



FHWA Pavement Surface Characteristics Program And Research Update

**20th Annual Road Profilers User's Group
RPUG**

October 27, 2008

Bob Orthmeyer



Focus Area Leadership and Coordination (FALCON) Teams

- 1. Pavement Design & Analysis**
- 2. Materials & Construction
Technology**
- 3. Pavement Management &
Preservation**
- 4. Pavement Surface
Characteristics**
- 5. Construction Quality Assurance**
- 6. Environmental Stewardship**



FALCON Team 4



Pavement Surface Characteristics

Where the public meets the road



Hi-Way Paving, Inc.



AAA Foundation for Traffic Safety

Co-Chairs: Larry Wisler
Bob Orthmeyer
Secretary: Joe Gregory

Focus Area Purpose/Scope

- Vision: Safe, smooth, and quiet pavements.
- Mission:
 - To provide insight and applications that assist FHWA leadership in assuring that pavement surfaces meet and/or exceed our client's expectations.
- Scope
 - The PSC FALCON Team will provide a multi-year strategic plan that coordinates the activities within FHWA that are concentrated in delivering an effective pavement surface characteristics program.



FALCON 4 Team Members

Role	Name	Unit
Leadership	Pete Stephanos	HIPT
	John Bukowski	HIPT
	Cheryl Richter	HRDI
Liaisons	Mark Swanlund	HIPT
	Jim Sorenson	HIAM
	Tom Harman	PMTST
	Aramis Lopez	HRDI
Co-Chairs	Bob Orthmeyer	PMTST
	Larry Wiser	HRDI
Secretary	Joe Gregory	HIAM
Members	Mike Moravec	HIPT
	Tom Van	HIAM
	Tom Drenthe	FLHD
	Luis Rodriguez	PMTST
	Dennis Sixbey	HRDI
	Jim Sherwood	HRDI
	Brad Hibbs	NC Div
	Gary Goff	ND Div
	Vacant	HSA
	Robert Rozycki	HPPI
Marketing	Kathleen Bergeron	HIHL
	Bill Bolles	HIF

National Performance Objectives

4.1 – Smoothness

Pavements are designed, constructed and maintained to meet users' expectations relative to ride quality.

4.2 – Friction

Pavements are designed, constructed and maintained to reduce friction-related crashes.

4.3 – Noise

Highway agencies use quiet pavement systems in noise-sensitive areas.

4.4 – Splash and Spray

Pavements are designed, constructed and maintained to reduce the potential for splash and spray.



Performance Measures

4.1 – Smoothness

- Good Ride Quality
Percent of VMT on NHS with IRI less than 95 in/mi.
 - From HPMS

- Acceptable Ride Quality
Percent of VMT on NHS with IRI less than 170 in/mi.
 - From HPMS

- Ride Quality Improvement
Percent of states meeting the national targets that have maintained conditions or shown improving trends over a 3-year period.
 - From HPMS



Performance Measures

4.1 – Smoothness (Con't)

- Ride Technology Deployment
Number of states that are using technologies/methods to improve smoothness.
 - Number of Agencies
 - Extent of National Highway Network

- Ride Quality Consideration Factor
Extent to which highway agencies consider ride quality in the pavement design, construction, management, and maintenance processes.
 - Rating by agency (self assessment)
 - Number of Agencies



Performance Measures

4.2 – Friction

- Friction Improvement Consideration Factor
Extent to which highway agencies consider friction in the pavement design, construction, management, and maintenance processes.
 - Rating by agency (self assessment)
 - Number of Agencies
- Friction Related Crash Rate
Friction-related crash rate (related to wet-weather and pavement).
 - Number of agencies
 - Extent of National Highway Network
- Friction Quality
A measure that indicates the quality of friction, nationally.
 - Start with interstate
 - Add NHS



Performance Measures

4.3 – Noise

- Quiet Pavement System Consideration Factor
Extent to which highway agencies consider quiet pavement systems in the pavement design, construction, management, and maintenance processes for noise-sensitive areas.
 - Quiet pavement systems (initially defined by states in the self-assessments)
 - Noise-sensitive areas (defined by states in the self-assessments)
 - Define “quiet pavement systems”
 - Rating by agency (self assessment)
 - Number of Agencies



Performance Measures



4.4 – Splash and Spray

- Splash/Spray Consideration Factor
Extent to which highway agencies consider splash and spray in the pavement design, construction, management, and maintenance processes.
 - Rating by agency (self assessment)
 - Number of Agencies
- Rutting Condition
Average rutting depth per sample unit.
 - From HPMS
- Splash/Spray Condition
A measure that indicates the splash and spray, nationally.
 - Start with interstate
 - Add NHS

National Strategies

- Develop, promote, and deploy assessment capabilities and technologies to improve highway systems.
- Demonstrate the benefits of using pavement surface characteristics as a highway system performance indicator.
- Develop and implement policy guidance to align with quality assurance, environmental policy, and safety policy.
- Develop a national management program.



