

# TRANSPORTATION RESEARCH BOARD

2007 Annual Report



TRANSPORTATION RESEARCH BOARD  
OF THE NATIONAL ACADEMIES

**The mission of the Transportation Research Board**

is to provide leadership in transportation innovation and progress through research and information exchange, conducted within a setting that is objective, interdisciplinary, and multimodal. The Board's varied activities annually engage about 7,000 engineers, scientists, and other transportation researchers and practitioners from the public and private sectors and academia, all of whom contribute their expertise in the public interest. The program is supported by state transportation departments, federal agencies including the component administrations of the U.S. Department of Transporta-

tion, and other organizations and individuals interested in the development of transportation.

The **Transportation Research Board** was organized in 1920 and is one of six major divisions of the National Research Council, which serves as an independent adviser to the federal government and others on scientific and technical questions of national importance. The National Research Council is jointly administered by the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine.

**THE NATIONAL ACADEMIES**

*Advisers to the Nation on Science, Engineering, and Medicine*

National Academy of Sciences  
National Academy of Engineering  
Institute of Medicine  
National Research Council



## Dear Supporter of TRB

This year TRB completed an 18-month effort to revise and update its strategic plan. Most of us have been involved in strategic planning efforts in our employing organizations and other organizations in which we participate. The process of developing the plan is often as important as the plan itself, and this was no exception—the extensive interactions and consultations throughout TRB paid immediate dividends in building bridges across activities and volunteer groups and in fostering a common institutional self-awareness.

The TRB Executive Committee was responsible for developing and approving the strategic plan, and its Subcommittee on Planning and Policy Review (SPPR) organized the process and reviewed drafts. In addition, the Technical Activities Council (TAC) surveyed its standing committees for input and participated throughout the process. A survey of subscribers to the *Transportation Research E-Newsletter* obtained views from a range of TRB constituents and customers. Special thanks go to former Executive Committee Chairs Genevieve Giuliano and Michael Meyer, who chaired the SPPR during the development of the plan; TAC Chair Neil Pedersen; and TRB Associate Executive Director Suzanne Schneider, who provided staff support throughout.

Although the development process was valuable, the resulting plan is the capstone and is vitally important to TRB. It presents our understanding of the challenges and opportunities before us, our goals for the future, and the specific objectives and actions to achieve these goals. Like its predecessors, the new plan emphasizes outreach to transportation constituencies and professionals underrepresented in TRB, as well as the evolution of TRB's portfolio of services, but adds a new focus on public outreach and on the resources to support TRB activities. The plan establishes eight goals:



Linda S. Watson, 2007 Chair of the TRB Executive Committee, and TRB Executive Director Robert E. Skinner, Jr.

1. Anticipate future transportation challenges and provide leadership in promoting and conducting research and policy analysis to prepare the United States for meeting those challenges.
2. Conduct and promote knowledge creation and dissemination, especially on innovative practices and technologies in the transportation sector.
3. Provide timely and informed advice on transportation and transportation-related issues to decision makers and others who are responsible for the nation's multimodal transportation system.
4. Act as an effective and impartial forum for the exchange of knowledge and information about transportation and its relationship with social, economic, environmental, and other issues.
5. Promote collaboration on transportation research, education, and technology transfer at international, national, regional, state, and

Genevieve Giuliano, Past Chair of the TRB Executive Committee, delivers the Thomas B. Deen Distinguished Lecture at the 2007 TRB Annual Meeting, exploring the changing landscape of transportation decision making.





U.S. Secretary of Transportation Mary E. Peters held an on-the-spot press conference with members of the national press after delivering the Chairman's Luncheon address at the TRB Annual Meeting in January. The Secretary also met with the leadership of TRB's Executive Committee.

local levels; across public and private sectors; and with transportation providers, customers, and other stakeholders.

6. Contribute to the professional development of individuals currently working in transportation and to the education and enhanced diversity of the pool of individuals who will work in the field in the future.
7. Conduct and promote communications efforts to enhance the awareness of transportation research and its contributions to innovation and progress in transportation.
8. Contribute to the public's understanding of transportation and its significance to the nation.<sup>1</sup>

Work began on some of the new objectives and actions even before the plan's formal adoption in June 2007 and is reflected in TRB's activities in the past year. As usual, 2007 was a busy year for TRB volunteers and staff. Some highlights are summarized below.

## SUPPORT FOR TRB'S CORE PROGRAMS

In last year's Annual Report, we noted that one of the unexpected, and probably unintended, consequences of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) was a significant reduction in the discretionary research funding available to

<sup>1</sup> The full plan is posted on TRB's website, [www.TRB.org](http://www.TRB.org).

the Federal Highway Administration (FHWA). Absent a "technical corrections" bill to restore some discretionary funding to the agency, FHWA would reduce its expected support for TRB core programs—standing technical committees, many publications, information services, the Annual Meeting, and many other technical conferences—by approximately \$1.1 million annually. With the reduction in place and no corrections bill forthcoming, TRB has implemented several measures in the past year to close the budget gap either through cost reductions or through increased revenues from other sources.

Some of the measures, such as increased Annual Meeting fees, have been visible to all; others have been less so, including staff reductions, reduced staff travel, cuts in the benefits provided to some of our most effective and faithful volunteers, fewer published papers, and shorter issues of *TR News*. Another change will debut at the 2008 Annual Meeting: the first commercial exhibits and sponsorships in TRB's history.

TRB has been able to close the budget gap. We are cautiously optimistic that the revenue enhancement measures will allow restoration of some of the services and activities that have been reduced. Although TRB has made some painful adjustments, we have worked hard to minimize the impact on supporters and sponsors.

## ANNUAL MEETING AND CONFERENCES

Registrations for the TRB 2007 Annual Meeting exceeded 10,400, slightly surpassing last year's record. "Transportation Institutions, Finance, and Workforce: Meeting the Needs of the 21st Century" was the spotlight theme for a program that offered more than 3,000 presentations in 589 sessions and 79 workshops.

Among the many highlights was the TRB Chairman's Luncheon address by U.S. Secretary of Transportation Mary E. Peters, who expanded on President Bush's proposals to increase vehicle fuel efficiency. Genevieve Giuliano of the University of Southern California delivered the Thomas B. Deen Distinguished Lecture on the changing landscape of transportation decision making.

In addition to the Annual Meeting and the workshops presented in January in Washington, D.C., TRB was the lead sponsor for more than 25 conferences and cosponsored a comparable number. "The Many Faces of Transportation

Sustainability” was the theme for the TRB 2007 Summer Conference in Chicago in July. The 32nd Annual TRB Summer Ports, Waterways, Freight, and International Trade Conference convened at the same venue, along with several workshops. Also in July, more than 200 people attended the 46th Workshop on Transportation Law in Philadelphia. Other TRB-led conferences focused on such topics as low-volume roads, urban streets, performance measurement, asset management, disaster planning for the carless, aviation-sector planning for pandemic outbreaks, water resources and the highway environment, and geographic information systems, geospatial, and other data technologies.

In September TRB launched a webinar series, attracting more than 250 participants to “Cable Barrier Systems: State of the Practice,” based on a National Cooperative Highway Research Program (NCHRP) report. The web-based seminars will bring some of the most popular TRB presentations to individuals who are unable to attend the original sessions and will include briefings on newly released TRB products and reports.

## TRANSPORTATION RESEARCH RECORD

Early in 2007, TRB staff learned that Thomson Scientific had transferred the *Transportation Research Record: Journal of the Transportation Research Board* (TRR) from the Web of Science to its proceedings category. Because of this reclassification, no 2006 citation impact factor was computed for the TRR. After an appeal by TRB that included revisions to the description of the publication and paper review process printed in each volume of the TRR, Thomson Scientific agreed in July that the publication is a scientific journal that should be categorized in the Web of Science and should receive the associated citation impact factor. This will resume with the release of the 2007 impact factors in June 2008. The lack of a citation impact factor for the TRR for 2006 is a one-year exception.

At its January 2007 meeting, the TRR Publication Board, cochaired by C. Michael Walton and Mary Lynn Tischer, determined that enhancing and expediting the availability of TRR papers should be the highest priority. Chief among the steps taken to meet this objective was the introduction of the TRR Online subscription service in March. TRB’s newest web-based information

dissemination service provides electronic access to more than 8,000 peer-reviewed papers published in the TRR series since 1996.

## RESEARCH MANAGEMENT

While TRB core programs are dealing with funding reductions in the aftermath of SAFETEA-LU, TRB’s research management activities have grown dramatically because of SAFETEA-LU and other federal legislation. Available funding for the research programs TRB manages totaled approximately \$95 million in 2007.

The new Strategic Highway Research Program (SHRP 2) completed its first full year of activity and is now fully staffed and under way. The program is funded at approximately \$35 million annually over four years, with the funds to be expended over a seven-year period. Contractors are conducting research in each of the program’s four theme areas—safety, renewal, reliability, and capacity. Altogether, approximately 30 research projects have started up, with a total funding commitment of approximately \$35 million. A new SHRP 2 implementation planning committee will prepare a report for Congress on activities to ensure that promising research results lead to innovations in the field.

TRB now manages four full-fledged cooperative research programs—NCHRP, the Transit Cooperative Research Program (TCRP), the Airport Cooperative Research Program (ACRP), and the new National Cooperative Freight Research Program (NCFRP). Funding in 2007 for these programs was as follows: NCHRP, \$35.6 million; TCRP, \$9.3 million; ACRP, \$10.0 million; and NCFRP, \$2.9 million. In addition, TRB manages



Three-dimensional representation of the hybrid-composite bridge beam, developed by John Hillman of Teng and Associates with support from the TRB IDEA Program. Now patented, the beam is a revolutionary new type of structural member for bridges, offering improved corrosion resistance and service life.



Strategic Highway Research Program 2 (SHRP 2) staff briefed representatives of the automobile manufacturing community in May and explored possible cooperation; (left to right:) SHRP 2 International Coordinator Derek Sweet, Director Neil Hawks, and Hiroshi Tsuda, Director of Intelligent Transportation Systems Research, Nissan Technical Center North America, Inc.



An International Roundtable in January opened new opportunities for research collaboration; participants included (left to right) Michael D. Meyer, Chair of the TRB International Activities Committee; TRB Executive Director Robert E. Skinner, Jr.; and Josef Mikulik, Director of the Transportation Research Center, Czech Republic.

the Commercial Truck and Bus Safety Synthesis Program (\$0.2 million) and a pilot Hazardous Materials Cooperative Research Program (HMCRP; \$0.9 million). Among the accomplishments of these programs in 2007 are the following:

- NCHRP published 65 reports, including the *Mechanistic-Empirical Pavement Design Guide and Software*, the culmination of a \$9.5 million research effort, the largest in the program's history. The American Association of State Highway and Transportation Officials has adopted the guide and software for use across the country.
- TCRP published more than 30 reports. Among the major products are five certification tests, now offered twice a year for transit bus mechanics by the National Institute for Automotive Service Excellence. The series ultimately will comprise 11 tests.
- ACRP, completing its second year of operation, published its first seven reports of research results, including an overview for airport managers and governing boards on safety management systems, to be followed by a detailed guidebook on developing a system. Syntheses of best practices covered innovative finance and alternative revenue sources, as well as general aviation airport safety and security.
- NCFRP and HMCRP, initiated at the close of 2006, formed panels for the first round of projects, developed requests for proposals, solicited proposals, and awarded research contracts.

TRB also manages four Innovations Deserving Exploratory Analysis (IDEA) programs, in

highways, transit, transportation safety, and rail. In 2007 the National Inventors Hall of Fame and the History Channel designated an IDEA product, the hybrid composite bridge beam system (Teng Associates, Inc.), as one of the top 25 inventions of the year.

## ADVICE TO POLICY MAKERS

TRB released two significant policy reports in 2007:

- *Metropolitan Travel Forecasting: Current Practice and Future Direction*, TRB Special Report 288, examined the travel forecasting models used for evaluating transportation policies and investments. The study committee identified the strengths and weaknesses of the models for such varied assignments and suggested directions for improvement.
- *Building the Road Safety Profession in the Public Sector*, TRB Special Report 289, assessed public-sector needs for highway safety professionals and explored how the supply of professionals can be enhanced in number and qualifications. No single discipline covers road safety, and few university programs address the topic, yet public agencies at all levels must develop and implement safety programs, collectively covering diverse topics, such as roadway design and operations, vehicle regulation and testing, traffic enforcement, and driver licensing. The committee recommended that an alliance of national organizations advocate for needed training, education, programming, and research.

Policy studies in progress include an assessment of the effects of climate change on U.S. transportation; an examination of the relationships among development patterns, vehicle travel, and energy consumption; and an exploration of funding options for freight transportation projects of national significance.

## INTERNATIONAL ACTIVITIES

The TRB 2007 Annual Meeting offered more than 50 international sessions, including a TRB-hosted international research roundtable, which identified opportunities for collaboration in research areas of common interest. NCHRP is including international subject-matter experts

on some research project panels, and SHRP 2 is establishing connections between its technical coordinating committees and European research associations.

In September, TRB Executive Director Robert E. Skinner, Jr., signed a memorandum of understanding with the World Road Congress, promoting a closer relationship between the two organizations. Stephen Godwin, TRB's Director of Studies and Special Programs, spoke at a European Commission conference on transportation research.

## SPONSOR NEWS

We are pleased to welcome the Bureau of Indian Affairs of the U.S. Department of the Interior as a new TRB sponsor, effective October 1.

## NATIONAL ACADEMIES UPDATE

Charles M. Vest, President Emeritus of the Massachusetts Institute of Technology, assumed the presidency of the National Academy of Engineering on July 1, elected to a six-year term. His predecessor, William A. Wulf, returned to the University of Virginia, as University Professor and AT&T Professor of Engineering and Applied Sciences in the Department of Computer Sciences.



Newly installed President of the National Academy of Engineering Charles M. Vest received the National Medal of Technology from President George W. Bush in July for "visionary leadership in advancing America's technological workforce and capacity for innovation...."

Harvey V. Fineberg, President of the Institute of Medicine, was appointed to a second six-year term beginning in July 2008.

Linda S. Watson  
*Chair, Executive Committee*

Robert E. Skinner, Jr.  
*Executive Director*

## STAFF NEWS

- **Robert J. Reilly** retired in March after 35 years with TRB's Cooperative Research Programs (CRP), 22 as CRP Director. Reilly oversaw the start-up



Robert Reilly (*center*) receives a framed commemorative resolution from the TRB Executive Committee, honoring his "superb leadership... outstanding judgment, integrity, and extraordinary dedication," presented by Meyer (*left*) and Skinner.

of the transit and airport cooperative research programs and, most recently, of the freight and hazmat programs.

- **Christopher W. Jenks** succeeded Reilly as CRP Director. Jenks has been with CRP for 14 years, as TCRP Manager since 2000 and ACRP Manager since 2005. He continues to handle the day-to-day management of TCRP and ACRP.
- **Crawford F. Jencks** was promoted to Deputy Director, CRP. Jencks has been with NCHRP for 28 years and has served as Manager since 1992. He continues to have day-to-day management responsibilities for NCHRP and for the new freight and hazmat programs.
- **Michael P. LaPlante** returned to TRB as Director of Finance and Business Operations, succeeding Anthony Mavrogiannis, who left in May to open his own travel agency.



# Transportation Research Board 2007 Executive Committee\*



**Watson**



**Miller**



**Skinner**

**Chair: Linda S. Watson**, CEO, LYNX—Central Florida Regional Transportation Authority, Orlando

**Vice Chair: Debra L. Miller**, Secretary, Kansas Department of Transportation, Topeka

**Executive Director: Robert E. Skinner, Jr.**, Transportation Research Board

**J. Barry Barker**, Executive Director, Transit Authority of River City, Louisville, Kentucky

**Michael W. Behrens**, Executive Director, Texas Department of Transportation, Austin

**Allen D. Biehler**, Secretary, Pennsylvania Department of Transportation, Harrisburg

**John D. Bowe**, President, Americas Region, APL Limited, Oakland, California

**Larry L. Brown, Sr.**, Executive Director, Mississippi Department of Transportation, Jackson

**Deborah H. Butler**, Vice President, Customer Service, Norfolk Southern Corporation and Subsidiaries, Atlanta, Georgia

**Anne P. Canby**, President, Surface Transportation Policy Partnership, Washington, D.C.

**Nicholas J. Garber**, Henry L. Kinnier Professor, Department of Civil Engineering, University of Virginia, Charlottesville

**Angela Gittens**, Vice President, Airport Business Services, HNTB Corporation, Miami, Florida

**Susan Hanson**, Landry University Professor of Geography, Graduate School of Geography, Clark University, Worcester, Massachusetts

**Adib K. Kanafani**, Cahill Professor of Civil Engineering, University of California, Berkeley

**Harold E. Linnenkohl**, Commissioner, Georgia Department of Transportation, Atlanta

**Michael D. Meyer**, Professor, School of Civil and Environmental Engineering, Georgia Institute of Technology, Atlanta (Past Chair, 2006)

**Michael R. Morris**, Director of Transportation, North Central Texas Council of Governments, Arlington

**John R. Njord**, Executive Director, Utah Department of Transportation, Salt Lake City (Past Chair, 2005)

**Pete K. Rahn**, Director, Missouri Department of Transportation, Jefferson City

**Sandra Rosenbloom**, Professor of Planning, University of Arizona, Tucson



**Barker**



**Behrens**



**Biehler**



**Bowe**



**Brown**



**Butler**



**Canby**



**Garber**



**Gittens**



**Hanson**



**Kanafani**



**Linnenkohl**



**Meyer**



**Morris**



**Njord**



**Rahn**



**Rosenbloom**



**Rosser**



**Rountree**



**Schwartz**



**Walton**



**Williams**

\* Membership as of December 2007.





