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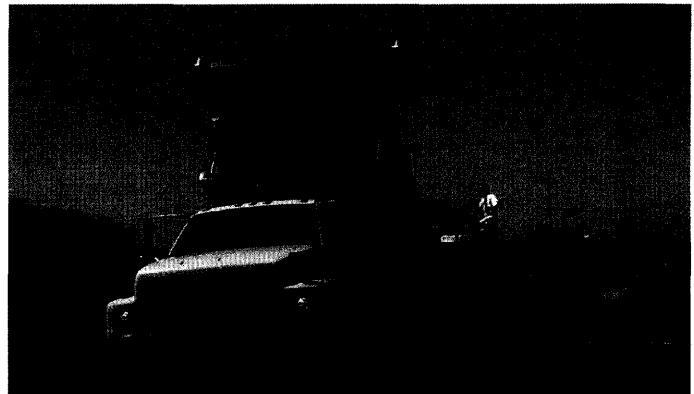
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New Help Desk: A One-Stop Source for Pavement Preservation Solutions

Help is now just a phone call away. The new Transportation System Preservation Technical Services Program (TSP²) hosted by the National Center for Pavement Preservation (NCPP) offers a Help Desk that State transportation departments can call or visit online for information and resources on pavement preservation. TSP² is sponsored by the American Association of State Highway and Transportation Officials (AASHTO). "The program provides a clearinghouse for comprehensive, up-to-date information on effective preservation technologies that enhance pavement performance and extend its useful service life," says NCPP Director Larry Galehouse. "It is a one-stop source for technical, training, and outreach services."

"As States implement asset management, system preservation will become an increasingly important strategy that can be used to achieve a desired level of service and return on investment of the transportation dollar," says Steve Varnedoe of the North Carolina Department of Transportation (NDCOT). "Having this AASHTO-supported program will provide a valuable resource to the States."

The new TSP² Web site (www.tsp2.org) features a System Preservation Technical Library, Bulletin Board System with a range of preservation-related topic discussion areas, email listservs where members can post or



The TSP² Help Desk offers information and resources on pavement preservation.

respond to questions and comments, preservation news archive, event calendar, and a Help Desk assistance request system. Assistance available through the Help Desk covers a wide range of preservation issues, including treatment technologies, asset management, best practices, certification, and network planning strategies. Access to much of the material on the Web site is restricted to State highway transportation personnel, Federal Highway Administration staff, and AASHTO members, who will be assigned a user name and password for the site. To obtain a user name and password, visit www.tsp2.org/register.php and fill out the user request form.

The TSP² Help Desk offers personalized assistance on any system preservation-related issue. "The staff of the NCPP has extensive experience with a wide range of preservation technologies and best practices, asset management, and network evaluation," says Galehouse. To contact the Help Desk, call



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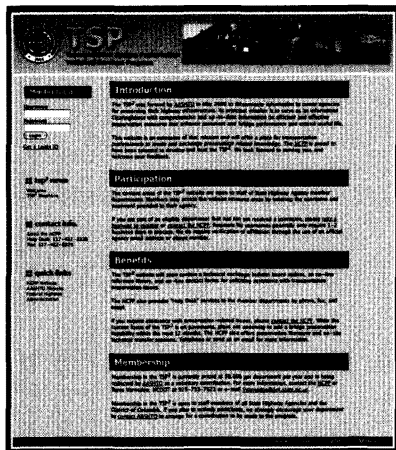
517-432-8220 (fax: 517-432-8223; email: ncpp@egr.msu.edu). Feedback obtained from Help Desk customers will be used to develop outreach and educational materials for participating members.

"We aim to add more resources and continue to enhance the program as time goes on," says Galehouse.

NCPP staff are also available through the TSP² program to present 1- to 2-day seminars for State transportation agencies on a variety of system preservation topics. Examples of available training seminars include:

- Overview of preservation technologies and best practices.
- Network evaluation and asset management techniques.
- Integrating preservation into network strategy.
- Sessions on specific preservation treatments.

Any AASHTO member can join the TSP². Membership in the program costs \$6,000 per agency per year. For more information on becoming a member, contact Ken Kobetsky at AASHTO, 202-624-5254 (email: kenk@aaashto.org), or Steve Varnedoe at NCDOT, 919-733-7621 (email: svarnedoe@dot.state.nc.us). *



Visit TSP² online at www.tsp2.org.

