



# FHWA Pavement Surface Characteristics Program And Regional Calibration Centers

**Northeast Pavement Preservation  
Partnership Meeting  
November 4, 2009  
Robert Orthmeyer**

# Outline

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- Brief FHWA overview
- Performance measures
- TPF 5(063) overview
- Regional certification/verification
- Inertial profilers certification



# Questions

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- Current DOT certification procedures?
- DOT or contractor used for network level ride information?
- QA/QC process for ride quality:
  - Network level?
  - Project level?



# FALCON Team 4



## Pavement Surface Characteristics

*Where the public meets the road*



Midway Point, WI



AAA Foundation for Traffic Safety

Co-Chairs: Larry Wiser – FHWA LTTP  
Bob Orthmeyer



U.S. Department of Transportation  
Federal Highway Administration

MOVING THE  
AMERICAN  
ECONOMY 

# 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 SC 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.



# National Performance Objectives

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## 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

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## 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.

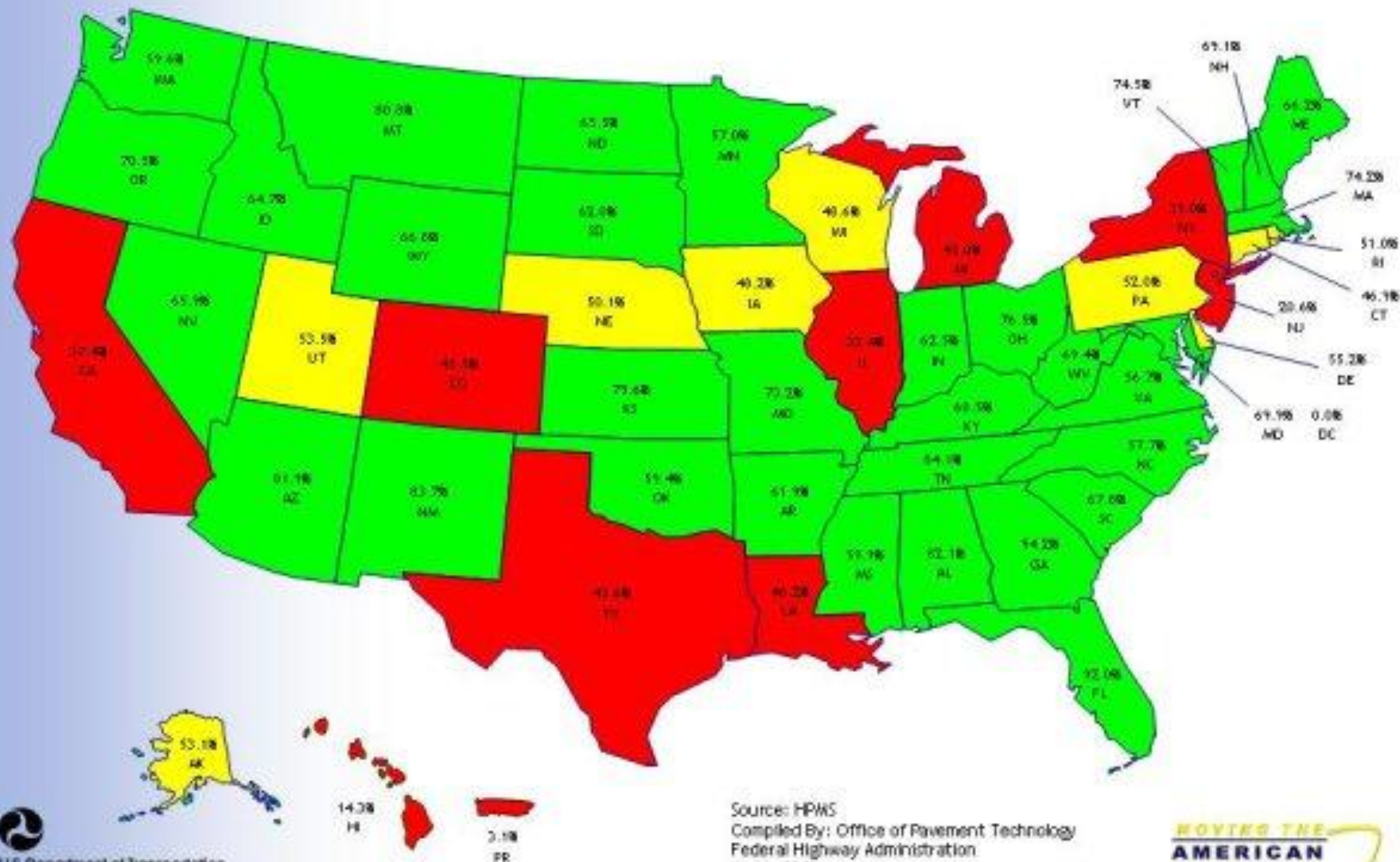
- From HPMS



# 2007 Pavement Condition on the National Highway System (NHS)

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

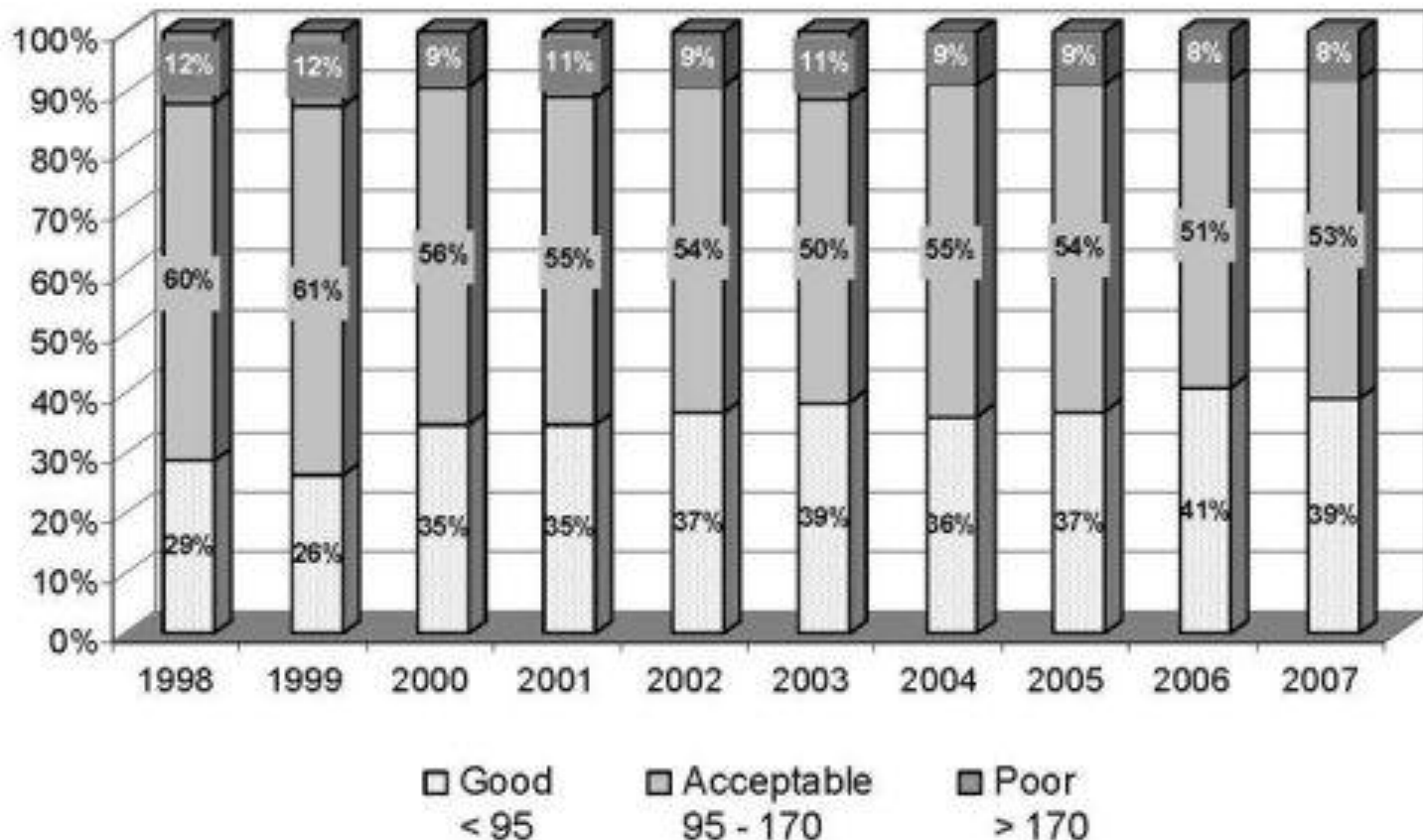
- ≥ National Average
- ≥ 1-10% below National Average
- > 10% below National Average





