National Update of MEPDG Activities

88th Annual TRB Meeting
Washington, DC
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Office of Pavement Technology
Overview

- Design Guide Implementation Team
- 2007 MEPDG State Survey
- Regional MEPDG User Groups
- Future Implementation Activities
PURPOSE of DGIT

• Team within FHWA created to support & educate State highway agencies, Division Offices, and industry in development & implementation of Mechanistic-Empirical Pavement Design

Facilitating Implementation of Mechanistic-Empirical Pavement Design
Implementation Strategies

Implement
Enhance
Educate
Workshop Webcast Descriptions

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

Webcasts of Design Guide Workshops

FHWA has conducted three different workshops in Connecticut and ConnDOT has webcast each of them over the World Wide Web. In addition to webcasting them live, they were recorded to have a permanent reference that individuals can view the workshops according to their own schedule. Information on the availability of each workshop is included below.

Climatic Considerations for M-E Pavement Design Workshop

This one-day workshop will be presented for pavement designers and materials engineers over a live webcast on September 19, 2005. This interactive workshop covers the Enhanced Integrated Climatic Model (EICM) which provides inputs to the MEPDG software. ConnDOT will webcast live starting at 9am Eastern time at http://www.ct.gov/dot/fhwa-webcast

Introductory Design Guide Workshop Available Online

On August 25, 2004 FHWA’s Design Guide Implementation Team (DGIT), in conjunction with the National Resource Center, conducted one of its introductory workshops on the Mechanistic-Empirical Guide for the Design of New and Rehabilitated Pavements which was developed under NCHRP 1-37A and was recently released for review. This workshop, which was held in Mystic, CT, was also broadcast by ConnDOT live over the internet with an estimated 201 people participating in the online webcast. ConnDOT has posted the August 26th webcast at www.ct.govdot/pavement191. This link will bring you to a website containing the agenda from workshop and once the agenda is brought up, you can click on any of the agenda items to bring up the Windows Media Player, and begin streaming that session. You can scroll forward or backward within the presentation to watch any portion of the presentation that you desire. It will buffer for a few seconds each time and then start playing at that location.

Obtaining Materials Inputs for M-E Design Workshop

This 2-day workshop presented for Materials Engineers, Pavement Design & Pavement Management Engineers, was webcast live on March 30-31, 2005 from Rocky Hill, CT. This interactive workshop covers the materials inputs required for conducting a mechanistic-empirical pavement design using the NCHRP 1-37A software. ConnDOT has posted this webcast at www.ct.govdot/pavement192

Executive Summary for Mechanistic Empirical Design

This 30-minute presentation geared toward Chief Engineer/Executives audience was webcast live on September 7, 2005 from Rocky Hill, CT. This presentation discusses the benefits and needs for transitioning your State highway agency to adoption of mechanistic-empirical pavement design. ConnDOT has posted this webcast at http://www.connDOT.ct.gov/media/main.jsp?parent=FHLI&link=tangela.mov&games http://www.conted.ct.gov/ct Jaguar anglia%20 pavements=%20FHWA

To view the video in Windows media format, you need the Windows Media Player
To view the video in Real media format, you need the Real Player.

This page last updated on 03/13/06
NHI Courses

- NHI #131064 – Introduction to Mechanistic Design
- NHI #131109 - Using Mechanistic-Empirical Pavement Design Guide Software
- NHI #132040 – Geotechnical Aspects of Pavements
- NHI #151018 – Application of Traffic Monitoring Guide
MEPDG Survey Conducted in 2007

- 52 responses, 50 states plus DC & PR
- 65 questions on:
  - Current Design Procedures
  - MEPDG Knowledge
  - Implementation Activities
  - Partnering Activities
  - Training Needs
How familiar is state with MEPDG?

- Heard term
- Workshop
- JTCoP, NCHRP or Lead State Group
- Other

Comparison between 2003 and 2007.
Asphalt Design Procedure

- AASHTO 1972: 63%
- AASHTO 1993: 13%
- State Design Procedure: 8%
- AASHTO/State Design Procedure: 4%
- Other: 12%

Design Guide Implementation Team
Concrete Design Procedure

19% AASHTO 1972
12% AASHTO 1981
17% AASHTO 1993
36% AASHTO 1998
10% State Design Procedure
2% AASHTO/State Design Procedure
4% Other
How does actual performance compare to design life?

