

November 2, 2016

TPF-5(299) Improving the Quality of Pavement Surface Distress and Transverse Profile Data Collection and Analysis

Andy Mergenmeier, P.E.

Senior Pavement and Materials Engineer

FHWA Resource Center

Improving the Quality of Pavement Surface Distress and Transverse Profile Data Collection and Analysis - Outline

- Background
 - Abbreviated history of Network Level AASHTO Pavement Distress Measurement Standards
 - FHWA ETG
- Pooled Fund (PF) study formation
- PF Activities
- PF – Consider Joining

Abbreviated History – AASHTO Standards

- Mid-1990's SHA and FHWA ETG
- Quantifying Roughness – Provisional 1999 (R43)
 - TPF-5(063)
- Faulting – Provisional 1999 (R36)
- Rutting – Provisional 1999 (R48))
- Cracking – Provisional 2001 (R55)

What has been Accomplished – Year 2003

- Profiler Equipment Spec – (M 328)
- Profiler System Certification – (R 56)
- Operating Profilers and Evaluating Pvt Profiles – (R57)
- Pavement Ride Quality Specification – (R 54)

Significant Ongoing Ride Quality Activities – Pooled Fund Study – Improving the Quality of Pavement Profiler Measurement, TPF-5(063) – sunset – new TPF

Evolution of Pavement Rating

Methodology	Fast	Safe	Repeatable and Objective
Walking			
Windshield	✓		
Semi-Automated	✓	✓	
Automated	✓	✓	✓

ETG Formed in 2006 - Members as of April 2013

- **FHWA**
 - Thomas Van, HQ Asset Management
 - Jack Springer, TFHRC
 - Andy Mergenmeier, RC
 - Mike Moravec, HQ Pavements
- **States**
 - Rick Miller, Kansas DOT
 - John Andrews, Maryland SHA
 - Magdy Mikhail, Texas DOT
 - Bouzid Choubane, Florida DOT
 - Cole Mullis, Oregon DOT
 - Judith Corley-Lay, North Carolina DOT
- **Industry**
 - Gary Elkins, MACTEC
 - Frank Holt, Dynatest
 - Jerry Daleiden, Fugro
 - Richard Fox-Ivey, Pavemetrics

Motivation for New/Updated Standards

- **Industry changes**
 - Service
 - Technology
- **State changes**
 - Programmatic
 - MEPDG
- **National changes**
 - MAP-21 (Performance)
 - HPMS
- **Need to get data**
 - Efficiently
 - Accurately
 - Safely

Improving the Quality of Pavement Surface Distress and Transverse Profile Data Collection and Analysis

- AASHTO PP 67, Quantifying Cracks in Asphalt Pavement Surfaces from Collected Images Utilizing Automated Methods
- AASHTO PP 68, Collecting Images of Pavement Surfaces for Distress Detection
- AASHTO PP 69, Determining Pavement Deformation Parameters and Cross-Slope from Collected Transverse Profiles
- AASHTO PP 70, Collecting the Transverse Pavement Profile

Improving the Quality of Pavement Surface Distress and Transverse Profile Data Collection and Analysis

- Rutting/Cracking Expert Task Group active for several years
 - Did not have the mechanism to conduct studies (\$\$\$\$)
 - April 2013 ETG recommended pooled fund study due to the success of TPF-5(063) Pavement Profiling effort.

Improving the Quality of Pavement Surface Distress and Transverse Profile Data Collection and Analysis – Objectives

Improve the Quality of Pavement Surface Distress and Transverse Profile Data Collection and Analysis by assembling SHAs, the FHWA, and industry representatives to:

- Identify data collection integrity and quality issues
- Identify data analysis needs
- Suggest approaches to addressing identified issues and needs

Based on this information, the SHAs and the FHWA will:

- Initiate and monitor projects intended to address identified issues and needs
- Disseminate results
- Assist in solution deployment

Improving the Quality of Pavement Surface Distress and Transverse Profile Data Collection and Analysis

- First Meeting – May 2014
- Research Contract (ongoing completion December 2016):
Development of Standard Data Format for 2-Dimensional and 3-Dimensional (2D/3D) Pavement Image Data that is used to determine Pavement Surface Condition and Profiles
- RFP “Calibration and Verification of Transverse Pavement Profile Measurements” – expected advertisement November 23, 2016
- Pooled Fund Study SharePoint site:
 - <https://collaboration.fhwa.dot.gov/default.aspx>
 - Register

NCHRP Project – Contract Negotiation/Execution

- Defining Comparable Pavement Cracking Data

Budget

- Commitments from 21 agencies through 2019 – over \$1.4 million

Friday Meeting – 8 am

- Chairman: John Andrews, MD SHA

TPF-5(299) Improving the Quality of Pavement Surface Distress and Transverse Profile Data Collection and Analysis

Andrew Mergenmeier P.E.

**Senior Pavement and Materials Engineer
FHWA Resource Center**

Questions/Comments