

FHWA R&T Now ~ September 2011~

A news update of research, technology, and development from the U.S. Department of Transportation (USDOT), Federal Highway Administration (FHWA)

GENERAL/ADMINISTRATIVE

FHWA Prepares to Implement SHRP 2

Approximately 20 percent of the Second Strategic Highway Research Program's (SHRP 2) more than 90 projects are complete. The Transportation Research Board (TRB) will continue to manage the research program until 2015, governed by its extended cooperative agreement with the Federal Highway Administration (FHWA). In the meantime, recognizing the considerable linkage between SHRP 2 research products and FHWA program goals, FHWA staff members remain engaged in TRB's early implementation activities (pilots, training, workshops, and webinars), as this will expedite the transfer of knowledge from the researchers to the deployment agents and practitioners.

Based on a preliminary assessment of all emerging SHRP 2 products, FHWA has targeted several products as immediate priorities for the Agency to lead deployment efforts in the coming months. FHWA is currently working with TRB and the American Association of State Highway and Transportation Officials (AASHTO) to develop implementation plans for these products. The collaborative plans will establish deployment goals, strategies, costs, and measures. Further product assessments will take place as additional SHRP 2 projects near completion.

FHWA and partner organizations, TRB, AASHTO, and the National Highway Transportation Safety Administration (NHTSA), continue to work on a collaborative approach to SHRP 2 implementation. The organizations are preparing a strategic communications plan to brand and promote the overall benefits of the SHRP 2 program. This activity will be tied to individual outreach efforts for specific SHRP 2 products and technologies.

For more information, contact Ken Jacoby, 202-493-3186, ken.jacoby@dot.gov.

ADVANCED RESEARCH

Exploratory Advanced Research Program Initiates Two Studies in Foundational Research for New Approaches to a National Transportation Demand Model

FHWA's Exploratory Advanced Research (EAR) Program entered into a contract with Battelle Memorial Institute to develop a futuristic design for a national long-distance travel survey. This design will push the boundaries of current sampling, data collection, and statistical weighting/estimation. FHWA also entered into a cooperative agreement with the Resource Systems Group, Inc, that will investigate using advanced agent-based modeling of long-distance travel behavior that is sensitive to policy variables and representative of the population, based on empirical evidence.

Both awards resulted from an open solicitation scoped after coordination with the Federal Railroad Administration and Federal Aviation Administration. If successful, the two awards are anticipated to contribute toward developing a multimodal national transportation demand model that could provide public and private sector entities the capability to conduct multimodal analyses of national and multi-state regional

travel and congestion, test the effectiveness of national policies, and provide a framework for system performance measurement.

For more information about the national long-distance travel survey project, contact Patrick Zhang, 202-366-1941, patrick.zhang@dot.gov. For more information about the agent-based microsimulation project, contact Brad Gudzinis, 202-366-5024, brad.gudzinis@dot.gov. For more information about the EAR Program, contact David Kuehn, 202-493-3414, david.kuehn@dot.gov.

FHWA and NSF Foster Collaboration to Advance Cyber-Physical Systems Research

FHWA is working with the National Science Foundation (NSF) to advance research on cyber-physical systems for highway transportation. On August 29, 2011, Michael F. Trentacoste, FHWA's Associate Administrator for Research, Development, and Technology and Director of the Turner-Fairbank Highway Research Center (TFHRC), met with Farnam Jahanian, Assistant Director of NSF's Computer and Information Science and Engineering Directorate, staff members, and other professionals to discuss areas of mutual interest. Cyber-physical systems research integrates the disciplines of engineering, computer science, and information science. At first, only a mechanical system controlled vehicle braking. Now vehicles are equipped with computer programming that can interact with the mechanical system to reduce skidding and improve stability. In the future, connected vehicles could communicate with other vehicles and the infrastructure interacting with braking and other control systems in ways that could dramatically reduce traffic deaths and injuries, improve mobility, and reduce energy use. FHWA, through the EAR Program, and NSF have already coordinated workshops for sharing results of ongoing research. The two agencies are currently looking at further opportunities, such as improving access to unique research test beds, enhancing the transfer of research results to industry, and increasing academic focus on national program needs.

For more information, contact David Kuehn, 202-493-3414, david.kuehn@dot.gov.

EAR Program Participates in an NSF Study on Underground Geoengineering

To explore underground geoengineering for sustainable development, FHWA's EAR Program has entered into an interagency agreement with NSF. This multiyear study will summarize current engineering knowledge related to underground development and identify research needs to capitalize on opportunities for enhancing urban sustainability through underground development. FHWA's support and participation in the study will leverage NSF funds already committed to the study and ensure that the study adequately addresses transportation needs associated with underground geoengineering for sustainable development.

More information regarding the NSF study is available at <http://www8.nationalacademies.org/cp/projectview.aspx?key=49215>.

INFRASTRUCTURE

Statistical Analysis of Performance of Recycled Hot Mix Asphalt Overlays in Flexible Pavement Rehabilitation

This document is a technical summary of FHWA's report, *Impact of Design Features on Pavement Response and Performance in Rehabilitated Flexible and Rigid Pavements* (FHWA-HRT-10-066). The objective of this TechBrief is to provide a summary of statistical analysis results of data collected during the Long-Term Pavement Performance Program. The performance of recycled hot mix asphalt was compared to virgin mix in flexible pavement overlays.

For more information, contact Larry Wisner, 202-493-3079, larry.wisner@dot.gov.