- 12% Less than design life
- 33% Similar to design life
- 45% More than design life
- 10% Don't Know
Does SHA Use or Plan to Use MEPDG?

- NO - 12
- YES - 40

Map showing states with blue indicating "NO - 12" and orange indicating "YES - 40". States like Alaska and Hawaii are highlighted.
Timeframe for Implementation

Using

Alaska
Hawaii

Design Guide Implementation Team
Timeframe for Implementation

- Using: 2
- 1 – 3 yrs: 17

Design Guide Implementation Team

[Map showing states with varying timeframes]
Timeframe for Implementation

- **Using**
  - 2

- **1 – 3 yrs**
  - 17

- **4 – 7 yrs**
  - 9

Design Guide Implementation Team
Timeframe for Implementation

- Using: 2
- 1 – 3 yrs: 17
- 4 – 7 yrs: 9
- > 7 yrs: 1

Design Guide Implementation Team
Timeframe for Implementation

- Using: 2
- 1 – 3 yrs: 17
- 4 – 7 yrs: 9
- > 7 yrs: 1
- No/Skipped: 23

Map showing states colored according to timeframes.
Does your state have implementation plan?
What factors are largest hindrance to implementation?

States with no plans to implement

- Traffic data collection (6)
- Trained Staff (6)
- Material Characterization (5)
- Limited Staff (2)
- Lack of test sections (2)
- Climate data (1)
- Value added designs (1)
- Ability to replace models (1)
What factors are largest hindrance to implementation?

States that plan to implement

• Material Characterization (20)
• Trained Staff (19)
• Traffic data collection (14)
• Lack of test section monitoring (14)
• Calibrating models (11)
• Limited Staff (5)
• Climate data (4)
• PMS data (1)
• Need to revise spec’s (1)
What efforts should be done at national level?

States with no plans to implement

- Training (2)
- Calibration (2)
- Climate data (1)
- Traffic data inputs (1)
- Value added designs (1)
- Material characterization (1)
- Implementation guidance (1)
What efforts should be done at national level?

States that plan to implement

- Training (9)
- Sensitivity analysis (7)
- Calibration process (7)
- Model improvements (6)
- Material characterization (4)
- Traffic data inputs (2)
- Climate data (2)
- Implementation guidance (1)
- Equipment buys (1)
- National/regional user groups (1)
MEPDG Survey Summary

- 77% of states plan to use MEPDG
- 54% plan to use MEPDG for statewide design catalogs
- 56% have plans to implement within 7 years
- Largest hindrance to implementation is:
  - Material Characterization (50%)
  - Trained Staff (48%)
  - Traffic Data (35%)
  - Monitored Test Sections (35%)
  - Local Calibration (28%)
Regional User Groups

Objectives

• Share Implementation Efforts
• Identify Activities for Regional Collaboration
• Consult with National Experts and Lead States
Regional User Groups

- North-East
- South-East
- North-Central
- North-West
- South-West

Design Guide Implementation Team
Regional MEPDG User Group
Meetings

Previous Meetings

• North-Central
  – Ames, IA Feb 2008

• North-East
  – Mercer, NJ Dec 2008
Regional MEPDG User Group
Meetings

Upcoming Meetings

• North-West
  – Corvallis, OR  March 9-10, 2009

• South West
  – Las Vegas, NV  March 23-24, 2009

• South-East
  – Nashville, TN  March 25-26, 2009
Future Implementation Activities

Support MEPDG State and Regional Research
- Sensitivity Analysis, share results on website
- Local Calibration, Monitored Test Sections
- Encourage Materials Testing for Level 1 inputs
- Pool Fund Studies

Facilitate Regional Activities
- ETG/User Groups
- Regional Calibration Efforts??
- Increased weather data
- Clearinghouse for State Implementation Activities
- Design Guide Catalogs??
DGIT Contact Info

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