**Allen**



**Barrett**



**Boardman**



**Brewster**



**Brubaker**



**Bugliarello**



**Capka**



**Connaughton**



**Hamberger**



**Hill**



**Horsley**



**Johnson**



**Millar**



**Nason**



**Shane**



**Simpson**



**Strock**



**Sturgell**

**Tracy L. Rosser**, Vice President, Corporate Traffic, Wal-Mart Stores, Inc., Bentonville, Arkansas

**Rosa Clausell Rountree**, Executive Director, Georgia State Road and Tollway Authority, Atlanta

**Henry G. (Gerry) Schwartz, Jr.**, Senior Professor, Washington University, St. Louis, Missouri

**C. Michael Walton**, Ernest H. Cockrell Centennial Chair in Engineering, University of Texas, Austin (Past Chair, 1991)

**Steve Williams**, Chairman and CEO, Maverick Transportation, Inc., Little Rock, Arkansas

**Thad Allen** (Adm., U.S. Coast Guard), Commandant, U.S. Coast Guard, Washington, D.C. (ex officio)

**Thomas J. Barrett** (Vice Adm., U.S. Coast Guard, ret.), Administrator, Pipeline and Hazardous Materials Safety Administration, U.S. Department of Transportation (ex officio)

**Joseph H. Boardman**, Administrator, Federal Railroad Administration, U.S. Department of Transportation (ex officio)

**Rebecca M. Brewster**, President and COO, American Transportation Research Institute, Smyrna, Georgia (ex officio)

**Paul R. Brubaker**, Administrator, Research and Innovative Technology Administration, U.S. Department of Transportation (ex officio)

**George Bugliarello**, Chancellor, Polytechnic University of New York, Brooklyn; Foreign Secretary, National Academy of Engineering, Washington, D.C. (ex officio)

**J. Richard Capka**, Administrator, Federal Highway Administration, U.S. Department of Transportation (ex officio)

**Sean T. Connaughton**, Administrator, Maritime Administration, U.S. Department of Transportation (ex officio)

**Edward R. Hamberger**, President and CEO, Association of American Railroads, Washington, D.C. (ex officio)

**John H. Hill**, Administrator, Federal Motor Carrier Safety Administration, U.S. Department of Transportation (ex officio)

**John C. Horsley**, Executive Director, American Association of State Highway and Transportation Officials, Washington, D.C. (ex officio)

**J. Edward Johnson**, Director, Applied Science Directorate, National Aeronautics and Space Administration, John C. Stennis Space Center, Mississippi (ex officio)

**William W. Millar**, President, American Public Transportation Association, Washington, D.C. (ex officio) (Past Chair, 1992)

**Nicole R. Nason**, Administrator, National Highway Traffic Safety Administration, U.S. Department of Transportation (ex officio)

**Jeffrey N. Shane**, Under Secretary for Policy, U.S. Department of Transportation (ex officio)

**James S. Simpson**, Administrator, Federal Transit Administration, U.S. Department of Transportation (ex officio)

**Carl A. Strock** (Lt. Gen., U.S. Army), Chief of Engineers and Commanding General, U.S. Army Corps of Engineers, Washington, D.C. (ex officio)

**Robert A. Sturgell**, Acting Administrator, Federal Aviation Administration, U.S. Department of Transportation (ex officio)

# Executive Office



**C. Michael Walton**  
*Chair*  
Subcommittee  
for NRC Oversight



**H. Gerard (Gerry) Schwartz, Jr.**  
*Vice Chair*  
Subcommittee  
for NRC Oversight



**Robert E. Skinner, Jr.**  
*Executive Director*



**Suzanne B. Schneider**  
*Associate Executive Director*

The TRB Executive Office provides policy and operational guidance for programs and activities; oversees committee and panel appointments and report review; provides support and direction for human resource issues and staffing needs; develops and directs the Board's communications and outreach efforts; provides staff support to the Executive Committee and its Subcommittee for National Research Council (NRC) Oversight; and maintains liaison with the executive offices of the National Academies, the Board's parent institution. The Executive Office also manages the editing, production, design, and publication of many TRB reports, including its journal series, magazine, and other titles.

## OVERSIGHT ACTIVITIES

The Executive Office supports the work of the TRB Executive Committee, which provides policy direction to TRB programs and activities within the overall policies of the National Academies. Oversight of committee and panel appointments and of report review is the responsibility of the Executive Committee's Subcommittee for NRC Oversight (SNO), which ensures that TRB meets institutional standards and that its activities are appropriate for the National Academies. As part of its oversight function, the subcommittee monitors the Board's progress in expanding the representation of minorities and women on TRB committees and panels. C. Michael Walton, TRB Division Chair for NRC Oversight, heads this subcommittee and represents TRB as an ex officio member on the NRC Governing Board. Henry G. (Gerry) Schwartz, Jr., serves as the SNO Vice Chair, a post established in 2006, with oversight responsibilities for the Strategic Highway Research Program 2 (SHRP 2).

The Executive Office processes the Board's large volume of committee and panel appointments



TRB Executive Director Robert E. Skinner, Jr., presents a report on the status of the organization at the TRB Executive Committee business meeting in January.

and maintains committee membership records. A hallmark of the National Academies is its institutional process to ensure the independent, rigorous review of reports. In maintaining these high standards, TRB follows guidelines approved by the NRC that carefully match the review criteria and procedures to the type of report.



TRB Executive office staff coordinate the appointments of approximately 7,000 engineers, scientists, and other transportation researchers to a variety of committees, panels, task forces, and expert groups: (left to right) Frances E. Holland, Pliney E. Davies, Committee Appointments and Human Resources Director Jewelene Richardson, and Robert J. Summersgill.

## PUBLICATIONS

To fulfill one of its oldest missions, TRB disseminates transportation research results and technology information through an extensive array of timely publications. The Board has gained national and international prominence for its books and reports assessing the state of the art or practice in specific areas of transportation, presenting the results of transportation research, addressing major national transportation policy issues, and identifying research needs. TRB continues to expand its publishing effort by releasing a growing number of titles electronically, some exclusively in electronic format.

TRB books and reports cover 17 broad categories and topics, spanning the range of transportation functions and modes. The TRB Publications Office produces titles in the following series:

- *Transportation Research Record: Journal of the Transportation Research Board* gathers technical papers that have been accepted for publication through a rigorous peer review process refereed by TRB technical committees. In 2007, the Board published 52 volumes of the journal, containing 823 papers grouped by subject. The journal passed a milestone this year with the publication of Volume 2000 in the series, which started in 1963. TRR Online, inaugurated this year, is an online subscription and pay-per-view service, providing access to more than 8,000 papers that have been published in the *Transportation Research Record* series since 1996.<sup>1</sup> All visitors to TRR Online can identify papers of interest and review abstracts. Access to the full papers is available to service subscribers and employees of TRB sponsors. Papers also may be purchased. In addition, Record papers in the 2007 series were posted simultaneously with the release of each printed volume to a searchable, password-protected section of the TRB website.<sup>2</sup>
- The bimonthly magazine *TR News* features timely articles on innovative and state-of-the-art research and practice in all modes of transportation. News items of interest to the transportation community, profiles of transportation professionals, book and journal summaries, meeting announcements, and highlights of TRB activities also are included. Cover features this year included articles on integrating aesthetics



into transportation projects, the Banff wildlife crossings in Canada, and transport research cooperation in Europe. Theme issues of the News focused on all-hazards preparedness, response, and recovery; visualization in transportation; and transportation design and construction 2020. Selected features of *TR News* are posted on the TRB website, and the full issue is made accessible on the web on a four-month delay.<sup>3</sup>

- *Special Reports* contain the results of TRB policy studies on issues of national importance in transportation. These studies, many conducted at the request of federal agencies or of Congress, focus on a variety of complex, often controversial, topics. Two special reports were published in 2007, *Metropolitan Travel Forecasting: Current Practice and Future Direction*, and *Building the Road Safety Profession in the Public Sector*. All current and selected out-of-print special reports are posted on the Board's website.<sup>4</sup>
- *Conference Proceedings* assemble formal papers, presentations, and summaries of discussions

Members of the Subcommittee for National Research Council Oversight are responsible for assuring that TRB committee and panel appointments and report reviews meet the standards of quality and objectivity set by the National Academies: (left to right) TRB Staff Suzanne B. Schneider; Debra L. Miller; C. Michael Walton, Chair; Linda S. Watson; Henry G. Schwartz, Jr., Vice Chair; Michael D. Meyer; Carol A. Murray (through March 2007); and Susan Hanson.

<sup>3</sup> [www.TRB.org/news/blurb\\_browse.asp?id=14](http://www.TRB.org/news/blurb_browse.asp?id=14).

<sup>4</sup> [www.TRB.org/news/blurb\\_browse.asp?id=12](http://www.TRB.org/news/blurb_browse.asp?id=12).



TRB's journal series passed a milestone with Volume 2000 this year; the *Transportation Research Record* started in 1963 (as the *Highway Research Record*) and has published more than 16,000 peer-reviewed papers in 17 subject categories in the past 25 years.

<sup>1</sup> [www.TRB.org/news/blurb\\_detail.asp?id=7420](http://www.TRB.org/news/blurb_detail.asp?id=7420).

<sup>2</sup> [www.TRB.org/publications/trr/Login.asp](http://www.TRB.org/publications/trr/Login.asp).



Suzanne B. Schneider, TRB Associate Executive Director, updates the Executive Committee on the status of the new strategic plan.

from TRB conferences and workshops. *Research to Enhance Rail Network Performance* was published this year and posted on the web.<sup>5</sup> *The Metropolitan Planning Organization, Present and Future* is slated for release by the end of the year.

- *Transportation Research E-Circulars* collect research problem statements, reports, and technical information from the work of TRB technical activities committees. Topics of Circulars published this year included artificial intelligence in transportation, data for performance measures, geotechnical challenges of the Interstate Highway System, and truck and bus safety research. Circulars are available exclusively in electronic format on the TRB website.<sup>6</sup>
- *Miscellaneous Reports* include special publications like the *Highway Capacity Manual 2000* and the *Access Management Manual*. The *Highway Capacity Manual 2000* was last updated in 2005 to incorporate corrections and changes as of July 2005 into the two print versions—one

The Executive Office assembles special briefings for the Executive Committee; in 2007, expert panelists spoke on energy and transportation sustainability; (left to right) Kenneth Small, George Eads, David Greene, and Nathan Glasgow.

<sup>5</sup> [www.TRB.org/news/blurb\\_browse.asp?id=92](http://www.TRB.org/news/blurb_browse.asp?id=92).

<sup>6</sup> [www.TRB.org/news/blurb\\_browse.asp?id=16](http://www.TRB.org/news/blurb_browse.asp?id=16).



for U.S. customary measures and one for metric—and the CD-ROM.

In addition, the Cooperative Research Programs Division produces an array of titles in several publications series. (For a list of all TRB publications, see pages 55–58.)

## COMMUNICATIONS

TRB is committed to improving the communication and public awareness of transportation issues and to enhancing the dissemination of research findings worldwide. Under the direction of the Board's Senior Communications Officer, TRB has been developing and implementing a variety of initiatives intended to improve communications and outreach.

One of the Board's most successful communications initiatives is the weekly *Transportation Research E-Newsletter*,<sup>7</sup> which reports on transportation research and research-related events within TRB and beyond. Circulation of the free newsletter is currently more than 30,000 and growing. About one-fifth of the readership is from countries outside the United States.

Other communications activities include enhancements to the Board's website; outreach to local government groups, other organizations, and individuals beyond traditional TRB constituencies; and targeting new audiences for specific reports and activities. In one of these efforts, TRB teamed with the National Conference of State Legislatures to create customized web links enabling state legislators and their staffs to access transportation research information on a variety of timely topics.

## STAFF NEWS

- **Reginald Gillum**, previously a Meeting Coordinator in the Technical Activities Division, joined the TRB Executive Office in the new post of Customer Service and Marketing Associate.
- Committee Appointments and Database Coordinator **Robert J. Summersgill** received an Individual Distinguished Service Award from the National Academies in October.

<sup>7</sup> [www.TRB.org/news/blurb\\_detail.asp?id=3946](http://www.TRB.org/news/blurb_detail.asp?id=3946). To subscribe, send an e-mail to [RHouston@nas.edu](mailto:RHouston@nas.edu) with "Subscribe TRB E-Newsletter" in the subject field.

# Technical Activities

The TRB Technical Activities Division provides a forum for transportation professionals to identify research needs and to share information on research and issues of interest. The Division's staff of specialists in each mode and discipline works with a community of volunteers to carry out activities on behalf of TRB sponsors and the transportation community. This community includes thousands of members and friends of more than 200 standing committees.

The TRB Technical Activities Council (TAC) oversees the organization and activities of the committees. Neil Pedersen, Maryland State Highway Administrator, serves as TAC Chair. The community is supplemented by TRB representatives in each state department of transportation (DOT), in more than 150 universities, and in 35 transit agencies.

## FOSTERING A COMMUNITY OF RESEARCHERS AND PRACTITIONERS

### Challenges Faced, Challenges Met

In 2007, the Technical Activities Division faced some of the most significant challenges in its 87-year history of fostering a community of transportation researchers and practitioners. The challenges were both new and old, expected and unexpected, and often presented opportunities.

#### *Providing a Sound Financial Footing*

As explained in the TRB 2006 Annual Report, funding provisions under the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) reduced the level of support for TRB core programs from the Federal Highway Administration (FHWA) by approximately \$1.1 million per year, beginning in 2007.



Because the majority of activities in the Technical Activities Division depend on core funding, significant time and effort were devoted to meeting the shortfall. All of the cost-saving and revenue enhancement options listed in the 2006 Annual Report were implemented. The budget goals for 2007 were met. Spending cuts prevented TRB from filling much-needed staff positions. TRB increased fees for meetings and other services to match prevailing market rates and initiated paid exhibits and sponsorships for the TRB Annual Meeting beginning in 2008. Other new programs, such as an online subscription service for the *Transportation Research Record: Journal of the Transportation Research Board* (TRR) and the TRB webinar series, are expected to increase revenue. These and other measures will put TRB in a stronger financial position to fulfill its mission and to meet the needs of the transportation community.

#### *Saving and Enhancing the Citation Index*

In mid-March, Thomson Scientific, which publishes the annual Science Citation Index, transferred hundreds of publications—including the TRR—to a separate category for conference proceedings. The reclassification excluded the TRR from the Web of Science listing and from citation ratings.

The full Technical Activities Council (TAC) meets for a briefing with TRB Executive Director Robert E. Skinner, Jr. (left, center).



**Neil J. Pedersen**  
*Council Chair*  
Technical Activities



**Robert C. Johns**  
*Chair*  
Policy and  
Organization Group



**Marcy S. Schwartz**  
*Chair*  
Planning and  
Environment Group



**L. David Suits**  
*Chair*  
Design and  
Construction Group



**Leland D. Smithson**  
*Chair*  
Operations and  
Maintenance Group



**Shelly R. Brown**  
*Chair*  
Legal Resources  
Group



**Leanna Depue**  
*Chair*  
System Users Group



**Karla H. Karash**  
*Chair*  
Public Transportation  
Group



**Robert M. Dorer**  
*Chair*  
Rail Group



**Paul H. Bingham**  
*Chair*  
Freight Systems  
Group



**James M. Crites**  
*Chair*  
Aviation Group



**Arlene L. Dietz**  
*Chair*  
Marine Group  
(Marine Board)



**Mark R. Norman**  
*Director*  
Technical Activities

The reclassification threatened the journal's and TRB's mission of linking the academic and practitioner communities in transportation research. TRB staff contacted Thomson Scientific and made clear that the TRR is a scientific journal, not a conference proceedings. After several communications, TRB revised the descriptions of the paper review and publication process that appears in each TRR volume, to avoid any misperception that the journal functions as a proceedings of the TRB Annual Meeting. After reviewing the changes, Thomson Scientific restored the TRR to the Web of Science and the associated ratings of citation impacts, resuming with the 2007 journal series. The omission of the TRR from the 2006 Thomson Scientific ISI citation impact factor, therefore, is a one-year exception.

TRB is taking additional steps to enhance the TRR citation impact ratings, under the leadership of the TRR Publication Board cochaired by C. Michael Walton, University of Texas at Austin, and Mary Lynn Tischer, Virginia DOT.

#### *Identifying and Sharing Transportation Research Needs*

TRB standing committees maintain collections of research problem statements for the most-needed research in their topic areas but lacked a central, searchable, and accessible database. In late 2007, TRB launched a new Research Needs Statements (RNS) database to assemble topic lists for the transportation research community, including TRB's Cooperative Research Programs, federal agencies, state DOTs, university faculty and students, consultants, and others.

The RNS database includes more than 700 statements in 31 subject areas as of late 2007. TRB standing committees have reviewed and endorsed each statement and will augment and update the entries regularly.

#### *Meeting the Paper Submission Crunch*

In recent years, a last-minute influx of papers overwhelmed TRB's online submission website, with most of the approximately 3,000 papers arriving in the final 36 hours before the August 1 deadline. To avoid bottleneck delays this year, TRB increased its server capacity and changed the process for



The TRR Publication Board considers measures to strengthen the citation ratings for TRB's journal: (clockwise, left to right) L. David Suits, Kumares C. Sinha, Thomas J. Kazmierowski, Cochair C. Michael Walton, Sandra Rosenbloom, Cochair Mary Lynn Tischer, Mary R. Brooks, and Technical Activities Director Mark R. Norman.

converting papers into PDF files. Two submission dates also were introduced, one for non-PDF electronic files and one for papers already converted to PDF. The measures were successful, and authors were able to submit papers without incident by the August 1, 2007, deadline.

#### *Bringing Information to Our Community*

Although thousands attend TRB conferences and meetings each year, many more are not able to attend gatherings on topics of interest. TRB has taken several steps to deliver important information to the transportation research community.

At its January 2007 meeting, the TRR Publication Board determined that enhancing and expediting the availability of TRR papers should be its highest priority. Chief among the steps to meet this objective was the long-planned introduction of the TRR Online subscription service, launched in March. TRR Online provides electronic access to more than 8,000 peer-reviewed papers published in the *Transportation Research Record: Journal of the Transportation Research Board* since 1996.<sup>1</sup> This resource employs up-to-date search technology. State DOTs and other TRB sponsor organizations receive complimentary subscriptions.

In September, TRB launched a webinar series. The inaugural webinar, “Cable Barrier Systems: State of the Practice,” based on a National Cooperative Highway Research Program (NCHRP) report, attracted more than 250 participants. The webinars—each approximately 90 minutes long—bring some of the most popular TRB sessions to those not able to attend; the webinars include presentations on newly released TRB products and reports. Access requires registration fees, waived for TRB sponsor organizations.