The TechBrief is available online via

<http://www.fhwa.dot.gov/publications/research/infrastructure/pavements/ltp/11051/index.cfm>

OPERATIONS

Connected Vehicle-Highway Research to Take the Road

FHWA's TFHRC Office of Operations R&D is undertaking new research into how infrastructure can support mobility, safety, and environmental applications for travelers. As a foundational piece of this research, TFHRC is developing a new signal phase and timing interface definition and message set. This will enable mobile devices in vehicles or carried by travelers, including people with disabilities, to obtain accurate, real-time information about the traffic signals they encounter. This will allow the vehicles and traveler to take actions that will decrease travel times, decrease red-light running, and improve fuel-efficiency. The first drafts of the new interface specification and message set have been completed and construction is scheduled to begin in early October to upgrade the Connected Vehicle-Highway Testbed (CVHT) with new signal control equipment. Field testing of this new interface will take place at the CVHT this winter.

For more information, contact Deborah Curtis, 202-493-3267, deborah.curtis@dot.gov.

SAFETY

Roadway Safety Data Partnership Capability Assessment

Have you scheduled your roadway data assessment yet? The Roadway Safety Data Partnership Capability is designed to work with each State to help it understand its roadway data capabilities and to encourage States to identify goals to guide roadway data improvement efforts. In addition, the information gathered from the assessments will help FHWA identify national gaps and better focus its efforts to support state activities aimed at reaching roadway data goals.

To learn more about the assessment or to schedule your State's assessment, please contact Heather Rothenberg, 202-366-2193, heather.rothenberg2@dot.gov.

More information is also available online at <http://safety.fhwa.dot.gov/rsdp>.

FHWA Issues Guidance on Fundamental Roadway Safety Data Collection

While many States are pursuing improvement in highway safety data analysis and the usage of analytical tools, many are asking what types of roadway data they should be collecting. FHWA's Office of Safety and an assembled Expert Working Group ended a year and a half of analysis and deliberation on this issue when they issued guidance on August 1, 2011 that describes the 38 fundamental roadway and traffic data elements that States should be collecting for their Highway Safety Improvement Program analysis. This new guidance along with its Background Research Report and a market analysis of the cost of collecting these data can be found at http://safety.fhwa.dot.gov/tools/data_tools/dcag.cfm

For more information, contact Mshadoni Smith, 202-366-7105, mshadoni.smith@dot.gov.

RECENT PERIODICALS

***FOCUS* Newsletter August 2011**

The August issue includes: A Data-Driven Approach to Inspection: FHWA Introduces New Bridge Safety Initiative; Expanded FHWA Hydraulics laboratory to Conduct Major New Bridge Scour Studies; FOCUS on Training—Ready, Set, Go: FHWA's Online Maintenance Training Series; New FHWA Tech Briefs Offer Information on Superpave Gyrotory Compaction; Webinar to Present Expert Guidance on Controlling Concrete Cracking; Subscribe to NHI Training Updates; and Highway Technology Calendar.

The issue is available online via <http://www.fhwa.dot.gov/publications/focus/11aug/11aug00.cfm>

For more information, contact Lisa Pope, lgpope@woodwardcom.com.

***FOCUS* Newsletter July 2011**

The July issue includes: RAP: The State of the Practice; FHWA Offers New Guidance on Hollow Bar Soil Nails; Intelligent Compaction: One Giant Step Forward in Quality Control; Highway Technology Calendar; Pipe Installation, Inspection, and Quality: What You Need to Know; and Annual Report Provides a Snapshot of NHI.

The issue is available online via <http://www.fhwa.dot.gov/publications/focus/11jul/11jul00.cfm>

For more information, contact Lisa Pope, lgpope@woodwardcom.com.

***Public Roads*—September/October 2011**

This issue includes: What Does It Take to Change How We Do Business?; Modeling Transportation Systems: Past, Present, and Future; Fighting Congestion with Smarter Highways; The Atlanta BeltLine: A Green Future; Going on a Road Diet; and Wherefore Art Thou Aggregate Resources for Highways?

It is available online via <http://www.fhwa.dot.gov/publications/publicroads/11septoct/index.cfm>

For more information, contact Paula Magoulas, paula.magoulas@dot.gov.

LTPP Newsletter--Summer 2011

This issue includes: FHWA, AASHTO, and States Reinforce Support for LTPP at the State Coordinators' Meeting; New! LTPP Webinars; New Publications; and E* Computation of LTPP Sites.

<http://www.fhwa.dot.gov/publications/ltpnews/11066.cfm>

Innovator: Accelerating Innovation for the American Driving Experience—September/October 2011

This issue includes: Massachusetts “Fast 14” Project Replaces Bridges in One Summer; Q&A With Mal Kerley: Using Innovation to Keep Virginia Moving; Technology Partnerships Project to Test Solar-Powered Traffic Signs; CM/GC Project Delivery Method Enhances Innovation; New Method to Permit Incremental Deck Replacement in New Hampshire; Reader Questions on Intelligent Asphalt Compaction Analyzer Answered; Quick Fix; and Calendar.

The issue is available online via <http://www.fhwa.dot.gov/hfl/innovator/issue26.cfm>

For more information, contact Kathleen Bergeron, kathleen.bergeron@dot.gov.

Links:

Turner-Fairbank Highway Research Center: <http://www.fhwa.dot.gov/research/>

Resource Center: <http://www.fhwa.dot.gov/resourcecenter/>

National Highway Institute: <http://www.nhi.fhwa.dot.gov/home.aspx>

Please forward this newsletter to others you think might find it interesting and/or useful.

Suggestions may be submitted to: FHWA_Now@fhwa.dot.gov