LTPP Today

Southeastern States
Pavement Management and Design Conference
Louisville, KY
June 25, 2003
Why LTPP?

To Provide Answers to How and Why Pavements Perform as they do.
Looking at the Past

• Began in 1989
  – GPS: 793 Sections
• SPS Construction
  – 233 Projects
  – 1298 Core Test Sections
  – 431 State Supplemental Test Section
LTPP Today

- GPS: 652 Test Sections
- SPS: 173 Projects
  - 929 Core Test Sections
  - 333 State Supplemental Test Section

Protect Endangered Species:
- LTPP Test Sections
Endangered Species: LTPP Test Sections

• States Assistance.
  – Notify LTPP when maintenance/rehab planned.
  – Traffic Control.
  – Material testing.

• No Rehabilitation after January 2004.
Data Collection

- Distress
- FWD
- Profile
- Weather Stations

- Seasonal Monitoring
- Materials
- Traffic
- GPR
- Drainage
  - Edge Drain Inspection
  - NCHRP 1-34(D)
Current Events

• Materials Action Plan
• Traffic Pool Fund Study
• GPR
• Drainage Survey
• Data Release Policy
  – 5-CD Standard Release
  – DataPave Online: www.datapave.com
Data Analysis

• New contract awarded
  – Three contractors
• Data analysis strategic plan.
  – Data analysis ETG.
  – Placemat.
  – Table cloth.
Where’s the Beef: Benefits of LTPP

Major Benefit of LTPP

Pavement Performance Database
LTPP Products

LTPP Product Team

• Started in 2000
• Currently a three member team
Congress tasked FHWA to “prepare products and deliver them to the appropriate customers in a rational, organized manner”

Congress tasked FHWA to work with TRB and LTPP by establishing an TRB-LTPP Products Subcommittee

Consider National Pavement Needs

Establish an FHWA product development and implementation program

Development of an LTPP Product Plan
LTPP Products

Existing Need Areas:

1. Design of New and Reconstructed Pavements
2. Maintenance and Rehabilitation of Pavements
3. Pavement Management System, Tools and Techniques
4. Traffic Loading and Environmental Effects
5. Provide Data (database) information and Services
LTPP Products

Coordination:

• LTPP Data Analysis (Tablecloth)
• LTPP ETGs & Products Subcommittee
• LTPP Operations Team
• Other FHWA Pavement Initiatives
LTPP Products

Some Products …

• LTPPBind 2.1
• Resilient Modulus CDROM
• FWD Calibration Procedures
• Manuals of Practice
• SMP CDROM
• Guidelines for FWD Temperature Adjustments
• Rigid Pavement Design Software
• ProVal
• DataPave online
**Product Format:** Software Application

- LTPPBIND is a program developed to aid highway agencies and contractors with the selection of the most suitable Performance Grade (PG) of asphalt binder for a given project.
- If you are using SuperPave, LTPPBIND can help you.
LTPP Products

**Product Format:** CDROMs

- The resilient modulus ($M_r$), or stiffness of the soil and rock in the sub-grade of a paving project, is a critical factor in determining the thickness and composition of pavement layers.

- Since 1993 the FHWA, under the Long Term Pavement Performance (LTPP) program, has done extensive work on the test protocols and procedures.
LTPP Products

Product Format: Publication

• LTPP calibration procedures adopted by AASHTO
• Product delivered in report form.
• Explains in details the calibration procedures.
• Videos are available!
• Report recommends calibration be conducted by everyone that has an FWD.
• No Calibration is a critical mistake, given the complexity of an FWD.

WHY SHOULD WE CALIBRATE?

To ensure consistent and high quality data between FWD units.
LTPP Products

Product Format: Pool Fund Study

Purpose:

To develop and implement long-term plans for FWD calibration centers and to minimize the variability in pavement deflection data obtained with falling weight deflectometers.

