

March 25, 1997

Ms. Jane F. Garvey
Acting Administrator
Federal Highway Administration
U.S. Dept. of Transportation
400 Seventh Street, S.W.
Room 8410
Washington, DC 20590

Mr. Francis B. Francois
Executive Director
AASHTO
444 North Capitol Street, N.W.
Suite 225
Washington, DC 20001

Dear Ms. Garvey and Mr. Francois:

This is the first letter report of the Transportation Research Board's TRB LTPP Committee regarding the continuation of the Long-Term Pavement Performance (LTPP) studies initiated by the Strategic Highway Research Program (SHRP) and now managed by the Federal Highway Administration. Throughout its existence, the SHRP was guided by a tripartite arrangement among the Federal Highway Administration, the American Association of State Highway and Transportation Officials, and the National Research Council. By mutual agreement of the three parties and contractual arrangement with the FHWA, the National Research Council, through its TRB LTPP Committee, continues to provide advice and assistance on the conduct of the LTPP studies.

On December 11-12, 1996, the TRB LTPP Committee met and discussed progress in the continuation of the Long-Term Pavement Performance studies. FHWA staff briefed the committee regarding the FHWA's operational philosophy, priorities, and funding for the LTPP program, and provided highlights of a few emerging products. The committee also was briefed on the FHWA's proposed LTPP product development and data analysis plans for 1997, its LTPP program assessment activity, and its plans for implementation of LTPP products.

Based upon materials presented at the meeting or provided earlier, as well as on the discussions that followed, the committee developed in an executive session the consensus recommendations that follow.

PROGRAM IMPROVEMENTS

In the briefing on "Program Improvements", the FHWA staff apprised the committee on the findings of its internal assessment of the status of the LTPP studies and proposed certain corrections and changes to operation of the studies to improve the ability to the program to meet its original goals and the expectations of the highway community. Certain key findings of the FHWA staff assessment are paraphrased here as they provide the foundation for the committee's recommendations.

The LTPP data sets are incomplete and unbalanced. While it has always been understood that the experiment designs as originally developed for LTPP may never be completely satisfied, this shortcoming is compounded because data available for those test sections under study varies markedly in quantity and quality from test section to test section.

The apparent value for analysis of individual test sections has not been recently assessed. The apparent value of individual test sections for analytical purposes is still based upon the original experiment designs and has not been reassessed to reflect actual test section population, data availability, or the current needs of state transportation agencies or other sectors of the highway community.

Test section monitoring is still being conducted according to schedules set early in the life of LTPP. Data collection schedules do not reflect the relative significance of individual test sections as they exist today. Neither have these schedules been optimized to reflect the past eight years of experience in data collection operations.

No assessment has been made of the ability of the studies, as they currently exist, to address the evolving needs of state transportation agencies. In the 10 years since the initiation of the experiment designs, state agency needs have evolved from concern about design of new pavement structures to maintenance and rehabilitation -- with an emerging need for information on reconstruction, a specialized version of new construction. The ability of the LTPP studies to meet such changing expectations has not been assessed.

The committee is concerned about these findings of the FHWA's internal assessment team and believes it is crucial to the success of the program for them to be remedied quickly. The committee generally concurs with, and places particular emphasis on, the following paraphrased recommendations for remedial action proposed by FHWA staff.

The existing backlog of data in the processing pipeline should be eliminated and future backlogs avoided. The backlog of data that have been collected but not processed and entered into national database must be eliminated and future backlogs avoided. Without accurate knowledge of data populations for each test section, it will be impossible to gauge the value of individual test sections to planned analytical research or to assess the ability of the studies to address current or emerging needs of state transportation agencies and other sectors of the highway community.

Test sections should be evaluated and re-classified according to the products to be produced and the quality and quantity of data each section is likely to provide. Once data entry is current, the individual test sections should be evaluated and classified according to their value to current or planned analytical research.

Program operations should be linked strongly to a strategic data analysis plan. Program operations, especially data collection, processing, and management, should be linked strongly to a strategic plan for LTPP data analysis and the development of LTPP's products.

Data collection priorities should be established to support ongoing and planned data analysis activities, and data collection procedures should be evaluated and modified. Data collection procedures and frequencies should be evaluated with respect to the needs of ongoing and planned analyses and the significance of individual test sections, and modified where appropriate. Such modification should be consistent with sound operational plans that optimize the value of the data collected while minimizing the resources expended.

The committee looks forward to receiving reports from the FHWA LTPP staff on progress in applying these proposed actions, and remains ready to assist where possible.

DATA ANALYSIS

The committee recommends that the FHWA proceed with the data analysis activities and development of products planned for 1997. The committee concurs that the analyses under way or proposed will, if successful, yield products of immediate value to transportation agencies. The committee recommends further that the data analysis plan be enhanced to include identification of the individual products associated with each analysis activity, as well as their schedules and costs.

The committee bases this recommendation on the FHWA's briefing, which indicated that the selection of LTPP products is based on the states' expressed needs, inputs from the TRB Expert Task Group on LTPP Data Analysis, an assessment of the data available for analysis and product development, and the general guidelines of the LTPP data analysis plan.

The committee agrees that producing products in the very near future is essential and, therefore, urges the FHWA to meet its commitment to deliver the following pavement design and management tools in 1997:

- Effects of key portland cement concrete design features on performance; guidelines for estimating design parameters used with 1993 AASHTO flexible design procedure;
- Guidelines for design and construction of long-lived pavements;
- Roughness reduction due to different rehabilitation treatments;
- Improved temperature adjustment of asphalt concrete deflection test results; and
- A roughness prediction model.

As noted in the FHWA's briefing, analyses to be initiated in 1997 are characterization of pavement variability, effects of rehabilitation on performance, characterization and modeling of rutting, performance of bonded concrete overlays, and distress-specific performance prediction models.

COORDINATION WITH NCHRP

The committee believes that the FHWA's LTPP activities should be coordinated with and complement the work of the National Cooperative Highway Research Program (NCHRP) Project 1-37, which is intended to develop a new pavement design guide by the year 2002. LTPP products that can assist the work of NCHRP Project 1-37 should be given priority to the extent that this can be done without compromising the timely development and delivery of LTPP products to the state transportation agencies.

PROGRAM BUDGET

The committee requests that the FHWA provide a detailed budget for the next five years of the LTPP program. The budget should show the relative magnitudes of the funds planned or proposed to be allotted to administrative and operational expenses, developing and implementing strategic data analysis plans, developing and implementing program improvements, developing and delivering products, supporting NCHRP 1-37, and addressing data accessibility issues. In addition to providing these details in support of the FHWA's proposed budget for the LTPP program of \$16 million per year, the FHWA is asked to develop and present at the committee's next meeting contingency plans for operating the program at funding levels of \$12 million per year and \$20 million per year.

PROGRAM COMMUNICATIONS

The committee is concerned by the apparent reduction of state commitment to the LTPP program, and attributes this to the generally superficial nature of the information disseminated about the program. The committee recommends that the FHWA develop brief but substantive informational brochures (perhaps one to two pages in length) describing the products under development. LTPP's products must be defined and their usefulness articulated in order for the program to succeed.

OPERATION OF THE LTPP DATABASE

The committee recommends that the FHWA investigate the pros and cons of privatizing the maintenance and further development of the LTPP database, the National Information Management System (NIMS). FHWA staff and contractor support of the NIMS has been a substantial consumer of LTPP funds, and the committee believes a private concern might be willing to assume this task for the FHWA at a lower cost.

Sincerely,

(s/ Allan L. Abbott)

Allan L. Abbott
Chairman
TRB LTPP Committee