FHWA MEPDG Activities

Reliability in the MEPDG Workshop

86th Annual TRB Meeting

January 21, 2001
My Objective

- It’s 4:00 pm on Sunday................
- The Saints are in the NFC Championship.....

Keep it Short !!!
DGIT Objectives

- Support
- Educate
- Enhance / Develop
- Implement

To support & educate State highway agencies, Division Offices, and industry in development & implementation of Mechanistic-Empirical Pavement Design
FHWA Offices Involved

TFHRC – Research

Headquarters – Program and Policy

Resource Center – Technology Deployment

Division Office – Program Delivery

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DGIT Education Activities

- Informational Workshops
  - Introduction
  - Materials
  - Climate
  - Traffic
  - PMS

All available via webcast: Thanks ConnDOT !!!

www.fhwa.dot.gov/pavement/dgit/dgitcast.cfm

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Additional Workshop

- Implementation Strategies and Local Calibration of the MEPDG
  - Planned 2008

Technical Assistance or additional Training available from Resource Center

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Where have we been?

- China
- Canada
- Mexico

I wasn’t invited
NHI Training

- **Analysis of New and Rehabilitated Pavement Performance with MEPDG**
  - NHI #131109 - (Under Development - Pilot: Spring 2007).

- **Introduction to Mechanistic Design**
  - NHI #131064 - (Available).

- **Geotechnical Aspects of Pavements**
  - NHI #132040 - (Available).

- **Application of the Traffic Monitoring Guide**
  - NHI #151018 - (Available).

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DGIT Research Activities - TFHRC

- **CTE Ruggedness Study**: (Near Complete)
- **Development of a Viscoelastoplastic Continuum Damage (VEPCD) Model**:
- **Methods to Determine E* for LTPP Sections**:
  - Impact Resonance Testing of Hot Mix Asphalt:
  - Using FWD with MEPDG
  - Impact of Hydraulic Cement Concrete (HCC) Input Parameters on the MEPDG
- **Evaluation of the NCHRP 1-40 Rigid Pavement Design Guide Procedure**:

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DGIT Enhancement Activities

- NCAT Structural Section Studies
- Working with NCHRP, JTCOP……..
Help Wanted !!

- Graduate Research Fellowship
- Study Improvements to Reliability Aspects of the MEPDG
  - Analytical and Simulation Methods
    - (Monte Carlo, Latin Hypercube, ..etc)

Announcement on the Back Table

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NCHRP Associated Projects

- 1-41 Reflective Cracking in HMA (Texas A&M)
- 1-42A Top-Down Cracking in HMA (U.Florida)
- 9-38 Fatigue Endurance Limit in HMA (NCAT)
- 9-30A Calibration of Rutting Models (AAT, ARA)
- 1-40 Technical Assistance in MEPDG (ARA, ASU)
- 9-22 Beta Testing of PRS with MPDG

http://www4.trb.org/trb/crp.nsf
Implementation

- **Lead States Group**
  - Linda Pierce, WashDOT
  - Laura Fenely, WisDOT

- Expert Task Group
- Information Clearing-house
- Tech Bulletins
- Track Activities

www.fhwa.dot.gov/pavement/dgit/leadstates/index.cfm

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Who’s interested in the MEPDG………………
Implementation Timeframe

- Some DOT’s Already Underway
- Others are Awaiting Other Efforts:
  - NCHRP Projects
  - FHWA Research Projects
  - Copy Other State Approaches
  - AASHTO Adoption
  - Windfall from Gas Tax Revenues
  - Hell Frozen
  - When Saints win Super bowl !!

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Hot off the press !!

- Features of the MEPDG Version 1.0
- Where can you get more information ?
- AASHTO Implementation
Version 1.0 Changes

- Due out yesterday!! (December 30th, 2006)
  - State DOT’s will receive 2 copies soon
- Batch Mode, Excel Batch Mode
- Model Recalibration
- Use of Volumetrics in rutting model
- $G^*$ - Witczak equation for $E^*$
- Computer Program Stability
- Perpetual Pavement Concept
- Calculation of ESAL’s

NCHRP Draft Research Results Digest
Other Documents

- MEPDG Users Manual (March 2007)
- Local Calibration Guide (Mid 2007)

L. Tolstoy
1735 Pages

VS.

E. Hemmingway
~150 Pages
We’ve come a long way !!!
We have a long way to go !!!!
Perspective

• 1960 – Completion of Road Test Experiment

• 1961-62 AASHO Interim Guide for the Design of Rigid and Flexible Pavements

• 1972 AASHTO Interim Guide for the Design of Pavements

• 1981 Revised Chapter III on Portland Cement Concrete Pavement Design

• 1986 Guide for the Design of Pavement Structures

• 1993 Revised Overlay Design Procedures

• 1998 Supplement to Concrete Design Procedures

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"We can't solve problems by using the same kind of thinking we used when we created them."

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Questions ???

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