FHWA R&T Now ~ January 2011~

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

GENERAL/ADMINSTRATIVE

Planning for the Second SHRP2 Implementation

There are more than 80 Strategic Highway Research Program (SHRP 2) research projects, and all except one are underway. The Transportation Research Board (TRB) is convening implementation planning workshops to facilitate the deployment of early SHRP 2 products. TRB's SHRP 2 staff members, working in conjunction with the Technical Coordinating Committees, have reviewed projects nearing completion and identified those that warrant pre-implementation initiatives or further research during 2011. FHWA liaisons and technical staff members are fully engaged in this process.

The current continuing resolution extended the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users surface transportation authorization through March 4, 2011 and amended Section 510 of Title 23 to allow the Secretary of Transportation to use SHRP 2 funds for implementation of research products related to SHRP 2. This includes development, demonstration, evaluation, and technology transfer activities. FHWA is taking a measured approach and carefully assessing those SHRP 2 products that the agency is best positioned to deploy. FHWA continues to collaborate with TRB, the American Association of State Highway and Transportation Officials (AASHTO), and the National Highway Traffic Safety Administration to educate and position our agencies, State departments of transportation and industry for deployment of SHRP 2 research results. This multi-organizational approach to implementation activities will ensure that proper preparations are made for the establishment of a formal SHRP 2 Implementation Program, upon reauthorization.

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

ADVANCED RESEARCH

FHWA EAR Program Builds on Emerging Information Technologies for Multimodal Integration

FHWA entered into a contract with the University of Southern California to develop a new type of decentralized transportation system capable of real-time allocation of resources. The premise is that an intelligent use of traffic information and dynamic trip matching will enhance private transportation decisions, tapping into unused vehicle capacity, radically transforming the way people use transportation systems. For more information on this Exploratory Advanced Research (EAR) Program project, contact Karen White, 202-366-9474, karen.white@dot.gov.

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

FHWA EAR Workshop Explores Technological Innovations in Transportation for People with Disabilities

On February 23, FHWA's Office of Operations Research and Development (R&D) is conducting a workshop at the Turner-Fairbank Highway Research Center for technology and disability experts outside transportation to discuss how technological advancements could help to empower people with disabilities to become more mobile. The workshop participants will discuss technologies, such as mobile computing,

computer vision, artificial intelligence, and robotics, that could be used for innovative ways to help those with vision impairment and cognitive impairments be more independent. The workshop will also connect FHWA technical experts with those from the University Transportation Centers, Federal agencies, and other sources who are conducting relevant accessible transportation research. For technical information about this EAR Program investigation, contact Mohammed Yousuf, 202-493-3199, mohammed.yousuf@dot.gov.

For more information about the EAR Program, contact Zachary Ellis, 202-493-3193, zachary.ellis@dot.gov.

INFRASTRUCTURE

Geosynthetic Reinforced Soil Integrated Bridge System, Interim Implementation Guide

Geosynthetic Reinforced Soil (GRS) technology consists of closely spaced layers of geosynthetic reinforcement and compacted granular fill material. GRS has been used for a variety of earthwork applications since the U.S. Forest Service first used it to build walls for roads in steep mountain terrain in the 1970s. Since then, the technology has evolved into the GRS Integrated Bridge System (IBS), a fast, cost-effective method of bridge support that blends the roadway into the superstructure. GRS-IBS includes a reinforced soil foundation, a GRS abutment, and a GRS integrated approach. The application of IBS has several advantages. The system is easy to design and economically construct. It can be built in variable weather conditions with readily available labor, materials, and equipment and can easily be modified in the field. This method has significant value when employed for small, single-span structures meeting the criteria described in this manual.

As a result of the demonstrated performance of GRS-IBS, the technology was selected for the Federal Highway Administration's (FHWA) Every Day Counts initiative, aimed at accelerating implementation of proven, market-ready technologies. This manual is the first in a two-part series and outlines the design and construction of GRS-IBS.

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

For more information, contact Mike Adams, 202-493-3025, mike.adams@dot.gov.

Geosynthetic Reinforced Soil Integrated Bridge System Synthesis Report

This report is the second in a two-part series and provides the background and other supporting information to substantiate the design method of GRS-IBS. The first document is a manual covering the design and construction of GRS-IBS. This two-part document series designs GRS as a composite material with known and predictable performance and deformations. Both documents are a collaboration between many disciplines within FHWA: geotechnical, structural, hydraulic, maintenance, and pavement engineering.

http://www.fhwa.dot.gov/publications/research/infrastructure/structures/11027/index.cfm

For more information, contact Mike Adams, 202-493-3025, mike.adams@dot.gov.

SAFETY

FHWA Publishes the Model Inventory of Roadway Elements

The FHWA Office of Safety and Office of Safety R&D announce the release of the Model Inventory of Roadway Elements Version 1.0 (MIRE 1.0). Safety data have long been the key to sound decisions about the design and operation of roadways. The emergence of safety analysis tools, such as SafetyAnalyst, the Interactive Highway Safety Design Model (IHSDM), and other procedures identified in the new Highway Safety Manual, has sharply increased the need for more and better safety data, such as crash data, roadway inventory data, traffic data, driver history data, citation/adjudication information, and other files.

MIRE 1.0 provides standardized definitions of roadway and traffic data elements, including coding for consistent capture of those data elements in databases.

For more information, contact Bob Pollack, 202-366-5019, robert.pollack@dot.gov or Carol Tan, 202-493-3315, carol.tan@dot.gov.