Finally, TRB continued to expand the number of sessions recorded and made available as e-sessions on the TRB website.<sup>2</sup>

#### *Addressing Crosscutting Issues*

Addressing issues that cut across the purviews of many TRB standing committees has long been a challenge. This year, the TRB Executive Committee and the TAC appointed a Special Task Force (STF) on Energy and Climate Change to develop a strategic approach for addressing transportation energy and climate change issues. Members in-

clude representatives from a cross section of standing committees with direct interest in the topics, as well as additional experts.

The STF is developing a strategic plan to guide the Division in planning activities related to energy and climate change and in involving constituencies. During its three-year term, the STF will coordinate energy and climate change activities across TRB Groups and standing committees, identify joint initiatives, and establish priorities. The Technical Activities Council will evaluate this approach for formal application to other critical and cross-cutting issues.

#### **Laying the Foundation for the Future**

The TAC led the development of a Division action plan, drawing from the updated TRB strategic plan and from input from standing committees. The action plan contains more than 40 items grouped into seven categories:

1. Strengthen the TAC’s ability to address critical and crosscutting issues.
2. Increase the involvement of key constituencies and groups.
3. Increase the TAC’s contributions to identifying needed research, monitoring ongoing research, and sharing research results.
4. Optimize the effectiveness and value of the TRB Annual Meeting and conferences.
5. Enhance the quality, stature, accessibility, and usefulness of TRB publications.
6. Take maximum advantage of new technology for communications and information.
7. Facilitate the ability of chairs to manage committees effectively and of volunteers to participate effectively.

The development of the action plan is more than a paper exercise. The Division’s 2002 Quality Improvement Program generated more than 60 action items; virtually every action item has been addressed, and most have been implemented.

#### **Fostering Community: Bringing People Together**

##### *TRB Annual Meeting*

Registrations for the TRB 2007 Annual Meeting exceeded 10,400, slightly more than last year’s record. Many compliments were received on the meeting program and administration. Staff identi-



Neil J. Pedersen, TAC Chair, has guided the Division in developing an ambitious action plan.



U.S. Secretary of Transportation Mary E. Peters presents the Chairman’s Luncheon address at the 2007 TRB Annual Meeting, providing additional details on the energy policies outlined in the President’s State of the Union Address.

<sup>1</sup> [www.TRB.org/news/blurb\\_detail.asp?id=7420](http://www.TRB.org/news/blurb_detail.asp?id=7420).

<sup>2</sup> <http://TRB.org/conferences/e-session/default.asp>.



Annual Meeting attendance has grown each year, with events like the Newcomers Welcome Reception successfully orienting first-time attendees to the program and involving them in the work of standing committees.

fied improvements that will be implemented for the 2008 meeting.

“Transportation Institutions, Finance, and Workforce: Meeting the Needs of the 21st Century” was the meeting’s spotlight theme, representing three of the nine TRB Critical Issues in Transportation. The 50-plus spotlight sessions focused on some of the most significant policy issues facing transportation agencies, the areas most in need of innovation, and the latest innovations.

Among the many highlights was the TRB Chairman’s Luncheon address by U.S. Secretary of Transportation Mary E. Peters, who expanded on President Bush’s proposals to increase vehicle fuel efficiency. Genevieve Giuliano of the University of Southern California presented the Thomas B. Deen Distinguished Lecture, an analysis of the changing landscape of transportation decision making. The five-day program included more than 3,000 presentations—approximately 1,800 papers plus 1,300 invited speakers—in 589 sessions and 79 workshops.

The number of papers presented in meet-the-author poster sessions continues to set records each year. Almost half of the papers at the 2007 meeting were presented in poster sessions. The grouping of poster presentations on similar topics has created

Meet-the-author poster sessions engaged Annual Meeting attendees and inspired collegial exchanges of information.



a critical mass and synergy that has increased the popularity of the sessions. The acceptance criteria for poster session presentations remain the same as for podium sessions; assignments are not made until the completion of the paper review and acceptance process.

TRB received almost 3,000 papers for consideration for Annual Meeting presentation, publication in the TRR, or both for 2008. Volunteers from TRB’s 200-plus standing committees peer-reviewed all papers.

The 2008 Annual Meeting is the first time that TRB is offering opportunities for businesses and other organizations to showcase their products and services in commercial exhibits. In addition, TRB has offered general and targeted sponsorship opportunities at the meeting. As of late 2007, much of the available exhibit space had been reserved.

“Partnerships for Progress in Transportation” is the spotlight theme for the 2008 TRB Annual Meeting. Sessions will explore partnership experiences, as well as the need and potential for partnerships inside and outside of the transportation community and around the world. Progress in addressing TRB’s critical issues in transportation will not be possible without collaborative efforts—resolving issues that involve congestion, infrastructure preservation, safety, funding, energy, environment, intellectual capital, and security and infrastructure protection will require partnerships among diverse players.

#### Conferences

During 2007, TRB was the lead sponsor for more than 25 conferences and cosponsored an equal number of other gatherings.

The Many Faces of Transportation Sustainability was the theme of the TRB 2007 Summer Conference in Chicago in July, attracting more than 500 participants who contributed a variety of perspectives to the discussions. More than 40 TRB standing committees held midyear meetings in conjunction with the conference. In addition, the 32nd Annual TRB Summer Ports, Waterways, Freight, and International Trade Conference convened at the same venue, along with workshops on environmental analysis, transforming transportation organizations, meeting freight transportation data challenges, and congestion pricing.

More than 200 attended the 46th Workshop on Transportation Law in Philadelphia in July. Other TRB-led conferences focused on low-volume roads; urban streets; performance measurement;



geographic information systems (GIS), geospatial, and other data technologies; research and data issues in freight transportation; asset management; aviation industry collaboration on planning for pandemic outbreaks; vehicle infrastructure integration; water resources and the highway environment; waste management; freeway and tolling operations; transportation planning applications; visibility and traffic control devices; and disaster planning for the carless.

#### *Biennial Meeting of TRB State Representatives*

TRB state DOT representatives held a biennial meeting, April 5–6, at the National Academies' Beckman Center in Irvine, California. The representatives requested additional guidance and information on best practices for fulfilling their role, plus more updates on TRB news. TRB staff is addressing these requests and is working to provide the state representatives with opportunities to play a more proactive role in TRB.

#### *International Activities*

The 2007 TRB Annual Meeting included more than 50 international sessions. TRB hosted an international research roundtable, cochaired by Executive Director Robert E. Skinner, Jr., and Executive Committee Chair Michael D. Meyer. Representatives from a dozen research institutes from around the world joined TRB division directors and members of the International Activities Committee for an exchange of information on research under way worldwide.

The July–August *TR News* featured an article on the European Conference of Transport Research Institutes (ECTRI), detailing the 10-point action plan in the Memorandum of Understanding signed in 2006 by TRB and ECTRI.<sup>3</sup> Another article focused on the European Cooperation on Scientific and Technical Research (COST) program supported by the European Union.

The research roundtable identified opportunities for collaboration in research areas of common interest and inspired a pilot effort by NCHRP to invite participation by international experts on several project panels. In turn, COST will pilot-test the inclusion of TRB committee members on several technical research panels. This reciprocal arrangement marks a considerable expansion of TRB's efforts to reach out beyond national borders

<sup>3</sup> *TR News* 251, [www.TRB.org/news/blurb\\_detail.asp?id=8026](http://www.TRB.org/news/blurb_detail.asp?id=8026).



World Road Association (PIARC) President Colin Jordan and TRB Executive Director Skinner sign a memorandum of understanding to promote cooperation between the two organizations, at the World Road Congress in Paris in August.

and work with transportation researchers on areas of common interest.

Other international outreach efforts included the following:

- Participation in the World Road Congress (PIARC) in Paris by Skinner and Senior Program Officer Martine Micozzi and the signing of a memorandum of understanding with PIARC;
- Participation by Studies and Special Programs Director Stephen Godwin on a European Commission conference panel on international research;
- Participation by Meyer and Sam Elrahman of the International Activities Committee on a panel on international collaboration between research programs at the World Congress on Transport Research; and
- Cosponsorship of the Association for European Transport's international conference, October 17–19, in Leiden, the Netherlands.

## POLICY AND ORGANIZATION

### Transportation Policy

A unique event at the Annual Meeting was a poster session and demonstration showcasing the 10 finalists and the winning entry in the Washington State DOT's Doug MacDonald Challenge. The contestants devised ways to communicate the concept of maximizing highway throughput to the public. The winning entry received a \$1,000 prize.

In September, TRB conducted a three-day conference in Irvine, California, on U.S. and international approaches to performance measurement for



Winner of the Doug MacDonald Challenge, Paul Haase receives a \$1,000 check from Katherine Boyd, Washington State DOT, for an effective demonstration of the concept of traffic throughput.

transportation systems. A specially appointed TRB–National Research Council committee planned this event, which was sponsored by FHWA, the Federal Transit Administration (FTA), California DOT (Caltrans), and TRB. Highlights included the opening remarks by Caltrans Director Will Kempton and an executive panel of domestic and international CEOs of transportation agencies, including Pete Rahn, Missouri DOT; Archie Robertson, United Kingdom Highways Agency; and Rhonda Faught, New Mexico DOT.

The Economics Committee and the Marine Group collaborated with the Asset Management Committee to organize session tracks for New Directions in Transportation Asset Management and Economic Analysis: Seventh National Conference on Asset Management, November 6–8, in New Orleans.

TRB’s Committee on Accessible Mobility co-sponsored the TRANSED 2007 international conference in Toronto, Canada. TRANSED is the world’s largest gathering of transportation professionals dedicated to improving the quality, safety, and range of services for mobility-impaired travelers.

The Policy and Organization Group continued to identify critical and crosscutting issues to guide development of activities among its 30 commit-

Archie Robertson of the United Kingdom Highways Agency; Pete K. Rahn, Missouri DOT; and John Gray, Interline, Union Pacific Railroad, answer questions after a panel presentation at the Third International Conference on Performance Measurement in September.



tees and within the Technical Activities Division. The group organized spotlight sessions for the 2007 annual meeting on such topics as transportation information needs, the impacts of fuel prices, sustainable financing, institutions adapting to new missions, plus education and workforce. In addition, at the TRB Summer Conference, the workshop on Transforming Transportation Organizations: Tools and Techniques for Organizational Development fostered understanding of organizational change.

## Security

Security, protection of critical infrastructure, and emergency response and recovery continue to be vital considerations for the transportation sector. TRB’s 86th Annual Meeting offered several workshops on these topics, including the third annual workshop on bridge and tunnel security. Other sessions covered security planning and funding and technical issues ranging from biometrics to the transportation worker identification credential. A meet-the-author poster session highlighted research on protective measures for multiple hazards, the survivability of intelligent transportation system networks, infrastructure reconstruction, and emergency service resources.

The May–June *TR News* was a theme issue on the critical role of transportation in preparing for, responding to, and recovering from natural and man-made disasters.<sup>4</sup> Establishing the next generation of surface transportation security was the subject of a joint meeting of the TRB Critical Transportation Infrastructure Protection Committee and the American Association of State Highway and Transportation Officials’ (AASHTO’s) Standing Committee on Transportation Security, in Irvine, California, in August. Topics of discussion included linking research with transportation security, risk management of multimodal transportation infrastructure, security training and professional capacity-building, emergency response planning practices, and the implications of national security plans for state DOTs. The program included speakers from the Transportation Security Administration and the Science and Technology Directorate of the Department of Homeland Security and from the National Transportation Security Center of the Transportation Institute.

<sup>4</sup> *TR News* 250, [www.TRB.org/news/blurp\\_detail.asp?id=7870](http://www.TRB.org/news/blurp_detail.asp?id=7870).

In February, TRB sponsored a conference on Disaster Planning for the Carless Society. Hurricanes Katrina and Rita revealed the vulnerability of carless residents in emergencies. Evacuation plans in most major cities fail to account adequately for the needs of the elderly, disabled, and transit-dependent populations. The conference brought together government officials, professionals, and experts to discuss effective preparations and assistance for those with the greatest need.

## Data and Information Systems

TRB partnered with AASHTO's Standing Committee on Planning to organize a peer exchange to investigate the value of information for decision making within states and metropolitan planning organizations (MPOs) and to suggest strategies.

A Mid-Atlantic regional workshop on Traffic Monitoring Data served as a forum for traffic data producers and users to highlight good practices in collection and analysis. The response to the workshop has led to several upcoming regional workshops on traffic data.

The North American Freight Transportation Data Workshop fostered exchange among users and providers of data on North American border crossings and trade flows. Presentations demonstrated the application and capabilities of transborder, border-crossing, and other trade flow data to address a range of policy, planning, and development issues, including effects on trade corridors.

A workshop on Meeting Freight Data Challenges explored approaches to improve the availability of freight data, including new business models, sources, and systems to integrate different data sources, for freight flow analysis and modeling. Participants developed research needs statements that were submitted to research funding programs.

The Advanced Research in Geospatial Information Technologies for Transportation workshop convened leading researchers and practitioners in geospatial science and technologies, as well as transportation science, engineering, and planning, to look forward 5 to 20 years and formulate a research and development agenda. The agenda addressed the major challenges for transportation systems in the use of emerging geospatial science and technologies.

Presentations and discussion at the workshop, Improving National Transportation Geospatial Information: Working Together for Better Deci-

sion Making, examined the potential benefits and costs of initiatives to improve the national geospatial information infrastructure for transportation. Representatives of both the transportation and mapping communities reviewed strategies for participation in national initiatives.

The data and information technology committees produced several TRB e-circulars in 2007 that summarized 2006 and 2007 activities:

- Integrating Roadway, Traffic and Crash Data Peer Exchange;<sup>5</sup>
- Research Opportunities in Transportation Radio Frequency Identification (RFID) Applications Conference;<sup>6</sup>
- Information Assets to Support Transportation Decision Making: A Peer Exchange of State Transportation Organizations;<sup>7</sup>
- Traffic Monitoring Data: Successful Strategies in Collection and Analysis;<sup>8</sup> and
- North American Freight Transportation Data Workshop.<sup>9</sup>

## Research and Education

The research and education committees planned several successful events at the 2007 Annual Meeting. More than 130 people attended a 4-hour workshop on the last day of the meeting to discuss Building the 21st Century Workforce. The workshop will be repeated in 2008.

<sup>5</sup> Transportation Research Circular E-C111, [www.TRB.org/news/blurb\\_detail.asp?id=7179](http://www.TRB.org/news/blurb_detail.asp?id=7179).

<sup>6</sup> Transportation Research Circular E-C114, [www.TRB.org/news/blurb\\_detail.asp?id=7569](http://www.TRB.org/news/blurb_detail.asp?id=7569).

<sup>7</sup> Transportation Research Circular E-C121, [www.TRB.org/news/blurb\\_detail.asp?id=8078](http://www.TRB.org/news/blurb_detail.asp?id=8078).

<sup>8</sup> Transportation Research Circular E-C120, [www.TRB.org/news/blurb\\_detail.asp?id=8004](http://www.TRB.org/news/blurb_detail.asp?id=8004).

<sup>9</sup> Transportation Research Circular E-C119, [www.TRB.org/news/blurb\\_detail.asp?id=8003](http://www.TRB.org/news/blurb_detail.asp?id=8003).



Keith Gates of the Department of Homeland Security—a former TRB staff member—speaks at a TRB 2007 Annual Meeting Workshop on Bridge and Tunnel Security.



Rob Hranac, Berkeley Transportation Systems, speaks at a TRB workshop, Traffic Monitoring Data: Successful Practices in Collection and Analysis, in May.

## PLANNING AND ENVIRONMENT

### Transportation System Planning

The Transportation Needs of National Parks and Public Lands Committee, meeting in Tacoma, Washington, focused on developing a strategic plan to build on its work as a task force and heard presentations on transportation issues at the Antietam National Battlefield and the Harpers Ferry National Historical Park.

The 11th TRB National Transportation Planning Applications Conference in Daytona Beach, Florida, May 6–10, 2007, emphasized practical, innovative, and timely technical and policy approaches to transportation planning with more than 115 presentations and six workshops, including GIS Tools for Transportation Planners; MPOs: Communicating with Elected Officials; and Visualize Your Assets with HERS-ST.

Many of the planning committees met in Chicago at the Joint Summer Meeting of the Ports, Waterways, Freight, International Trade, Planning, Economics, Finance, Management, and Environmental Committees. More than 40 TRB committees met to conduct business and to attend sessions. Other events in conjunction with the Summer Meeting included workshops on Transforming Transportation Organizations: Tools and Techniques for Organizational Development; Environmental Analysis in Transportation; Meeting Freight Transportation Data Challenges; and Pricing. Tours featured intermodal freight systems, the Chicago rail infrastructure, environmental analysis, and the Chicago river, port, and harbor.

### Social, Economic, and Environmental

The Environmental Analysis in Transportation Committee met in conjunction with the TRB Summer Meeting for the first time, conducting a workshop on environmental issues related to sustainability. The Ecology and Transportation Committee met during its biannual participation at the International Conference on Ecology in Transportation.

The Transportation and Air Quality committee cosponsored a summer workshop in Orlando, Florida, on developments in transportation planning and land use modeling that may lead to air quality benefits.

The Historic and Archeological Preservation Committee held a workshop in Flagstaff, Arizona,

in July on railway and roadside architecture issues. The Transportation-Related Noise and Vibration Committee met in San Luis Obispo, California, in July, for a workshop that encouraged a more international view of the measurement and modeling of highway-related noise.

A conference of the Waste Management and Resource Efficiency in Transportation Committee in Fort Worth, Texas, featured presentations on best practices and lessons learned in environmental stewardship, resource efficiency, and waste management.

The number of technical papers on global climate change submitted for presentation at the 2007 TRB Annual Meeting increased by 20 percent, as the issue of global warming has gained attention worldwide. TRB has established a Special Task Force on Energy Futures, with 18 members representing committees that address various dimensions of energy-related issues—including energy and alternative fuels, air quality, sustainability, environmental impacts of aviation, and freight operations.

The task force explored opportunities to focus standing committees' attention on these issues and identified current and emerging transportation-related energy issues for TRB to address. A second implementation task force is developing a strategic action plan to integrate and coordinate energy and global climate change activities within the TRB standing committee structure.

In August, the 11th Biennial Asilomar Conference on Transportation and Energy Policy, sponsored by committees in the Environment and Energy Section, attracted more than 200 participants from around the world, representing government, industry, nongovernment organizations, and academia. Participants examined the growing concerns about climate change—which many consider today's greatest environmental challenge—as well as the expanding public and private initiatives to reduce greenhouse gases from the transportation sector.