Blast Design and Analysis for Highway Structures

To assist States in developing standards and methods for protecting structures from terrorist threats and enhancing the security of their critical assets, the Federal Highway Administration's (FHWA) Resource Center is offering a new 1.5-day workshop to train engineers in designing and analyzing highway structures to protect against the intense dynamic loads generated by bomb blasts.

Blast Design and Analysis for Highway Structures focuses on the fundamentals of explosion effects, how to determine blast loads on bridge structures and compute the structural response to blast loads, and the design and retrofit of structures to resist blast effects. The workshop's emphasis is on terrorist threats, including vehicle-borne improvised explosive devices and hand-emplaced improvised explosive devices. Currently available software and publications on blast effects and design guidance will also be discussed and demonstrated, with specific instructions provided for obtaining and using the featured software.

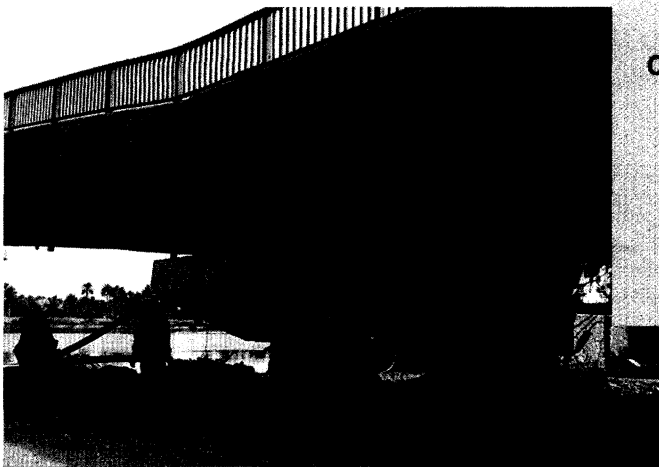
"Engineers and team leaders who are responsible for designing, reviewing, or qualifying structures that could be sub-

jected to security threats will benefit greatly from this training," says Waider Wong of the FHWA Resource Center. "It offers best practice guidance for increasing the security of critical structural assets."

A pilot session of the workshop was held for the New York State Department of Transportation's (NYSDOT) Central Bridge Design Office in Albany, New York, from May 10-11, 2006. "The training focused on blast theory and analysis methods and was very informative," notes George Christian, Director of NYSDOT's Office of Structures.

Additional sessions have been scheduled to date in New York City and South Carolina. Participants should have a general background in structural analysis and design and must be U.S. citizens.

For more information or to schedule this workshop in your State, contact Waider Wong at the FHWA Resource Center, 410-962-9252 (email: waider.wong@fhwa.dot.gov), or Steve Ernst in FHWA's Office of Bridge Technology, 202-366-4619 (email: steve.ernst@fhwa.dot.gov). *



This photo shows a bridge in Iraq severely damaged by a relatively small amount of explosives placed in a terrorist attack.

"The workshop offers best practice guidance for increasing the security of critical structural assets."

National Transportation Product Evaluation Program: A Win-Win for States and Industry

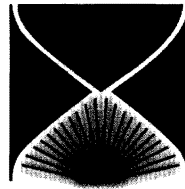
Make more informed decisions when selecting construction, maintenance, and traffic safety products by participating in the National Transportation Product Evaluation Program (NTPEP). Since 1994, this American Association of State Highway and Transportation Officials' (AASHTO) program has tested hundreds of transportation products each year. The test results are sent to participating State departments of transportation and AASHTO committees in reports issued throughout the year.

"It is a win-win for States, as it reduces duplication of effort in testing and qualifying products," says Mike McGough, NTPEP manager for AASHTO. "We send States the test results without any

endorsement, allowing them to decide whether to use a product. This national testing program provides cost savings for both States and product manufacturers."

NTPEP is supported by the Federal Highway Administration (FHWA). "We encourage States to use the results of the program to the maximum extent possible," says Michael Rafalowski of FHWA's Office of Pavement Technology.

