



U.S. Department of Transportation

Memorandum

6300 Georgetown Pike
McLean, Virginia 22101

**Federal Highway
Administration**

Subject: **ACTION:** LTPP Directive D-58
Office Review of Manual Distress Surveys

Date: March 21, 2017

From: Jack Springer
Long Term Pavement Performance Team

Reply to
Attn of: HRDI-30

To: Mr. Gabe Cimini, PM - LTPP North Atlantic Regional Contract
Mr. Gabe Cimini, PM - LTPP North Central Regional Contract
Mr. James Sassin, PM - LTPP Southern Regional Contract
Mr. Kevin Senn, PM - LTPP Western Regional Contract

Attached is Long Term Pavement Performance (LTPP) Program Directive D-58. This directive provides procedures and standards required for the office review of manual distress surveys. The office review encompasses the activities undertaken by Regional Support Contractor (RSC) personnel to ensure data quality after completion of field data collection activities. This directive supersedes D-30. All distress data collection should follow these guidelines. Please ensure that all personnel involved with the process are aware of this new directive.

Should you have any questions concerning this directive, please do not hesitate to contact me on (202) 493-3144 or jack.springer@dot.gov.

Attachment

FHWA:
File: M:\LTPP Directives\Distress\D-58
cc:
Jonathon Groeger (TSSC)
Jack Springer
Directive Binder
Official File

LONG TERM PAVEMENT PERFORMANCE PROGRAM DIRECTIVE



For the Technical Direction of the LTPP Program



Program Area:	Monitoring	Directive Number:	D-58
Date:	March 17, 2017	Supersedes:	D-30
Subject:	Office Review of Manual Distress Surveys		

Introduction

This directive provides procedures and standards required for the office review of manual distress surveys. The office review encompasses the activities undertaken by Regional Support Contractor (RSC) personnel to ensure data quality after completion of field data collection activities.

All manual distress surveys shall be subject to an office review as defined in this directive. Except where otherwise noted, the office review shall be performed by an LTPP **Distress Rater** or **Office Reviewer** as defined in directive D-56 or its current equivalent. The office review shall not be performed by the person who performed the survey in the field.

The purpose of the office review is to find and correct erroneous information, verify mapped information accurately transcribed to the numerical values recorded on the distress data sheets, ensure proper symbols are used on the maps, review time series consistency, check consistent application of definitions and procedure used by the raters, and perform other data processing quality assurance related tasks.

In order to accomplish these goals, the office review will include both a review of the survey for consistency unto itself (single survey review), and a time series review to ensure consistency with prior surveys. These reviews are in addition to the review required by *LTPP Monitoring Directive D-11: Use of Distress Maps from Prior Surveys*, which has many of the same objectives.

Single Survey Review

In order to provide data of the highest quality, the RSC must verify, at a minimum, the following conditions are met:

- All drawn distresses are properly included in the page summaries.
- All distresses in the page summaries are properly included on the maps.
- All distresses in the individual page summaries are included in the map summary.
- Proper symbols are used to identify distresses consistent with the current version of the LTPP Distress Identification Manual.
- There are no math errors in the summarization.
- The data sheets are consistent with the map summary.
- All significant notes from the maps are included in the comments section of the data sheets.
- The distress types and quantities are consistent with the collected photographs.
- Any new maintenance or rehabilitation activities noted on the forms are brought to the attention of the RSC Database Manager.

When inconsistencies are identified, the proper resolution may not always be apparent from the available documents. In these cases, it may be necessary to coordinate with the **Distress Rater** that performed the survey. Ultimately, all identified inconsistencies and discrepancies must be resolved.

If, in the course of this review, errors are identified, they must be corrected on the maps, summaries, and data sheets, such that they are all consistent. Corrections must be clear and legible. If corrections to the existing data sheets cannot be made in a manner that results in a reasonably clear grayscale images, corrected replacement versions of the affected maps and data sheets must be created.

The previously defined review activities must be completed prior to the data being entered into the database and Ancillary Information Management System (AIMS).

After data is entered into the database, another review of the survey data must be performed to ensure that transcription errors were not made during data entry. After data entry, the RSC must:

- Verify that the values on the data sheets are identical to those in the database.
- Run the distress Quality Control (QC) checks and address all QC errors and warnings.

Database activities may be performed by RSC personnel that are not **Distress Raters** or **Office Reviewers**. If, despite the pre-entry reviews, data and documentation errors are discovered during data processing, the process previously defined for error correction must be followed, and must involve a **Distress Rater** or **Office Reviewer**.

Time Series Review

In addition to the minor errors that occur during the creation of a set of distress data sheets and maps, the temporal nature of distress data collection creates the opportunity for significant inconsistencies from one survey to the next, or even gradually over time. In order to provide the user with the highest quality data set, these time series inconsistencies must be minimized. This is the goal of the time series review.

A time series check of the section history of distress surveys shall be performed after the new distress survey has been subject to the single survey review previously defined. As part of this check, the reviewer must perform a visual comparison of the map to the map from the prior survey to verify consistency. This comparison is in addition to the comparison performed by the rater as part of Directive D-11. The comparison must, as a minimum, verify the following conditions are met:

- There are no data entry errors.
- The same distresses are consistently identified by a single distress type. (A diagonal crack on a JPCC slab cannot be a longitudinal crack in one survey and a corner break in the next).
- All decreases in distress compared to the previous survey are explained.
- All increases in distress compared to the previous survey are reasonable.
- All noted maintenance and rehabilitation activities contained in the comments are accounted for in the database.
- All maintenance and rehabilitation activities between the two surveys contained in the database are accounted for in the distress surveys.
- All comments are valid and consistent (For instance, comments regarding maintenance activities that were determined to not have occurred must be removed or altered to prevent confusion.)

All issues discovered during the time series review process must be resolved to the satisfaction of both the **Office Reviewer** and the original **Distress Rater**.

If issues cannot be resolved internally by RSC personnel, the issue must be presented to the FHWA LTPP staff for review and recommendation.

After the time series review has been completed, and all issues satisfactorily resolved; remaining inconsistencies that are considered to be acceptable, but likely to cause confusion for users, must be identified and explained on the data sheets and in the database for all affected surveys.

Prepared by: TSSC

Approved by:

Jack Springer
LTPP Team Leader