FHWA Pavement Surface Characteristics Program And Regional Calibration Centers

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

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

- 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

Co-Chairs: Larry Wiser – FHWA LTPP
Bob Orthmeyer
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

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
2007 Pavement Condition on the National Highway System (NHS)
National Average = 56.7%, Target 57% in 2009
Good/Very Good (IRI of <95”/mile)

Source: HPWS
Compiled By: Office of Pavement Technology
Federal Highway Administration
March 2008
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)

- CT: 8% Good < 95, 51% Acceptable 95 - 170, 41% Poor > 170
- MA: 2% Good < 95, 79% Acceptable 95 - 170, 7% Poor > 170
- RI: 20% Good < 95, 46% Acceptable 95 - 170, 5% Poor > 170
- VT: 5% Good < 95, 73% Acceptable 95 - 170, 9% Poor > 170
- NH: 9% Good < 95, 63% Acceptable 95 - 170, 7% Poor > 170
- ME: 7% Good < 95, 61% Acceptable 95 - 170, 41% Poor > 170
- NY: 14% Good < 95, 45% Acceptable 95 - 170, 41% Poor > 170

Connecticut Department of Transportation “On The Move” Performance Metrics Report, January 2009
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
Potential Reference Devices
Inertial Profiling Toolkit

- ProVAL software & 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
Questions?

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