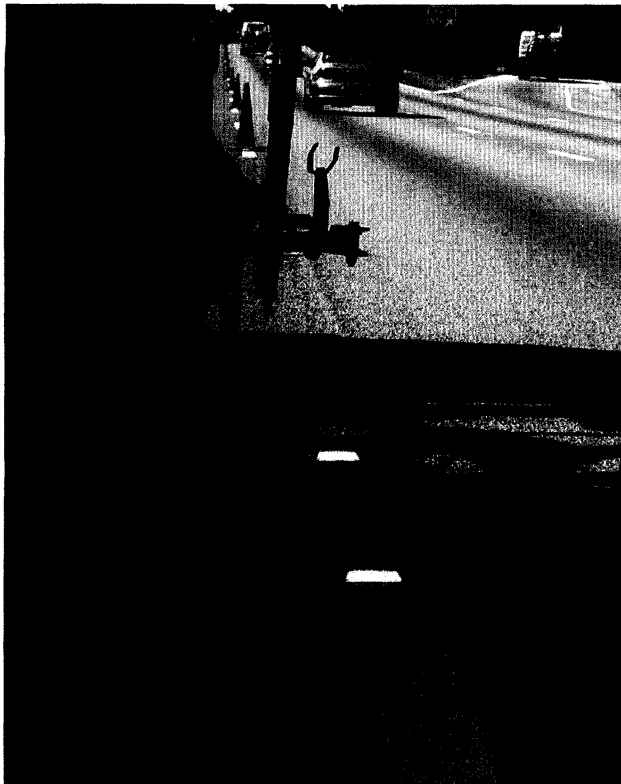
In 2005, 375 products were tested. In the construction area, product categories include concrete admixtures, erosion control, concrete curing compounds, geotextiles and geosynthetics, and reinforcing steel. Maintenance products tested are in



**AASHTO's
National Transportation
Product Evaluation
Program**

the categories of bridge deck overlays, hot-mix asphalt (HMA) crack sealant, rapid set concrete patch materials, and structural steel coatings. Traffic safety products include pavement marking materials, raised pavement markers, portable changeable message signs and flashing arrow panels, and temporary traffic control devices (for a complete list of product categories, see sidebar).

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NTPEP product categories include raised pavement markers, shown above.

NTPEP Product Categories

Construction

- Concrete admixtures.
- Concrete curing compounds.
- Erosion control products.
- Geotextiles and geosynthetics.
- Geosynthetic soil reinforcement.
- High density polyethylene (HDPE) plastic pipe.
- Reinforcing steel.
- Portland cement concrete joint sealants.

Maintenance

- Bridge deck overlays.
- HMA crack sealants.
- Rapid set concrete patch materials.
- Structural steel coatings.

Traffic Safety

- Pavement marking materials.
- Portable changeable message signs and flashing arrow panels.
- Raised pavement markers.
- Rolled-up signing materials.
- Sign sheeting materials.
- Snow-plowable raised pavement markers.
- Temporary traffic control devices.

Falling Weight Deflectometers: Transferring the Technology

For the Federal Highway Administration's (FHWA) Long Term Pavement Performance (LTPP) program, technology transfer is more than just sharing data and information. The LTPP program recently gave four of its falling weight deflectometers (FWDs) to FHWA's Western Federal Lands Highway Division (WFLHD), Central Federal Lands Highway Division (CFLHD), Turner-Fairbank Highway Research Center in McLean, Virginia, and the National Center for Asphalt Technology (NCAT) in Auburn, Alabama. These FWDs are now being used for pavement projects and research.

The FWD is a nondestructive testing device that can be used in structural testing for pavement rehabilitation, investigations, design, and research. The FWD imparts a dynamic load to the pavement surface that is similar to that of a single heavy moving wheel load. The resulting pavement deflection can then be measured. This deflection data combined with the pavement layer thickness can be used to determine the in-situ resilient modulus of layers within a pavement structure and analyze the remaining service life of a pavement.

"The FWD has been a very important piece of equipment to the LTPP program. It has allowed the structural monitoring of thousands of pavement test sections across North America since 1988 and contributed to the largest pavement deflection data set in the world," says Eric Weaver of FHWA. "As the LTPP program matures and test sections have been phased out of the program, there is less of a demand for the equipment. The LTPP program therefore felt that it would be mutually beneficial to transfer the technology to others that can use it."

