Long-Term Pavement Performance Committee Letter Report: August 13, 2014

DETAILS

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Committee on Long-Term Pavement Performance

TRB TRANSPORTATION RESEARCH BOARD
OF THE NATIONAL ACADEMIES

August 13, 2014

Mr. Gregory G. Nadeau
Acting Administrator
Federal Highway Administration
U.S. Department of Transportation
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HOA-1, Room E87-314
Washington, DC 20590-9898

Mr. Frederick G. (Bud) Wright
Executive Director
American Association of State Highway and Transportation Officials
444 North Capitol Street, NW
Suite 225
Washington, DC 20001

Re: 34th Letter Report of the Transportation Research Board Long-Term Pavement Performance Committee

Dear Mr. Nadeau and Mr. Wright:

This letter reports the findings and recommendations that were developed at the meeting of the Transportation Research Board (TRB) Long-Term Pavement Performance (LTPP) Committee on June 3–4, 2014. The meeting was convened to review progress in the continuation of the LTPP studies. A roster of members indicating those who attended the meeting is enclosed.

As explained in earlier letter reports, the LTPP studies were initiated as part of the Strategic Highway Research Program and have been managed by the Federal Highway Administration (FHWA) since 1992. Throughout its existence, the LTPP program has been guided by an arrangement between FHWA, the American Association of State Highway and Transportation Officials (AASHTO), and the National Research Council (NRC) of the National Academies. By agreement of the three parties and through a contractual arrangement with FHWA, NRC continues to provide advice and assistance on the conduct of the LTPP studies through the work of its TRB LTPP Committee.

The agenda of the meeting consisted of briefings by members of the FHWA LTPP Research Team and the chair of the committee's Expert Task Group (ETG) on LTPP Special Activities, each followed by a question-and-answer period and discussion. Among the topics were the committee's 33rd letter report, FHWA's response, and status updates on the following LTPP program topics: unfinished business transferred from the retired traffic ETG to the special activities ETG, data analysis, database enhancements, software development and enhancement, product development and deployment, outreach to states and other constituent groups, and the new warm-mix asphalt experiments.

At the conclusion of the open session, the committee held a closed session to deliberate on its findings and formulate its consensus recommendations. These recommendations are organized below into sets, each labeled[1] for reference and consisting of one or more paragraphs in regular type sometimes followed by a paragraph in italic type. The regular type denotes the finding and the italic type the recommendation.

[1] Each finding–recommendation set has a unique label taking the form "LRn/m", where "n" is the number of the letter report and "m" is the number of the finding–recommendation set.

Our findings and recommendations are as follows:

LR34/1
We note with sadness the absence from the meeting of Aramis López, FHWA's LTPP Team Leader, due to the untimely death of a loved one, and are at a loss to find the words to express our condolences to him. While he tends to the needs of his family at this sad time, he can draw a measure of comfort from the knowledge that the LTPP Team performed professionally and met all of our needs for information on the status of the LTPP program. He was missed.

LR34/2
We are pleased that Jim McDonnell, our AASHTO liaison, and Mario Paredes, an AASHTO fellow on loan from the Florida Department of Transportation, were able to attend our meeting. Their active participation in all of the discussions was valuable and provided a perspective we lack whenever an AASHTO representative cannot attend our meetings. We look forward to further such contributions by AASHTO to our continuing review and oversight of the LTPP program.

LR34/3
We are pleased that Cheryl Allen Richter, Assistant Director for Pavement Research and Development in FHWA's Office of Infrastructure Research and Development and one of our FHWA liaisons, attended a recent meeting of AASHTO's Standing Committee on Highways and presented a briefing on the LTPP program. We have heard that her presentation was well received and helped renew interest in LTPP and the willingness of some members to volunteer to fill future vacancies on our roster.

We recommend that opportunities to brief other high-level committees of AASHTO on LTPP be sought and that such briefings occur every other year.

