

***LTPP Newsletter***  
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***Progress To Date Under SAFETEA-LU***

Passage of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) required the Long-Term Pavement Performance (LTPP) program to review its operations due to a reduction in funds. This resulted in the LTPP Operational Plan, which can be found in the [LTPP 2005 Year in Review](#), (FHWA-HRT-06-086).

One of the first orders of business under the LTPP Operational Plan was to make pavement performance monitoring adjustments to optimize the use of program resources. This required significant consideration and coordination between Federal staff and LTPP contractors and resulted in a General Operation Program Directive, "LTPP Pavement Performance Monitoring Adjustments" (GO-38).

The adjustments described in the directive focus LTPP monitoring resources on the following major pavement families, which comprise the majority of test sections in the LTPP program's General Pavement Studies (GPS) and Specific Pavement Studies (SPS) experiments:

- **New hot-mix asphalt (HMA) pavements:** Test sections in the GPS-1, GPS-2, SPS-1, SPS-8 (flexible), and SPS-9 (new construction) experiments.
- **New jointed plain concrete pavements:** Test sections in the GPS-3, SPS-2, and SPS-8 (rigid) experiments.
- **HMA overlays on HMA pavements:** Test sections in the GPS-6, SPS-5, and SPS-9 (overlay) experiments.
- **HMA overlays on portland cement concrete pavements:** Test sections in the GPS-7 and SPS-6 experiments.

The directive details the specific requirements that test sections must meet to be considered to receive LTPP funds for monitoring. To view the full directive and all other program directives, visit [www.ltp.org/directives.shtml](http://www.ltp.org/directives.shtml).

The sections that do not meet the directive criteria will be given a "Test Section Out-of-Study" classification, which means that the sections will no longer be monitored. Previous monitoring data for these sections, however, will remain in the LTPP database. These test sections include those that are part of experiments GPS-6A, GPS-7A, GPS-9, SPS-3, SPS-4, and SPS-7.

The changes to LTPP operations as a result of the directive were immediate and far reaching. For example, approximately 350 sections have already been reclassified as out-of-study as a result of the directive. Therefore, 21 percent fewer test sections are in-study now compared to this time last year. Approximately 49 percent of the test sections in the LTPP program currently are out-of-study.

***What's Happening With LTPP Data Analysis and Product Development?***

The currently funded data analysis activities will be completed by the end of 2009. However, no further investment of LTPP program funds will be dedicated to formal data analysis projects through 2009.

The 34 analysis project statements that currently make up the LTPP strategic data analysis plan will be integrated into the execution plan for the Federal Highway Administration's (FHWA) pavement program, into the University Transportation Centers' initiatives, and into the Pavement

Roadmaps. In addition, the LTPP staff will focus their efforts on implementation and technology transfer so that the LTPP program can achieve its short- and long-term objectives. These efforts will include promoting cooperation among client bodies, research organizations, educational institutions, and industry; enhancing intellectual capacity; and stimulating innovation.

The LTPP program will rely on other funding mechanisms within FHWA to develop products based on information derived from the program.

### ***Change in Schedule***

There is one minor change to report since the LTPP Operational Plan was first presented in the [LTPP 2005 Year in Review](#) (FHWA-HRT-06-086).

The plan stated that pavement performance monitoring activities will be completed by September 30, 2008. The new end date for these activities is December 31, 2008, because the annual Standard Data Release is based on the calendar year, not the fiscal year.

## *In Brief*

### ***Falling Weight Deflectometer (FWD) Pooled Fund Study Update*** [TPF-5 \(039\), FWD Calibration Center and Operational Improvements](#)



Sixteen of 17 members of the Transportation Pooled Fund Study (TPF) “FWD Calibration Center and Operational Improvements” (TPF-5(039)) participated in the fourth meeting of the Technical Advisory Committee (TAC) in Denver, CO, on April 27–28, 2006. Representatives from the Colorado Department of Transportation (CDOT) hosted the event at their office and laboratory facility.

At the meeting, a team from Cornell University presented information on the progress that has been made toward developing updates to the 1994 Strategic Highway Research Program (SHRP)/LTPP FWD Calibration Protocol. The new procedures for equipment calibration were then demonstrated at the CDOT FWD Calibration Center. Representatives from CDOT and the Pennsylvania Department of Transportation also made presentations based on their personal experience that provided insight into equipment-specific calibration issues.

The latter part of the meeting provided an opportunity for the TAC to work together to identify future objectives and work to be done during the remaining years of the study from 2007 to 2009. The primary objectives identified by the TAC fall into three categories: technical support, long-term funding, and product development.

Cornell researchers are finalizing the new calibration hardware, software, procedures, and protocols, with installation and training to be provided this summer to the SHRP/LTPP regional

calibration centers in Colorado, Minnesota, Pennsylvania, and Texas. For more information on the study or to learn how to participate in future work, visit [www.pooledfund.org](http://www.pooledfund.org) and search for TPF-5(039) or contact Eric Weaver at 202-493-3153 or [eric.weaver@fhwa.dot.gov](mailto:eric.weaver@fhwa.dot.gov).

### **2006 International Contest on LTPP Data Analysis**

[FHWA](http://www.fhwa.dot.gov) and the American Society of Civil Engineers are cosponsoring the International Contest on LTPP Data Analysis. Now in its sixth year, the contest is designed to encourage university students, professors, and highway department engineers from around the world to get involved in using the LTPP database. Please encourage your colleagues and friends to participate. **The contest deadline is June 30, 2006.** For more information or to view the contest guide, visit [www.fhwa.dot.gov/pavement/ltp/contest2006.cfm](http://www.fhwa.dot.gov/pavement/ltp/contest2006.cfm).

