

# FOCUS

May 2013

## INSIDE

- 3 LTPP-PLUG: Plug your traffic loading data gaps
- 4 Get ready for SHRP2 Tuesdays
- 5 How to build a transportation asset management plan
- 6 Highway technology calendar
- 7 Infrastructure innovation webinars

## Maintenance Leadership Academy *Training Today's Highway Maintenance Managers*

**A**dvance your skills as a highway maintenance manager or supervisor with the new Maintenance Leadership Academy available from the Federal Highway Administration's (FHWA) National Highway Institute (NHI).

Designed to be an intensive program for State, district, and county maintenance managers and supervisors, the Academy can assist agencies in shortening the time needed to train new managers, as well as provide career development for more experienced staff. The training highlights both the changes in highway maintenance that have occurred over the past 20 years and the new technologies that will transform future maintenance practices. Participants will study personnel management, materials selection, equipment use, budgeting, and maintenance planning.

Featured topics include:

- Use of maintenance administration to achieve highway agency goals.
- How pavement and bridge preservation treatments fit into an overall system preservation program and the optimal timing for treatments.
- Drainage maintenance and roadside management techniques.
- A maintenance manager's roles and responsibilities for developing, implementing, and managing a comprehensive plan to address weather-related events.
- Maintenance and use of traffic control devices, including work zone plans, work zone traffic control devices, signs, striping, guardrails, and median barriers.

continued on page 2 >

[www.fhwa.dot.gov/publications/focus/index.cfm](http://www.fhwa.dot.gov/publications/focus/index.cfm)



U.S. Department  
of Transportation

**Federal Highway  
Administration**



Participants at the fall 2012 session of FHWA's Maintenance Leadership Academy, which was held in TN.

## Maintenance Leadership Academy, continued from page 1

- How environmental protection issues, regulations, and control measures affect highway maintenance activities.

Following an initial session in Texas, the Academy was held in fall 2012 in Tennessee. “It was a very good learning experience,” said participant Ritchie Swindell of the Georgia Department of Transportation. “The information on pavement preservation was particularly helpful, as we are concentrating more on system preservation now. I brought the information from the pavement preservation module back and shared it with colleagues.”

“The training was outstanding,” said Tony Thompson of the South Carolina Department of Transportation. “As my previous experience was in construction, every aspect of it was useful for me. I think everyone appreciated the opportunity to meet participants from various States and talk about the ways we handle different situations. I would absolutely recommend it to others.”

The Academy’s 8-week schedule combines 12 days of classroom training with 32.5 hours of independent study and two 1-hour Web conferences, minimizing the time participants need to be away from their jobs. Participants should have previously completed “Pavement Preservation Treatment Construction” (Course No. FHWA-NHI-131110), or had equivalent training or experience in this content area.

Agencies can host a session in their State or work with NHI to plan a regional session. The cost is \$2,000 per participant, with a minimum class size of 20 and

“The information on pavement preservation was particularly helpful, as we are concentrating more on system preservation now.”



© www.iStockphoto.com/Mike Clarke

Topics covered at the Maintenance Leadership Academy include materials selection, equipment use, and maintenance planning.

a maximum of 30. The next session is scheduled to begin in Phoenix, Arizona, in September 2013. For more information on the Maintenance Leadership Academy (Course No. FHWA-NHI-

134063), visit [www.nhi.fhwa.dot.gov](http://www.nhi.fhwa.dot.gov) and select “Search for a Course.” Information is also available by contacting Marty Ross at NHI, 720-963-3212 (email: [marty.ross@dot.gov](mailto:marty.ross@dot.gov)). \*

# LTPP-PLUG: Plug Your Traffic Loading Data Gaps

New software available for beta testing from the Federal Highway Administration's (FHWA) Long-Term Pavement Performance (LTPP) program is helping transportation agencies plug their traffic loading data gaps when designing pavements.