## DESIGN AND CONSTRUCTION

### Design

The Geometric Design Committee published a web circular, *Geometric Design Strategic Research*,<sup>10</sup>

<sup>10</sup> Transportation Research Circular E-C110, [www.TRB.org/news/blurb\\_detail.asp?id=7183](http://www.TRB.org/news/blurb_detail.asp?id=7183).

and met with the Operational Effects of Geometric Design Committee at the Urban Street Symposium in Seattle, Washington, June 24–27. The Roadside Safety Design Committee conducted a workshop on cable median barrier systems, July 8–11, in Rapid City, South Dakota, developing a summary of the state of the art and recent developments. The Landscape and Environmental Design Committee celebrated its 75th anniversary at its midyear meeting, August 5–8, in Fort Lauderdale, Florida.

The Hydrology, Hydraulics, and Water Quality Committee sponsored a workshop on Water Resources and the Highway Environment: Impact and Solutions, July 16–18, in Sanibel Island, Florida.

### Pavement Management Systems

The committees in the Pavement Management Systems Section prepared a web circular, *Lessons Learned from the AASHTO Road Test and Performance of the Interstate Highway System*.<sup>11</sup> The material drew from a double session at the 2006 Annual Meeting on the 50th Anniversary of the Interstate Highway System.

The section committees also cosponsored the National Conference on Pavement Management, May 6–9, in Norfolk, Virginia, and the 5th International Conference on Maintenance and Rehabilitation of Pavements and Technological Control in Park City, Utah, August 8–10.

### Structures

The Structures Section committees cosponsored the Seismic Accelerated Bridge Construction Workshop in San Diego, California, October 11.

### Construction and Materials

The committees in the Construction and Materials Sections sponsored five workshops for practitioners at the TRB 2007 Annual Meeting on building quality hot-mix asphalt longitudinal joints, advanced models for asphalt pavement mixtures and pavements, portland cement concrete cracking, integrated materials and construction practices for durable concrete pavements, and the steel bridge specifications and guidelines in development by AASHTO and the National Steel Bridge Alliance.

Working with FHWA and AASHTO, the Task Force on Accelerating Innovation in the Highway Industry sponsored Reducing Traffic Congestion: Real Opportunities, the fourth in a series of senior executive forums on accelerating innovation, in Washington, D.C.

In September, the Durability of Concrete Committee cosponsored the 1st International Conference on Recent Advances in Concrete Technology, in Washington, D.C. In November, in Atlanta, Georgia, committees in the Concrete Materials Section and the Portland Cement Concrete Pavement Construction Committee cosponsored the International Conference on Optimizing Paving Concrete Mixtures and Accelerated Concrete Pavement Construction and Rehabilitation.

### Soils, Geology, and Foundations

The TRB 9th International Conference on Low-Volume Roads, June 24–27, in Austin, Texas, attracted more than 200 participants from 24 countries. The program included a keynote address by Maryvonne Plessis-Fraissard of the World Bank and the presentation of more than 80 peer-reviewed papers published in the TRR. Conference sponsors included the Bureau of Indian Affairs, FHWA, the U.S. Department of Agriculture Forest Service, the U.S. Army Corps of Engineers, and the Environmental Protection Agency.

In addition, a TRB 2007 Annual Meeting workshop, Low-Volume Roads Engineering Best Practices, presented the planning, design, and maintenance issues that are key for a good low-volume road and assembled information on references and websites covering low-volume road issues.

A TRB 2007 Annual Meeting workshop for geotechnical and bridge engineers reviewed the load and resistance factor design (LRFD) approach to



Remnants of Loop 1 of the AASHTO Road Test track, 50 years later (from Transportation Research Circular E-C118).

Senior Program Officer Frederick D. Hejl (*left*) presents the agenda at a meeting of the Nanotechnology-Based Concrete Materials Task Force.



<sup>11</sup> Transportation Research Circular E-C118, [www.TRB.org/news/blurp\\_detail.asp?id=7868](http://www.TRB.org/news/blurp_detail.asp?id=7868).



FHWA Administrator J. Richard Capka addresses a plenary session of the Low-Volume Roads Conference; with him are (left to right) Danny Scheel, Judge of Comal County, Texas; Michael W. Behrens, Executive Director, Texas DOT; Michael T. Long, Oregon DOT, chair of the conference steering committee; keynote speaker Maryvonne Plessis-Fraissard, Director, Transport and Urban Development Department, The World Bank; and Nazir Alli, CEO, South African National Road Agency, Ltd.<sup>12</sup>

the design of substructures and explained the differences between LRFD and standard practices, with practical examples.

Another Annual Meeting workshop, Reliability in the *Mechanistic–Empirical Pavement Design Guide*, addressed the variability of data on material properties, subgrade characteristics, construction quality control methods, traffic, climate, performance prediction models, and field performance evaluations.

The Engineering Geology Committee sponsored a Technical Session on Draped Rockfall Protection Systems at the annual meeting of the Association of Environmental and Engineering Geologists, September 24–27, in Los Angeles, California. The Symposium on Differential Weathering of Rock Slopes was sponsored by the Engineering Geology and the Exploration and Classification of Earth Materials Committees, October 15, in Pocono Manor, Pennsylvania, just before the 58th Highway Geology Symposium.

The geotechnical engineering committees also cosponsored the Geosynthetics Conference 2007, in Washington, D.C., January 16–19; the 1st North

<sup>12</sup> Video of the Low-Volume Roads Conference opening plenary session is available at [www.utwired.engr.utexas.edu/conferenceroads/](http://www.utwired.engr.utexas.edu/conferenceroads/).



Matthew W. Witczak addresses a 2007 TRB Annual Meeting workshop on Reliability in the *Mechanistic–Empirical Pavement Design Guide*.

American Landslides Conference, Vail, Colorado, June 3–8; and the 8th International Symposium on Cold Region Development: ISCORD 2007, in Tampere, Finland, September 25–27.

The Soil Mechanics Section sponsored a web circular, *Geotechnical Engineering Challenges of the Interstate Highway System: The First 50 Years and a Look Ahead*, exploring lessons learned since the construction of the Interstates, along with the upcoming challenges for geotechnical engineering.<sup>13</sup>

## OPERATIONS

The 3rd Urban Street Symposium, held in June in Seattle, Washington, convened more than 150 planners, engineers, and others with diverse perspectives and backgrounds, from more than 10 countries, to consider a range of issues in city street planning, design, and operations. The Geometric Design Committee, the Operational Effects of Geometrics Committee, the Access Management Committee, and the Landscape and Environmental Design Committee organized the symposium; cosponsors included the U.S. Access Board and the Institute of Transportation Engineers.

In May, the TRB Conference on Freeway and Tolling Operations in the Americas, in Houston, Texas, drew more than 160 participants to share views, knowledge, and experience. The TRB Freeway Operations Committee organized the program, with cosponsors including U.S. DOT, Texas DOT, and the Texas Transportation Institute.

The Traffic Signal Systems Committee, the Intelligent Transportation Systems (ITS) Committee, and the Vehicle–Highway Automation Committee organized two workshops on deployment issues, data needs, and future research topics in ITS and vehicle–infrastructure cooperation, in San Jose, California, in July. The first workshop, Cooperative Intersection Collision Avoidance Systems and Vehicle–Infrastructure Integration, focused on traffic signal control and brought together experts from government, industry, and academic programs. The second workshop, Vehicle–Infrastructure Cooperation Research Needs, identified research critical to the development of transportation applications in vehicle–infrastructure cooperation. Cosponsors for the workshops included Caltrans, California’s Partners for Advanced Transit and Highways, and ITS America.

<sup>13</sup> Transportation Research Circular E-C116, [www.TRB.org/news/blurp\\_detail.asp?id=7639](http://www.TRB.org/news/blurp_detail.asp?id=7639).

## MAINTENANCE

Committees in the Maintenance Section sponsored a variety of sessions during the TRB 2007 Annual Meeting, including maintenance management and personnel; maintenance performance-based contracting in the United States and around the world; recruitment, retention, and training of transportation maintenance personnel in the public and private sectors; structure maintenance and management; pavement maintenance; safety and operations; winter maintenance; and surface transportation weather.

Maintenance committees cosponsored the 18th Annual TRB Visibility Symposium in College Station, Texas, April 17–18, and the 15th Equipment Management Workshop in Asheville, North Carolina, June 3–7.

The Maintenance Structures Committees are forming a Bridge Preservation Joint Subcommittee to facilitate discussion and coordination on ways to extend the service life of bridges and networks of bridges. The Sealants and Fillers for Joints and Cracks; Structures Maintenance; Bridge Management; Polymer Concretes, Adhesives, and Sealers; and Corrosion Committees are participating in the new joint subcommittee, which will hold an organizational meeting at the TRB 2008 Annual Meeting.

## SAFETY

A record number of technical papers on safety were submitted to TRB for the 2007 Annual Meeting. A substantial increase in the past 10 years in research papers on pedestrian and bicycle topics indicates renewed interest in improving accommodations and safety for vulnerable road users.

The Visualization Task Force became the Visualization in Transportation Committee. The committee released the proceedings of the 5th International Visualization in Transportation Symposium, held in October 2006, on the web,<sup>14</sup> and assembled articles for a theme issue of *TR News*.<sup>15</sup>

The Truck and Bus Safety Committee prepared a web-circular synthesis of completed research in the field, *The Domain of Truck and Bus Safety Research*.<sup>16</sup>

<sup>14</sup> [www.teachamerica.com/viz/viz2006.html](http://www.teachamerica.com/viz/viz2006.html).

<sup>15</sup> *TR News* 252, [www.TRB.org/news/blurb\\_detail.asp?id=8266](http://www.TRB.org/news/blurb_detail.asp?id=8266).

<sup>16</sup> Transportation Research Circular E-C117, [www.TRB.org/news/blurb\\_detail.asp?id=7733](http://www.TRB.org/news/blurb_detail.asp?id=7733).

The Joint Subcommittee on Roundabouts became a Task Force and is preparing for the 2nd National Roundabouts Conference, in Kansas City, in May 2008.

The scope of safety activities was broadened with the creation of two new subcommittees: the Joint Subcommittee on Medical Advisory Boards and the Subcommittee on Emergency Medical Services Transportation Safety.

Two other subcommittees were created to focus on specific problems. A Joint Subcommittee on Driver Training, cosponsored with the Operator Education and Regulation Committee and the Truck and Bus Safety Committee, reflects the resurgence of interest in this safety strategy. The Subcommittee on Young Drivers focuses on a high-risk, high-crash group of drivers and was stimulated in part by presentations at a May 2006 Institute of Medicine–TRB workshop, Preventing Teen Motor Crashes: Contributions from the Behavioral and Social Sciences. At the workshop, experts in transportation, education, and basic science explored new findings in adolescent and brain development, cognitive science, and risk behavior.

## LEGAL RESOURCES

To enhance the successful operations of law offices that support transportation agencies, the Legal Resources Group conducted a transportation law workshop; assembled practical information on electronic records retention, electronic filing, and electronic discovery; and worked with other committees on crosscutting issues.

Approximately 210 federal, state, and private transportation attorneys participated in the 46th Annual Workshop on Transportation Law, held in Philadelphia, Pennsylvania, July 8–11, 2007. More than one-third of the attendees were from FHWA, FTA, and other U.S. DOT agencies. The workshop is an approved source of continuing legal education.

The requirements for electronic records retention, electronic court filings, and electronic discovery have had a major effect on the practice of transportation law, and transportation attorneys are struggling to understand and respond to the challenges. Committees in the Legal Resources Group have produced an array of informative and practical meeting sessions and have recommended several research needs statements for listing in the TRB database and for consideration by the NCHRP and TCRP legal studies committees.



The TRB Visualization in Transportation Committee assembled feature articles for a special issue of *TR News* to inform the transportation research community about recent developments in the field.



The conference on Research Issues in Freight Transportation: Congestion and System Performance conducted a poster session in the atrium of the National Academies' Keck Center in October.

Over the past several years, committees from other Technical Activities Division Groups and project panels from the Cooperative Research Programs have sought the cooperation and counsel of members—and sometimes full committees—of the Legal Resources Group and have received timely responses. For example, the joint sponsorship of a session on liability issues associated with bicycle route designation eventually developed into an NCHRP legal study project.

## AVIATION

A specially appointed TRB–National Research Council (NRC) committee organized a workshop in September on issues of concern to airports and airlines in the development and implementation of the National Strategy for Pandemic Influenza. Funded by the Airport Cooperative Research Program, the workshop also addressed airport- and airline-specific planning for dealing with pandemic outbreaks more generally. The presentations and discussions provided opportunities for aviation-sector professionals and representatives of key federal agencies to share information and explore issues for consideration in developing pandemic plans.

The Aviation Economics and Forecasting Committee and the Light Commercial and General Aviation Committee conducted a workshop with Federal Aviation Administration cooperation to provide comments and discussion on current forecasts. The October 17–18 workshop focused on the changing fleet environment within the busi-

ness and general aviation sector and the decrease in the number of pilots entering and staying in the aviation industry.

## FREIGHT SYSTEMS

In April, TRB and the American Trucking Associations cosponsored the first National Summit on Agricultural and Food Truck Transport for the Future, in Washington, D.C., with more than 200 attendees and 40 speakers. In July, most of the Freight System Group committees held midyear meetings during the Summer Conference in Chicago and participated in sessions on a variety of freight-related topics.

Industry and government officials agree that freight system capacity issues are not going away. The continuing growth in freight demand is keeping the pressure on private industry—shippers and carriers—and on public agencies to deal with critical capacity constraints. TRB's 86th Annual Meeting offered sessions with industry and government leaders exploring ways to address capacity constraints, public and private approaches to financing freight infrastructure, implications of the costs of congestion for all parties in the supply chain, and the implications of the transportation worker identification credential.

In October, TRB hosted the Research Issues in Freight Transportation: Congestion and System Performance Conference—a forum for researchers, government officials, and private-sector representatives to exchange ideas on improving the freight system and on defining freight-related research opportunities. This was the second conference oriented to University Transportation Centers, with support from the Research and Innovative Technology Administration.

Proceedings of the Conference on Freight Demand Modeling: Tools for Public-Sector Decision Making, which was supported by several federal agencies, have entered the publication process. The proceedings include peer-reviewed papers and summaries of presentations on the state of the practice in freight demand modeling and highlight the need for improved modeling tools as public involvement increases.

## MARINE

Environmental issues, port capacity, security, and maritime workforce development were among the topics covered in the marine sessions and workshops at TRB's 86th Annual Meeting. Water



transportation and intermodal freight were key elements in a four-part megasession on freight systems capacity. Two sessions on ferry transportation addressed emerging markets—including freight ferries—and operating concepts, as well as developments in design, safety, and management. Other sessions highlighted research on inland waterways, marine environmental issues, intermodal terminal design and operations, and port operations and international trade. Meet-the-author poster sessions featured recent research on inland waterway infrastructure and port operations.

In May, TRB and the Marine Board hosted the 9th Annual Harbor Safety Committee (HSC) Conference in Chicago. HSCs are local coordinating bodies that work with the U.S. Coast Guard to address the safety, security, mobility, and environmental protection of a port or waterway, including commercial and recreational marine transportation. At the conference, HSC representatives participated in a robust exchange of information on current challenges, best practices, case studies, and lessons learned, and engaged public- and private-sector executives and leaders on marine transportation issues.

The annual TRB Summer Ports, Waterways, Freight, and International Trade Conference was held concurrently with the Joint Summer Meeting of several other TRB standing committees in Chicago, and several program components were collaborative efforts. The event included the mid-year meetings of the Freight Systems and Marine Group committees, as well as sessions on transportation financing, the aging port and waterway infrastructure, the California infrastructure bond initiative, the AASHTO bottom-line reports on freight and water transportation, and the challenges of global sourcing and supply chains.

The Marine Board held its 2007 Spring Meeting in Portland, Maine, in May and addressed a range of topics, including marine salvage, marine resources in response and recovery, aids to navigation, safety in offshore operations, short sea shipping, and air emissions from port operations. Participants also toured Casco Bay by ferry, the Gulf of Maine Research Institute, and the Bath Iron Works shipyard. The Fall Meeting in Washington, D.C., focused on issues and activities of greatest concern to sponsors.

## PUBLIC TRANSPORTATION

The Best Practices: Coordination of Transit, Regional Transportation Planning, and Land Use

Conference was held in Denver, Colorado, August 26–28, organized by the Public Transportation Planning and Development Committee and five other TRB committees. Cosponsors included FTA, the American Public Transportation Association (APTA), the National Association of Regional Councils, the Denver Regional Transportation District, the Denver Council of Governments, and the City of Denver.

Transit committees cosponsored two other conferences: Geographic Information Systems, with the National Center for Transit Research, University of South Florida, November 6–8, in Tampa; and the Bus Rapid Transit Forum, November 11, in Quebec City, Canada, with the Canadian Urban Transit Association.

Several transit committees conducted summer meetings. In New York City, June 2, three rail transit committees and two subcommittees met at the APTA Rail Transit Conference. The Transit Planning Committee and the Bus Committee met during the Best Practices Conference in Denver.

## RAIL

Concerns about freight and passenger rail operations are intertwined because of capacity constraints throughout the rail network from increased freight demand, as well as from shared passenger–freight operations on freight railroads. To keep pace with the growth in demand for freight rail services, the rail industry is investing in infrastructure, equipment, and workforce. Hiring needs in the industry are significant for the first time in decades, and finding qualified staff is critical.

A workshop at the TRB 2007 Annual Meeting dealt with issues related to training new engineers in railway design and maintenance. Technical sessions focused on topics such as freight railroad terminal performance, developments in advanced train control systems, options for restructuring intercity rail passenger operations in the United States, international experience in the development of high-speed rail, and rail freight as a possible tool for mitigating highway congestion.

In March, TRB published *Research to Enhance Rail Network Performance*, proceedings of a conference held at the request of the Federal Railroad Administration in Washington, D.C., in 2006.<sup>17</sup> The publication includes summaries of presenta-



*Research to Enhance Rail Network Performance*, released on the web in March, includes links to research needs statements related to the conference themes of safety, capacity, and efficiency.

<sup>17</sup> Conference Proceedings on the Web 3, [www.TRB.org/news/blurb\\_detail.asp?id=7226](http://www.TRB.org/news/blurb_detail.asp?id=7226).

