

FHWA R&T Now ~ November 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

The Second Strategic Highway Research Program (SHRP 2) has been underway since 2007 and almost 30 percent of over 90 projects are finished or nearing completion. Governed by its extended cooperative agreement with the Federal Highway Administration (FHWA), the Transportation Research Board (TRB) will continue to manage the research program until 2015. Meanwhile, FHWA has targeted several early products as immediate priorities for the Agency, which will lead a deployment effort in coming months.

FHWA is working with TRB and the American Association of State Highway and Transportation Officials (AASHTO) on a collaborative implementation approach for these and all SHRP 2 products. In fact, FHWA and AASHTO have identified five mutual priority early products to jointly begin implementing. Further product assessments will take place as additional SHRP 2 projects near completion.

FHWA and its partner organizations, TRB, AASHTO, and the National Highway Transportation Safety Administration, continue to work on a collaborative overall 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, ken.jacoby@dot.gov, 202-493-3186.

ADVANCED RESEARCH

Exploratory Advanced Research Program Seeks Expert, Stakeholder Involvement

To take advantage of a broad variety of scientific and engineering discovery, the Exploratory Advanced Research (EAR) Program involves traditional (State Department of Transportation researchers, University Transportation Center researchers, and TRB committee and panel members) and nontraditional stakeholders throughout the research process. The program involves stakeholders in topic identification and scoping through meetings and scanning trips; it involves them in proposal selection and project evaluation through the use of expert reviewers. With a full portfolio of 41 projects underway, the EAR Program is seeking stakeholders to assist with evaluation of ongoing research projects.

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

INFRASTRUCTURE

Memorandum: Distribution of FHWA GRS-IBS Construction Video

FHWA would like to announce the availability of the Geosynthetic Reinforced Soil Integrated Bridge System (GRS-IBS) Construction DVD that supports the Administration's Every Day Counts (EDC) initiative on this technology. The GRS-IBS construction video can be viewed on EDC's Web site:

http://www.fhwa.dot.gov/everydaycounts/technology/grs_ibs/multimedia.cfm

The construction video can be viewed on the FHWA's YouTube channel:

http://www.youtube.com/user/USDOTFHWA#p/a/u/0/w_5WFoAdoUw

The construction video follows the guidance outlined in the GRS-IBS Implementation Guide, FHWA-HRT-11-026, dated January 2011, which is available on the following Web site:

<http://www.fhwa.dot.gov/publications/research/infrastructure/structures/11026/index.cfm>

For more information, contact Michael Adams, Geotechnical Researcher, 202-493-3025, mike.adams@dot.gov; or Daniel Alzamora, Implementation Team Leader, 720-963-3214, daniel.alzamora@dot.gov.

Report: LTPP Computed Parameter: Dynamic Modulus

The dynamic modulus, $|E^*|$, is a fundamental property that defines the strain response characteristics of asphalt concrete mixtures as a function of loading rate and temperature. Given the significance of $|E^*|$, this study evaluated existing prediction models, developed new models, and populated the Long-Term Pavement Performance (LTPP) database to provide a valuable data source for the pavement community. Supplementing the full suite of material properties, performance history, traffic, and climate with $|E^*|$ estimates will be advantageous in conducting Mechanistic-Empirical Pavement Design Guide (MEPDG) calibration, validation, and implementation.

For more information, contact Larry Wiser, 202-493-3079, larry.wiser@dot.gov.

<http://www.fhwa.dot.gov/publications/research/infrastructure/pavements/ltp/10035/index.cfm>

Report: Falling Weight Deflectometer Calibration Center and Operational Improvements: Redevelopment of The Calibration Protocol and Equipment

This report details the critical updates to the Strategic Highway Research Program falling weight deflectometer calibration procedure. This report will be of interest to engineers who perform structural evaluation of pavements.

For more information, contact Eric Weaver, 202-493-3153, eric.weaver@dot.gov; or Jane Jiang, 202-493-3149, jane.jiang@dot.gov.

<http://www.fhwa.dot.gov/publications/research/infrastructure/pavements/ltp/07040/index.cfm>

Impact of Design Features on Pavement Response and Performance in Rehabilitated Flexible and Rigid Pavements

The primary focus of this research was to determine the effects of design and construction features—such as overlay thickness and mix type, presence of milling, and type of restoration—on pavement response and performance and to establish the importance of these features in the prediction of future performance of rehabilitated pavements. The results provide useful information about rehabilitated pavement section performance predictions and recommendations for future model improvements.

For more information, contact Larry Wisler, 202-493-3079, larry.wisler@dot.gov.

