

FHWA Surface Characteristics Program and TPF 5(063) Study Update

**Road Profiler User's Group
RPUG**

December 9, 2009
Atlanta, GA

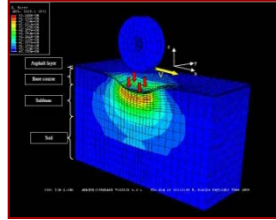




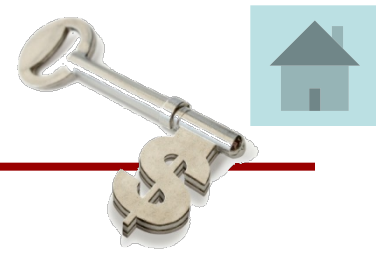
Pavement Surface Characteristics



FHWA FY 2009 Accomplishments



Key Accomplishments



- New Profiler Spec
- Friction study
- Integrated Texture-noise Model





Outcome

Smoothness (IRI), NPM

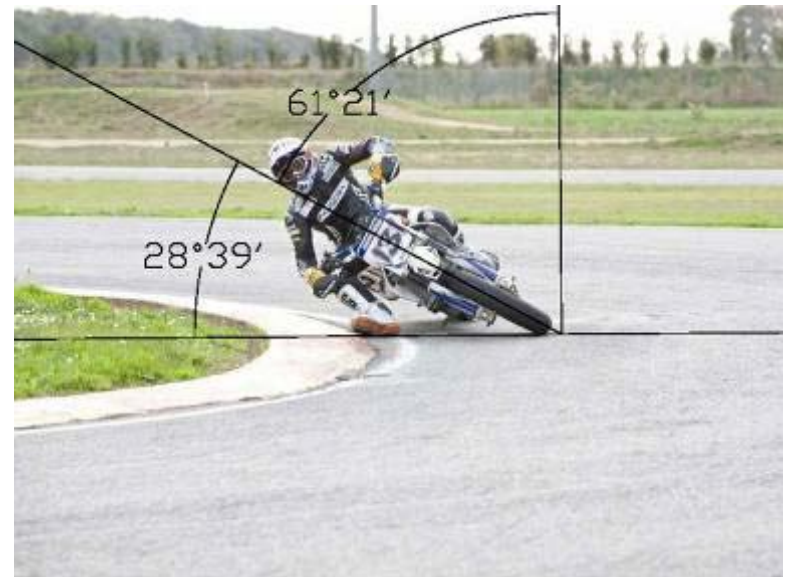
Highlight team efforts in establishing national/AASHTO standards in pavement smoothness, rutting and cracking – need these for pavement condition performance measures.





Friction Thresholds

- Investigating most suitable equipment
- Working with States on data collection
- Develop Pavement Friction Management Programs with States



Integrated Texture-noise Model

- Task initiated in the fall of 2009 to develop a work plan for a Texture-noise model
- Collecting a sample of synchronized texture (1-D and 2-D) and noise (OBSI) data to support an approach to define a noise prediction method using macrotexture
- Compiling a database of existing texture and noise data (accessing raw data is essential)



FHWA FY 2009 Accomplishments

Source: Caltrans/UCPRC OBSI equipment

FHWA Toolkit

- Smoothness
 - ProVAL software (www.roadprofile.com)
 - ASTM E2560-07: Standard Specification for Data Format for Pavement Profile
 - NHI 131100 “Pavement Smoothness”
 - AASHTO Ride Quality Standards Implementation Contract
- Noise
 - AASHTO Provisional Standard on Tire/Pavement Noise Measurement

