Committee on Implementing the Research Results of the Second Strategic Highway Research Program (SHRP 2) Letter Report: January 23, 2013

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Committee on Implementing the Research Results of the Second Strategic Highway Research Program

January 23, 2013

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Dear Mr. Mendez and Mr. Horsley:

This is the third letter report of the Committee on Implementing the Research Results of the Second Strategic Highway Research Program (SHRP 2). SHRP 2 is a major research program authorized by Congress and administered by the Transportation Research Board (TRB) under a cooperative agreement with the Federal Highway Administration (FHWA). The committee was established at the request of FHWA to provide policy and technical advice to the U.S. Department of Transportation (USDOT) and the American Association of State Highway and Transportation Officials (AASHTO) on recommended strategies for introducing the results of SHRP 2 into the knowledge base and the active practice of transportation engineers, planners, traffic managers, and other potential users. The committee will focus its recommendations on implementation plans and future actions by USDOT and the state departments of transportation. The committee membership has been drawn from the executive and senior professional levels of state highway agencies, a metropolitan planning organization, private industry, transportation-related associations, and academia.

Summary of November 28-29, 2012 Committee Meeting

At the committee's November 28-29 meeting, the committee received updates on the status of research and development activities being conducted by TRB/SHRP 2. Many research projects are nearing completion and a number of development activities are under way to ensure that research results are being converted into products that can be directly used by implementing agencies.

In its second letter report, the committee asked for a number of plans to be developed related to implementation. The committee received and had the opportunity to review the following documents prior to the meeting:

- "Three-Year Implementation Plan for the Second Strategic Highway Research Program"
- "Communications and Outreach Plan for the Second Strategic Highway Research Program"
- "Information Technology Plan for the Second Strategic Highway Research Program"

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- "Talking Points: Draft Safety Implementation Plan for the Second Strategic Highway Research Program"
- Implementation plans for Products C06 (Implementing Eco-Logical) and R26 (Guidelines for the Preservation of High-Traffic-Volume Roadways)

At its meeting, the committee was briefed on the first four of these plans, as well as on the status of implementation strategies for products in each of the four focus areas, by FHWA and AASHTO staff. It was also briefed on additional funding for SHRP 2 implementation that has become available from Statewide Planning and Research funds under the provisions of the recently passed Moving Ahead for Progress in the 21st Century (MAP-21) surface transportation authorization bill, spending plans for use of funds available for implementation from SAFETEA-LU, current thinking regarding implementation assistance programs, and potential additional development work that FHWA may ask TRB to complete to ensure that products are ready for implementation.

The committee appreciates the attention given by FHWA and AASHTO to the recommendations contained in our second letter. It is clear that you have listened to and acted upon the recommendations contained in the letter. The detailed plans submitted to the committee demonstrate that considerable thought has gone into addressing implementation issues. The committee is gratified to see the focus placed on users in all of the plans. We are pleased with the progress made in identifying strategies for implementation of products in the three-year plan, and we particularly appreciate the focus on users in the outreach and communications plan. We are glad to see that progress was made on decisions for hosting of some IT products, but recognize that more work needs to be done on those products for which decisions have not yet been made. The committee was updated on the ongoing discussions between FHWA and AASHTO regarding the TCAPP (Transportation for Communities—Advancing Projects through Partnerships) web tool in response to a resolution passed by the AASHTO Standing Committee on Planning (SCOP). This resolution asked for a pause in several TCAPP-related development and implementation activities to enable SCOP members to become more familiar and assess issues associated with TCAPP. These issues include what modifications are most appropriate for improving usability; options regarding hosting of the web tool (i.e., on whose server it will reside and who will be responsible for maintaining the web tool); and options for governance, including how decisions are made regarding modifications to, use of, and technical assistance for TCAPP.