Prior to the technology transfer, the CFLHD had contracted for FWD services on an as needed basis, primarily reserving FWD use for projects where many



Ray Brown (left), Director of the National Center for Asphalt Technology at Auburn University in Auburn, AL, receives the keys to one of FHWA's FWDs from Brandt Henderson, LTPP Regional Field Data Collection and Equipment Manager.



miles of testing were involved. However, now CFLHD will have the opportunity to use FWD testing for smaller scope activities as well, such as research, quality assurance, and forensic analysis. The FWD will get its first use in Mesa Verde National Park in Colorado, where CFLHD is planning to rehabilitate the main entrance road to the Park. A few areas of soft subgrade soil are known to exist along the project route. "The goal of the FWD testing will be to delineate the limits of this soft subgrade," says Mike Voth of CFLHD. "Overall project cost efficiency will be improved by developing a design solution for the soft subgrade

areas separate from the remaining areas of the project, where better soil conditions exist." CFLHD then plans to use the FWD to evaluate pavement performance expectations on two recently completed projects in Utah's Zion National Park and Cedar Breaks National Monument.

NCAT will use the FWD at its test track, a 2.7-km (1.7-mi) full-scale flexible pavement test facility. "The FWD will be an integral part of the 2006-2009

research cycle, which will feature 46 test sections sponsored by various State departments of transportation and FHWA," says David Timm of NCAT. "It will aid in seasonal and temporal characterization of the test sections, measure structural integrity as a function of distress, and provide vital inputs for mechanistic-empirical pavement design validation and calibration." The FWD will also be used in conjunction with embedded pavement instruments to validate pavement response models.

The WFLHD has used its FWD for testing on the Going to the Sun Road in Glacier National Park in Montana to analyze the pavement's general condition and remaining service life and plan road repairs. It has also been used for testing on paved and gravel roads for the West Fork Road project in Montana. WFLHD had previously contracted for FWD testing to help with the design of pavement overlay thicknesses and to determine subgrade strengths and delineate soft subgrade areas. "By owning this equipment, the cost for this type of testing will decrease and allow for it to be used more often for not only design purposes, but also for construction needs," says Gary Evans of WFLHD. It will also aid in the future implementation of mechanistic-empirical pavement design methods. Other potential uses include forensic analysis of pavements, studies of remaining service life, pavement performance modeling for pavement management systems, and to analyze road thaw weakening effects to determine load restrictions.

For more information on using FWDs, contact Eric Weaver at FHWA, 202-493-3153 (email: eric.weaver@fhwa.dot.gov). *

NTPEP, continued from page 3

An NTPEP Oversight Committee sponsors Project Panels, which are responsible for developing project work plans for lab and field performance testing of products. Panel members include both State and industry representatives. Testing is primarily hosted by State departments of transportation. If the testing is beyond the available resources of State participants, then NTPEP arranges for testing to be done by universities or private testing laboratories.

Details on NTPEP's work and services are available online at www.ntpep.org. Information posted includes project work plans, reports, and guidelines for manufacturers on submitting products to be tested. A new feature of the Web site is

DataMine, an online tool for querying, analyzing, and reporting on current and past NTPEP product evaluations. Developed under National Cooperative Highway Research Program Project 20-7 (Task 150), DataMine allows NTPEP participants to look up test data online. Host States can also enter their testing data using DataMine. "This will save a lot of time for NTPEP participants," says McGough. Data is currently available for the categories of pavement markings, sign sheeting, and structural steel coatings, with geotextiles and erosion control soon to be added and other categories under development.

Voluntary contributions to NTPEP of \$6,000 per year per State are requested. For more information on joining NTPEP and using the product data in your agency, contact Mike McGough at AASHTO, 202-624-3632 (fax: 202-624-5469; email: mmcgough@aaashto.org). *

Details on the National Transportation Product Evaluation Program are available online at www.ntpep.org.

Announcing the 2007 Highway Materials Engineering Course

Applications are now being accepted for the 2007 session of the Federal Highway Administration's (FHWA) annual Highway Materials Engineering course. Targeted towards State department of transportation engineers who require a basic knowledge of highway materials, the 6-week course offers an intensive introduction to materials, mix design procedures, and quality assurance.

The curriculum, which includes 150 hours of classroom time and 50 hours of laboratory work, focuses on materials control and acceptance; soils and foundations; steels, welding, and coatings; aggregates and unbound bases; asphalt materials and paving mixtures; and concrete.

Participants will study the engineering and design properties of highway materials, as well as the selection criteria for these materials. In addition, attendees will learn mix design procedures and field and laboratory testing procedures. "Upon completion of the course, participants will be well-equipped to develop an effective materials acceptance plan," says Michael Rafalowski of FHWA's Office of Pavement Technology.

