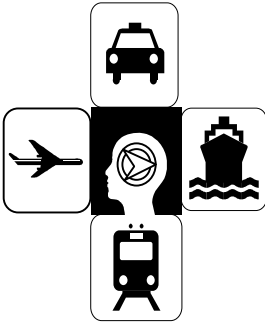


JERSEY DOT'S

"TURNING PROBLEMS INTO SOLUTIONS"



Need a solution?
Think Jersey DOT

Tech Brief

DEVELOPMENT OF FALLING WEIGHT DEFLECTOMETER PROCEDURES MANUAL

FHWA/NJ-2009-005

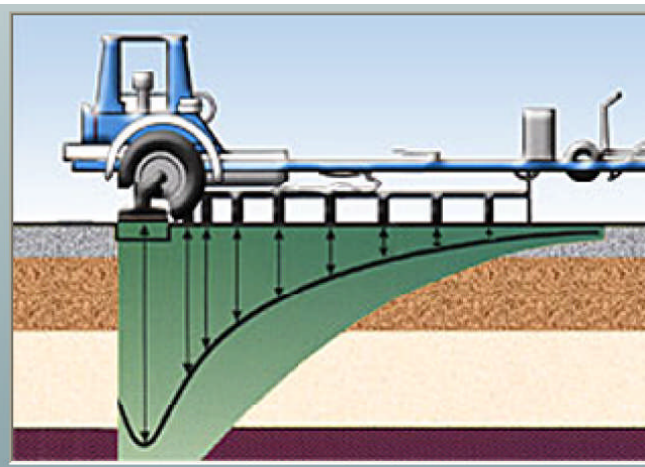
April 2009

SO, HERE'S THE PROBLEM...

For rehabilitation design processes, the new Mechanistic-Empirical Pavement Design Guide (MEPDG) relies heavily on the material stiffness backcalculated from the deflection measurements taken from existing pavements. These measurements are typically made using Falling Weight Deflectometer (FWD) or Heavy Weight Deflectometer (HWD) units. This research investigates how to provide high quality and consistent material stiffness data, whether the testing is done by State personnel or private contractors?

AND, HERE'S OUR SOLUTION...

Develop a FWD Procedures Manual that regulates field testing, analysis, and reporting procedures for FWD and HWD equipment. Adherence to the developed procedures during FWD testing and analysis, should ensure that good quality material stiffness values are input into the MEPDG processes.



AND, HERE'S WHAT WE DID...

The state-of-practice in FWD testing and analysis procedures was examined by looking at the standard protocols of a number of other highway agencies. The specific needs of NJDOT were also examined and a protocol was developed that encompassed current standard practice in a way most suited to NJDOT operations.

AND, HERE'S WHAT WE CAME UP WITH...

An FWD Procedures Manual was developed that contains protocols for FWD testing and analysis for the purpose of project-level rehabilitation design using MEPDG. The developed guidelines clearly define:

- Calibration procedures.
- Testing requirements.
- Data analysis approach.
- Reporting requirements.

THE BOTTOM LINE...

When treating a pavement, it is vital to know whether the problem being addressed is structural or functional in nature. Matching the appropriate treatment to the pavement's needs can lead to significant reductions in pavement construction and life cycle costs. Using FWD analysis to determine pavement structural capacity can therefore result in more cost-effective rehabilitation decisions by providing information that can be used to match the treatment to the cause. The protocols developed will ensure that FWD data is collected and analyzed in a consistent, technically sound, and state-of-practice manner.

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A final report is available online at
<http://www.state.nj.us/transportation/research/research.html>

If you would like a copy of the full report, please FAX the NJDOT, Division of Research and Technology, Technology Transfer Group at (609) 530-3722 or send an e-mail to Research.Division@dot.state.nj.us and ask for:

Development of FWD Procedures Manual
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