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/MMA Binders
Why Install High Friction Surfacing?

Different Friction Demand
Why High Friction Surfacing?

FARS 2010
All fatal crashes: 30,296

Fatal Crash Percentages

Horizontal Curves & Intersections
(Roughly 50%)
Current Safety Countermeasures

Signs, Markings, Microsurfacing
Skid related crashes are determined by many factors:

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

Source NCHRP 108
Horizontal Curve HFS Installation

Well-Designed Intersections
Speed Mitigation
Can Pavement Characteristics Improve Safety at Intersections and Curves?
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
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…”
Since Installation – Zero Crashes
ATSSA’s High Friction Surfacing Council

ATSSA Board Approved: April 2012
NTPEP Test Deck (2012 & 2013)

- NTPEP Test Deck Installation – 8 Installations
- 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?