FHWA developed the LTPP-PLUG (Pavement Loading User Guide) software to assist agencies in selecting axle loading defaults to use with the *Mechanistic-Empirical Pavement Design Guide* (MEPDG). These defaults can be used for pavement sites where site-specific traffic data collected by weigh-in-motion

(WIM) equipment are limited or do not exist.

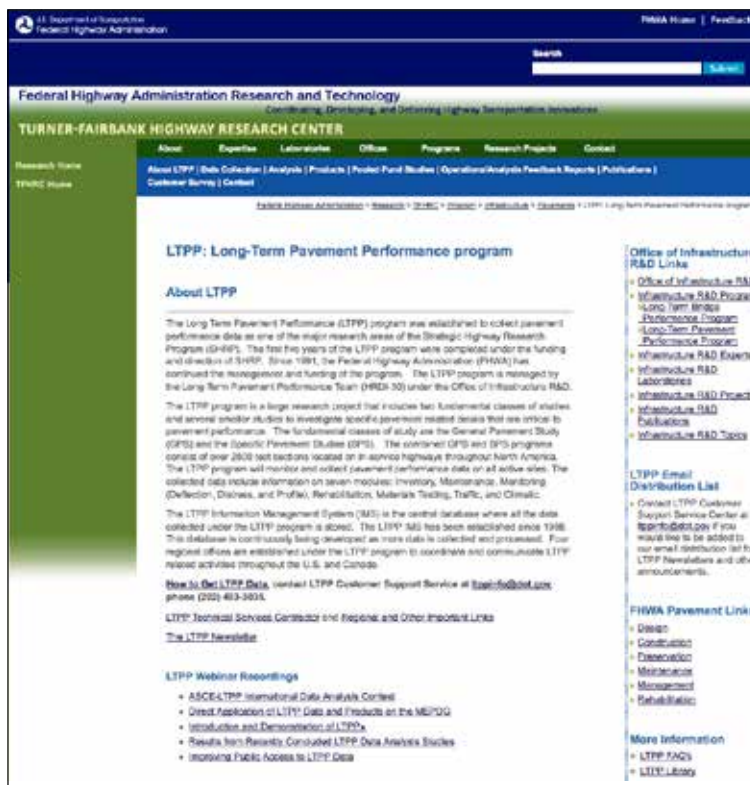
Available as a Microsoft Access® database application, LTPP-PLUG works with both LTPP and user-provided WIM data summaries to produce axle load distribution files. These files can be used with the MEPDG and its related software products. The LTPP WIM data describes the range of axle loading conditions observed at select Specific Pavement Study (SPS) sites of the LTPP program.

"LTPP-PLUG gives you the flexibility to pick what's best for you. Designed to be easy to use by pavement engineers, it lets you use either global defaults or

targeted defaults based on your own data," said Mark Hallenbeck of the Washington State Transportation Center. "The resulting file then becomes an input to the MEPDG." The program can meet the needs of both pavement engineers that have little background in traffic data and staff more experienced in working with such data.

Agencies can compare their own data to the LTPP axle loading defaults and decide which is better to use. Users also have the option of being guided through the selection process. The LTPP loading defaults are divided into two tiers. Tier 1 represents a national default, or the average loading condition from LTPP SPS sites for each type of axle for every class of vehicle. Tier 2 groups these data into different loading conditions, ranging from very light to very heavy axle load distributions. Also built into the LTPP-PLUG software is a mechanism for grouping axle loading distributions supplied independently by State highway agencies and then computing State-specific axle loading defaults.

To receive a free copy of LTPP-PLUG for beta testing, send an email to [LTPPinfo@dot.gov](mailto:LTPPinfo@dot.gov). Beta testing will continue until June 14, 2013. To download the recorded presentations from a February FHWA Webinar that featured LTPP-PLUG, visit [www.fhwa.dot.gov/research/tfhr/programs/infrastructure/pavements/ltpplug](http://www.fhwa.dot.gov/research/tfhr/programs/infrastructure/pavements/ltpplug). For more information, contact Deborah Walker at FHWA, 202-493-3068 (email: [deborah.walker@dot.gov](mailto:deborah.walker@dot.gov)).