A considerable amount of planning for SHRP 2 implementation has taken place, as demonstrated in the planning documents and presentations provided to the committee. Now that this planning has occurred and products are ready for deployment, the focus of the program will need to shift from planning for implementation to actual implementation of the products by state DOTs and other implementing agencies. Transitioning from a planning for implementation mode to an operational mode will require a number of changes in approach. The following recommendations are related to this transition.

1. **Now that a more detailed three-year implementation plan has been developed for SHRP 2 that addresses implementation on a programmatic level, the committee recommends that FHWA and AASHTO begin actual implementation activities with potential users for individual products as soon as possible, without waiting for all the detailed implementation plans and procedures to be finalized.**

FHWA and AASHTO have been effective in their efforts to raise awareness within the user community about SHRP 2 and the products contained in the three-year implementation plan. Potential users of SHRP 2 products—especially state departments of transportation (state DOTs)—have received the message that SHRP 2 products are coming out and will soon be ready for field trials and other uses. Expectations and interest have been raised, and numerous state DOTs are asking how they can begin using and field testing products as soon as possible. It is critical that these expectations begin to be met quickly while interest remains high. Some actions should be taken to get the most promising and straightforward products into the field, even if all implementation plans and procedures are not completely finished.

2. **The committee recommends that FHWA and AASHTO quickly identify the decisions that need to be made to carry out the implementation program and who is responsible for making them. In addition they should develop streamlined decision-making processes.**

There are many activities occurring within a relatively short time period with regard to SHRP 2 implementation. This is a large, complex undertaking, and not surprisingly, decision-making processes and responsibilities regarding SHRP 2 implementation appear not to be clearly understood by all parties. Decisions are taking too long and are sometimes revisited because all affected parties were not consulted (e.g., IT hosting decisions). The committee recommends that FHWA and AASHTO ensure that decision-making processes and responsibilities are clear and that decisions are made in a timely fashion. This includes decisions at the programmatic level, at the product level, and at the individual state level. Vetting processes should be streamlined to focus on the individuals in each organization who must be in agreement for an action to be taken. FHWA and AASHTO should develop ways to inform vetters of the importance of carrying out their charge quickly, so as not to hold up the implementation program. In addition, the committee recommends that FHWA and AASHTO carefully consider which decisions need to be made in a centralized manner and which can be delegated to program offices, committees, or staff. The committee would like to see a listing of the types of decisions that need to be made, the process for making each type of decision, and who has responsibility, at both the program-wide level and at the project level. This should help the committee, FHWA, AASHTO staff, state DOTs, and other implementing agencies to better understand the decision-making process.

3. **The committee recommends that FHWA and AASHTO make timely decisions regarding responsibilities for hosting, maintenance, operation, and upgrading of IT products.**

Although decisions have been made regarding hosting for several IT products, there are a large number of IT products for which these decisions are still outstanding. FHWA and AASHTO need to make these decisions soon, so that the work needed to allow these products to be transitioned from TRB to the new owner can be accomplished before the end of the TRB Cooperative Agreement with FHWA on March 31, 2015. If no owner is found for products, it could affect the feasibility of long-term implementation.

Planning and budgeting need to occur for products that will have to be modified to meet the host organizations' IT standards. This applies both to products currently in the three-year plan and to those that may be considered for addition to the plan. User input in making these decisions is desirable, as demonstrated in the case of TCAPP.

The committee recommends that a detailed plan be developed that identifies the party responsible for hosting, maintenance, operation, and upgrading of each IT product and the steps required, so that products can be transitioned from TRB to the new owner. Decisions have been made for hosting of several products as presented in the current IT planning document. If it has been decided that neither FHWA nor AASHTO will host certain products, efforts should be made to rapidly identify whether third-party hosting of these products is viable. If no host is found for certain products, these products should be identified, so that implementation planning for these products does not go forward. The detailed IT plan should prove useful to the committee, FHWA, and AASHTO as input to overall implementation planning.