LR34/4
We congratulate the LTPP Team for its significant accomplishments since our last meeting, including the following:

- The official rollout of the InfoPave software system at TRB's Annual Meeting;
- The revitalization of the American Society of Civil Engineers (ASCE)–LTPP International Data Analysis Contest, with cash prizes provided through ASCE by industrial sponsors;
- The publication of the LTPP brochure FHWA-HRT-14-017, including a statement of LTPP's continuing mission;
- The successful database restoration trial from the simulated disaster exercise; and
- The large number of data analysis projects generated in response to LTPP's broad agency announcement inviting descriptions of pavement performance investigations recommended by the LTPP Pavement Analysis Forum in 2010.

LR34/5
It has been reported to us that the reauthorization legislation being contemplated by Congress for highway research might reduce LTPP's funding by 50 percent from its MAP-21[2] level. We believe that prudence requires that plans be developed now to manage such a reduction. Such plans could include the identification of work that is under way that would

[2] Moving Ahead for Progress in the 21st Century Act.

have to be curtailed, work that is being readied for initiation in the near future that would have to be postponed, and work that is contemplated for a later start that would have to be put on indefinite hold. In each of these categories, the relative priorities of the individual activities and their estimated costs could be assessed. These work items, priorities, and costs would enable the development of contingency plans defining LTPP's path going forward.

Of particular concern to us is the possible impact of a serious reduction in LTPP's funds on LTPP's original experiments, given the high level of interest in the new experiments addressing the performance of warm-mix asphalt pavements and pavement preservation. Apportionment of LTPP's reduced funds among the "old" and the "new" experiments will be especially challenging.

We recommend that contingency plans be developed to define the technical activities that would be conducted by the LTPP program in the event of a reduction in the funds available from MAP-21 levels.

LR34/6

We are pleased by the progress being made in the development of a report summarizing the background, history, and plans of LTPP. This is a daunting task because of the program's long and complex history: the program spans at least from the mid-1980s to the present, encompasses management and direction first by a unit of the National Academies and later by FHWA, and was supported by numerous committees that initially developed and directed contracts and later advised LTPP staff who managed contracts. We congratulate the LTPP Team for the progress to date and look forward to the completion of this effort in the near future.

However, we are concerned that this report could inadvertently lead to the conclusion that the LTPP program has ended or is coming to a close. It is essential that this conclusion be averted. Both the text of the report and its title should leave no doubt that LTPP remains a vigorous and vital component of FHWA's research and development, with ongoing activities and planned work that will enhance its already substantial achievements.

We recommend that this report convey the message that LTPP is a continuing program with important ongoing activities aimed at developing and delivering new products that enhance its impressive list of completed products. In addition, we recommend that the report be given a title that conveys this message, so that those who receive but do not read the report will have no doubt about its contents.

LR34/7

We restate for emphasis our interest in the further development and evaluation of a new traffic summary statistic based on load spectra, as recommended in greater detail in our previous letter report,[3] and look forward to feedback from the LTPP Team demonstrating that

- The LTPP database contains the data necessary to compute this statistic;
- The InfoPave software can compute this statistic for database users without the need for considerable additional research and resource expenditures; and
- The statistic can be easily explained to and understood by most data users, correlated with pavement performance, and correlated with the load spectra used in the *Mechanistic–Empirical Pavement Design Guide*.

[3] Letter Report No. 33, dated December 31, 2013.

We request a status report on the development and evaluation of this new summary statistic at our next meeting.

LR34/8

We are pleased by the reported positive reception of LTPP InfoPave by the highway pavement community, and we again congratulate the LTPP Team and its contractors for this remarkable achievement. The initial version of this software system has increased interest in LTPP and the use of its database. We are certain that state highway agencies will reap benefits from its use in their pavement design, construction, and operation activities.

This initial version of LTPP InfoPave is just that: the first edition of the software. It is neither perfect nor complete; corrections will be necessary, components will be improved, and enhancements will be conceived. For LTPP to maximize the productivity of the further work on InfoPave, this work must be planned and managed in a disciplined manner.