### **New Community of Practice Web Site for the LTPP Standard Data Release (SDR)**

LTPP works hard to deliver tutorials, utility software tools, and resource documents that contain the necessary information to use and understand the SDR. These efforts are undertaken because SDR users can find it daunting to navigate and extract the most relevant information from the database, which has hundreds of tables, thousands of fields, and millions of records. To provide additional assistance, the LTPP program has created a [Community of Practice Web site](http://www.fhwa.dot.gov/pavement/ltp/communityofpractice/) to provide SDR users with a forum to post questions and share experiences. When posting a question to the Web site, be sure to indicate which version of the SDR you are using.

The LTPP program makes the world's largest pavement performance database available annually to the public in Microsoft® Access format as a set of five CD-ROMs or as a single DVD. To order a copy, contact LTPP Customer Support Services at [ltpinfo@fhwa.dot.gov](mailto:ltpinfo@fhwa.dot.gov).

### **Roads & Bridges Article about LTPP**

The "Innovations in Technology" column in the March 2006 issue of *Roads & Bridges* magazine featured "Tools for LTPP." The article focused on the LTPP program's new initiatives to advance the goal of building more cost-effective and better-performing pavements. These initiatives include the [FWD Calibration Center and Operational Improvements Pooled Fund Study](http://www.fhwa.dot.gov/pavement/ltp/fwd/), the use of weigh in motion (WIM) equipment to collect traffic data, and the development of a smoothness index profile and new software to calculate pavement surface roughness, which highway agencies can use to evaluate WIM sites. Later this year, FHWA will propose to the American Association of State Highway and Transportation Officials a related provisional specification developed by LTPP that covers the formal procedures for calibrating a WIM site for traffic data collection. Although only *Roads & Bridges* subscribers can view the article online, visit [www.roadbridges.com](http://www.roadbridges.com) for more information.

### **Recently Published LTPP Reports**



[Review of the Long-Term Pavement Performance Backcalculation Results](#), (FHWA-HRT-05-150). This report is a comprehensive review and evaluation of LTPP backcalculation data. To undertake the review and evaluation, researchers developed an approach called forwardcalculation to determine layered elastic moduli from in situ load-deflection data. The researchers then used a forwardcalculated moduli to screen the entire set of LTPP-computed parameters of backcalculation results.



[Guidelines for Review and Evaluation of Backcalculation Results](#), (FHWA-HRT-05-152). This report presents a screening approach for reviewing and evaluating backcalculated moduli. The approach, which enables users to choose any backcalculation program they wish, offers forwardcalculated values that may be used to compare the results of two or more evaluation methods.

The Microsoft Excel<sup>®</sup> spreadsheets that contain the formulas used in the reports described above are available from LTPP, thereby making all forwardcalculation input quantities transparent to those who want to use the methodology. In total, four spreadsheets are available—two for asphalt-bound surfaces and two for cement-bound surfaces. All four spreadsheets include metric and U.S. standard units. To obtain the spreadsheets, contact LTPP Customer Support Services at 202-493-3035 or [ltppinfo@fhwa.dot.gov](mailto:ltppinfo@fhwa.dot.gov).

[Quantification of Smoothness Index Differences Related to Long-Term Pavement Performance Equipment Type](#), (FHWA-HRT-05-054). The LTPP program recently conducted a project to (1) compare International Roughness Index (IRI) values obtained by the different inertial profilers, (2) investigate data collection characteristics and compare profile data collected by the different inertial profilers, and (3) investigate the factors that contribute to differences in IRI values for data obtained from the LTPP profilers and Dipstick<sup>®</sup>. Results from this project indicate that good agreement exists in the IRI values between the different inertial profilers used in the LTPP program.

[Long-Term Pavement Performance Maintenance and Rehabilitation Data Collection Guide](#), (FHWA-HRT-06-068). This document provides guidelines and forms for documenting maintenance and rehabilitation treatments on test sections and is an update to chapters 6 and 7 of the 1993 version of the LTPP Data Collection Guide. The terms maintenance and rehabilitation are used within the LTPP program to classify how various treatments that alter a test section's structure are documented in the database. There is an important distinction between the words since classification of some treatments may differ from highway agency terminology. For example, thin overlays that some agencies classify as maintenance are classified by the LTPP program as rehabilitation.

[Guidelines for the Collection of Long-Term Pavement Performance Data](#), (FHWA-HRT-06-067). Several years ago, the LTPP program developed a set of guidelines for the collection of all LTPP data and provided these guidelines to regional support contractors to facilitate uniform data collection. Over time, however, additional documents were developed that provided more

specific requirements for LTPP data collection. As collection methods have changed and improved over the years, the guidelines used in obtaining data have changed. The objective of this document is not to provide the exact guidelines, but to provide references for the guidelines and revisions to the guidelines used in collecting each type of data for LTPP over the lifetime of the program.

For more information on LTPP publications and products, visit the LTPP Library and Products Web sites at [www.fhwa.dot.gov/pavement/ltpplibrary.cfm](http://www.fhwa.dot.gov/pavement/ltpplibrary.cfm) and [www.fhwa.dot.gov/pavement/ltppproduct.cfm](http://www.fhwa.dot.gov/pavement/ltppproduct.cfm).

For more information about the LTPP program, visit [www.fhwa.dot.gov/pavement/ltpplibrary.cfm](http://www.fhwa.dot.gov/pavement/ltpplibrary.cfm).

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