

FHWA R&T Now ~ July 2012~

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

GENERAL/ADMINISTRATIVE

FHWA Mobilizes to Implement SHRP 2

With the extension of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users through fiscal year 2012 and the passage of the Moving Ahead for Progress in the 21st Century Act (MAP-21), implementation of the Second Strategic Highway Research Program (SHRP 2) is officially underway. To date, approximately \$93 million has been made available to the Federal Highway Administration (FHWA) and the American Association of State Highway and Transportation Officials (AASHTO) to implement the SHRP 2 program. The recently signed 2-year transportation authorization, MAP-21, includes a provision to fund SHRP 2 implementation from a percentage of State Planning and Research (SP&R) funds to be determined by a three-quarter majority of the States.

While the Transportation Research Board (TRB) continues to manage the ongoing research, FHWA and AASHTO have prioritized all expected research results and agreed to a joint 3-year implementation plan that extends from 2012 through 2014. The plan calls for approximately six SHRP 2 products (or product groupings) to begin implementation each year, based on the assessed priority and readiness of each product. The plan also includes specific programmatic activities necessary to support the overall implementation effort. The plan was presented to the SHRP 2 Implementation Advisory Committee in June. In close collaboration with AASHTO and TRB, FHWA technical staff are convening implementation planning workshops for the 2012 products. Each workshop will involve key end users of the product. The end users will provide input for the development of a comprehensive product implementation plan. After finalizing each plan's strategies and budget, product deployment will officially begin.

In many cases, showcasing the product's applicability and benefits to other potential users and stakeholders through demonstrations will be an important strategy of the product implementation plan. A process is currently being developed to publicize SHRP 2 demonstration opportunities and allow State Departments of Transportation, tribal governments, Federal Land Management Agencies, Metropolitan Planning Organizations, and local governments to apply for demonstration funding.

For more information, contact Margie Sheriff, 202-366-1747, margie.sheriff@dot.gov.

ADVANCED RESEARCH

Postdoctoral Associates Featured in the News

Two National Research Council (NRC) postdoctoral associates working at FHWA were recently featured in the NRC Research Associates Programs newsletter, *The Postdoc*. Dr. Jose Munoz is using nanotechnology to improve concrete aggregate performance. Dr. Emmanuel Bolarinwa is enhancing crash simulation efforts by developing an improved finite element model for vehicle tires.

For more information, visit

http://sites.nationalacademies.org/xpedio/groups/pgasite/documents/webpage/pga_066045.pdf

INFRASTRUCTURE

TechBrief: Relating Ride Quality and Structural Adequacy for Pavement Rehabilitation and Management Decisions

This TechBrief discusses the relationship between pavement ride quality and structural adequacy. It presents highlights from a literature search and findings from the analysis and comparison of ride quality and structural adequacy data from the Long-Term Pavement Performance program. Although a viable relationship between the two parameters could not be established, the lack of correlation is considered of value to pavement management system practitioners, as it indicates that good ride quality does not mean good structural support or vice-versa. This becomes an important consideration for those who want to base performance measures on ride quality indicators.

This document is available at

<http://www.fhwa.dot.gov/publications/research/infrastructure/pavements/ltpp/12046/index.cfm>.

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

Report: Simplified Techniques for Evaluation and Interpretation of Pavement Deflections for Network-Level Analysis: Guide for Assessment of Pavement Structure Performance for PMS Applications

The objective of this study was to develop an approach for incorporating techniques to interpret and evaluate deflection data for network-level pavement management system (PMS) applications.

This document is available at

<http://www.fhwa.dot.gov/publications/research/infrastructure/pavements/ltpp/12025/index.cfm>.

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

Report: Evaluation of State Quality Assurance Program Effectiveness

In view of the different transportation department construction quality assurance (QA) programs and their importance toward obtaining low-cost, high-quality construction, a need still exists to measure how well each program is working. This report documents the investigation of different transportation department construction QA programs and provides recommendations for improvements that can increase the effectiveness of QA programs.

The document is available at <http://www.fhwa.dot.gov/publications/research/infrastructure/12027/>.

For more information, contact Fred Faridazar, 202-493-3076, fred.faridazar@dot.gov.

Report: Pier Scour in Clear-Water Conditions With Non-Uniform Bed Materials

The study described in this report was conducted in the J. Sterling Jones Hydraulics Laboratory at FHWA's Turner-Fairbank Highway Research Center in response to requests from State departments of transportation for new design guidance to predict bridge pier scour for coarse bed material. The study included experiments conducted at this laboratory and data analysis from the Colorado State University and the

United States Geological Survey. This report will be of interest to hydraulic engineers and bridge engineers involved in bridge foundation design.

The document is available at
<http://www.fhwa.dot.gov/publications/research/infrastructure/hydraulics/12022/index.cfm>.

For more information, contact Kornel Kerenyi, 202-493-3142, kornel.kerenyi@dot.gov.