The image is a screenshot of the Federal Highway Administration's website, specifically the page for the Long-Term Pavement Performance (LTPP) program. The page header includes the FHWA logo and navigation links. The main content area is titled "LTPP: Long-Term Pavement Performance program" and contains an "About LTPP" section. This section describes the program's purpose, which is to collect pavement performance data for research and development. It mentions that the program was established in 1981 and is managed by the Long-Term Pavement Performance Team (LTPPT) under the Office of Infrastructure R&D. The page also lists various resources, including technical services, webinars, and a list of LTPP sites. A sidebar on the right contains links to related resources, such as "Office of Infrastructure R&D Links" and "FHWA Pavement Links".

For more information about LTPP-PLUG and other resources available from the Long-Term Pavement Performance program, visit [www.fhwa.dot.gov/research/tfhr/programs/infrastructure/pavements/ltpplug](http://www.fhwa.dot.gov/research/tfhr/programs/infrastructure/pavements/ltpplug).

# Get Ready for SHRP2 Tuesdays

Mark your calendar now for SHRP2 Tuesdays. Starting in May and continuing throughout the year, the second Strategic Highway Research Program (SHRP2) will sponsor a new Webinar series scheduled primarily for the first and third Tuesday of each month. Each Webinar will highlight SHRP2 products scheduled for implementation and the significance of research results.

Launched in 2006 as a partnership among the Federal Highway Administration (FHWA), American Association of State Highway and Transportation Officials (AASHTO), and Transportation Research Board (TRB), SHRP2 has conducted more than 100 research projects designed to meet a range of pressing problems facing the Nation's roadway system. The result is an array of advanced tools and technologies for improving highway safety, renewal, reliability, and capacity.

Upcoming Webinars include Nondestructive Testing Technologies for Concrete Bridge Decks on May 21, 2013, from 2 to 3:30 p.m. (eastern daylight time). This session will explore a new SHRP2 report, *Nondestructive Testing to Identify Concrete Bridge Deck Deterioration*, and related electronic toolbox. Nondestructive testing (NDT) techniques have the potential to quickly and reliably provide information about conditions under the surface of bridge decks, so that transportation agen-

cies can make more informed treatment decisions.

The report evaluates the capabilities and limitations of the most common NDT techniques for detecting and analyzing typical deterioration occurrences in concrete bridge decks, such as delamination, corrosion, and vertical cracking. Details are included on the techniques' accuracy, precision, ease of use, speed, and cost. Techniques are also ranked and graded based on the SHRP2 project's validation work. Practitioners can use the accompanying electronic toolbox, NDTtoolbox, to obtain information on recommended technologies for detecting a particular deterioration.

The May 21 Webinar will feature representatives from Rutgers, The State University of New Jersey; FHWA; AASHTO; and TRB. The final 30 minutes of the session is reserved for participant questions.

For registration information, visit [www.trb.org/StrategicHighwayResearchProgram2SHRP2/Blurbs/168779.aspx](http://www.trb.org/StrategicHighwayResearchProgram2SHRP2/Blurbs/168779.aspx). The cost is \$89 per site. There is no fee for employees of TRB sponsors, including State transportation agency sponsors. Others eligible to receive complimentary registration include employees of tribal governments and Congressional staff members. More information on the pricing structure is available at [www.trb.org/ElectronicSessions/ConferenceRecordings.aspx](http://www.trb.org/ElectronicSessions/ConferenceRecordings.aspx). Participants

**SHRP2 SOLUTIONS**  
TOOLS FOR THE ROAD AHEAD

**Toolbox Resource for Non-Destructive Testing**  
Comprehensive guide on non-destructive testing procedures allows for smarter selection of the right technologies

A number of non-destructive testing (NDT) techniques have become available to the transportation industry in recent years. Some of these are commercially available, some are prototypes, but most are proprietary technologies. Overall, these technologies and techniques have generated faster and more effective ways to perform non-destructive testing on bridge decks, concrete tunnel linings, hot mix asphalt, and other structures and materials.