FHWA 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



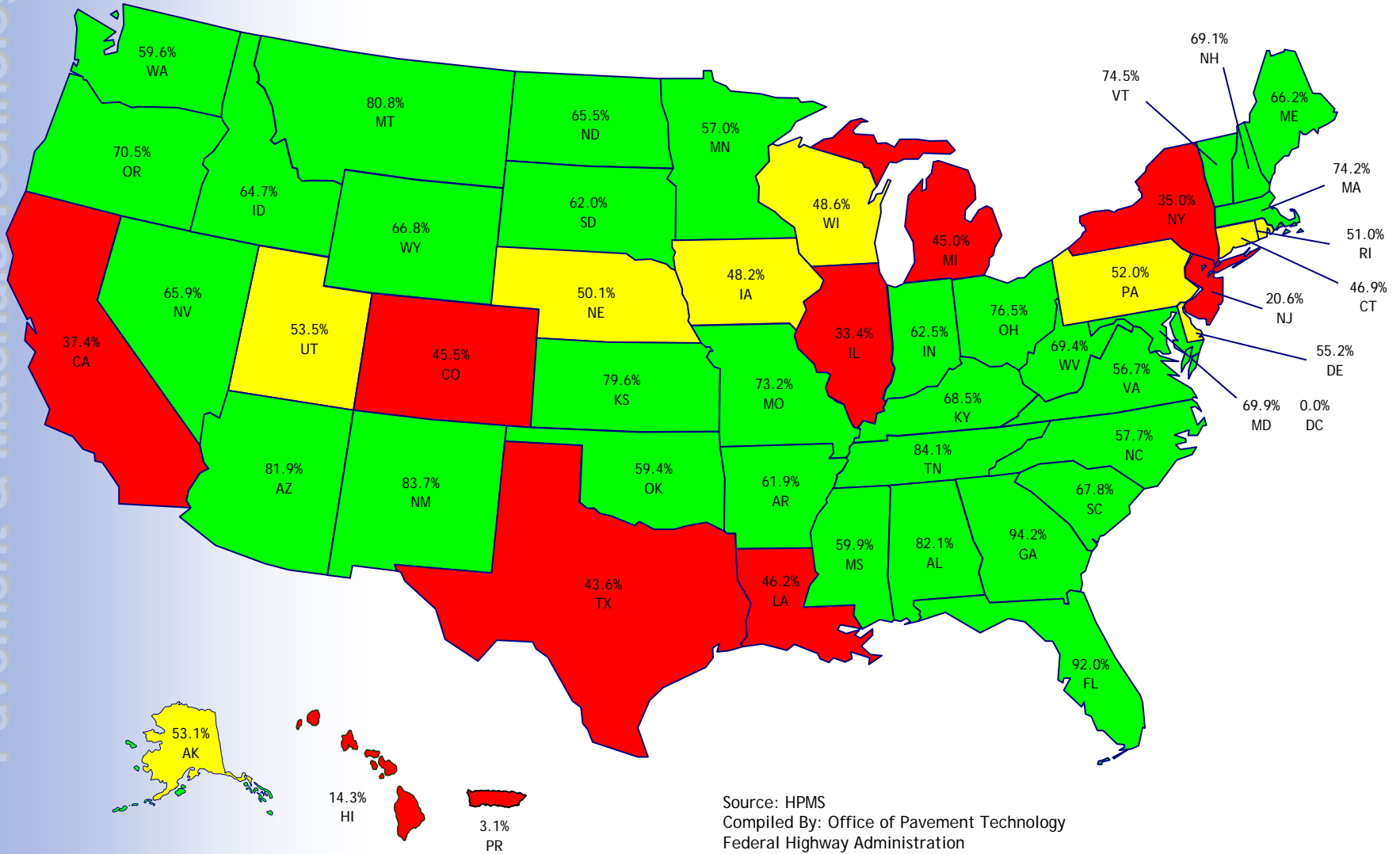
2007 Pavement Condition on the National Highway System (NHS)

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

Pavement & Materials Technology



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

Inertial Profiler

Next-Generation Materials Technology



FHWA 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”