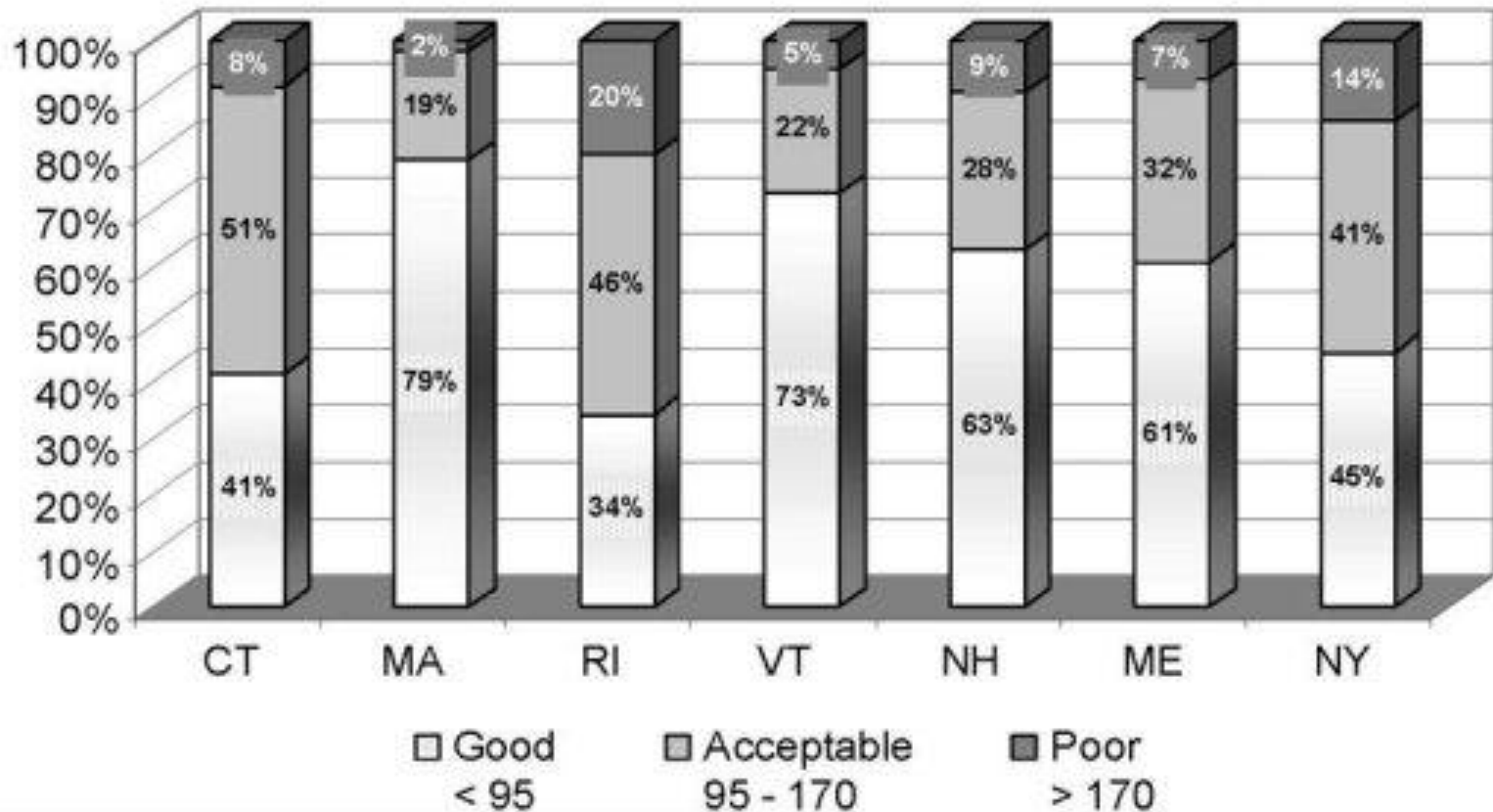
# DOT Performance Measures

Figure 6. Ride Quality on Connecticut's National Highway System Roads  
International Roughness Index (IRI) inches per mile



# DOT Performance Measures

**Figure 7. Ride Quality on the National Highway System in New England and New York, 2006 inches per mile International Roughness Index (IRI)**



# Related Funded FY09 Activities

- AASHTO Smoothness Standards Refinement/Deployment
- ProVAL Deployment and Enhancement
- Profiler calibration, regional verification testing and operator certification
- Relating Ride Quality And Structural Adequacy For Pavements



# Pooled Fund Study

- TPF 5(063) “Improving the Quality of Pavement Profiler Measurement”
  - 21 State Highway Agencies, LTPP, WFLHD, EFLHD, FHWA Office of Pavement Technology
  - \$2.4 Million Study
  - Multiple contracts
  - Extended through September 2011



# TPF 5(063) Priorities

1. Develop a profile reference device
2. Define critical accuracy requirements for inertial profilers
3. Develop construction acceptance software for profiles – ProVAL
4. Certification/Validation sites
5. Evaluate limits of single accelerometer
6. Emerging technology that enhances profiling



# Inertial Profilers



# Potential Reference Devices



# Inertial Profiling Toolkit

- ProVAL software & workshops  
([www.roadprofile.com](http://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





# Questions?

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