As part of the research conducted under the second Strategic Highway Research Program (SHRP2), an independent assessment of the many available NDT technologies was conducted to determine the capabilities and limitations within the range of products available.

Non-Destructive Testing Technologies Lead to More Rapid Reconstruction

**The Solution**

A new resource – the NDTtoolbox – is being created through SHRP2 as an electronic repository of NDT techniques and technologies, bringing together information and assessments derived from the research in an easily accessible and readily available format. Users will be able to use the NDTtoolbox to explore different NDT technologies, view their benefits, and learn how to use them effectively. The toolbox will include information and descriptions of the technology, its applications, performance, and limitations, equipment, test procedures, and protocols, and sample results.

The SHRP2 research of NDT techniques assessed the strengths and limitations of applicable NDT technologies from the perspective of speed, accuracy, precision, and ease of use. Test procedures and protocols for the most effective application of NDT methods will be identified and available in the NDTtoolbox, as well as a comprehensive guide to the technologies available. The NDTtoolbox will allow transportation agencies to quickly review these non-destructive testing methods and more easily identify which method is best to use.

The NDTtoolbox will serve as a quick reference of validated methods for identifying deterioration on concrete bridge decks, as well as those for quality control of construction materials and pavements, and condition assessment of pavements and tunnels. When completed, the NDTtoolbox will include results from six related NDT research projects and will provide recommendations regarding the best technologies to use for a particular deterioration detection application.

**Save Lives**  
Better information allows engineers to take better care of bridges and roads.

**Save Money**  
Picking the right technology for the situation prevents trial and error.

**Save Time**  
Choosing the learning curve saves owners time.

Tools detect defects, saving placement and allow immediate repair.

Upcoming SHRP2 Webinars include a session highlighting Non-destructive Testing Technologies for Concrete Bridge Decks.

can earn professional development hours. For questions about registration or professional development hours, contact Reggie Gillum at TRB, [RGillum@nas.edu](mailto:RGillum@nas.edu).

Upcoming Webinars also include Expedited Planning and Environmental Review of Highway Projects on June 4 and Performance Specifications for Rapid Renewal on June 11. To receive notices about future Webinars, sign up for SHRP2 email alerts at [www.trb.org/StrategicHighwayResearchProgram2SHRP2/Blank2.aspx](http://www.trb.org/StrategicHighwayResearchProgram2SHRP2/Blank2.aspx). More information on SHRP2 is available at <http://shrp2.transportation.org>. \*

continued on page 8 >



# How to Build a Transportation Asset Management Plan

**B**uild your transportation agency's case for infrastructure investments with two new courses from the Federal Highway Administration's (FHWA) National Highway Institute (NHI) that teach participants how to develop a Transportation Asset Management Plan (TAMP).

A TAMP is a business plan that outlines necessary infrastructure investments and explains how the resources will be used. Start learning the basics of developing a TAMP with the free 1-hour Web-based training course, "Introduction to a Transportation Asset Management Plan" (Course No. FHWA-NHI-131106C).

The training covers the typical content of a plan, including how this content relates to requirements in the Moving Ahead for Progress in the 21st Century Act (MAP-21); key components such as performance projections and financial summaries; expected involvement of transportation agency personnel in developing and updating a plan; and how TAMPs are being used by agencies. Also featured are audio clips from leaders in State highway agencies discussing the ways they expect to use their TAMPs and expected benefits.