## 2007 AWARDS



Recipients of TRB's major awards, presented at the 2007 TRB Annual Meeting Chairman's Luncheon, stand with luncheon speaker Mary E. Peters, U.S. Secretary of Transportation (*second from left*): Herbert H. Richardson, retired Director of the Texas Transportation Institute, recipient of the Roy W. Crum Distinguished Service Award; Francis B. Francois, longtime Executive Director of the American Association of State Highway and Transportation Officials, honored with the Frank Turner Medal for Lifetime Achievement in Transportation; Anne P. Canby, president of the Surface Transportation Policy Partnership, recognized with the W. N. Carey, Jr., Distinguished Service Award; and Maryland State Highway Administrator Neil J. Pedersen, who received the George S. Bartlett Award for Outstanding Contribution to Highway Progress.



Another major award, the Thomas B. Deen Distinguished Lecture, tapped the professional insights of Genevieve Giuliano (*center*), Professor and Senior Associate Dean of Research and Technology in the School of Policy, Planning, and Development, University of Southern California, and Director of the METRANS Transportation Center. Joining her after the lecture are (*left to right*) Technical Activities Council Chair Neil J. Pedersen; Michael D. Meyer, 2006 Chair of the TRB Executive Committee; Thomas B. Deen, past Executive Director of TRB; and TRB Executive Director Robert E. Skinner, Jr.

tions by high-level railroad industry and government leaders, who shared the freight and passenger perspectives on issues related to the main themes of the workshop: safety, capacity, and efficiency of the rail network. Also included are the TRB-NRC conference committee's recommendations for future research and development priorities under each of the themes and in areas of convergence or overlap.

In July, the committee on Intercity Rail Passenger Systems published its online newsletter *Intercity Rail Passenger Systems Update, No. 12*, including feature articles on California's preparations for implementing a new transportation bond program; a dialogue on the economics and funding—and public benefits—of intercity rail; and rail news from Europe.<sup>18</sup>

## STAFF NEWS

- **Thomas M. Palmerlee** was promoted to Associate Director of the Technical Activities Division.
- The National Academies presented awards to Director of Meetings **Linda M. Karson**, for Communications, and to **Stephen F. Maher**, Engineer of Design, for Community Service.
- **Richard F. Pain**, Senior Program Officer for Safety, was funded to keynote a safety conference in China and selected as one of four team members to assess the Israeli highway safety research program.
- **Erica Swartz** joined the staff as a Meeting Coordinator and **Kaneshia N. Williams** started as a Meeting Assistant.

<sup>18</sup> [http://onlinepubs.trb.org/onlinepubs/irps/irps\\_12.pdf](http://onlinepubs.trb.org/onlinepubs/irps/irps_12.pdf).

# Studies and Special Programs

The Studies and Special Programs Division conducts policy studies at the request of the U.S. Congress, the executive branch agencies, states, and other sponsors; operates a bibliographic database of completed research and provides library reference services; produces syntheses of current practices in highway, transit, airport operations, and commercial truck and bus safety; and manages the Innovations Deserving Exploratory Analysis (IDEA) programs in highway, transit, rail and truck safety, and high-speed rail.

## POLICY STUDIES

With guidance from committees drawn from the nation's leading experts, the Policy Studies group produces reports examining complex and controversial transportation issues. Studies cover all modes of transportation and a variety of safety, economic, environmental, and research policy issues. The U.S. Congress and the executive branch have adopted many recommendations from TRB policy reports, attesting to the substantive value of the findings.

The Subcommittee on Planning and Policy Review provides oversight for TRB's policy work, under the leadership of former TRB Executive Committee Chair Michael D. Meyer, a professor in the School of Civil and Environmental Engineering, Georgia Institute of Technology. Since 1998, all completed policy study reports are posted on the TRB website.<sup>1</sup> *Informing Transportation Policy Choices*, a web document that provides an overview of all TRB policy studies from 1983 through 2006, is also posted on the Policy Studies page of the website.<sup>2</sup>

## Completed Reports

*Metropolitan Travel Forecasting: Current Practice and Future Direction*

Special Report 288

TRB Special Report 288 examines metropolitan travel forecasting models that provide public officials with information for decision making on

<sup>1</sup> [www.TRB.org/news/blurb\\_browse.asp?id=12](http://www.TRB.org/news/blurb_browse.asp?id=12).

<sup>2</sup> [www.TRB.org/news/blurb\\_detail.asp?id=7968](http://www.TRB.org/news/blurb_detail.asp?id=7968).



**Michael D. Meyer**  
Chair  
Subcommittee  
on Planning and  
Policy Review



**Stephen R. Godwin**  
Director  
Studies and  
Special Programs



TRB Executive Director Robert E. Skinner, Jr. (*left*), reports on recent TRB activities at the spring meeting of the Subcommittee on Planning and Policy Review, chaired by Michael D. Meyer.



major transportation system investments and policies.<sup>3</sup>

The committee finds that the travel forecasting models now in use are not adequate for analyzing many of today's policy questions or for meeting regulatory requirements. The

committee recommends a process for metropolitan planning organization (MPO), state, and federal modeling experts to work together to improve models and practice. Also recommended is the establishment of an MPO cooperative research program, along with a substantially increased federal investment in model development and testing. Findings from a survey used to develop the report are available online.<sup>4</sup>

Martin Wachs, RAND Corporation, chaired the committee. The Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), the Office of the Secretary of Transportation, and TRB provided funding.

*Building the Road Safety Profession in the Public Sector*

Special Report 289

Road safety experts at the federal, state, and local levels are charged with reducing the more than 40,000 deaths and 3 million injuries that occur each year on the nation's roads. This expert workforce grew up around a national commitment that began in the 1960s to address highway safety. The various safety regulations and programs administered by these professionals have saved thousands of lives and averted millions of injuries. But the first generation of this workforce is now retiring, and the sources and qualifications of their replacements are uncertain. Many of today's professionals have decades of experience and developed their knowledge and skills on the job.

The committee that produced this report points to a lack of training and education programs to prepare the workforce, which comprises an estimated 10,000 working primarily on road safety and another 100,000 who influence road

safety.<sup>5</sup> The committee recommends that national associations forge an alliance to advance the road safety profession by promoting a multidisciplinary workforce; identifying best practices in the recruitment and development of professionals; encouraging the use of newly established core competencies to guide education and training programs; and advocating for scientific safety program evaluation and research to inform the profession. The alliance also should advocate for road safety education and training by research-oriented universities and should explore the possibility of creating a specialized education and training institute.

Kam K. Movassaghi, C. H. Fenstermaker and Associates, chaired the committee. Funding was provided by FHWA, the Federal Motor Carrier Safety Administration (FMCSA), and TRB.

**Letter Reports**

*Research and Technology Coordinating Committee for FHWA*

September 2007

The Research and Technology Coordinating Committee (RTCC) has provided guidance to the research and technology programs of FHWA since 1991. The committee's letter report for 2007 summarizes ideas to help FHWA improve delivery of the national highway research and technology program through collaboration with its partners.<sup>6</sup>

The committee notes organizational improvements that are working toward the vision for FHWA staff to serve as "innovators for a better future." For example, FHWA program and research and technology staff are working more extensively with stakeholders to develop initiatives and evaluate the results.

Looking toward future improvements, the RTCC will work with FHWA staff to assist in collective priority setting by the highway research and technology community, develop new approaches for deployment, and achieve better communication about the research and technology process and results.

The RTCC is funded by FHWA. E. Dean Carlson, former Secretary of the Kansas Department of Transportation (DOT) and past FHWA Executive Director, serves as committee chair.



<sup>3</sup> [www.TRB.org/news/blurbs\\_detail.asp?id=7821](http://www.TRB.org/news/blurbs_detail.asp?id=7821).

<sup>4</sup> <http://onlinepubs.trb.org/onlinepubs/reports/VHB-2007-Final.pdf>.

<sup>5</sup> <http://onlinepubs.trb.org/onlinepubs/sr/sr289/pdf>.

<sup>6</sup> [http://onlinepubs.trb.org/onlinepubs/reports/rtcc-september\\_2007.pdf](http://onlinepubs.trb.org/onlinepubs/reports/rtcc-september_2007.pdf).

## *Pavement Technology Review and Evaluation*

February 2007

TRB's Committee for Pavement Technology Review and Evaluation provides strategic advice and guidance to FHWA for the conduct of the Pavement Technology Program. In addition to reviewing FHWA's program through an annual public forum of stakeholders, the committee assesses the utility of the technologies under investigation, provides guidance for the effective deployment and implementation of successful technologies, identifies and prioritizes additional research needs, and makes suggestions for the future direction of the program.

After a series of briefings by FHWA staff at its first meeting, the committee prepared its first letter report, acknowledging the need for a better understanding of the interaction among FHWA's various entities in the conduct of the program, of the way that activities in FHWA's Strategic Pavement Technology Program Roadmap are prioritized, and how input from stakeholders—particularly external stakeholders—is sought in establishing the program's goals and priorities.<sup>7</sup> In general, the committee supports FHWA's approach as a good starting point and considers the program's overarching goals and focus areas appropriate.

Carlos M. Bracerias, Deputy Director, Utah DOT, chairs the committee, which is sponsored by FHWA.

### *Transit Research Analysis Committee*

May 2007

TRB's Transit Research Analysis Committee (TRAC) advises FTA in the development of a strategic agenda for transit research and identifies roles that FTA and industry could play in carrying out that agenda. The committee's May 2007 letter report examines the strategic direction and balance of FTA's research, including the importance of rail transit research in the agency's portfolio.<sup>8</sup>

The committee commends FTA on efforts in the past year to develop a multiyear research program plan addressing the goals and objectives defined in the strategic research plan. Although the plan identifies gaps and opportunities, the committee notes that more effort is needed to define and develop new projects.

<sup>7</sup> [www.TRB.org/news/blurb\\_detail.asp?id=7389](http://www.TRB.org/news/blurb_detail.asp?id=7389).

<sup>8</sup> [www.TRB.org/news/blurb\\_detail.asp?id=7694](http://www.TRB.org/news/blurb_detail.asp?id=7694).

The letter report points out that, largely as a result of Congressional earmarks and designations, FTA's research portfolio lacks focus, includes unnecessary duplication in certain areas, and has a technological bias. The committee recommends that FTA focus on two major related activities in developing a national agenda for transit research. First, under the multiyear research program plan, FTA should define and develop projects linked to the goals and objectives of the strategic research plan. Second, FTA should demonstrate the impacts of transit on national goals, such as reducing road congestion, fostering environmental stewardship, and reducing dependence on imported oil.

FTA sponsors the committee and funds the work. Michael S. Townes, President, Hampton Roads Transit, serves as committee chair.

### *Review of the Federal Railroad Administration Research and Development Program*

May 2007

The Federal Railroad Administration's (FRA's) research and development program is almost exclusively safety-related, except for several projects funded through the Next-Generation High-Speed Rail effort. (The legislation authorizing the next-generation activity has expired, and the program is winding down.) Charged with reviewing FRA's research and development program, the committee makes five recommendations in its most recent letter report:<sup>9</sup>

1. Find other government agency partners to complete the funding for the Nationwide Differential Global Positioning System, which is critical to the development of positive train control (PTC);
2. Document the results from the major PTC project funded under the Next-Generation High-Speed Rail program, which is being phased out, and determine what can be transferred to other projects;
3. Support the development of standards for PTC interoperability with appropriate research and technical assistance;
4. Develop tools and metrics for measuring railroad capacity; and
5. Consolidate and package results from completed and ongoing FRA research that could

<sup>9</sup> [www.TRB.org/news/blurb\\_detail.asp?id=7667](http://www.TRB.org/news/blurb_detail.asp?id=7667).



Members of the Research and Technology Coordinating Committee for FHWA hear a presentation on current processes for pavement research, technology, and evaluation.

Jonathan L. Gifford chairs the final meeting of the Committee on Options for Accelerating Intelligent Transportation Systems Standards, assisted by Senior Program Officer Thomas R. Menzies, Jr., and Stephen R. Godwin, Director of Studies and Special Programs.



contribute to energy conservation and identify appropriate research in this area for government and industry.

The committee is chaired by Robert E. Galamore, who is retired from Northwestern University. The work is funded by FRA.

#### *Options for Accelerating Intelligent Transportation Systems Standards*

June 2007

U.S. DOT charged this committee to analyze ways to expedite and streamline the processes for developing intelligent transportation systems (ITS) standards, as requested by Congress in the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). The committee also was asked for guidance on U.S. DOT's role in supporting standards development and deployment.

In this nine-month project, the committee found that the majority of the standards that U.S. DOT has initiated through various standards development organizations have been published or

The Expert Task Group on LTPP Special Activities meets in October to provide advice on data collection, processing, and analysis to the TRB Long-Term Pavement Performance Committee.



are close to completion.<sup>10</sup> The committee therefore comments only briefly on options to streamline or expedite standards and focuses instead on the role that U.S. DOT should take in the future.

The committee finds that standards are vital to the development and deployment of ITS technologies; that U.S. DOT will expedite standards development by taking a prominent role in support; and that ITS standards setting should be viewed as an ongoing process. The committee recommends that U.S. DOT articulate a strategic vision; engage end users systematically in determining the need for new or revised standards; and forge stronger relationships with other relevant standards activities within the federal government.

The study was funded by the ITS Joint Program Office of the U.S. DOT Research and Innovative Technology Administration. Jonathan L. Gifford, George Mason University, chaired the study committee.

#### **Ongoing Studies**

In addition to projects providing ongoing reviews of FHWA's research and technology programs, pavement technology deployment programs, the Long-Term Pavement Performance Program, and the research programs of FRA and FTA, the Policy Studies group includes committees working on a variety of important—and sometimes controversial—topics. Several ongoing studies are described below.

##### *Climate Change and Transportation*

The TRB Executive Committee initiated a study of the effects of climate change on U.S. transportation infrastructure and operations. The study committee commissioned papers that were presented and discussed at a major conference in October 2006. The final report is scheduled for release in early 2008. Funding is provided by U.S. DOT, the U.S. Army Corps of Engineers, the American Association of State Highway and Transportation Officials (AASHTO) through the National Cooperative Highway Research Program (NCHRP), the Transit Cooperative Research Program (TCRP), the Environmental Protection Agency, and TRB.

##### *The Role of Transit in Emergency Evacuations*

In SAFETEA-LU, Congress requested that TRB review the role of transit in emergency evacua-

<sup>10</sup> [www.TRB.org/news/blurb\\_detail.asp?id=7816](http://www.TRB.org/news/blurb_detail.asp?id=7816).

tions of the nation's 38 largest urbanized areas. The study was requested in response to the difficulties evacuating Manhattan after the terrorist attacks of September 11, 2001, but the project also examines the evacuation problems experienced by cities and states during natural disasters such as hurricanes. Release of the report is expected in early 2008. Funding is provided by FTA and TCRP.

#### *St. Lawrence Seaway: Options to Eliminate Introduction of Nonindigenous Species in the Great Lakes, Phase II*

Options are being developed to allow continued growth in trade in the Great Lakes region while curtailing the introduction of nonindigenous species via ships entering the St. Lawrence Seaway. The project is funded by the Great Lakes Protection Fund. The report will be released in early 2008.

#### *Funding Options for Freight Transportation Projects of National Significance*

The TRB Executive Committee initiated this study to evaluate options for the public sector to share in funding freight projects of national significance. TRB and the UPS Foundation are the study sponsors.

#### *Traffic Safety Lessons from Benchmark Nations*

Another study initiated by the TRB Executive Committee is examining the experience of nations that have been most successful in reducing traffic fatalities and injuries. The study will determine how these nations built the political will to implement controversial behavioral interventions and will identify approaches that may be transferable to the United States. Funding is provided by TRB.



Members of the Committee on the St. Lawrence Seaway: Options to Eliminate Introduction of Nonindigenous Species in the Great Lakes, Phase II consider information presented by a guest speaker at a meeting in July.

#### *Reducing Greenhouse Gas Emissions and Saving Energy in Transportation*

In recognition of the renewed interest in saving energy and reducing greenhouse gas emissions, the TRB Executive Committee has initiated a study that will examine the full array of options for transportation and identify promising strategies for policy makers. The project began in late 2007 and will unfold over an 18-month period.

#### *Highway Safety Research Coordination*

The committee for the study on highway safety research coordination is examining options for improving coordination among the several funders of highway safety research. The committee also is considering strategies to improve research quality. The study is funded by NCHRP and FHWA, with a final report expected in early 2008. Forrest M. Council, Senior Safety Researcher, University of North Carolina Highway Safety Research Center, chairs the committee.



Successful but sometimes controversial traffic safety policies from other nations are the focus of a TRB-initiated study committee.

## INFORMATION SERVICES

### **Transportation Research Information Services**

The Transportation Research Information Services (TRIS) database is the world's largest online bibliographic database of transportation research. TRIS contains more than 680,000 records of published and ongoing research in all modes and disciplines of transportation. More than 40,000 new records were added in 2007.

Late in the year, TRIS added a 20,000-record database of Environmental Impact Statements (EIS)—the most comprehensive EIS collection in the United States—produced by Northwestern University's Transportation Library. TRIS initially will contain only the bibliographic records for the reports; however, because Google is digitizing the collection, TRIS eventually will provide links to the full texts.

Most of the TRIS database is available on the Internet as TRIS Online through the Bureau of Transportation Statistics' (BTS) National Transportation Library website.<sup>11</sup> TRB produces and maintains TRIS, and BTS makes the database accessible on the web without charge.

TRIS Online features an enhanced, searchable interface, provided by BTS, and offers both simple

<sup>11</sup> <http://ntlsearch.bts.gov/tris/index.do>.



Staff for TRIS, which celebrated its 40th anniversary in 2007, review the contents of the latest information folder: (left to right) Norma Hansell-Price, Acquisitions Assistant; Shirley A. Morin, TRIS Database Administrator; James W. Yates, Jr., Library Clerk; Barbara L. Post, Manager; Penny Passikoff, Abstractor and Indexer; Nancy Choudry, Abstractor and Indexer; and Jessica Fomalont, Librarian. (Not pictured: Jack Chen, TRIS Database Specialist.)

and advanced search capabilities. TRIS Online links records to the full text of electronic documents or to information about ordering from suppliers. Almost 36,000 TRIS records are linked to the full text.

