

MOUNTAIN-PLAINS CONSORTIUM

PROJECT BRIEF | December 2014

North Dakota Implementation of Mechanistic-Empirical Pavement Design Guide (MEPDG)



the **ISSUE**

The research compared the principles, major inputs and distress models of the two design procedures (1993 Design and MEPDG), identified the input data needs for local calibration of MEPDG flexible pavement distress models in North Dakota and documented procedures of the new AASHTOWare Pavement ME-Design software.

the **RESEARCH**

This document introduces the Mechanistic-Empirical Pavement Design Guide, including its conceptual framework and methodology. It compares the design guide with the other major pavement design guide, AASHTO's Guide for Design of Pavement Structures, 1993 edition. It also introduces considerations relevant for agencies considering implementation, including local calibration and sensitivity analysis.

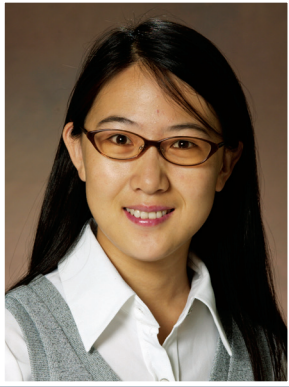


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South Dakota State University

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Project Title

North Dakota
Implementation of
Mechanistic-Empirical
Pavement Design Guide
(MEPDG)

Co-Investigator(s)

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the **FINDINGS**

While MEPDG is a more theoretically sound pavement design procedure than the AASHTO method, its implementation must ultimately offer long-term financial benefits to each adopting agency in terms of better pavement designs. It is not enough, particularly in the current climate of limited financial resources, for a pavement design procedure to be solely based on sound engineering principles. The method must be demonstrated to be cost-effective in implementation and in practice. The research needs identified above will help satisfy these needs for the state of North Dakota.

the **IMPACT**

The report provides North Dakota with a general summary on the features of MEPDG, summarizes the findings of previous studies on the implementation of MEPDG state wide, and identifies input data needs and research steps for the MEPDG implementation to prepare North Dakota for successful implementation of the MEPDG state wide.

For more information on this project, download the entire report at <http://www.ugpti.org/resources/reports/details.php?id=783>

For more information or additional copies, visit the Web site at www.mountain-plains.org, call (701) 231-7938 or write to Mountain-Plains Consortium, Upper Great Plains Transportation Institute, North Dakota State University, Dept. 2880, PO Box 6050, Fargo, ND 58108-6050.



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