"Upon completion of the course, participants will be well-equipped to develop an effective materials acceptance plan."

The course will be held at the University of Nevada-Reno from January 29 through March 16, 2007. A 1-week break is scheduled for February 19-23, 2007. The course fee is \$6,100. Travel and other expenses for participants must also be funded by their own agencies.

Applications are due to FHWA by November 1, 2006. Candidates will be notified of their status by December 1, 2006. The criteria for selection include the strength of the endorsement from an applicant's agency, potential contributions to the agency's highway materials program, highway engineering experience, and academic and professional achievements. Employees of State, local, and Federal agencies involved in highway construction will receive priority.

More details on the course and an online application are available at www.fhwa.dot.gov/Pavement/materials/131023.cfm. For additional information, contact Michael Rafalowski at FHWA, 202-366-1571 (fax: 202-493-2070; email: michael.rafalowski@fhwa.dot.gov). *

NPHQ 2006 Conference: Around the Curve in Highway Quality

Find out what's around the curve for highway transportation at the National Partnership for Highway Quality's (NPHQ) Fall 2006 Highway Quality Conference, scheduled for November 14-15, 2006, in New Orleans, Louisiana. NPHQ brings together State, Federal, and highway industry leaders to encourage the use of quality practices that will improve safety and service for highway users.

The 2006 conference will look at "Turning Highway Program Curve Balls into Home Runs," with presentations on public-private partnership models, innovations in keeping and training the evolving workforce, and lessons learned from responding to Hurricane Katrina. The Louisiana Department of Transportation and Development will also highlight its Quality Improvement Program. Other topics include the Strategic Highway Research Program II, the Federal Highway Administration's (FHWA) Transportation Curriculum Coordination Council, State Quality Partnerships, and FHWA's new Highways for LIFE program. The 2006 NPHQ Making a Difference Award winners will also be announced at the conference.

For more information or to register, visit www.nphq.org. Information is also available from Bob Templeton at NPHQ, 512-301-9899 (email: btemplenphq@aol.com), or Ken Jacoby at FHWA, 202-366-6503 (email: ken.jacoby@fhwa.dot.gov). *

Highway Technology Calendar

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

Climatic Inputs for Mechanistic-Empirical Pavement Design Workshop

September 6, 2006, Minneapolis, MN
September 19, 2006, Rocky Hill, CT*

*(The September 19 workshop will also be Webcast at www.ct.gov/dot/fhwa-webcast)

This Federal Highway Administration (FHWA) workshop aims to familiarize participants with modeling climatic effects on pavement performance using the *Mechanistic-Empirical Pavement Design Guide*, reducing climatic effects through materials selection and design, and analyzing current State design methods for climatic effects. There is no charge for the workshop. The target audience includes State materials engineers, pavement design engineers, and industry or academic consultants who support transportation departments' pavement design.

Contact: Gary Crawford at FHWA, 202-366-1286 (gary.crawford@fhwa.dot.gov), or visit www.fhwa.dot.gov/pavement/dgit/climatic.cfm.

Eleventh Annual Eastern Winter Road Maintenance Symposium and Equipment Expo

September 6-7, 2006, Atlantic City, NJ

The symposium is designed for winter maintenance managers and other public works practitioners. Topics will cover safety, operations, and environmental issues. The event is sponsored by FHWA, the American Association of State Highway and Transportation Officials (AASHTO), and the New Jersey Department of Transportation.

Contact: For registration information, contact Trindal Stanke at AASHTO, 202-624-3696 (tstanke@aaashto.org). For additional information, contact Paul Pisano at FHWA, 202-366-1301 (paul.pisano@fhwa.dot.gov).

International Conference on Perpetual Pavement

September 13-15, 2006, Columbus, OH

The conference will highlight issues related to designing, constructing, and monitoring perpetual pavements. Topics will include design verification and calibration, modeling, instrumentation, durability, and mechanical properties of materials. Conference sponsors include the Ohio Department of Transportation, National Asphalt Pavement Association, National Center for Asphalt Technology, and FHWA.

Contact: Nancy Covington at the Ohio Research Institute for Transportation and the Environment, 740-593-2476 (orite@bobcat.ent.ohiou.edu), or John D'Angelo at FHWA, 202-366-0121 (john.d'angelo@fhwa.dot.gov).