TRIS is also available on the Internet for a fee through Dialog, Inc., and as part of the TRANSPORT database, a cooperative effort between TRB and the International Transport Research Documentation database of the Organisation for Economic Co-operation and Development (OECD). TRANSPORT is produced and distributed by Ovid-SilverPlatter.

The TRB Publications Index is a searchable database available on TRB's website that contains all TRB, Highway Research Board (HRB), Strategic Highway Research Program (SHRP), and Marine Board publications since 1923.<sup>12</sup> The TRB Publications Index offers simple and advanced searching and allows users to view results, download the results in a variety of formats, and e-mail the results. The index provides direct web links to available full-text documents and to ordering information.

### Research Needs Statement Database

In late 2007, the Research Needs Statement (RNS) Database debuted on the TRB website.<sup>13</sup> Developed at the request of the TRB Technical Activities Division, the database is part of the Research in Progress (RiP) Database. The RNS website allows users to search for research needs that have been identified, developed, and prioritized by TRB technical committees and others.

<sup>12</sup> <http://pubsindex.trb.org/>.

<sup>13</sup> <http://rns.trb.org>.

### Research in Progress

The RiP website is a searchable database of more than 9,500 records of active or recently completed research projects.<sup>14</sup> The University Transportation Centers (UTCs) are now using the RiP as the clearinghouse for university transportation research, fulfilling a requirement in SAFETEA-LU. The Research and Innovative Technology Administration (RITA) funded the software enhancements that have facilitated UTC use of the RiP.

Individuals from state DOTs and UTCs can add, modify, or delete records of research through a web-based data entry system. A current awareness service notifies users automatically about new project records in specified subject areas. The RiP contains international project records from OECD's International Transport Research Documentation's Transportation Research in Progress Database. The RiP web page received more than 1 million visits from users worldwide in 2007.

### TRB Library

The TRB Library is a small, specialized library that provides reference and information services to TRB sponsors, committee members, and staff. Many state DOTs regularly use the library services. The library subscribes to more than 370 serial titles and contains a complete collection of TRB, HRB, SHRP, and Marine Board publications.

The TRB Library is included in the Transportation Library Catalog through the National Transportation Library and the Online Computer Library Center's WorldCat.

## SYNTHESIS OF INFORMATION REPORTS

### Cooperative Research Programs Syntheses

Under the sponsorship of the Cooperative Research Programs administered by TRB, the Synthesis unit prepares reports on current practice and knowledge for a range of key highway and transit topics. Practitioners and researchers make extensive use of the reports.

A highway committee, a transit committee, and an airport committee of the Cooperative Research Programs select the study topics each year. In 2007, the committees selected 13 new highway, 6 new transit, and 5 new airport studies. A consul-

<sup>14</sup> <http://rip.trb.org/>.





A synthesis panel reviews the status of work on Transportation's Role in Emergency Evacuation and Reentry, a topic under NCHRP Synthesis of Information Related to Highway Problems.

tant experienced in the topic area researches and writes each Synthesis report, with guidance from an expert panel.

A list of reports published in the past 12 months appears on pages 56–58. Approximately 3,500 copies of each report are published in hard copy, and 3,000 of these are distributed to state DOTs, transit agencies, and TRB topic-area subscribers. The reports also are posted on the TRB website.<sup>15</sup>

TRB maintains an inventory of hard-copy Synthesis reports for sale. Illustrative airport, highway, and transit titles published in 2007 are listed in the box on this page.<sup>16</sup>

### Commercial Truck and Bus Safety Synthesis Program

The Commercial Truck and Bus Safety Synthesis Program (CTBSSP) is a cooperative research program sponsored by FMCSA and administered by TRB. The program was authorized in 2001 to support FMCSA's safety research programs. In 2007, FMCSA reauthorized the program through a cooperative agreement providing \$200,000 annually through 2012. This amount supports two new studies each year.

The studies summarize current practice in a specific technical area in commercial truck and bus safety, usually through a literature search and a survey of organizations such as state DOTs, enforcement agencies, commercial truck and bus companies, or other appropriate groups. The program is modeled on the synthesis programs of

<sup>15</sup> Airport syntheses: [www.TRB.org/news/blurb\\_browse.asp?id=138](http://www.TRB.org/news/blurb_browse.asp?id=138); highway syntheses: [www.TRB.org/news/blurb\\_browse.asp?id=5](http://www.TRB.org/news/blurb_browse.asp?id=5); transit syntheses: [www.TRB.org/news/blurb\\_browse.asp?id=6](http://www.TRB.org/news/blurb_browse.asp?id=6).

<sup>16</sup> Synthesis reports may be ordered from the TRB Online Bookstore, <http://trb.org/bookstore/>, or by calling 202-334-3213.

NCHRP and TCRP. The primary users of the synthesis final reports are practitioners who are facing the issues or problems addressed, in a variety of settings.

A program oversight panel monitors CTBSSP and the program procedures; selects Synthesis topics annually, after periodic, industrywide solicitations; refines Synthesis scopes; selects researchers to prepare each Synthesis; reviews products; and makes publication recommendations. The program oversight panel has authorized 18 Synthesis topics. Five Synthesis reports, listed on page 57, were published in 2007 and are available on the TRB website.<sup>17</sup>

<sup>17</sup> [www.TRB.org/news/blurb\\_browse.asp?id=11](http://www.TRB.org/news/blurb_browse.asp?id=11).



## ILLUSTRATIVE SYNTHESIS REPORTS, 2007

### Synthesis of Airport Practice

- 1 Innovative Finance and Alternative Sources of Revenue for Airports
- 3 General Aviation Safety and Security Practices

### Synthesis of Highway Practice

- 364 Estimating Toll Road Demand and Revenue
- 366 Tribal Transportation Programs
- 374 Preserving Freight and Passenger Rail Corridors and Service
- 376 Bridge Inspection Practices

### Synthesis of Transit Practice

- 68 Methods of Rider Communication
- 70 Mobile Data Terminals





A Transit IDEA panel evaluates a proposal for a project contract.

## INNOVATIONS DESERVING EXPLORATORY ANALYSIS PROGRAMS

IDEA programs fund early-stage investigations of potential breakthroughs in transportation technology. Small projects, initiated by researchers, investigate the feasibility of innovative concepts that could advance transportation practice. IDEA programs sponsor high-risk research that is independent of the immediate mission concerns of public agencies and of the short-term financial imperatives of the private sector.

The state DOTs collectively fund highway-related research through the NCHRP IDEA program. Research on innovations applicable to transit practice is carried out under the Transit IDEA program, funded by FTA through TCRP. FRA spon-

sors the Rail IDEA program to advance the safety and performance of the U.S. rail system, and, with FMCSA, cosponsors the Safety IDEA program, which funds projects to improve the safety of truck, intercity bus, and rail operations.

Each IDEA program follows a similar administrative model, adapted for sponsorship arrangements and target audiences. Each program operates through a committee or panel of volunteer transportation experts who solicit, review, and select proposals that merit research contracts. Because IDEA projects are high-risk investigations of unproven concepts, funds awarded for any one project are usually less than \$100,000. Frequently, however, IDEA funds are augmented through cost-share arrangements, nearly doubling the amount of research that can be supported through the IDEA programs.

At the 2007 TRB Annual Meeting, the four IDEA programs conducted their first joint poster session, TRB's IDEA Program: Sparking Innovation in Transportation. The session highlighted 26 of the most promising current projects and received a constant stream of interested visitors, who were able to interact directly with the inventors.

An annual summary of completed and current projects is published for each of the IDEA programs and distributed at the TRB Annual Meeting. These summaries are also available on the IDEA page of the TRB website, along with the IDEA Program Announcement, which contains forms and guidelines for submitting proposals.<sup>18</sup> A less formal publication, *Ignition*, features interviews with IDEA investigators and transportation leaders, plus articles that highlight promising projects. Issues of *Ignition* are archived on the IDEA website.

Consultant Arun Vohra describes his Transit IDEA project, Cleaning and Recoating Electrified Third Rail Cover Boards, at a special 2007 TRB Annual Meeting poster session, TRB's IDEA Programs: Sparking Innovation in Transportation.

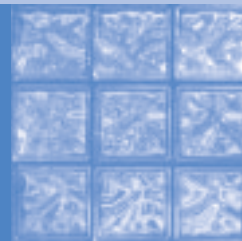


## STAFF NEWS

- Information Services Manager **Barbara L. Post** received the 2007 Professional Achievement Award from the Transportation Division of the Special Libraries Association.
- **Amelia B. Mathis** was promoted to Administrative Assistant.
- **Laurie S. Geller** joined the staff as Senior Program Officer.

<sup>18</sup> [www.TRB.org/Studies/Programs/IDEA.asp](http://www.TRB.org/Studies/Programs/IDEA.asp).

# Cooperative Research Programs



TRB administers five contract research programs:

- The National Cooperative Highway Research Program (NCHRP), sponsored by the American Association of State Highway and Transportation Officials (AASHTO) in cooperation with the Federal Highway Administration (FHWA);
- The Transit Cooperative Research Program (TCRP), sponsored by the Federal Transit Administration (FTA);
- The Airport Cooperative Research Program (ACRP), sponsored by the Federal Aviation Administration (FAA);
- The National Cooperative Freight Research Program (NCFRP), sponsored by the Research and Innovative Technology Administration (RITA); and
- The Hazardous Materials Cooperative Research Program (HMCRP), sponsored by the Pipeline and Hazardous Materials Safety Administration (PHMSA).



Susan Martinovich, Chair of the AASHTO Standing Committee on Research, and Crawford F. Jencks, Deputy Director, Cooperative Research Programs, consider proposals for NCHRP projects.

## NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM

NCHRP is an applied research program that responds to the needs of state highway and transportation departments by solving pressing operational problems. Although NCHRP accounts for a small percentage of the nation's annual investment in highway research, its close association with AASHTO and its position within the National Academies have enabled the program to carry out important research resulting in practical products.

Since 1962, NCHRP has administered 1,508 research projects. More than 992 publications have appeared in the *NCHRP Report* and *NCHRP Synthesis of Highway Practice* series, in addition to 324



**Susan Martinovich**  
*Chair*  
AASHTO Standing Committee on Research



**Robert I. Brownstein**  
*Chair*  
TCRP Oversight and Project Selection Committee



**Cheryl A. Burke**  
*Chair*  
HMCRP Technical Oversight Panel



**Michael P. Huerta**  
*Chair*  
NCFRP Oversight Committee



**James A. Wilding**  
*Chair*  
ACRP Oversight Committee



**Christopher W. Jenks**  
*Director*  
Cooperative Research Programs



**Crawford F. Jencks**  
*Deputy Director*  
Cooperative Research Programs

volumes of *Research Results Digest* and 48 of *Legal Research Digest*, as well as 157 other documents published electronically.

NCHRP projects for federal fiscal year (FY) 2007 were placed under contract as funds became available. Proposal solicitations for 31 research projects in federal FY 2008 (October 1, 2007, through September 30, 2008) were released starting in August 2007; depending on the availability of funding authorized in federal legislation, contracts should be executed in the first three months of 2008.

Under the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), the Federal-Aid Highway State Planning and Research Funds have been increasing slightly, and NCHRP funding is affected proportionally. Funding available for NCHRP in FY 2005 totaled \$33 million; in FY 2006, \$32.7 million; in FY 2007, \$36.5 million; and in FY 2008, an estimated \$36 million.

AASHTO considered 147 problem statements submitted by states, AASHTO committees, and FHWA for the FY 2008 program. The quantity and quality of the requests ensure optimal use of the authorized funds. In September, AASHTO began to formulate the FY 2009 program and will determine the program content in March 2008.

NCHRP reports published during the past 12 months are listed on pages 56–57. A total of 260 projects were under contract as of September 1, 2007, with 96 additional projects under development or awaiting contract.

Each NCHRP study follows an approved research plan under the guidance of a panel of technical specialists and experienced practitioners. The panel defines the scope of work, selects the contractor under a competitive proposal process, and monitors the research from beginning to end. The panel's participation ensures the credibility of the research findings, facilitating adoption by AASHTO, state departments of transportation (DOTs), and other organizations.

NCHRP panels convened for more than 110 project meetings in 2007; panel members contributed more than 2,000 days of volunteer time to attend meetings, plus a comparable amount of time to review materials. NCHRP benefits from more than 2,154 volunteers who expend time and energy primarily for the challenges and the satisfaction of making significant contributions to the field.

Many NCHRP research projects have had a direct impact on practice through products such as

specifications, manuals, and guidelines. NCHRP emphasizes working with practitioners who will use the research results. The program's close relationship with AASHTO committees is important in carrying out this goal—approximately 40 percent of the research funds for fiscal year 2008 is allocated for 25 projects requested by 14 AASHTO committees.

Experience has shown that AASHTO committees are more likely to use NCHRP research results when (a) the committee identifies and requests the research, (b) committee members serve on the NCHRP project panel guiding the research, and (c) findings and recommendations are presented to the committee at the conclusion of the study. NCHRP projects frequently incorporate these three steps.

Many NCHRP projects are developing recommended revisions to AASHTO publications at the request of committees. When AASHTO adopts an NCHRP project's recommendations as a guide or specification, practitioners who may not be able to stay abreast of research results benefit from having the best information available through the AASHTO documents.

Details on the program from 1962 through 1988 can be found in *NCHRP Summary of Progress Through 1988*. Details on work since 1988 are available in *NCHRP Summary of Progress, December 31, 2007* and on the web.<sup>1</sup>

NCHRP studies of particular importance to AASHTO that were completed during the past year are summarized in the following sections. All reports are available on the web.<sup>2</sup>

## Planning and the Environment

NCHRP Report 565, *Evaluation of Best Management Practices for Highway Runoff Control*, provides best management practices for controlling stormwater runoff from highways. These practices avoid or mitigate the negative impacts of various pollutants that can be carried by rainfall into the groundwater and receiving waters.

NCHRP Report 569, *Comparative Review and Analysis of State Transit Funding Programs*, examines the levels and types of state funding for public transportation. The report presents supplemental analyses of information collected in an annual survey by the Bureau of Transportation Statistics,

<sup>1</sup> [www.TRB.org/nchrp](http://www.TRB.org/nchrp).

<sup>2</sup> [www.TRB.org/news/blurb\\_browse.asp?id=2](http://www.TRB.org/news/blurb_browse.asp?id=2).



Dennis L. Christiansen, Texas Transportation Institute, speaks at a meeting of the AASHTO Research Advisory Committee during the 2007 TRB Annual Meeting. The committee's charge includes rating research problem statements for possible exploration as NCHRP projects.

explores a framework for conducting peer analyses, and suggests enhancements to the survey that would allow states to conduct additional analyses of public transportation funding.

NCHRP Report 570, *Guidebook for Freight Policy, Planning, and Programming in Small and Medium-Sized Metropolitan Areas*, explores the effective design, startup, and management of freight policy, planning, and programming processes in smaller metropolitan areas.

NCHRP Report 574, *Guidance for Cost Estimation and Management for Highway Projects During Planning, Programming, and Preconstruction*, provides approaches to estimating and managing costs to avoid escalation and to support the development of consistent and accurate project estimates through all phases—from long-range planning through priority programming and on to project design.

NCHRP Report 582, *Best Practices to Enhance the Transportation–Land Use Connection in the Rural United States*, serves as a guidebook to best practices and includes case studies that address key, common transportation issues in rural areas undergoing development and growth or decline.

NCHRP Report 586, *Rail Freight Solutions to Roadway Congestion*, presents ways to assess the merits of public investment in rail freight to relieve roadway congestion. Also presented are tools that assist in incorporating rail freight considerations into urban and intercity transportation decision making.

NCHRP Report 591, *Factors That Support the Planning–Programming Linkage*, provides guidance for creating a strong link between long-range transportation plans and projects in priority programs.

## Pavement Design and Materials

AASHTO has adopted as interim products the *Mechanistic-Empirical Pavement Design Guide and Software* produced under NCHRP Projects 1-37 and 1-40. The guide represents the largest continuous effort in the history of NCHRP, funded at more than \$9.5 million from 1998 to 2007 and involving many contractors and consultants. The guide and software will improve the design of pavements for highways throughout the United States and should lead to better-performing, more cost-effective pavements. The software will be maintained as part of the AASHTOWare product line.

NCHRP Report 557, *Aggregate Tests for Hot-Mix Asphalt Mixtures Used in Pavements*, pres-

ents performance-based procedures for evaluating and selecting aggregates for specific mixture applications.

NCHRP Report 567, *Volumetric Requirements for Superpave Mix Design*, examines changes to the recommended Superpave mix design criteria for voids in mineral aggregate, voids filled with asphalt, and air voids content, along with the effects on the performance and durability of hot-mix asphalt.

## Bridges and Structures

NCHRP Report 558, *Manual on Service Life of Corrosion-Damaged Reinforced Concrete Bridge Superstructure Elements*, reviews step-by-step procedures for assessing the condition of corrosion-damaged bridge elements. The report also explores procedures to estimate the remaining life of reinforced concrete bridge superstructure elements and to determine the effects of maintenance and repair options on service life.

NCHRP Report 575, *Legal Truck Loads and AASHTO Legal Loads for Posting*, explores recommended revisions to the legal loads for posting from the *Manual for Condition Evaluation of Bridges* and the *Guide Manual for Condition Evaluation and Load and Resistance Factor Rating (LRFR) of Highway Bridges*.

NCHRP Report 579, *Application of LRFD Bridge Design Specifications to High-Strength Structural Concrete: Shear Provisions*, examines research to extend the applicability of shear design provisions for reinforced and prestressed concrete structures in the AASHTO load and resistance factor design (LRFD) bridge design specifications to concrete compressive strengths greater than 10 ksi.

NCHRP Report 584, *Full-Depth, Precast Concrete Bridge Deck Panel Systems*, recommends guidelines for the design, fabrication, and construction of full-depth, precast concrete bridge deck panel systems,



Test girders arrive at Newmark Laboratory, University of Illinois, for NCHRP Project 12-56, Application of the LRFD Bridge Design Specifications to High-Strength Structural Concrete: Shear Provisions (from NCHRP Report 579).



Sheet pile weir fitted with a fish ladder, to prevent streambed degradation and enable fish to migrate upstream, from NCHRP Report 587, *Countermeasures to Protect Bridge Abutments from Scour*.

as well as durable, rapidly constructed connections between panels.