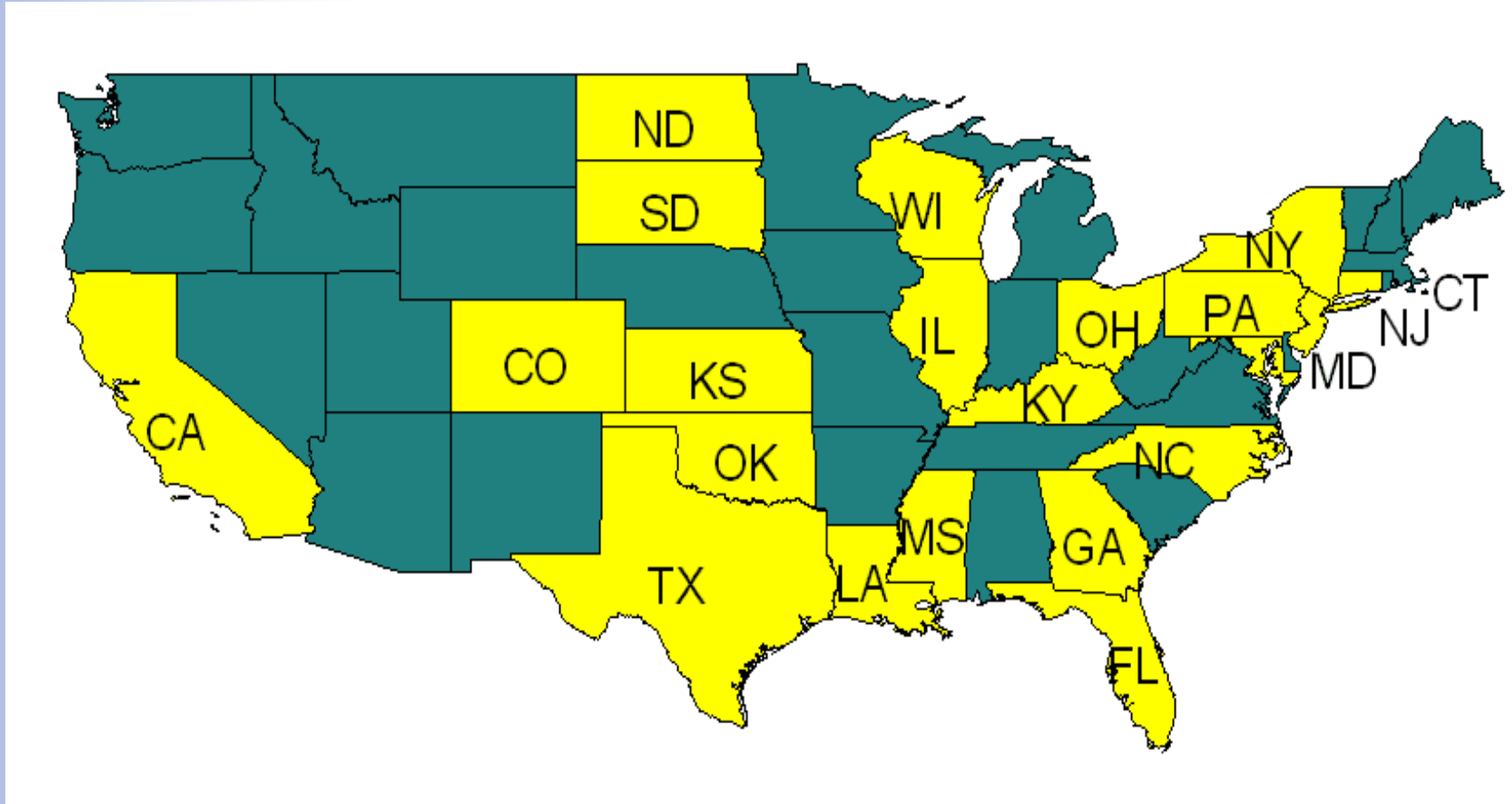
Overview TPF 5(063)

- FHWA is lead agency with 21 participating State Highway Agencies (SHA's)
 - FHWA Office of Pavement Technology (HIPT)
 - \$1.4 Million **EIGHT (8)** Year Study
 - FHWA Long Term Pavement Performance (LTPP)
 - FHWA Federal Lands

Participating State Agencies (21)

- Ohio
- Louisiana
- Kentucky
- California
- Colorado
- Florida
- Georgia
- Kansas
- Mississippi
- New Jersey
- New York
- North Dakota
- South Dakota
- Illinois
- North Carolina
- Maryland
- Oklahoma
- Connecticut
- Texas
- Wisconsin
- Pennsylvania

Participating State Agencies



Budget

- Commitments from SHA's: \$1,427,000
 - Funds received as of November 30: \$1,291,800
 - FHWA funds:
 - LTPP - \$100,000
 - Federal Lands - \$20,000
 - Office of Pavement Technology - \$1,025,984

Priorities (reviewed annually)

1. Build Reference Profile Device
2. Critical Requirements - complete
3. Bumpfinder Software - complete
4. Certification/Validation Sites
5. Evaluating Upper Limits of Single Accelerometer – Phase I complete
6. Emerging Technology that Enhances Profile Measurement