FHWA reported at the November 28-29 committee meeting that a decision would be made before the next meeting of the committee about whether the USDOT will host the Safety databases. It was also acknowledged at the meeting that additional information is needed beyond that provided in a report that the Volpe Center produced for FHWA on options for long-term stewardship of the data. The committee urges FHWA, in collaboration with the National Highway Traffic Safety Administration (NHTSA) and in consultation with AASHTO and TRB, to keep to the proposed deadline to make a decision about USDOT hosting before the committee's June 2013 meeting. It is critical that this basic decision be made soon so that plans for transition to USDOT can be effected (if USDOT hosting is the selected option) or so that alternative hosting options can be studied, selected, and carried out before the end of TRB's cooperative agreement (if USDOT is not going to host the databases). Again the needs and requirements of a broad array of potential users should play a significant role in the decision regarding the ultimate hosting organization.

Similarly, the committee recommends that FHWA and AASHTO slow down implementation activities on TCAPP while they collaboratively work together to decide on an implementation strategy for TCAPP. This work should be guided by input from potential users. The committee agrees in general with the actions that FHWA and AASHTO propose to take, namely:

- educate potential users of TCAPP regarding the research results that are contained in the TCAPP web tool and how the web tool can be used to help transportation agencies address problems they are facing in the planning and project development process;
- receive input from these users on improvements that can be made to improve TCAPP's usefulness and usability;
- develop better cost estimates for the option of FHWA hosting TCAPP, as well as explore whether there are any other realistic alternatives to FHWA hosting the web tool; and
- identify and evaluate governance options that would be based on users providing input regarding how TCAPP is used, training and technical assistance, and improvements to be made to TCAPP in the future.

The committee recommends that these activities begin soon, so that users can have enough time to better understand TCAPP and provide meaningful input regarding the above issues.

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4. **The committee recommends that communication about implementation focus on accurate and complete information about SHRP 2 products.**

    The committee is pleased with the emphasis placed on users in the communications and outreach plan. While brief, attractive communication mechanisms are effective in getting users' attention, those who are seriously interested in implementing a SHRP 2 product need accurate and detailed information in order to determine if the product addresses their needs. Those charged with any form of communication (state visits, webinars, presentations at meetings and conferences, etc.) need to have in-depth knowledge of a product, including the problem it is intended to solve or the objective it is intended to advance, how the product works, and how it is used.

    The committee recommends that communications and outreach efforts continue to focus on users and how SHRP 2 products can address user needs. Implementation will be most successful if managers and staff in state DOTs and other implementing agencies understand how SHRP 2 tools will address some of their priority needs. This requires an approach of not only educating managers and staff in implementing agencies about SHRP 2 products and what these products can do for their agencies, but understanding the needs of the agencies and discussing how SHRP 2 products can help address these needs.

    The committee recommends that outreach and communications efforts be educational in nature and include two-way dialogue about how products can meet agencies' needs. Face-to-face outreach and communications with both senior managers and technical staff who will be responsible for implementation are critical, particularly in this era of reduced staff and competing demands on state DOTs and other implementing agencies. To promote implementation of SHRP 2 products, the committee recommends that the communications and outreach plan assign specific outreach responsibilities to individuals who have credibility with the target audience.

    In addition, it is important that communications about a product clearly articulate where the product is in the overall research, development, and implementation process. It is important to manage user expectations regarding the development status of the product. Even a well-developed research product will usually require adjustments or modifications in response to the wide array of contexts in which users will apply the product. This should be made clear to early implementers, along with the message that their feedback about a product is important to its overall effectiveness.

