North-Central M-E PDG User Group

Illinois Indiana Iowa Kansas Michigan Minnesota Missouri Nebraska Wisconsin

Preliminary Implementation of MEPDG in NE

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Current Research Projects

- Implementation of M-E Pavement Design in NE
  - Principal Investigator: Dr. Azizinamini, P.E., Ph.D.
- Layer Moduli of NE Pavements for MEPDG
  - Principal Investigator: Dr. Yong-Rak Kim, Ph.D.

Implementation of MEPDG

- Phase I
  - Jul 1 2006 - Jun 30 2008
  - Objective: Create roadmap for implementation of MEPDG (PCC only)
- Phase II
  - Jul 1 2007 – Jun 30 2010
  - Objective: Calibrate MEPDG (PCC only) through field instrumentation and testing

Implementation of MEPDG, Phase I
Create Roadmap for Implementation

- Literature Review
- Software Familiarization
- Sensitivity Analysis
- Preliminary Evaluation of MEPDG
  - Run analysis on existing 20+ yr old pavements
  - Compare MEPDG results to actual conditions
- Final Report
  - Summary of sensitivity analysis and input prioritization
  - Identification of sources or testing procedures to obtain necessary inputs
  - Recommendations

Implementation of MEPDG, Phase II

Calibrate MEPDG for use in NE

- Field instrumentation
  - Instrumentation plan based on Phase I results
  - Instrument at least 2 rigid pavement sections
  - Conduct short/long term monitoring/testing
- Utilize non-linear, finite element analysis models to analyze additional scenarios
- Calibrate MEPDG based on findings

Layer Moduli of NE Pavements for MEPDG (AC)

- Jan 9, 2008 – Jun 30, 2010
- Objective: Develop database of dynamic and resilient modulus values for NE materials

Layer Moduli of NE Pavements for MEPDG (AC)

- Literature Review
- Identify desired HMA, aggregate, & soils for testing
- Obtain and test NDOR project samples
- Build Database
- Evaluate accuracy of Level II moduli predictions
  - Calibrate model based on test results

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Thanks