

Research for the Federal Highway Administration Using Falling Weight Deflectometer Data with Mechanistic-Empirical Design and Analysis



In 2006, Applied Pavement Technology, Inc. (APTech) was awarded a contract from the Federal Highway Administration to investigate the use of falling weight deflectometer (FWD) data as part of mechanistic-empirical pavement design procedures. In particular, with the recent release of the new American Association of State Highway and Transportation Officials Mechanistic-Empirical Design Guide (MEPDG), there was a strong need for a comprehensive review of the current state of the practice of falling weight deflectometer (FWD) testing, backcalculation, and interpretation. Moreover, there was a need for identifying the way that FWD testing could best be integrated in the new MEPDG.

Under the project, APTech has prepared an interim report documenting current FWD testing and analysis practices. The research team is now conducting a series of “case studies” in which the MEPDG is being used in conjunction with FWD data from a number of project sites (and representing a range of pavement types and design conditions) as a means of demonstrating the use of FWD data in the mechanistic-empirical pavement design process. Significant findings from the case studies will be summarized into a document that provides “best practices” guidelines for FWD testing, interpretation, and analysis.