American Traffic Safety Services Association

High Friction Surfacing

Robert N. Dingess
President, GTMA

(Chair of ATSSA’s High Friction Surfacing Council)
What is a High Friction Surface?

- $F_N \geq 65$
- Aggregate with resistance to polishing
Aggregates That Meet High Friction

Calcined Bauxite
High Friction Polymer Binders
Why Install High Friction Surfacing?

Different Friction Demand
Current Safety Countermeasures

Signs, Markings, Microsurfacing
Horizontal Curve HFS Installation

Well-Designed Intersections
Why High Friction Surfacing?

FARS 2010
All fatal crashes: 30,296

Fatal Crash Percentages

Horizontal Curves & Intersections
(Roughly 50%)
Speed Mitigation
Skid related crashes are determined by many factors:

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

Source NCHRP 108
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
One Fatal and 23 Injury crashes

Intersection/Curve: Bellevue, Washington
Provide Skid Resistant Pavement Surfaces

Intersection/Curve: Bellevue, Wash.

Installation of a HFS surface on a horizontal curve. Prior to the installation, this location had 45 accidents.
Rural Curve - Bridge Hill – Oldham County, KY 22

One Fatal
23 Injury Crashes
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
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

11:15 am almost 200 sy completed

1:00 pm install complete & 60% power swept
Since Installation – Zero Crashes
ATSSA’s High Friction Surfacing Council

ATSSA Board Approved: April 2012
NTPEP Test Deck (Late Summer 2012)

- NTPEP Test Deck Installation – Summer 2012
- AASHTO SOM – Joint Committee (HFS Specification)
- FHWA Every Day Counts Initiative
- ATSSA HFS Booklet
- ATSSA HFS Installer & Inspection Training & Video
- ATSSA Website: highfrictionsurface.net
What’s Next

• **Enhanced Friction Specification**
  (Granite, Flint, etc.)

• **Color Lane Surface Specification**
  (Purple, Red & Green)
Policy Initiatives

• Amend HSIP Friction Language

• Pavement Friction Management Program

• Data Collection Eligibility – Friction
Finding HFS Locations

• Horizontal Curves – A New Method for Identifying At-Risk Locations for Safety Investment (Howard Preston)

• Horizontal Curve Identification and Evaluation, September 2012

• SHRP 2 Naturalistic Driving Study & Utah Safety Initiative (ESRI & AAA Foundation)
Questions?