The MIRE Report can be found online at: http://safety.fhwa.dot.gov/tools/data_tools/mirereport/. Additional background information, resources, and discussion forums can be found at the MIRE Web site at www.mireinfo.org.

FHWA Releases Software Suite Update

The FHWA Office of Safety R&D announces that the *updated* version of *2010 Public Release of Interactive Highway Safety Design Model (IHSDM)—Highway Safety Manual (HSM) Predictive Method (version 6.0.2)* is now available for free downloading at www.ihsdm.org. (Existing registered users, follow the "Download login" link to access this update. New users, click on the "Download Registration" link.) The IHSDM is a suite of software analysis tools for evaluating safety and operational effects of geometric design decisions. This release, which supports the AASHTO's recent publication of the HSM Part C—Predictive Method Software, includes six evaluation modules.

For more information, contact Clayton Chen, 202-493-3054, clayton.chen@dot.gov.

Roundabouts-Informational Guide, Second Edition, Released

The Roundabouts—An Informational Guide (FHWA-RD-00-067) was originally published in 2000, when there were fewer than 100 modern roundabouts in existence in the United States. Now, many hundred roundabouts later, the update to the 2000 Guide has arrived. On December 6, 2010, the TRB released Report 672, Roundabouts—An Informational Guide, Second Edition. It is available at http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_672.pdf.

In addition, resources are available to support the implementation of roundabouts: (1) a new roundabouts Peer-to-Peer Program administered by the Office of Safety Research designed to provide technical assistance to State departments of transportation and others; (2) an available National Highway Institute workshop (course number 380096) entitled *Modern Roundabouts: Intersections Designed for Safety*: and, (3) the Transportation Research Board 3rd International Roundabouts Conference to be held in Carmel, Indiana on May 18-20, 2011.

For more information, contact Jeffrey Shaw, jeffrey.shaw@dot.gov.

OPERATIONS

FHWA Staff Participates in 12th Annual International Roundtable on Accessible Transport

On January 27, Mohammed Yousuf of FHWA's Office of Operations R&D spoke on "technological innovations in transportation for persons with disabilities" at roundtable series hosted by the American Public Transportation Association. The roundtable series was held to provide opportunities for informal reports and dialogue by international practitioners and stakeholders concerned with promoting accessible transport for persons with disabilities, seniors, and other beneficiaries of universal designs. The series was cosponsored by Access Exchange International (San Francisco) and the International Centre for Accessible Transportation (Montreal).

For more information, contact Mohammed Yousuf, 202-493-3199, mohammed.yousuf@dot.gov.

Modeling and Simulation

The project, Effective Integration of Analysis Modeling and Simulation Tools, will be initiated this year as part of an ongoing research program. It will define a model integration concept of operations and requirements that will enable harmonious information exchange, and data transferability among models of various domains and scale. These new methods and tools will be validated through a proof of concept and prototype(s) demonstration.

For more information contact Joe Bared, (202) 493-3314, joe.bared@dot.gov.

RECENT PERIODICALS

FOCUS Newsletter—November 2010

This issue includes: Transportation Asset Management: A Focus on Implementation; New Course Offers Bridge Inspection Refresher Training; Adding Value With FHWA's VE Workshop; Excellence in Highway Design 2010; Highway Technology Calendar; and, TRB Session to Feature LTPP Strategies for Collecting Quality WIM Data.

http://www.fhwa.dot.gov/publications/focus/10nov/index.cfm

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FOCUS Newsletter—December 2010

This issue includes: The LTPP Program: Two Decades of Advancements in Pavement Design and Management; The Online Source for Training the Transportation Workforce; SHRP 2 To Hold Innovative Bridge Symposium; Highway Technology Calendar; FHWA Training Examines Inspection Techniques for Steel Bridges; and, Your Ticket to Innovations and Real Solutions.

http://www.fhwa.dot.gov/publications/focus/10dec/index.cfm

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***Public Roads* –November/December 2010**

This issue includes: The Double Crossover Diamond; Integrated Corridor Management; Workforce Development in Action; and, The CMF Clearinghouse: A Handy Safety Tool.

http://www.fhwa.dot.gov/publications/publicroads/10novdec/index.cfm

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***Public Roads* –January/February 2011**

This issue includes: Managing Traffic Operations During Adverse Weather Events; Twisting Roads Still Spell Trouble; Winds, Windstorms, and Hurricanes; Using GPR to Unearth Sensor Malfunctions; Traffic Simulation Runs: How Many Needed?; and, Pooling Talent and Technologies.

http://www.fhwa.dot.gov/publications/publicroads/11janfeb/index.cfm

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***Innovator–Accelerating Innovation for the American Driving Experience*—October/November 2010**

This issue includes: Showcase Shows Off Accelerated Construction of D.C. Bridge; Road Safety Audits Attract Growing Interest; Fabrication of Innovative Bridge Deck Panels Displayed; Market Research Lowers Innovation Deployment Risk; Highways for LIFE Spotlights Key Innovations; Labs Try New Device to Measure Cold-Weather Cracking of Asphalt Binders; Progress Cited for FRP Composites in Bridges; and, Calendar.

http://www.fhwa.dot.gov/hfl/innovator/issue21.cfm

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TRB Conduct of Research Committee – *January 2011 Newsletter*

This issue includes: Sharing Information and Ideas to Collaboratively Address Transportation Research Challenges; CoR (ABG 10) Guide to TRB 90th Annual Meeting; and, Social Media and New Developments in Electronic Communications for the Conduct of Research Committee.

https://sites.google.com/site/conductofresearchcommittee/documents-and-files/january-2011-newsletter

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

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