Funded FY08 Activities

- 4.001 – Smoothness Provisional Standards Refinement/Deployment
- 4.002 – Smoothness Measurement Technology
- 4.003 – Functional Performance / Satisfaction Indicator Development
- 4.005 – Advanced Texture/High Friction Demonstration Project



FY08 Activities (cont.)

- 4.006 – Friction/Texture Test Equipment Loan Program
- 4.007 – Sound Intensity Test Method Refinement/Validation
- 4.008 – Integrated Texture-Noise Model Development
- 4.009 – Traffic Noise Model (TNM) Pavement Effects Project



FY08 Activities (cont.)

- 4.010 – ProVAL Deployment and Enhancement
- 4.011 – Splash/Spray Potential Assessment Tool Development
- 4.012 – Refinement of Smoothness Requirements for WIM Systems



FALCON Coordination

- State, Academia, and Industry activities
- Concrete Pavement (CP) Roadmap Track 4 – “Optimized Surface Characteristics for Safe, Quiet, and Smooth Concrete Pavements”
- National Asphalt Pavement Roadmap Program 7 – “Surface Characteristics”



FALCON Coordination

- TPF 5(063) “Improving the Quality of Pavement Profiler Measurement”
- TPF 5(135) “Tire/Pavement Noise Research Consortium”
- TPF 5(139) “PCC Surface Characteristics: Tire -Pavement Noise Program Part 3 - Innovative Solutions /Current Practices”
- TPF 5(141) “Pavement Surface Properties Consortium: A Research Program”



FALCON Toolkit

- Smoothness

- ProVAL workshops (www.roadprofile.com)
- ASTM E2560-07: Standard Specification for Data Format for Pavement Profile
- NHI 131100 “Pavement Smoothness”
- AASHTO Provisional Standard PP49 & PP50 Implementation Contract

- Noise

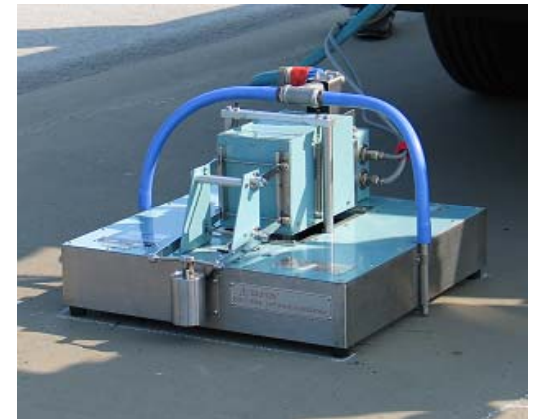
- Noise 101 workshop
- AASHTO Provisional Standard on Tire/Pavement Noise Measurement



FALCON Toolkit

Friction/Texture

- Equipment loan program: Griptester, Circular Texture Meter – CTM, Dynamic Friction Tester – DFT
- Draft Technical Advisory on Skid-Crash Reduction Program under development



