



Long-Term Pavement Performance

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MEMORANDUM

TO: Antonio Nieves
FROM: Gonzalo Rada GR
DATE: May 29, 1998
SUBJECT: LTPP Directive P-21: Upgrade of PROQUAL Software to Version 2.08
FHWA Contract No. DTFH61-97-C-00002
PCS/LAW Project No. 10900-7-0714-01-103
PAPER FILE: Pavement Monitoring/Profile M
CC: M. Symons, A. Lopez, B. Bellinger, R. Perera, B. Henderson

Enclosed is a draft version of the above referenced directive for your review and comment. This directive has been prepared for purposes of distributing and implementing the PROQUAL Version 2.08 software, in compliance with instructions provided by the FHWA regarding the release of LTPP software. Please review this directive at your earliest convenience and provide us any comments and/or suggestions that you may have so that the necessary adjustments can be made prior to its distribution to the RCOs.

Should you have any questions or would like to discuss this directive, please do not hesitate to contact us.

Best Regards.

LONG TERM PAVEMENT PERFORMANCE PROGRAM DIRECTIVE



For the Technical Direction of the LTPP Program



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| Program Area: | Monitoring | Directive Number: | P-21 |
| Date: | June 5, 1998 | Supersedes: | P-18 |
| Subject: | Upgrade of PROQUAL Software to Version 2.08 | | |

This new version of the software contains modifications made in response to feedback from the RCOCs. More specifically, the following modifications were made to the program to correct known problems or to implement suggested enhancements:

Backup/restore option in PROQUAL has been modified to allow user to backup or restore data to a user specified location (i.e., disk or directory). PKUNZIP-T integrity test is invoked at conclusion of software compression using PKZIP and prior to decompression using PKUNZIP. Results of PKUNZIP-T integrity test are reported to the screen. These improvements allow user to backup/restore and copy profile data within PROQUAL, without having to exit to DOS.

- DNC 690 utility conversion program has been modified to check for two (2) consecutive lines of zero (0) elevations; if encountered, conversion is terminated. DBF file created contains elevations up to location of 0.000 elevations used to identify end of file. This addresses problem of having zero (0) elevation data at end of file.

Note: If section or subsection length is selected that is longer than that for available data; last elevation record is duplicated by software to fill required data points for section/subsection. With this correction, RCOCs will be able to reprocess LTPP sections that were short on elevation points, which resulted in erroneous SV or RMSVA data.

- Resolved problem within subsectioning feature: when setting limits for DNC 690 metric data that is recorded to fractions of a millimeter. Program will now select elevation value closest to selected range.
- Because manual Dipstick® data entry allows for stations past end of test section and 'zero (0)' Dipstick® and offset readings, program input module has been modified to take the length by interval as input to header in order to determine number of samples

installing the PROQUAL Version 2.08 software, a back-up of history files (HIST*.*) is required. Copy these files to a temporary directory on the root drive. Before installing the software, DELETE all files in the PROF2 directory or remove the PROF2 directory. Do not attempt to overwrite existing files. From A:\ or floppy drive where disks are loaded to, type "install". A c:\PROF2 directory will be created if it does not already exist, and the program and support files will be copy to that directory. If user wishes program to reside on another directory, he/she will need to move the directory and files. On completion, user must create a KJL_SYST directory with at least the FHWACN.DAT file, if it does not already exist. The FHWACN.DAT file is available in the PROF2 directory. Next, copy history files (HIST*.*) previously saved (to the PROF2/HIST subdirectory) to the PROF2 directory. To execute the program, type "PROF2" while in the PROF2 directory. The program menu options will appear on the screen and user may proceed as usual. Do not forget to update parameter file for serial number, model number, manufacturer, etc. Also, it is advisable to print the parameter file for future reference.

The above software modifications necessitated changes to the PROQUAL documentation. The updated documentation is also attached to this directive and it should replace that included with the LTPP Manual for Profile Measurements: Operational Guidelines, Version 3.0.

Please note that release of PROQUAL v2.08 may require reprocessing of a small set of previously processed profile data. More specifically, RCOCs need to review data processed with PROQUAL v2.05 through 2.07 to determine if there are test sections where spikes existed in the profile runs, but which were not detected by the spike algorithm in PROQUAL v2.xx. The best way to do this is to compare the slope variance (SV) generated by v2.08 with that from earlier versions. Slope variance is very sensitive to rapid changes in profile elevation, and thus a good indicator of spikes due to equipment or other non-pavement related anomalies. Profile data sets having previously undetected spikes (as determined from review of SV data) will require reprocessing with PROQUAL v2.08; however, it is again emphasized that only a small percentage of test sections are expected to require reprocessing.

Questions concerning this directive should be addressed to Antonio Nieves of the FHWA LTPP Division Office at (703) 285-2526. Problems related to the operation of the software should be submitted using a problem report form (PROFPR), in accordance with LTPP Directive P-03.

Prepared by: TSSC

Approved by:

Monte Symons
Team Leader, LTPP Operations