Traffic Inputs for Mechanistic-Empirical Pavement Design Guide

September 18, 2006, Rocky Hill, CT
(The workshop will also be Webcast at www.ct.gov/dot/fhwa-webcast)

The workshop will share best practices for collecting the traffic data required for successful use of the *Mechanistic-Empirical Pavement Design Guide*.

Contact: Gary Crawford at FHWA, 202-366-1286 (gary.crawford@fhwa.dot.gov), or visit www.fhwa.dot.gov/pavement/dgit/index.cfm.

Fifth National Seismic Conference on Bridges and Highways

September 18-20, 2006, San Francisco, CA

The conference is the fifth in a series of biennial events sponsored by FHWA. Caltrans, the Transportation Research Board (TRB), and the Multidisciplinary Center for Earthquake Engineering Research are cosponsors. The conference is designed to increase awareness of seismic and geological hazards and enhance the technical expertise of engineering professionals, so

that they can mitigate the risk of failure or damage to bridges and highways.

Contact: Phillip Yen at FHWA, 202-493-3056 (fax: 202-493-3442; email: wen-huei.yen@fhwa.dot.gov), or Mike Keever at Caltrans, 916-227-8806 (fax: 916-227-8242; email: mike_keeveer@dot.ca.gov). Information is available online at www.mceer.buffalo.edu/meetings/5nsc.

Use of Pavement Management System Data to Calibrate Mechanistic-Empirical Pavement Design

September 20, 2006, Rocky Hill, CT
(The workshop will also be Webcast at www.ct.gov/dot/fhwa-webcast)

This FHWA workshop will help pavement design and pavement management engineers better understand how data from pavement management systems can be incorporated in the new *Mechanistic-Empirical Pavement Design Guide* software.

Contact: Gary Crawford at FHWA, 202-366-1286 (email: gary.crawford@fhwa.dot.gov), or visit www.fhwa.dot.gov/pavement/dgit/index.cfm.

International Conference on Long-Life Concrete Pavements

October 25-27, 2006, Chicago, IL

The conference will focus on implementable design, construction, and repair techniques that result in long-lasting concrete pavements. It is targeted at pavement engineering and construction professionals who are involved in various aspects of pavement design, construction, testing and evaluation, and rehabilitation.

Contact: Shiraz Tayabji at Construction Technology Laboratories, Inc., 410-997-0400 (fax: 410-997-8480; email: stayabji@ctlgroup.com), or Sam Tyson at FHWA, 202-366-1326 (email: sam.tyson@fhwa.dot.gov). Information can be found online at www.fhwa.dot.gov/pavement/concrete/2006conf.cfm.

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Highway Technology Calendar, continued from page 7

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.

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Check out FOCUS online at
www.tfhr.gov/focus/focus.htm

Highway Quality Conference November 14-15, 2006, New Orleans, LA

Sponsored by the National Partnership for Highway Quality (NPHQ), the conference will highlight advances in State Quality Partnerships, the winners of the 2006 NPHQ Making a Difference Awards, and the Louisiana Department of Transportation and Development's Quality Improvement Program.

Contact: Bob Templeton at NPHQ, 512-301-9899 (email: btemplenphq@aol.com), or Ken Jacoby at FHWA, 202-366-6503 (email: ken.jacoby@fhwa.dot.gov). Details are also available online at www.nphq.org.

TRB 86th Annual Meeting January 21-25, 2007, Washington, DC

Transportation professionals from around the world will gather at the meeting to share their knowledge and perspectives on current developments in transportation research, policy, and practice. The spotlight theme for 2007 is "Transportation

Institutions, Finance, and Workforce: Meeting the Needs of the 21st Century."

Contact: For information, visit the TRB Annual Meeting Web site at www.trb.org/meeting. Questions about the meeting can be emailed to TRBMeetings@NAS.edu.

National Conference on Pavement Management May 6-9, 2007, Norfolk, VA

Conference topics will include the history and development of pavement management, engineering applications of pavement management data, integrating pavement management systems (PMS) and pavement preservation programs, and using PMS data to calibrate the new *Mechanistic-Empirical Pavement Design Guide*. The conference is sponsored by FHWA, the Virginia Department of Transportation, Virginia Transportation Research Council, and the Virginia Tech Transportation Institute.

Contact: Thomas Van at FHWA, 202-366-1341 (email: thomas.van@fhwa.dot.gov).

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