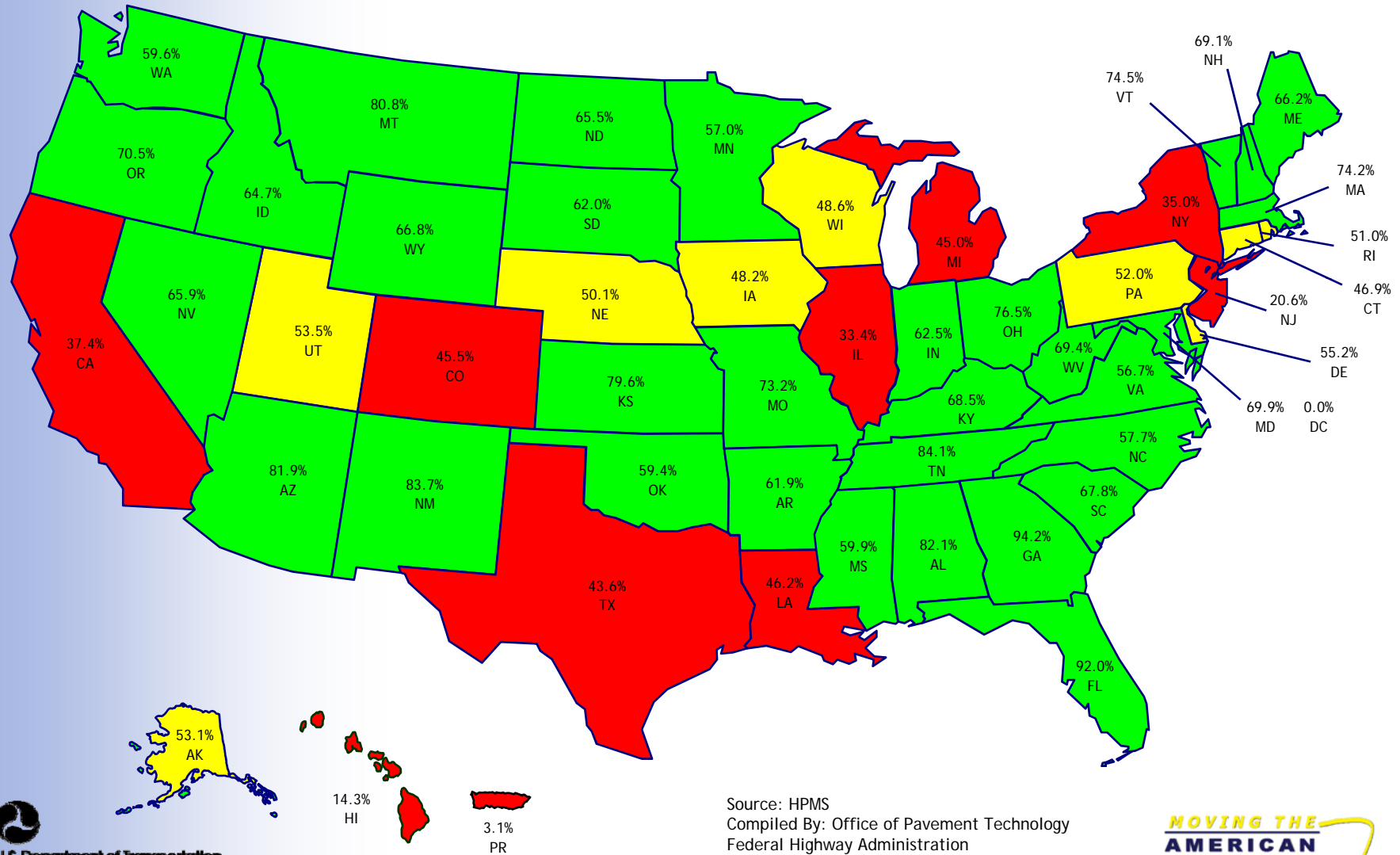
U.S. Department of Transportation
Federal Highway Administration

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AMERICAN
ECONOMY 

2007 Pavement Condition on the National Highway System (NHS)

National Average = 56.7%, Target 57% in 2009
Good/Very Good (IRI of <95"/mile)

- ≥ National Average
- ≥ 1-10% below National Average
- > 10% below National Average

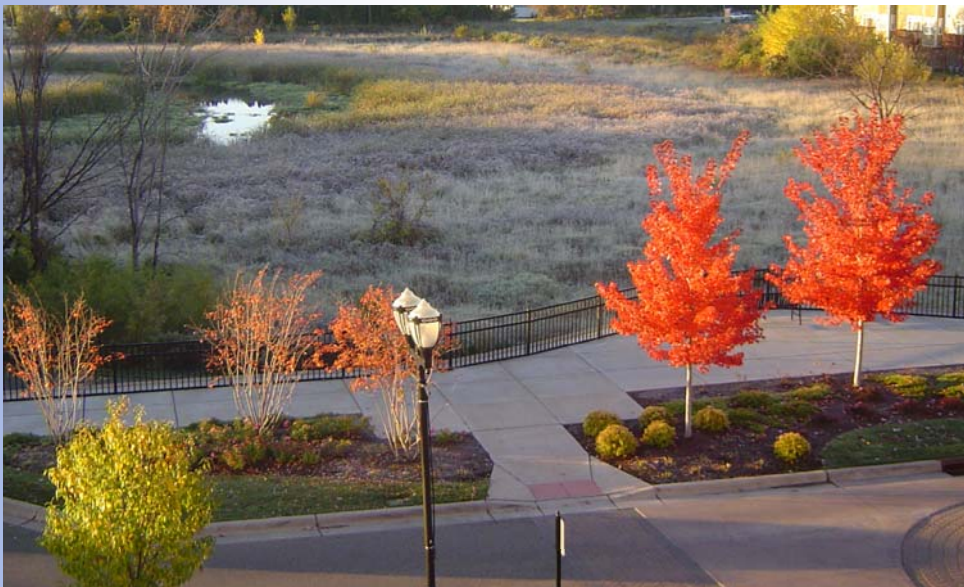


Inertial Profiler



Questions?

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