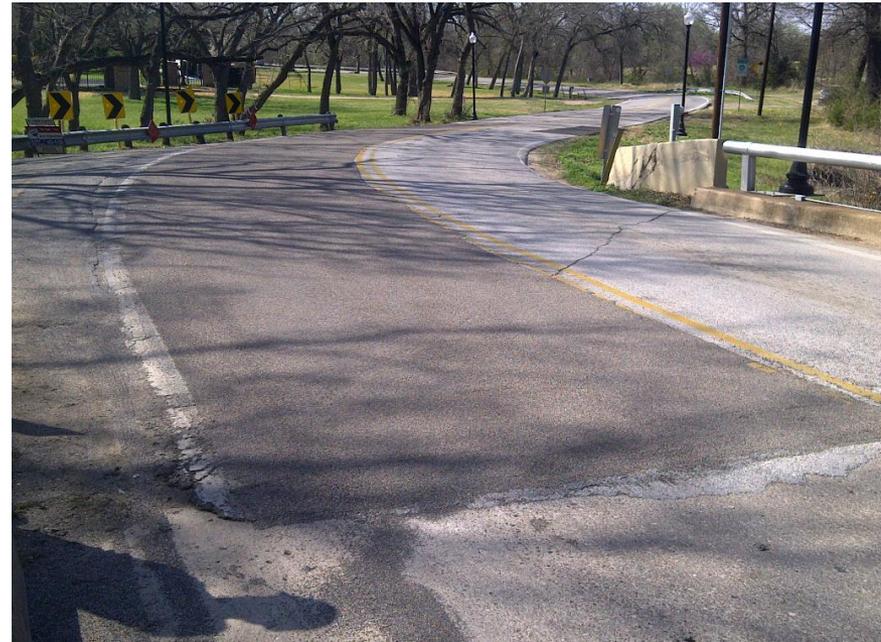
Derrick Castle  
KY Transportation Cabinet  
(502) 564-3160  
[derrick.castle@ky.gov](mailto:derrick.castle@ky.gov)

Ken Berg (Chairman)  
Utah DOT  
(801) 965-4321  
[kenberg@utah.gov](mailto:kenberg@utah.gov)

Greta Smith, AASHTO, [gsmith@ashto.org](mailto:gsmith@ashto.org)  
202-624-5815

# More Information

[www.highfrictionsurface.net](http://www.highfrictionsurface.net)





# National Committee on Uniform Traffic Control Devices

Markings Technical Committee

## *Colored Lanes Task Force*

### Red – Bus Lanes





# National Committee on Uniform Traffic Control Devices

Markings Technical Committee

## Colored Lanes Task Force

### Green – Bicycle Lanes





# National Committee on Uniform Traffic Control Devices

## Markings Technical Committee

### Colored Lanes Task Force

#### Purple - ETC



John J. Sullivan IV for FHWA





# National Committee on Uniform Traffic Control Devices

Markings Technical Committee

## *Colored Lanes Task Force*

### Friction Issues

#### United States Access Board – Proposed Accessibility Guidelines

Surfaces: R302.7 -

“The surfaces of pedestrian access routes and the surfaces at accessible elements and spaces that connect to pedestrian access routes must be firm, stable, and slip resistant.”

## **ATSSA High Friction Surfacing Council**

- AASHTO Standard Specification for High Friction Surfacing
- AASHTO Standard Specification for Lane Color Surface Treatments (Green, Red & Purple)
- Enhance Friction Surfacing Specification
- Friction Pavement Marking Specification



Questions?