The Web-based training is a prerequisite for attending the more comprehensive 1.5-day training course, "Development of a Transportation Asset Management Plan" (Course No. FHWA-NHI-131106B). This course discusses the role of a TAMP as a planning, communication, and accountability tool and provides the templates and guidelines agencies need to develop or enhance their own

plan. The focus is on the three primary components of a TAMP: strategic performance measurement, risk assessment, and financial management. Participants will learn strategies for incorporating risk into investment decisions and determining whether their agency is making sustainable, long-term investments in its assets.

Both TAMP courses are designed for senior- and mid-level managers from State and local transportation agencies who have responsibility for asset management decisionmaking. Potential participants may include members of asset management steering committees and staff who work in planning, engineering,

maintenance and operations, financial management, traffic and safety engineering, system operation and management, and information technology.

The course fee for "Development of a Transportation Asset Management Plan" is \$350 per participant, with a minimum class size of 20 and a maximum of 30. For more information on taking both TAMP courses, visit [www.nhi.fhwa.dot.gov](http://www.nhi.fhwa.dot.gov) and select "Search for a Course." To learn more about developing a TAMP, visit [www.fhwa.dot.gov/asset](http://www.fhwa.dot.gov/asset), or contact Nastaran Saadatmand at FHWA, 202-366-1337 (email: [nastaran.saadatmand@dot.gov](mailto:nastaran.saadatmand@dot.gov)), or Steve Gaj at FHWA, 202-366-1336 (email: [stephen.gaj@dot.gov](mailto:stephen.gaj@dot.gov)). \*



A Transportation Asset Management Plan outlines necessary infrastructure investments and explains how the resources will be used.

# Highway Technology Calendar

*The following events provide opportunities to learn more about products and technologies for accelerating infrastructure innovations.*

## **Seventh National Seismic Conference on Bridges and Highways**

May 20–22, 2013, Oakland, CA

Conference sessions will focus on understanding and mitigating damage to the Nation's highway infrastructure from earthquakes and other natural hazards. Sponsors include the Federal Highway Administration (FHWA); California Department of Transportation; Transportation Research Board; American Association of State Highway and Transportation Officials; University at Buffalo, The State University of New York; and the Multidisciplinary Center for Earthquake Engineering Research.

*Contact:* Phillip Yen at FHWA, 202-366-5604 (email: wen-huei.yen@dot.gov), or visit <http://7nsc.info>.

## **Thirtieth Annual International Bridge Conference (IBC)**

June 2–6, 2013, Pittsburgh, PA

Sponsored by the Engineers' Society of Western Pennsylvania, the IBC will cover all aspects of bridges, including design, engineering, construction, maintenance, preservation, and rehabilitation. A special session on June 3 will highlight the bridge program of this year's featured agency, the Massachusetts Department of Transportation. Also featured are seminars on the most promising bridge products resulting from the second Strategic Highway Research Program (SHRP2) and new tools and resources for steel

bridge design. Workshops will include presentations by FHWA on Application of Software in Load Rating of Highway Bridges, Accelerated Bridge Construction, Bridge Preservation Strategies, and Moving the Bridge Industry Towards Bridge Information Modeling (BrIM) Project Delivery and Data Management. For participants registered for the IBC, there is no additional cost for the FHWA workshops. The conference also offers an optional bus tour highlighting unique area bridges.

*Contact:* Myint Lwin at FHWA, 202-366-4589 (email: myint.lwin@dot.gov), or visit [www.eswp.com/bridge](http://www.eswp.com/bridge).

## **Second National Covered Bridge Conference**

June 5–8, 2013, Dayton, OH

The FHWA National Historic Covered Bridge Preservation Program is sponsoring the conference in partnership with the National Park Service and U.S. Forest Service. Themes include research and rehabilitation projects, best practices for rehabilitation, and continuing threats and challenges to covered bridges, including damage caused by Hurricane Irene and Tropical Storm Lee in 2011. Participants will have the opportunity to tour several historic covered bridges.