SAFETY

National Roadway Safety Data Partnership Peer Exchanges

FHWA's Office of Safety is announcing four national Roadway Safety Data Partnership (RSDP) peer exchanges. These exchanges will provide States with the opportunity to share knowledge about the key data capability areas addressed by the RSDP's recent State Data Capability Assessment, including data collection and management; data analysis and tools; data processes and policies; and data interoperability and expandability. Each of the peer exchanges will focus on one of these four aspects of a State's data capabilities. Also, during each peer exchange, participating States will discuss the state-of-the-practice for geographic information systems (GIS) based safety analysis, and will identify gaps in GIS research. Each State will be invited to participate in a specific peer exchange based on the results of their State Data Capabilities Assessment. Following the last of the peer exchanges, a national data action plan will be constructed.

The first two peer exchanges will be held August 15–16 in Indianapolis, IN and September 11–12 in Lakewood, CO. Approximate timeframes for the final two exchanges are November 2012 and February 2013.

For more information about the peer exchanges, contact Melonie Barrington, 202-366-8029, melonie.barrington@dot.gov.

For more on the RSDP, visit <http://safety.fhwa.dot.gov/rsdp/index.cfm>

August 21 Launch for Safety Pilot Model Demonstration of Connected Vehicle Technology

On August 21, 2012, the U.S. Department of Transportation and the University of Michigan Transportation Research Institute will launch the Safety Pilot Model Demonstration (SPMD) in Ann Arbor, MI. The project is a field trial of connected vehicle technology, which is based on wireless communication between vehicles (V2V) and between vehicles and critical infrastructure components (V2I), such as traffic signal controllers. FHWA is a partner in SPMD, and has led efforts to develop the roadside equipment for this project, which permits V2I communications. The transfer of information between vehicles, and between vehicles and the infrastructure, enables safety applications that alert drivers about potential crashes and other hazardous conditions. National Highway Traffic Safety Administration (NHTSA) research has found that connected vehicle technology has the potential to reduce the likelihood or severity of crashes in up to 80 percent of non-impaired crash scenarios. The SPMD will involve approximately 3,000 vehicles including cars, trucks, and transit vehicles that will operate for 1-year in a real-world driving environment. Data from the SPMD will be used to support a 2013 NHTSA agency decision on the future of connected vehicle technology.

For more information, contact Carl Andersen, 202-493-3366, carl.andersen@dot.gov.

For more information about the SPMD, visit http://www.its.dot.gov/safety_pilot/index.htm.

Report: Field Evaluation of a Restricted Crossing U-Turn Intersection

FHWA's Office of Safety Research and Development is focused on improving highway operations and safety by increasing the knowledge and understanding of the effects of intersection design on operational efficiency and safety. In rural areas, four-lane divided access highways often serve as the arteries for mobility and commerce. Local residents and businesses commonly access these highways via two-way stop-controlled intersections. Left turns and through movements onto or across these highways too often result in serious crashes. The restricted crossing U-turn (RCUT) intersection design is intended to address this safety issue. This report includes the results of driver behavior observations at an RCUT intersection in Maryland and the results of an empirical Bayes before after crash analysis for RCUT intersections on two Maryland corridors. This report should be useful to traffic engineers, planners, and officials who are considering safety improvements at unsignalized intersections on four-lane divided highways.

For more information, contact Monique Evans, 202-493-3074, monique.evans@dot.gov.

The document is available at

<http://www.fhwa.dot.gov/publications/research/safety/hsis/11067/index.cfm>.

RECENT PERIODICALS

Public Roads—July/August 2012

This issue includes: Trouble in Paradise; Behind the Scenes at TMCs; Unearthing Crow Tribal History; Replacing Historic Bear Creek Bridge; and Walking and Bicycling Pay Off.

It is available online via <http://www.fhwa.dot.gov/publications/publicroads/12julaug/index.cfm>

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

FOCUS Newsletter July 2012

The July issue includes: Extending the Service Life of Suspension Bridge Cables: FHWA Releases New Inspection Primer; States Step into a Virtual World at FHWA Geotechnical Expo; Intelligent Compaction; The Road from Evaluation to Implementation; A Quick Introduction to Change Orders and Claims; Infrastructure Innovation Webinars; and Highway Technology Calendar.

The issue is available online via <http://www.fhwa.dot.gov/publications/focus/12jul/12jul00.cfm>

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

Innovator: Accelerating Innovation for the American Driving Experience—May/June 2012

This issue includes: Vermont Sets Stainless Standard for Bridges; All-Weather Pavement Marking System Gets Work Zone Test; Innovation Halves Construction Time and Saves Millions on D.C. Bridge Project; States Apply Preservation Strategies to Make Bridges Last; Innovation in Action; Innovative Transporters Chop Years From Lane Closures; and Calendar.

The issue is available online via <http://www.fhwa.dot.gov/hfl/innovator/issue30.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