LONG TERM PAVEMENT PERFORMANCE PROGRAM DIRECTIVE

For The Technical Direction Of The LTPP Program

Program Area: Monitoring

Directive Number: FWD-4

Supersedes: SHRP Directive FWD-10, paragraphs 3 and 4
Supplements: LTPP Manual for FWD Testing: Version 2.0/February 1993, FWD Data and Filed Program Backup Procedures

Date: January 28, 1994

Subject: LTPP FWD Data Handling and Processing Procedures

The attached document, entitled "LTPP FWD Data Handling and Processing Procedures, (Final Version: January 1994)" addresses the procedures to be followed in handling and processing Falling Weight Deflectometer (FWD) data collected for the Long-Term Pavement Performance Program, effective immediately.

In the event of incompatibilities between the computer hardware currently in use, and the specified software versions, earlier versions of the specified software may be used as an interim measure, pending delivery of the replacement FWD tow vehicles which will be equipped with new computers.

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LTPP FWD DATA HANDLING AND PROCESSING PROCEDURES
(Final Version: January 1994)

1. FWD operators will make three complete backup copies of LTPP FWD data files using FastBack Plus (v6.0) and/or PKZIP (v2.04g). Two of the copies will be created on floppy diskette, and the third copy will be created on floppy diskette or the FWD computer hard drive. Acceptable data backup options include the following:

   - Create three copies on floppy diskette using FastBack Plus;
   - Create three copies on floppy diskette using PKZIP; or
   - Create two of the copies on floppy diskette using FastBack Plus or PKZIP and the third copy on the FWD computer hard drive using PKZIP.

   One backup copy on floppy diskette is to be transmitted to the RCO along with the following: (1) the printed copy of the deflection data generated by the FWD during the actual testing and (2) the backup history report of all files generated (if FastBack Plus was used).

   The remaining two copies will serve as backups should the copy sent to the RCO be lost or damaged. One of these copies must be removed from the FWD tow vehicle whenever the FWD operator is not with the testing equipment.

2. FWD data received at the RCO will be restored to its original format using FastBack Plus or PKZIP, as appropriate; the same software as used in Step No. 1 to create the copy on floppy diskette(s) must be used to restore the FWD data.

   The RCO will verify that data files are complete and in readable form. Deflection data files may be edited, but the RCO may only edit header information (including the station header lines, where stations and lane specifications are stored) and/or delete deflection data accidently stored.

   Printed copies of the deflection data generated in the field must be kept on file at the RCO. If FastBack Plus was used, backup history reports may be deleted.

3. FWDSCAN must be run on the FWD data. Two files are generated from FWDSCAN: (1) a *.OUT file which lists all errors detected; and (2) a *.PKS file which contains only the peak deflection data.

   The *.OUT file will list both fatal and non-fatal errors detected. If the *.OUT file contains fatal errors (i.e. those marked by an '*' symbol at the beginning of the line), the RCO must edit the data files to correct these errors and rerun FWDSCAN.

   This procedure continues until the *.OUT file no longer contains fatal errors.

4. The edited deflection data (*.FWD files) and pavement temperature data are then loaded into the Regional Information Management System (RIMS).

   The loading process generates a file called FWDLOAD.LOG. This file should be reviewed and errors corrected as necessary. This procedure should be repeated until the following message appears in FWDLOAD.LOG: "The FWD file has been successfully loaded."

   After notification from the RCO, the FWD operators may reuse the backup floppy diskette(s) which remain with the FWD tow vehicle, and/or delete the PKZIP copy created on the FWD computer hard drive if applicable.

5. FWDCHECK must be run on the *.PKS files. Results (*.RES files) generated from FWDCHECK contain 'comments' that must be loaded into RIMS.

6. After successful loading of all data into RIMS, all *.FWD, *.OUT, *.PKS, and .RES files should be archived to optical disk. The FWDLOAD.LOG should be printed and the file can then be deleted.

   Rationalization:

*.FWD -	source of all of the following files.
*.OUT -	archival proof that the file conformed to test procedures, whether it successfully loads into the IMS or not.
*.PKS -	due to popular demand, easy means of supplying boiled down version of the deflection data.
*.RES -	analytical FWDCHECK results from the *.FWD files.