<http://www.fhwa.dot.gov/publications/research/infrastructure/pavements/ltp/10066/index.cfm>

TechBrief: Improved Corrosion-Resistant Steel for Highway Bridge Construction

Plate girder bridges are usually fabricated from painted carbon steels or unpainted weathering steels. Weathering steels, including the modern high-performance steels, offer the lowest life-cycle cost (LCC) over the design life of the bridge because, in most service environments, ongoing maintenance due to steel deterioration is not necessary. Reducing the cost of stainless steel would improve the LCC of bridges in severe corrosion service conditions. This study identifies steels with lower potential cost than American Society for Testing and Materials A1010 that could be candidates for bridge construction while still providing low corrosion rates.

For more information, contact Paul Virmani, 202-493-3052, paul.virmani@dot.gov.

<http://www.fhwa.dot.gov/publications/research/infrastructure/structures/bridge/11061/index.cfm>

OPERATIONS

New Operations Lab Opens at TFHRC

On October 6, 2011, FHWA's Turner-Fairbank Highway Research Center (TFHRC) Office of Operations R&D hosted an open house to showcase the new Saxton Transportation Operations Laboratory. The Laboratory is a state-of-the-art research facility focusing on transportation enabling technologies, innovative concepts and analysis, and operations applications. On-site researchers will conduct transportation operations research in a controlled environment and collaborate with Operations and Intelligent Transportation Systems research practitioners in USDOT, across the country, and across the world. The Open House included presentations, demonstrations of lab capabilities, and a tour of the facility. Demonstration topics included communications network modeling and calibration techniques, development of advanced freeway merge assistance concepts, cooperative adaptive cruise control field test results, and a live traffic signal control demonstration.

For more information, contact Bob Ferlis, 202-493-3268, robert.ferlis@dot.gov.

Report: Guide on the Consistent Application of Traffic Analysis Tools and Methods

FHWA, in support of the Traffic Analysis and Simulation Pooled Fund Study, initiated a study to identify and address consistency in the selection and use of traffic analysis tools. This document offers recommendations on the management, planning and conduct of traffic analysis that will promote greater traffic analysis tool consistency over the typical project development life cycle. It is directed toward State DOT professionals and people in other agencies who are responsible for transportation project development and delivery.

<http://www.fhwa.dot.gov/publications/research/operations/11064/index.cfm>

For more information, contact Randall VanGorder, 202-493-3266, randall.vangorder@dot.gov.

SAFETY

FHWA Laboratory Receives ISO Accreditation for Quality and Consistency

FHWA's Federal Outdoor Impact Laboratory (FOIL) at TFHRC recently received ISO:17025 certification. The International Organization for Standardization (ISO) is known as the world's largest developer and publisher of international standards. ISO accreditation is the main standard used by testing and calibration laboratories to show that they can produce consistently valid results and that they have a documented quality management system. Customers of the FOIL are primarily FHWA and other Government agencies. This rigorous accreditation allows customers to confidently compare the results of impact tests.

The assessment was conducted on August 2-3, 2011 by an external accrediting agency. The assessment included a review of reference materials to ensure set policies for testing are developed. The Laboratory also was assessed for its testing and reporting capabilities; it conducted a full-scale vehicle crash test on a 2006 Kia Rio 4-door sedan during the assessment period, to collect and process data on the vehicle's crush characteristics.

Watch the videos of the August 3, 2011, crash test on the FHWA YouTube channel at <http://www.youtube.com/watch?v=mbsestgoxnE>

http://www.fhwa.dot.gov/research/resources/iso_accreditation_for_quality_consistency.cfm

For more information, contact Eduardo Arispe, 202-493-3291, eduardo.arispe@dot.gov.

RECENT PERIODICALS

***Public Roads*—November/December 2011**

This issue includes: When Distracted Road Users Cross Paths; To ABC or Not?; In Pursuit of Sustainable Highways; Finding the Right Tool for the Job; A Living Outdoor Laboratory; and What's in the Numbers?

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

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

FOCUS Newsletter October 2011

The October issue includes: Fast 14: Accelerating Bridge Replacements in Massachusetts; PaveSuite: Transforming Pavement Data into Informed Decisionmaking; Customize Your 2011 NHI Training Catalog; Infrastructure Innovation Webinars; International Conference on Long-Life Concrete Pavements to Showcase Innovation; Highway Technology Calendar; and A Guide to FHWA's Infrastructure Publication Resources.

The issue is available online via <http://www.fhwa.dot.gov/publications/focus/11oct/11oct00.cfm>

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

Innovator: Accelerating Innovation for the American Driving Experience—November/December 2011

This issue includes: States Try Innovations on Demonstration Projects; Innovation Calls for New Ways of Working, Transportation Experts Say; ABC Methods Come Together on Iowa Project; Lending A Hand; Innovation Helps Maryland Reopen Bridges in Time for School; Ultra-High-Performance Concrete Makes the Connection on Modular Bridges; and Calendar.

The issue is available online via <http://www.fhwa.dot.gov/hfl/innovator/issue27.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