*Contact:* Everett Matias at FHWA, 202-366-6712 (email: everett.matias@dot.gov), or visit [www.woodcenter.org/2013-national-covered-bridge-conference](http://www.woodcenter.org/2013-national-covered-bridge-conference).

## **Fiftieth Annual Petersen Asphalt Research Conference**

July 15–17, 2013, Laramie, WY

Organized by the Western Research Institute (WRI), the conference presents current research aimed at understanding and improving asphalt performance. Topics range from fundamental compositional research to applied field engineering. Participants are invited to take part in an open mic discussion.

*Contact:* Steve Salmans at WRI, 307-721-2306 (email: ssalmans@uwyo.edu), or Jack Youtcheff at FHWA, 202-493-3090 (email: jack.youtcheff@dot.gov). Information is also available at [www.petersenasphaltconference.org](http://www.petersenasphaltconference.org).

## **2013 Pavement Performance Prediction Symposium**

July 18, 2013, Laramie, WY

Presented by WRI in cooperation with FHWA's Turner-Fairbank Highway Research Center, the symposium will take an in-depth look at a single asphalt-related topic.

*Contact:* Steve Salmans at WRI, 307-721-2306 (email: ssalmans@uwyo.edu), or Jack Youtcheff at FHWA, 202-493-3090 (email: jack.youtcheff@dot.gov). More information on the selected topic will be available at [www.petersenasphaltconference.org](http://www.petersenasphaltconference.org).\*

# Infrastructure Innovation Webinars

These free Webinars provide a quick introduction to the latest infrastructure innovations and technologies.

## Know the Risks: Geotechnical Assets Are Key to Improving Performance

Part 1, May 13, 2013, 2–3:30 p.m. (eastern daylight time)

Part 2, June 24, 2013, 2–3:30 p.m. (eastern daylight time)

Sponsored by the Federal Highway Administration (FHWA) and American Association of State Highway and Transportation Officials (AASHTO), the Webinars will examine the role of geotechnical assets in the performance of transportation systems. Participants will learn how to consider risk and implement asset plans designed to improve performance. Case studies will highlight steps State transportation departments and Federal agencies are taking to manage their geotechnical assets.

Topics for Part 1 include capturing the impact of geotechnical assets on system performance, risk-based methods for managing geotechnical features in transportation infrastructure, and the Washington State Department of Transportation's Unstable Slope Management Program. Part 2 will feature case studies from Colorado and Yosemite National Park, as well as discussion of retaining wall management programs and geotechnical asset management of mechanically stabilized earth walls.

No registration is required. To join the Webinars, call 866-299-7945 (enter "3450166" as the participant passcode) and log into [www.livemeeting.com/cc/icollaboration/join?id=TAM\\_Webinar&role=attend](http://www.livemeeting.com/cc/icollaboration/join?id=TAM_Webinar&role=attend). After each Webinar, a recording and presentations will be available at <http://tam.transportation.org>.

## Asset Management Book Club

All Webinars are from 2–3:30 p.m. (eastern daylight time).

May 22, 2013

June 26, 2013

July 24, 2013

August 28, 2013

September 25, 2013

In 2011 AASHTO published the *Transportation Asset Management Guide: A Focus on Implementation*,

which encourages transportation agencies to use asset management principles. Sponsored by FHWA and AASHTO, this Webinar series will review the content of the guide and share experiences from practitioners. To register, visit [www.fhwa.dot.gov/asset/bookclub.cfm](http://www.fhwa.dot.gov/asset/bookclub.cfm). Advance registration is required for each individual Webinar. For additional information, contact Nastaran Saadatmand at FHWA, 202-366-1337 (email: [nastaran.saadatmand@dot.gov](mailto:nastaran.saadatmand@dot.gov)). \*

The screenshot shows the FHWA Asset Management website. The main heading is "FHWA Webinar Series: Asset Management Book Club". Below this, there is a table titled "Mark your calendars for 2PM Eastern on the following dates:".