It has been reported that a list of 197 software enhancements of InfoPave has been compiled and grouped into three tiers: those that are under way, those that will be undertaken when funds permit, and those that will be developed later. While we wish to learn more about the proposed enhancements in each tier, it concerns us that this list was developed by LTPP staff and contractors without direct input from database users or solicitation of comments from others, including our ETG. It also concerns us that this list was not preceded by a plan for the further development of InfoPave and a set of priorities, both of which could have governed what enhancements were added to the list and into which tiers they were placed.

We are pleased to learn that an InfoPave Champions Group is being formed and that the members of our committee and our ETG have been invited to join, together with representatives of state highway agencies, universities, and industry. This will enlarge the source of feedback concerning needed improvements and enhancements of InfoPave and perhaps influence the plan and priorities when they are developed.

We request a briefing at our next meeting on the plan for development of InfoPave and the priorities by which the enhancements to be developed were determined.

LR34/9

Without rehashing our earlier correspondence on this matter, we restate our interest in the forensic investigation of a pavement's condition immediately before cessation of LTPP's collection of its performance data, or before it "goes out-of-test." We have all agreed that forensic studies of LTPP test sites would add valuable data to the LTPP database—data that can be gathered in no other way. We have been told that LTPP encourages the states to conduct such investigations and would support them, but LTPP has no plan for forensic testing.

We believe that a plan detailing the procedures, protocols, equipment, manpower, funding, and schedule necessary for forensic investigations—if it were developed and promoted by LTPP and discussed with the state agencies—could remove whatever barriers exist and even garner the support and cooperation of the states.

We recommend the development of a detailed plan for forensic studies of LTPP test sites at the conclusion of data collection and a proactive approach for engaging state agencies in reviews of this plan.

LR34/10

We previously expressed concern that the addition of new experiments concerning the performance of warm-mix asphalt pavements and pavement preservation might adversely affect the successful completion of LTPP's original set of experiments. In response, we were assured that programmatic and financial efficiencies stemming from the inevitable reduction in the number of active test sites remaining in the original experiments allowed the new work to be added without negative consequences.

Yet we see that LTPP's pooled fund study for the collection of weigh-in-motion (WIM) traffic data has concluded; that WIM sites in Delaware, Florida, Maine, Pennsylvania, and Tennessee are being decommissioned; and that forensic investigations (see LR34/9) of original test sites at the sometimes unplanned end of their status as such remain unfunded. A more detailed exposition of the efficiencies that permitted the addition of new experiments without adverse consequences might alleviate our continuing concern for the successful prosecution of LTPP's original experiments and explain why adding new experiments takes precedence over continuing the collection of traffic data and instituting forensic studies.

This was a highly productive meeting thanks to the preparations of Aramis López, the FHWA LTPP Research Team leader, and the members of his team. Your agency is fortunate to have professionals as staff members possessing such a steadfast dedication to the LTPP program.

Sincerely,

William H. Temple
Chair
TRB LTPP Committee

Enclosure: Roster of the TRB Long-Term Pavement Performance Committee Indicating Attendance at the Meeting of June 3–4, 2014

Enclosure

Roster of the TRB Long-Term Pavement Performance Committee Indicating[1] Attendance at the Meeting of June 3–4, 2014

William H. Temple, *Chair*
Executive Director
Concrete and Aggregates Association of Louisiana

Thomas E. Baker, *Vice Chair*
State Bridge and Structures Engineer
Washington State Department of Transportation

Michael E. Ayers
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Norman W. McLeod Engineering Professor
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Gary L. Hoffman
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Patricia S. Hu
Associate Administrator and Director
Bureau of Transportation Statistics
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U.S. Department of Transportation

Randell H. Iwasaki
Executive Director
Contra Costa Transportation Authority

Russel W. Lenz
Director, Heavy Municipal and Utilities Divisions
Associated General Contractors of Texas

Robert L. Sack (by telephone)
Deputy Chief Engineer
New York State Department of Transportation

Larry A. Scofield (by telephone)
Director of Engineering and Research
International Grooving and Grinding Association

Ted M. Scott II
Director of Engineering
American Trucking Associations, Inc.

Gary C. Whited
Program Manager, Construction and Materials Support Center
University of Wisconsin–Madison

[1] Attendees of the meeting are indicated in boldface.