NCHRP Report 587, *Countermeasures to Protect Bridge Abutments from Scour*, provides selection criteria and guidelines for the design and construction of countermeasures to protect bridge abutments and approach embankments from scour damage.

NCHRP Report 566, *Guidelines for Concrete Mixtures Containing Supplementary Cementitious Materials to Enhance Durability of Bridge Decks*, presents a methodology for designing hydraulic concrete mixtures that incorporate supplementary cementitious materials to enhance the durability of cast-in-place concrete bridge decks. The research tested fly ash, silica fume, slag, and natural pozzolans singly and in combination.

### Construction and Maintenance

NCHRP Report 561, *Best-Value Procurement Methods for Highway Construction Projects*, examines procurement methods, award algorithms, and



Panel reviews Powerpoint presentation on progress in NCHRP Project 22-20, *Design of Roadside Barrier Systems Placed on MSE Retaining Walls*.

rating systems for awarding best-value highway construction contracts. The report also reviews criteria for selecting projects for best-value procurement, as well as implementation strategies and a model best-value specification.

NCHRP Report 568, *Riprap Design Criteria, Recommended Specifications, and Quality Control*, examines design guidelines; recommended material specifications and test methods; recommended construction specifications; and construction, inspection, and quality control guidelines for riprap in a range of applications, including revetment on streams and riverbanks, bridge piers and abutments, and bridge scour countermeasures such as guide banks and spurs.

NCHRP Report 577, *Guidelines for the Selection of Snow and Ice Control Materials to Mitigate Environmental Impacts*, explores guidelines for the selection of snow and ice control materials by evaluating cost, performance, and impacts on the environment and infrastructure. The report presents a decision tool for selecting snow and ice control materials for the specific needs of a highway agency, a purchase specification that can be used when agency staff have selected materials, and a quality assurance monitoring program that includes procedures and standard test methods to characterize snow and ice control products before purchase or use.

NCHRP Report 581, *Design of Construction Work Zones on High-Speed Highways*, explores an approach for selecting an appropriate construction work zone type; suggests guidance for the design of geometric features, including horizontal and vertical alignment, cross-sectional features, and barrier placement; and examines a variety of ancillary features such as drainage systems, lighting, and surface type. As part of the research, this project created a work zone prediction model and user's guide to estimate free-flow vehicle speeds through two types of construction work zones on four-lane freeways—single-lane closures and median crossovers.

### Security

NCHRP Report 525, Volume 12, *Making Transportation Tunnels Safe and Secure*, jointly funded with TCRP, provides transportation tunnel owners and operators with guidelines for protecting tunnels by minimizing the potential for damage from extreme events, so that damaged tunnels may return to full function after a relatively short period.

## Traffic and Operations

NCHRP Report 572, *Roundabouts in the United States*, presents methods for estimating the safety and operational impacts of roundabouts and provides updated design criteria.

## Information Technology

NCHRP Report 576, *TransXML: XML Schemas for Exchange of Transportation Data*, proposes a common framework for the exchange of transportation data in eXtensible Markup Language, known as TransXML. The framework is designed for developing, validating, disseminating, and extending current and future schemas. The report also explores the benefits of adopting and expanding TransXML, and highlights efforts to ensure its success.

## Continuing Projects

NCHRP supports several continuing projects with studies both completed and under way:

- Project 20-5, Synthesis of Information Related to Highway Problems, produces state-of-the-practice reports (see Studies and Special Programs Division section, pages 30–31).
- Project 20-6, Legal Problems Arising out of Highway Programs, conducts reviews of case law and publishes the results in the NCHRP Legal Research Digest series.
- Project 20-30, NCHRP IDEA (Innovations Deserving Exploratory Analysis), funds projects to explore innovative concepts and to initiate product development (see Studies and Special Programs Division section, page 32).
- Project 20-36, Highway Research and Technology—International Information Sharing, provides financial support for state DOT represen-



The safety and operational effects of roundabouts—like this in Springfield, Oregon—are the subject of NCHRP Report 572, which includes updated design criteria.

tatives to participate in foreign meetings and to host foreign experts in the United States. The project also shares expenses with FHWA for foreign scanning tours.

- Project 20-68, U.S. Domestic Scan Program, was adopted after a successful pilot test. Three or four domestic scans will be conducted annually.

## TRANSIT COOPERATIVE RESEARCH PROGRAM

Authorized by the Intermodal Surface Transportation Efficiency Act and initiated under TRB management in July 1992, TCRP is supported by annual grants from FTA. The TCRP Oversight and Project Selection (TOPS) Committee chooses research for the program; the committee also serves as the board of directors of the Transit Development Corporation (TDC), a nonprofit educational and research affiliate of the American Public Transportation Association (APTA). A three-way memorandum of agreement by FTA, TDC, and



Under NCHRP Project 20-36, Highway Research and Technology—International Information Sharing, a U.S. group visits colleagues at the Bundesanstalt für Strassenwesen, the German Federal Highway Research Institute.

Cooperative Research Programs Director Christopher W. Jenks (*center*) delivers a report at the October meeting of the TCRP Oversight and Project Selection Committee.



TRB outlines the program's operating procedures. In its 15 years, TCRP has undertaken 514 studies; of these, 427 have been completed and 87 are in progress.

TCRP receives submissions of research problem statements throughout the year and has considered approximately 2,200 since 1992. In early 2007, TCRP issued a call for FY 2008 problem statements to more than 4,000 individuals and organizations in the transit community, emphasizing research consistent with FTA's Strategic Research Goals and the TCRP Strategic Plan. TCRP received and processed 118 problem statements for FY 2008.

TRB submits quarterly progress reports on TCRP to FTA, describing the work accomplished during the quarter and anticipated for the next period. Details of the program's progress since 1992 can be found in the December 2007 TCRP Annual Report.

TCRP panels have the same responsibilities as NCHRP panels for developing requests for proposals, selecting contractors, and monitoring the research. TCRP panels held 54 meetings during 2007, involving approximately 500 professionals and representing more than 700 days of volunteer time. Among these were 23 panel meetings to prepare research problem statements and to select research agencies; 22 interim project meetings to review project status at midcourse; and 9 meetings on special projects. The TOPS Committee also met twice in the year.

TCRP published 32 project reports in 2007, bringing the total to 447 publications: 156 Reports, 73 Syntheses of Transit Practice, 86 Research Results Digests, 23 Legal Research Digests, 45 IDEA reports, 39 web-only documents, and 25 CD-ROMs.

### Research Dissemination

Dissemination of TCRP research results is a concerted activity. APTA administers TCRP Project J-1, Dissemination and Implementation of TCRP Research Findings, to distribute TCRP research materials to targeted audiences. This outreach includes various forms of promotion, such as the Internet. APTA also disseminates TCRP information through *Passenger Transport*, the industry's weekly newspaper, as well as through announcements, press releases, and news reports.

APTA solicits research problem statements; conducts surveys; arranges for workshops, field visits, and training; and oversees other activities to ensure that public transportation industry practitioners receive and implement TCRP research results. The Conference of Minority Transportation Officials also distributes TCRP materials through the TCRP Ambassador Program, which maintains a roster of transit professionals who promote TCRP project findings to practitioners.

The J-1 Program has developed a TCRP dissemination website maintained by APTA; has distributed publications catalogs on general and rural topics; has coordinated industry mailings and surveys to ascertain the levels of use and awareness of the program's products; and has produced informational CDs. TCRP reports are available online through APTA's TCRP dissemination website<sup>3</sup> and through TRB's TCRP web page.<sup>4</sup>

The following TCRP activities of particular interest were in progress or were completed during the year.

<sup>3</sup> <http://www.tcrponline.org/index.cgi>.

<sup>4</sup> [www.TRB.org/tcrp](http://www.TRB.org/tcrp).



## Public Transportation Security

Public transportation security continues to be a focus for TCRP. The TOPS Committee has allocated \$2.75 million to security-related research since September 11, 2001.

TCRP Report 86 comprises a series of volumes on transit security-related research, covering a variety of topics. One volume was added in 2007. TCRP Report 86, Volume 13, *Public Transportation Passenger Security Inspections: A Guide for Policy Decision Makers*, provides information for assessing the advantages and disadvantages of a passenger security inspection program. The report identifies (a) the most promising types of screening technologies and methods in use or under testing; (b) the operational considerations for deploying the technologies in land-based systems; (c) the legal precedent for passenger screening activities; and (d) a decision model for a passenger security inspection policy.

An additional security-related publication, *A Guide to Transportation and Hazards Resources*, is expected in early 2008.

## Transit Vehicles and Maintenance

Work continued on TCRP Project C-14, Technical Support for Development of Transit Bus Standards. The project has established a transit industry-driven process for producing bus standards and has recommended practices in various technical areas. Administered by APTA, the process is guided by the APTA Bus Standards Policy and Planning Committee.

In 2007, the development of standards and recommended practices continued for bus brakes; engine cooling systems; heating, ventilation, and air conditioning; transit operator and supervisor training; transit vehicle data recorders; technical specifications for hybrid-electric transit buses; bus fire prevention, including equipment specifications; bus rapid transit vehicles; bus maintenance training; bus maintenance facility planning guidelines; and bus interior noise. In 2008, the \$1.275 million in TCRP funding for this effort will be expended, and the standards-development process will continue as an APTA-supported program.

TCRP Project E-6, Transit Bus Mechanics: Building for Success—The ASE Transit Bus Maintenance Certification Test Series, continues to develop tests for the Institute for Automotive Service

Excellence (ASE) to certify transit bus mechanics. The tests will be similar to those for the automotive, medium- and heavy-duty truck, and school bus industries. The project panel has identified 11 subject areas for testing.

In 2007, ASE administered five transit bus tests—electrical and electronics; brakes; diesel engines; advance diesel engine diagnostics; and heating, ventilation, and air conditioning. ASE is offering the tests nationwide in the spring and fall of each year as part of the regular test schedule.

Subject matter experts have started work on tests for suspension and steering and for transmission and drive train. The tests should become part of the ASE series in spring 2008.

The plan is to add 2 to 3 tests each year until all 11 are available. Test development involves coordination with organized labor to ensure the availability of relevant training. In combination with the ASE tests, the training serves as a means for developing the bus maintenance workforce.

## Track-Related Research

Three track-related publications were released: TCRP Research Results Digest 82, *Use of Guard/Girder/Restraining Rails*; TCRP Research Results Digest 83, *Performance and Testing Requirements for Portable Track Geometry Inspection Systems*; and TCRP Web-Only Document 37, *Rail Base Corrosion Detection and Prevention*. Digest 82 provides guidelines for the application of guard, girder, or restraining rails by transit systems to improve vehicle curving performance, reduce risk of flange climb derailment, and control wheel-rail wear.

Digest 83 investigates portable track geometry measurement systems and their applicability to transit operations. Performance guidelines and testing requirements are provided for transit agencies that are evaluating and selecting a portable track geometry system.

Web-Only Document 37 explores the corrosion effects experienced by rail transit systems; examines a finite element analysis and a flaw growth model; and reviews the inspection, prevention, and monitoring of rail base corrosion.

## Planning

TCRP Report 95, *Traveler Response to Transportation System Changes, Chapter 17: Transit-Oriented Development*, focuses on the TOD strategy for land





Planning-related TCRP reports examine transit-oriented development and agency strategies for creating high-ridership systems, among other topics.

use and its effects on transportation, addressing the three dimensions of TOD: regional context, land use mix, and primary transit mode. New and synthesized research is presented, including a TOD index for describing projects.

TCRP Report 111, *Elements Needed to Create High-Ridership Transit Systems*, describes transit agency strategies to create high ridership and includes case studies that examine the internal and external elements that contribute to successful ridership increases, as well as the internal and external challenges for the agencies. A companion interactive CD-ROM contains a database of transit agency ridership strategies linked to the strategies and examples in the report. The CD-ROM also includes a brochure outlining the key elements identified in the report for increasing and sustaining ridership. The materials are designed to assist transit managers, staff, policymakers, and regional stakeholders to identify strategies to increase ridership.

TCRP Report 116, *Guidebook for Evaluating, Selecting, and Implementing Suburban Transit Services*, examines the relationship between suburban transit services and land use and traces out the trends that influence the availability and operation of suburban transit services, which include commuter, route deviation, demand response, circulators, shuttles, and vanpools. This report updates information presented in TCRP Report 55, *Guidelines for Enhancing Suburban Mobility Using Public Transportation*, and presents the latest research results and issues related to suburban transit services.

A companion document includes eight detailed case studies describing the types of suburban tran-

sit services offered; the types of operational issues; the funding arrangements; the marketing program; the performance-measurement program; and the successes, challenges, and lessons learned from introducing suburban transit services. Available online as TCRP Web-Only Document 34, the companion report also includes quantitative and qualitative decision matrices.

## Operations and Safety

TCRP Project D-9, *Transit Vehicles and Facilities on Streets and Highways*, developed comprehensive geometric design guidelines for accommodating transit vehicles and facilities on highways and streets. The project also developed a process for selecting appropriate transit facilities to accommodate current and future transit demand—based on local conditions—to improve travel times and reliability. The report includes geometric guidelines associated with transit facilities on or immediately adjacent to streets and highways. AASHTO will publish the results from this project as a companion to the “Green Book,” *A Policy on Geometric Design of Highways and Streets, 5th Edition*.

TCRP Synthesis 70, *Mobile Data Terminals*, provides state-of-the-practice information on the use of mobile data terminals (MDTs) at transit agencies across the United States. The report also contains information on the capabilities of mobile data computers and about the rapidly changing wireless communications infrastructure that supports MDT deployment in transit.

TCRP Research Results Digest 84, *Audible Signals for Pedestrian Safety in LRT Environments*, provides guidelines for the application of audible light rail transit (LRT) signals for pedestrians, including descriptions of systems and associated operating procedures, the integration with other crossing measures, the criteria for use, and the effectiveness and limitations.

## Complementary Paratransit

TCRP Report 119, *Improving ADA Complementary Paratransit Demand Estimation*, provides a handbook for estimating Americans with Disabilities Act (ADA) paratransit demand. The handbook contains several tools for estimating demand, including an online spreadsheet that works from user-entered data; a series of graphs for calculating demand estimates; and elasticities and factors for



quick calculations of the effects of small changes in service policies.

TCRP Report 121, *Toolkit for Integrating Non-dedicated Vehicles in Paratransit Service*, provides tools for transportation managers and planners to determine the appropriate split between dedicated and nondedicated paratransit services to increase cost-effectiveness and meet peak demand. The report provides key findings from nine case studies, along with a Nondedicated Vehicle Optimization Model and User Manual.

### Bus Rapid Transit

TCRP Report 117, *Design, Operation, and Safety of At-Grade Crossings of Exclusive Busways*, provides information and guidance for improving the safety and performance of exclusive busways on at-grade intersections along (a) busways within arterial street medians; (b) physically separated, side-aligned busways; (c) busways on separate rights-of-way; and (d) bus-only ramps. Intersections include highway intersections, midblock pedestrian crossings, and bicycle crossings. The guidance can enhance safety at busway crossings, maintain efficient transit and highway operations, and minimize pedestrian delay. TCRP Web-Only Document 36 contains supplemental information.

TCRP Report 118, *Bus Rapid Transit: Practitioner's Guide*, reviews the costs, impacts, and effectiveness of implementing selected bus rapid transit (BRT) components. The report includes practical information for transit professionals and policy makers in planning and decision making about implementing different components of BRT systems. This report updates information presented in TCRP Report 90, *Bus Rapid Transit*, with the latest developments and research results.

### New and Emerging Technologies

TCRP Report 84, Volume 8, *Improving Public Transportation Technology Implementations and Anticipating Emerging Technologies*, summarizes the value of current technologies in public transportation, describes how transit agencies can benefit from advanced technologies, and identifies five emerging technologies with applications for transit agencies.

### Transit Lessons from Abroad

Since 1994, TCRP Project J-3, International Transit Studies Program, has sponsored 27 leadership

development missions. More than 350 transit professionals have participated in missions to Europe, Asia, Canada, South America, New Zealand, and Australia in the past 13 years. The purpose of the program is to expand the horizons of U.S. transit managers. The findings and observations of the participants are published in the TCRP Research Results Digest Series.<sup>5</sup>

## AIRPORT COOPERATIVE RESEARCH PROGRAM

ACRP was authorized in the Vision 100: Century of Aviation Reauthorization Act, and a memorandum of agreement was signed in October 2005 to initiate the program. FAA sponsors ACRP, TRB manages the program, and representatives of airport operating agencies provide oversight and governance.

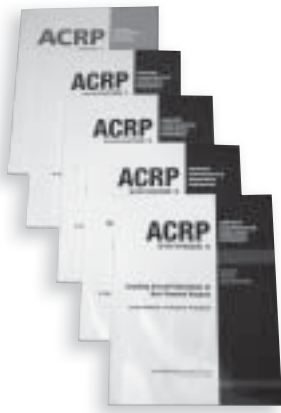
ACRP carries out applied research on problems shared by airport operating agencies but not adequately addressed by federal research programs. A 2003 study sponsored by FAA and published as TRB Special Report 272, *Airport Research Needs: Cooperative Solutions*, identified the need for ACRP. The program undertakes research and other technical activities in a variety of airport subject areas, including design, construction, maintenance, operations, safety, security, policy, planning, human resources, and administration.

The Vision 100 Act authorized \$10 million per year for ACRP through FY 2007. To date, federal appropriations have included \$3 million in FY

<sup>5</sup> TCRP Research Results Digests 20, 22, 27, 31, 33, 36, 42, 47, 49, 53, 54, 58, 62, 64, 66, 68, 70, 71, 77, 81, and 85.

Nighttime view of Baltimore-Washington International Airport. Revenue sources, safety management, energy use, and activity forecasting are among the topics of early ACRP products. (Photo by Declan McCullagh.)





2005, and \$10 million in FY 2006 and FY 2007. Funding beyond FY 2007 is subject to the Vision 100 Act reauthorization process, which is under way; the expectation is that a minimum of \$10 million will be authorized and appropriated for FY 2008.

The ACRP Oversight Committee (AOC), appointed by the U.S. Secretary of Transportation, met twice in 2007 to select research projects for the FY 2007 and FY 2008 programs. To date, the AOC has authorized 85 projects totaling \$24.3 million in a variety of subject areas of interest to the airport community. The AOC will meet again in early 2008 to select additional projects.