Current Status:

Currently generating interest and participation from potential state partners.
LTPP Products

Product Format: Publication
Set of four manuals

• Materials and Procedures for Rapid Repair of Partial-Depth Spalls in Concrete Pavements
• Materials and Procedures for Repair of Potholes in Asphalt-Surfaced Pavements
• Materials and Procedures for Repair of Joint Seals in Portland Cement Concrete Pavement Joints
• Materials and Procedures for Sealing and Filling Cracks in Asphalt-Surfaced Pavements
LTPP Products

**Product Format:** CDROMs (3)

**Purpose:** To deliver all information and data related to the Seasonal Monitoring Program (SMP)

- Introduction to the program
- Videos
- Guides for installation of monitoring equipment
- Comprehensive Data Users Guide
- Table Navigator program
- Document Navigator program
LTPP Products

Product Format: CDROM

• Showcases report FHWA-RD-98-085 “Temperature Prediction and Adjustment Factors for Asphalt Pavements”.

• Includes a spreadsheet that includes all the methods described in the report.

• Source code so it can be used in other operating environments.
LTPP Products

Product Format: CDROM

- Microsoft Excel spreadsheet
- Automates the design and analysis procedures of the 1998 AASHTO Supplement
- Spreadsheet has separate sheets:
  For determining:
  - accumulated traffic loadings
  - seasonally adjusted k values
  - adjusted k-value for fill and/or depth to rigid layer
- Also perform corner break checks and faulting cracks
LTPP Products

Profile Viewer and Analyzer

- Is a software package that imports, displays, and analyzes the characteristics of pavement profiles.
- International Roughness Index, Ride Number, Profile Index, California profilograph, and rolling straightedge, and other more complex filters such as Butterworth band pass filters and power spectral density.
ProVAL uses a new standard file format that is fast, compact, and portable.

ProVAL can analyze large numbers of profiles of virtually any length.

Formats: industry-standard University of Michigan Transportation Research Institute Engineering Research Division (ERD) profiler; the Texas DOT profiler; and the K.J. Law profiler.
LTPP Products

The Long Term Pavement Performance (LTPP) program, the largest pavement study ever conducted, is becoming the primary source of pavement performance information for the North American highway community. This 30-year LTPP program was initiated in 1987, as part of the Strategic Highway Research Program (SHRP). Responsibility for program management was transferred to FHWA in 1992. Today, the program has more than 2,400 test sections on in-service highways at over 900 locations throughout North America. Data are collected through cooperative efforts of the agencies that own the pavement and the LTPP program organization. The extensive data collection effort includes inventory, material testing, pavement performance monitoring, climate, traffic, maintenance, rehabilitation, and seasonal testing modules. The data are housed in an information management system (IMS), the LTPP database, which is the world’s largest pavement performance database, with enormous potential for the development of products to improve pavement technology. The data are subject to an extensive series of quality control checks before being made available to the public.

LTPP DataPave Online is a major effort to make the LTPP data more accessible to the worldwide transportation community. LTPP DataPave Online has been developed to address two objectives:

**Visualization** - The first objective is to provide mid- and upper-level managers and other users with quick, easy-to-use presentations to illustrate the value and potential of LTPP data.

**Analysis** - The second objective is to provide a user-friendly front end for exploring, extracting, and organizing the extensive LTPP data for data analysis.

LTPP DataPave Online has been developed by ENGINEERING Corporation. Please visit the FHWA LTPP Web Site for more information on the LTPP program and database.

**DISCLAIMER**: This web site is an evaluation site for the database application program "DataPave" produced by the Long Term Pavement Performance (LTPP) program. The Federal Highway Administration (FHWA)/LTPP updates the database information on this web site every six months. For more up-to-date information, please visit the FHWA LTPP Web Site.
What is DataPave?

- A web application that provides access to all releasable LTPP data.
- Data can be extracted (exported) to a number of popular file formats to be used for analysis.
LTPP Products

What makes DataPave so special?
• Continuing effort to have the LTPP data more accessible to everyone via the INTERNET.

What will NOT do for you DataPave?
• Will NOT resolve your pavement problems, but will provide useful data to step you in the right direction!
# LTPP Products

## Additional information....

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Thank You

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http://www.tfhrc.gov/pavement/ltpp/ltppp.htm