5. **In addition to the current emphasis on implementation of a subset of individual products, the committee recommends that FHWA and AASHTO also look more comprehensively at how to implement all promising products, how to address a broader array of potential users and stakeholders, how to support implementation of business practice innovations, and how to tailor implementation approaches to meet the user demand for particular products.**

    The committee appreciates the efforts undertaken to date on implementation planning for individual products in the first year of the three-year implementation plan. Having the opportunity to review two of the product-level implementation plans was helpful. The

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research plans for SHRP 2 were based on a strategic approach to addressing some of the most significant challenges being faced by state DOTs and other transportation agencies. Individual research projects and their products are often interrelated with other projects and products within the same focus area, and sometimes even with products from other focus areas. Strategies should be developed to implement interrelated products as suites, or packages, of products. The committee recommends that lessons from SHRP 1 regarding the combining of interrelated tools into packages such as Superpave or Roadway Weather Information Systems be applied. An implementation strategy also needs to be developed for those products not currently contained in the three-year plan, including addressing whether these products should be included as part of a suite of related products.

Based on where state DOTs are facing their biggest challenges, the focus of the SHRP 2 program has been more on how to change or improve the way transportation agencies do business than on development of new technologies. SHRP 2 research identified new and different ways of addressing these challenges, often based on best practices in the United States and around the world. Even for those research projects that produced IT tools, in most cases the IT tools are meant to assist in implementing business process changes. The committee recommends that implementation explicitly address the unique requirements for implementing business process innovation. An approach should be developed that is more focused on training, technical assistance, and change management assistance. This approach may necessitate a different emphasis in communications and outreach messages. Users, working together with experts in the field of change management, should be involved in helping identify how to most effectively implement business process changes within their agencies.

Feedback to date has shown that there is considerable interest in certain products by many state DOTs. Based on the fact that funding for implementation has approximately doubled since development of the three-year plan that was presented in June 2012 and that a large portion of this additional funding is coming from the states' Statewide Planning and Research (SPR) allocation, funding allocations should be influenced by where the greatest demand exists among potential users, particularly the state DOTs. The committee recommends that sufficient funding be allocated to those products that have the greatest demand, so that many more than five to six states can receive assistance in implementing these products. This may be especially true in the case of business process innovations.

To date the main emphasis appears to have been on implementation of SHRP 2 products by state DOTs. Many of the products of SHRP 2 in each of the focus areas could benefit organizations other than state DOTs. Implementation and communications strategies, as well as implementation support, need to be developed and delivered to interested local governments, metropolitan planning organizations, resource agencies, the private sector, and others who might be interested in adopting SHRP 2 results relevant to their missions. The committee also recommends that strategies be developed for identifying the roles universities could play in educating the next generation of transportation professionals in SHRP 2 products, as well as assisting state DOTs in training and in implementing SHRP 2 products.
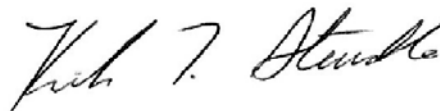
6. **The committee recommends that FHWA and AASHTO develop a project monitoring process and regularly report to the committee and to potential users, especially the state DOTS, on how SHRP 2 implementation funds are being spent.**

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Given the large expenditure of public funding, the committee and state DOTs will be interested in regular reports on how the SHRP 2 implementation funds are being spent. With SPR funds being used in SHRP 2 implementation, state DOTs will likely place even more emphasis on such accountability. Monitoring and reporting to state DOTs should include program-wide allocation of funds among focus areas and major types of activities, as well as project-level allocations. This will require project management tools and reports that can be used internally for management of the program and externally for accountability reporting. The committee would like to better understand the program and project management systems that will be used by FHWA and AASHTO.

Closing

The committee commends FHWA and AASHTO for their responsiveness to the recommendations contained in our last letter and the considerable work that has been done to plan for the implementation phase of SHRP 2. The program is at a critical turning point, with deployment of products to state DOTs and other implementing agencies about to begin in earnest. The committee looks forward to working with both FHWA and AASHTO in further discussing the issues contained in this letter related to this transition.

Sincerely,

Kirk T. Steudle
Chair, Committee on Implementing the
Research Results of SHRP 2

Attachment

Attachment 1

**TRB Committee on Implementing the Research Results of the
Second Strategic Highway Research Program**

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[1] Did not attend June 18-19, 2012, committee meeting.