Scheduled Date	Title	Topics	Reading Assignment
1/23/2013	Introduction to the AASHTO Asset Management Guide: A Focus on Implementation	<ul style="list-style-type: none"> <li>Introduction to the Book Club</li> <li>Overview of the AASHTO Guide</li> <li>Question and Answer Session</li> </ul>	Chapter 1
2/21/2013	Setting the Direction for TAM	<ul style="list-style-type: none"> <li>Set Agency Goals and Objectives for TAM</li> <li>Perform and Agency Self Assessment and TAM Gap Analysis</li> <li>TAM Maturity Score</li> <li>TAM Implementation Process</li> <li>Case Study - Development of an Implementation Plan</li> <li>Question and Answer Session</li> </ul>	Chapter 2 and Appendix A (Gap Analysis Spreadsheet)
3/27/2013	Aligning the Organization	<ul style="list-style-type: none"> <li>Develop the Change Strategy and the Role of Leadership in Facilitating Change</li> <li>Integrate Asset Management into the Agency Culture and the Business Processes</li> <li>Establish Asset Management Roles and Responsibilities</li> <li>Establishing Performance Management Standards</li> <li>Case Study - Missouri DOT Performance Measurement</li> <li>Question and Answer Session</li> </ul>	Chapter 3 & Appendix C (Retreat Case Study)
4/24/2013	Transportation Asset Management Plan	<ul style="list-style-type: none"> <li>Purpose of a TAMSP</li> <li>Writing a TAMSP: Who's Required? Typical Content vs. MAP</li> <li>21 Requirements</li> <li>Roles and Responsibilities</li> </ul>	Chapter 4

More information about the Asset Management Book Club is available at [www.fhwa.dot.gov/asset/bookclub.cfm](http://www.fhwa.dot.gov/asset/bookclub.cfm).

# FOCUS

*Focus* (ISSN 1060-6637), which is published monthly by the U.S. Department of Transportation's Federal Highway Administration (FHWA), covers the implementation of innovative technologies in all areas of infrastructure.

Its primary mission is twofold: (1) to serve the providers of highway infrastructure with innovations and support to improve the quality, safety, and service of our roads and bridges; and (2) to help promote and market programs and projects of the various offices of FHWA's Office of Infrastructure.

**FHWA Administrator:** Victor M. Mendez

**Managing Editor:** Lisa Jackson  
Tel: 202-493-3204 (fax: 202-493-3475)  
lisa.jackson@dot.gov

**Editor:** Lisa Pope  
Tel: 202-234-7157 (fax: 202-347-6938)  
lgpope@woodwardcom.com

Federal Highway Administration (HRTM)  
6300 Georgetown Pike, McLean, VA  
22101-2296

Notice—The United States Government does not endorse products or manufacturers. Trade or manufacturers' names appear herein solely because they are considered essential to the object of the article.

Publication No. FHWA-HRT-13-013  
HIF-1/05-13(WEB)E

**SHRP2 Tuesdays,**  
continued from page 4

## Your Guide to SHRP2 Products

Find the SHRP2 tools and resources you need by visiting the program's new online Products Chart. Click on a topic to see a brief description of the resources and links to available products. The chart indicates which products are available now and when others will be ready. Resources are also grouped according to the policy goals contained in the Moving Ahead for Progress in the 21st Century Act (MAP-21), including congestion,

infrastructure, sustainability, and system reliability.

To view the chart, visit [www.trb.org/StrategicHighwayResearchProgram2SHRP2/SHRP2Products.aspx](http://www.trb.org/StrategicHighwayResearchProgram2SHRP2/SHRP2Products.aspx). Additional information on SHRP2 products can be found at <http://shrp2.transportation.org>. This summer, AASHTO, FHWA, and TRB will launch a joint online clearinghouse, goSHRP2. \*