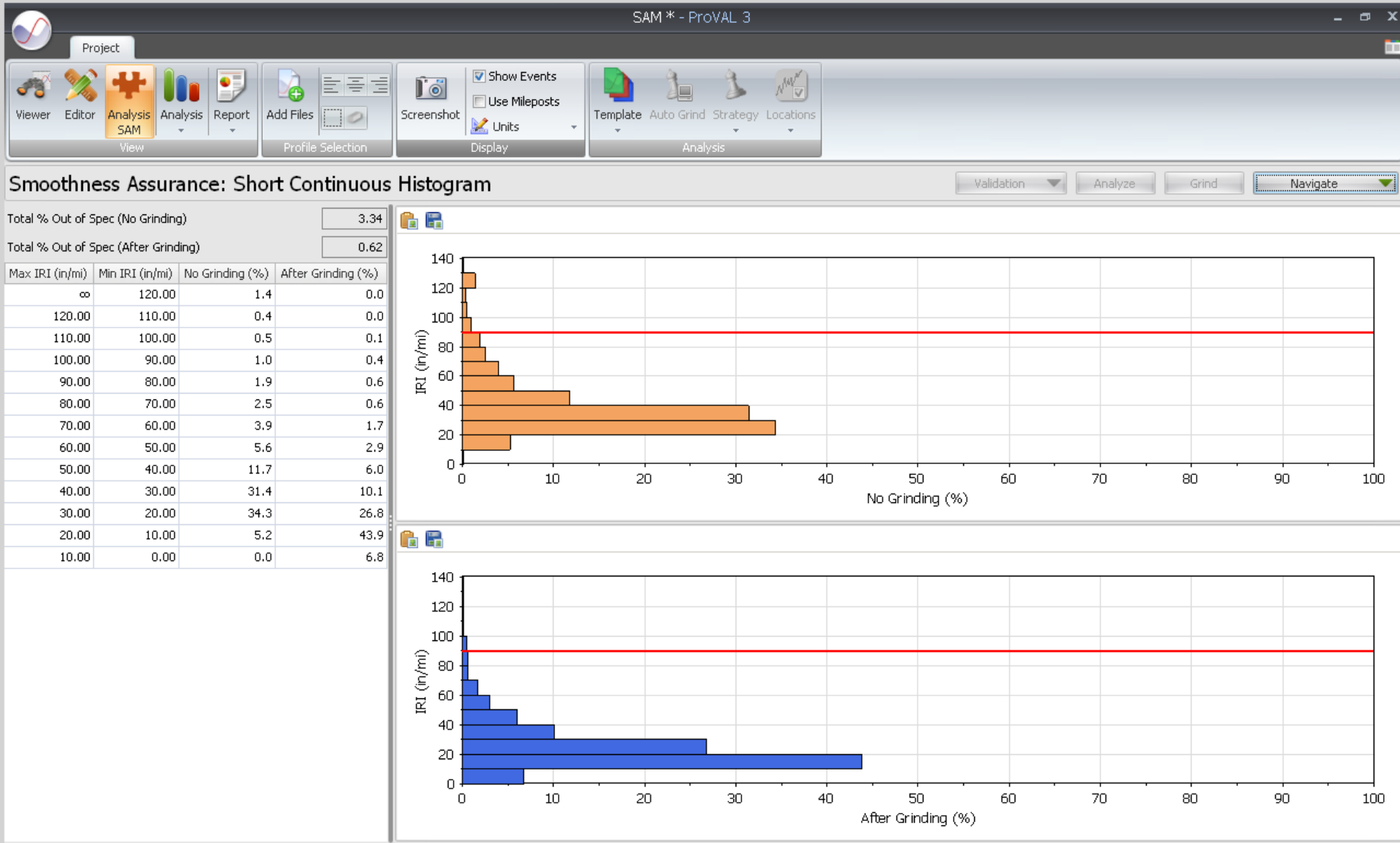
Progress on Priorities

1. Build a Reference Profile Device (underway):
Two parts -
 - i. Benchmark Testing – UMTRI
 - ii. Reference Device: Four awards
 - APR, Inc.; ICC, Inc.; SSI; VTech
2. Critical Requirements (completed): UMTRI;
final report on pooled fund study website –
“Critical Profile Accuracy Requirements”
(CPAR)

Priorities

3. Bumpfinder Software: The Transtec Group, Inc. – ProVAL & SAM
- ProVAL 2.73 released in December 2007
 - ProVAL 3.0 released in Oct. 2009
 - Multiple workshops
 - Recently completed: LADOTD & FL
 - RPUG and CALTRANS

ProVAL 3.0 software & workshops



Priorities

4. Certification/Validation Site
 - i. On hold until reference device complete?
5. Evaluating Upper Limits of Single Accelerometer
 - i. Phase I: Starodub, Inc. – complete
 - ii. Phase II: awarded September 2009
6. Emerging Technology that Enhances Profile Measurement
 - i. Automated Faulting Measurement
 - ii. Urban IRI measurement

Questions?

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