In 2007, 11 projects were completed and entered into the TRB publication process. Seven publications were produced (one Report, two Research Results Digests, and four Syntheses), with the four others expected in early 2008.

More than 350 individuals from the airport community are participating on ACRP project panels, which held approximately 70 meetings during 2007 to develop scopes of work, select research contractors, and review interim products. This volunteer assistance from project panel members is vital to assuring that the research and products are oriented to airport practitioners.

The following ACRP activities of particular interest were in progress or were completed during the year.

### **Airport Financing and Revenue**

ACRP Synthesis 1, *Innovative Finance and Alternative Sources of Revenue for Airports*, describes alternative financing options and revenue sources currently available or that could be available in the United States. The synthesis provides a brief overview of capital funding sources commonly used by airport operators, a review of the capital financing mechanisms used by airports, descriptions of revenue sources developed by airport operators, and a review of privatization options available to U.S. airport operators.

### **Airport Safety Management Systems**

ACRP Report 1, Volume 1, *Overview of Safety Management Systems for Airports*, provides a brief description of a safety management system (SMS) and serves as a quick, easy-to-read introduction to SMSs for airport directors and governing boards. The report presents the ad-

vantages associated with an SMS and explains the four components or pillars of a system—safety policy, safety risk management, safety assurance, and safety promotion. Also included is background information on the International Civil Aviation Organization's requirements for SMS at airports, along with the experiences of airports outside the United States that have implemented SMS.

This report represents Step 1 of a two-step process. Step 2, ACRP Project 04-05, will develop *A Guidebook for Airport Safety Management Systems* for airport operators. The guidebook will cover in detail the how-tos of developing an SMS at an airport and is scheduled for completion in the last quarter of 2008 and for publication in 2009.

### **Energy Use in U.S. Airports**

ACRP Research Results Digest 2, *Model for Improving Energy Use in U.S. Airport Facilities*, describes industry best practices that have allowed airport managers to curb energy expenses in airport facilities. The digest provides the results of a nationwide survey of airport energy-related operations and maintenance, building recommissioning, and energy conservation improvement practices for airports of various sizes.

### **Airport Planning**

ACRP Synthesis 2, *Airport Aviation Activity Forecasting*, reviews current practices and methods in airport activity forecasting in the United States, addressing the applications of airport forecasts and identifying common aviation metrics, aviation data sources, issues in data collection and preparation, and special data issues at nontowered airports. The synthesis offers an overview and discussion of available forecasting methods, including primary statistical methods; market share analysis; econometric modeling; and time series modeling. The focus is on appropriate forecasting methods, with examples from actual airport forecasting studies. The evaluation of forecasts is also covered, including assessments of forecast uncertainty, accuracy, optimism bias, and options for resolving differences between forecasts.

ACRP Synthesis 4, *Counting Aircraft Operations at Nontowered Airports*, identifies and evaluates the different methods that states, airports, and metropolitan planning organizations have

used to count and estimate aircraft operations at nontowered airports. The goal is to identify best practices, as well as new technologies, for counts and estimates.

### General Aviation Airports

ACRP Synthesis 3, *General Aviation Safety and Security Practices*, examines current practices in safety and security at general aviation airports and reviews the resources for developing safety and security programs, the funding sources and issues that determine the amount of money available for such programs, and current practices to keep facilities safe and secure.

## NATIONAL COOPERATIVE FREIGHT RESEARCH PROGRAM

Congress recognized the need for more research focused on freight transportation and, in 2005, authorized NCFRP in the SAFETEA-LU legislation. NCFRP is sponsored by RITA and managed by TRB, with program guidance provided by an oversight committee comprising a representative cross section of freight stakeholders. On September 6, 2006, RITA and the National Academies executed a contract to begin work. The total available funds in FY 2006 were \$2.65 million, and in FY 2007, \$2.9 million. FY 2008 and FY 2009 are expected to be funded at approximately \$3.0 million annually under SAFETEA-LU.

NCFRP conducts applied research on freight industry problems that are not being adequately addressed by other research programs. The NCFRP strategic plan has five objectives:

1. **Analyze the business of freight transportation.** Trends in the global and national movement of freight and business logistics are likely to place greater demands on the nation's freight transportation system. NCFRP research will provide better information and clearer insight into the market-driven factors that lead and respond to current and future freight demand.
2. **Develop reliable data and tools for the analysis of freight transportation.** Successful decision making depends on credible and reliable analysis, which requires high-quality data. NCFRP research will identify improvements in collecting, analyzing, and using data and



will develop tools for analyzing and managing the economic, safety, security, environmental, health, energy, and community impacts of freight transportation decisions.

3. **Explore operational improvements for freight transportation.** Enhancing the system performance should not focus only on providing new infrastructure but should include operational strategies and more efficient management of capacity. NCFRP research will provide guidance on implementing improvements in operational and system management.
4. **Evaluate investment decisions for adding physical capacity to the freight transportation system.** Quantifying benefits—including the return on the investment—is a key input for decision making. NCFRP research will provide information and guidance on making sound decisions for adding capacity when the investment makes economic sense.
5. **Identify ways to strengthen the institutional framework for the freight transportation system.** Institutional capacity is often a prerequisite for successful planning and implementation of freight-oriented strategies. NCFRP research will identify institutional barriers, organizational capacity issues, and innovative solutions to freight transportation challenges. Of particular interest is the evolving concept of public-private partnerships that often does not conform to jurisdictional boundaries or to the traditional dividing line between government and business.

The Freight Research Oversight Committee had its inaugural meeting in December 2006, discussing organizational issues that affect the operation of NCFRP. The committee selected 10 research topics to be funded with FY 2006 and FY 2007 funds. One project dealing with exclusive truck lanes is jointly funded by NCHRP, and seven NCFRP technical

View of intermodal and multimodal freight activity in the Port of Long Beach, California, the second busiest port in the United States. NCFRP is producing applied research to improve freight transportation. (Photo by Joseph R. Morris.)

panels will manage the other nine. Contracts for research are being initiated.

The Oversight Committee met in December 2007 to select projects for the FY 2008 program. Technical panels are being formed for the new projects.

## HAZARDOUS MATERIALS COOPERATIVE RESEARCH PROGRAM

SAFETEA-LU authorized a pilot cooperative research program on hazardous materials transportation. HMCPRP is sponsored by PHMSA, and a contract to begin work on the pilot went into effect in September 2006. HMCPRP will complement other U.S. DOT research programs as a stakeholder-driven, problem-solving program, fund-

ing research on real-world, day-to-day operational issues with near- to mid-term time frames. The total available funding in FY 2006 was \$0.88 million and in FY 2007, \$0.97 million. Funding for the remaining two fiscal years under SAFETEA-LU is estimated at close to \$1 million annually.

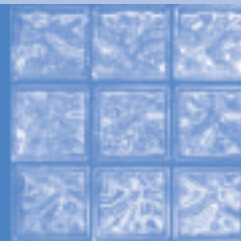
The HMCPRP Technical Oversight Panel held its inaugural meeting November 30–December 1, 2006, and discussed the program's operation. With the funds provided for FY 2006 and FY 2007, the panel selected four research projects that have been assigned to four technical panels. The technical panels have met, prepared scopes, and selected contract research agencies. All four projects are under way. The Oversight Panel met in late November 2007 to select projects for the FY 2008 and FY 2009 program years.

### STAFF NEWS

- **Christopher W. Jenks** was promoted to Director, CRP, in March, replacing **Robert J. Reilly**, who retired after 35 years with TRB, 22 as CRP Director. Jenks has been with TRB for 14 years, most recently as Manager of TCRP and ACRP.
- **Crawford F. Jencks** was promoted to Deputy Director, CRP, in April. In this new capacity, he assists in CRP management and continues to serve as Manager of NCHRP, NCFRP, and HMCPRP.
- Senior Program Officer **Edward T. Harrigan** received an Individual Distinguished Service Award from the National Academies in October.
- Three new Senior Program Officers started at NCHRP: **David A. Reynaud**, formerly director of the Highway Innovative Technology Evaluation Center for the American Society of Civil Engineers; **Lori L. Sundstrom**, previously Executive Officer for the Portland (Oregon) Development Commission and Chief of Staff and Environmental Services Section Manager for Oregon DOT; and **Nanda N. Srinivasan**, who has served as a consultant, focusing on transportation planning; transportation data, including travel surveys and the decennial census; and geographic information systems, and has worked for a highway engineering construction firm.
- **Lawrence D. Goldstein** became part of the ACRP and TCRP staff as a Senior Program Officer, bringing more than 30 years of experience as a consultant to airports and transit agencies on transportation economic analyses.
- NCFRP and HMCPRP hired **William C. Rogers** as a Senior Program Officer. He previously served as Vice President for Safety, Training, and Technology at the Motor Freight Carriers Association; Director of Research for the American Trucking Associations Foundation; and Program and Management Analyst with the Federal Aviation Administration.
- The CRP Publications Section hired **Margaret B. Hagood**, Editor, and **Maria S. Crawford**, Assistant Editor.
- Joining the CRP staff as Senior Program Assistants were **Rachel E. Diaz** and **Stella O. L. Dorn II**.
- **Megan Chamberlain** became a member of the CRP staff as a Program Assistant in October.

# Strategic Highway Research Program

## SHRP 2



Congress authorized the second Strategic Highway Research Program (SHRP 2) in August 2005 to investigate the underlying causes of high traffic fatality rates and of intensified congestion and to find methods for renewing the aging transportation infrastructure without contributing to traffic fatalities or congestion. To meet this charge, SHRP 2 has developed research plans in four integrated focus areas to

- Reduce crash risk,
- Identify and develop innovative methods for highway renewal,
- Improve highway and transportation planning through collaborative decision making, and
- Address the causes of congestion and delay.

During 2007, the SHRP 2 Oversight Committee approved research contracts for 18 new research projects and the 2008 research plans for all four focus areas, which will comprise another dozen projects. Several of the 2008 projects will



Although the truck that overturned and spilled its load on a California freeway has been towed away, and the first responders are gone, the incident scene remains risky. Caltrans workers clean up the debris, the Highway Patrol funnels accumulating traffic into a single lane, and drivers inch forward with varying degrees of attentiveness and patience. Research in all four of the SHRP 2 focus areas could help reduce the number and effects of such incidents.

involve multiple contract awards. The selections developed from informed and thoughtful discussions throughout the year among members of the four Technical Coordinating Committees and the Expert Task Groups charged with drafting the requests for proposals. The discussions refined the project objectives and focused the program activities.

Progress in each focus area is briefly described in the following sections. Also highlighted are program outreach activities, including international conferences, the second SHRP 2 Safety Symposium, a meeting with representatives of the automobile manufacturing sector, and workshops to integrate research by contractors in the focus areas of capacity and reliability. More detailed information about projects is available on the SHRP 2 website.<sup>1</sup>

## FOCUS AREAS

### Safety

Although driving behavior is widely believed to be responsible for most collisions, the effects of roadway design and traffic conditions on driver performance and on the risk of collisions and casualties are largely unknown. SHRP 2 safety research will apply advanced technologies to understand how drivers interact with and adapt to a variety of factors—the vehicle, the traffic, the roadway characteristics, traffic control devices, and the environment—and to assess the changes in collision risk associated with each factor.

Nearly continuous collection of a vast array of data will support a study of the entire driving process, including near-collisions, critical incidents,



**Allen D. Biehler**  
*Chair*  
SHRP 2 Oversight Committee



**Neil F. Hawks**  
*Director*  
SHRP 2



**Ann M. Brach**  
*Deputy Director*  
SHRP 2

<sup>1</sup> [www.TRB.org/SHRP2](http://www.TRB.org/SHRP2).



Bhagwant Persaud, Ryerson University, and Patrick Brady, Florida DOT, participate in a meeting of an expert task group for the SHRP 2 Safety Project, Integrate Methods and Develop Analysis Plan.

and traffic conflicts. The goal is to measure crash margin factors to develop surrogate risk estimates for specific traffic maneuvers. The field study of driving behavior will gather data with a sophisticated instrumentation package installed in the vehicles of 2,000 to 3,000 volunteer drivers. In addition, a roadside video system will record the movement of all vehicles at a specific site.



Work began in 2007 on the first three projects, and contracts for two additional projects are in negotiation. These five projects will collect and analyze the largest-ever data set for driving behavior. Five other projects are scheduled under the safety research plan.

### Renewal

SHRP 2 renewal research aims to develop a systematic approach to renew highways and ensure durable facilities with rapid and minimally disruptive techniques. The task involves identifying and developing materials and methods for design, construction, and inspection that



Instrumentation for the SHRP 2 naturalistic driving study will include radar sensors mounted behind the license plate. (Photo courtesy of Virginia Tech Transportation Institute.)

reduce life-cycle costs, extend useful life, improve constructability, and decrease onsite construction times.

The research plan addresses strategies such as prefabrication, modular construction, standardized components, and roll-in technologies for bridges and pavements. Seven projects are under way, and five requests for proposals that were issued in July are in contract negotiations. Three additional projects are anticipated under the research plan.

### Reliability

SHRP 2 reliability research addresses the root causes of uncertain travel times by focusing on highway system operations. The reliability of travel time is valued by travelers and shippers and is related to the problem of congestion. Transportation agencies can make significant gains addressing congestion even as travel demand grows.



Reliability research projects will identify effective operations strategies; improve the means of integrating operations activities into planning, modeling, and decision making; and aid in the implementation of operations strategies. Three projects are under way, and three others are in contract negotiation. Another six projects are anticipated under the research plan.

### Capacity

Capacity research within SHRP 2 focuses on strategies and tools to integrate environmental, economic, and community requirements systematically into the planning and design of new highway capacity. At the core of the research program is a framework for collaborative decision making, aimed at context-sensitive solutions to capacity problems. Supporting the framework are projects that focus on system-based performance measures, the regional economic impact of new highway capacity, reflecting the capacity gains from highway management in the planning process, and assessing the effect of congestion and pricing on highway users' behavior.



Results and insights from the early projects will allow the development of tools that target the





William Strawderman, Rutgers University, addresses theoretical aspects and practical implications of statistical analyses in the SHRP 2 program at the second SHRP 2 Safety Symposium, July 2007, attended by more than 100 members of the highway safety community.

most critical barriers to success. Research started on three capacity projects this year, and two others have entered contract negotiation. One additional project is scheduled for 2008, with several others identified for future funding.

## BUILDING A GLOBAL NETWORK

In June, representatives from nine automobile manufacturers and two industry associations attended a briefing at the National Academy of Sciences building to learn about the SHRP 2 safety research plan and to discuss participation in the in-vehicle safety studies. As a result, Michael Cammisa, Director of Safety for the Association of International Automobile Manufacturers, and Vann



Michael Cammisa, Director of Safety, Association of International Automobile Manufacturers, shares his perspective at an industry briefing on the SHRP 2 safety research plan at the National Academy of Sciences building in Washington, D.C., in May; next to him is Maurice Arcangeli of Subaru.

Wilbur of the Alliance of Automobile Manufacturers were appointed liaisons to the Technical Coordinating Committee for Safety.

The second SHRP 2 Safety Symposium convened in July, drawing more than 100 members of the highway safety community. Presentations focused on the work in progress, and the discussions during the one-and-a-half-day meeting have contributed constructively to the projects. A third symposium is scheduled for July 17–18, 2008.

This year SHRP 2 joined two initiatives of the Joint Transport Research Committee (JTRC) of the Organisation for Economic Co-operation and Development and the European Conference of Ministers of Transport. William Hyman, who heads SHRP 2 activities in the reliability focus area, joined the JTRC Working Group for a project to improve reliability and levels of service. JTRC also hosted a roundtable in Boston, Massachusetts, in October on the economic impact of transport investments; SHRP 2 was invited to nominate several panelists.

Derek Sweet, SHRP 2 International Coordinator, continues to expand the program's international interaction. In July he attended a meeting in Amsterdam, convened by Fred Wegman of the Netherlands Institute for Road Safety Research; more than a dozen organizations assessed interest in a European naturalistic driving study. The outcome was positive, and the next steps are being pursued. In addition, discussions are under way for Canadian participation in the SHRP 2 in-vehicle driving study, and Monash University in Australia also has expressed interest.



Improving travel time reliability starts with a focus on highway system operations.

## A RESOURCE FOR RESEARCH TEAMS

The size and complexity of many SHRP 2 projects have attracted proposals from teams of researchers who pool their expertise and resources. The SHRP 2 website now includes a feature that allows research contractors to indicate interest in collaboration and to list their research focus areas, qualifications, facilities, and other organizational infor-

mation. The list includes approximately 40 entries from the United States, Australia, Canada, Europe, and Israel.

## STAFF NEWS

Four new staff members joined SHRP 2 in 2007:

- **James W. Bryant, Jr.**, brings expertise in operations, construction, and contract management to his responsibilities as Senior Program Officer in the renewal focus area.
- **William A. Hyman**, an economist with experience in resource allocation and asset management, joined the reliability focus area as Senior Program Officer.
- **Charles R. Fay** was promoted to Senior Program Officer in the safety focus area. He is a former Christine Mirzayan Science and Technology Graduate Fellow of the National Academies' Policy and Global Affairs Division.
- National Academies veteran **Noreen D. Stevenson** transferred to SHRP 2 as Senior Program Assistant, and **Patricia A. Williams** transferred to the post of Administrative Assistant.
- **Shelly N. Cooke**, who has a background in customer service, is applying her problem-solving abilities as a Senior Project Assistant in the capacity focus area.

# Administration and Finance

The TRB Administration and Finance Division provides financial, technological, and administrative support for the work of TRB staff; financial oversight of the contracts and grants related to TRB activities; expenditure controls; administration of publications sales and distribution; maintenance of the benefits and services for sponsor and affiliate organizations; and liaison to the administrative and financial offices of the National Academies.

## FINANCIAL MANAGEMENT

The division manages the contracts and grants that support TRB's work, prepares budgets for continuing operations and individual projects, and controls expenditures. TRB's total income and expenditures have increased consistently each year to more than \$60 million (see graph, page 50). A statement of income and expenditures is provided on pages 52–53.

## AFFILIATE AND SPONSOR SERVICES

TRB's core technical activities have five main levels of support: student affiliates, individual affiliates, organizational affiliates, sustaining affiliates, and sponsors. All affiliates and sponsors contribute to the support of TRB activities through annual fees based on the level of services selected.

Individual and student affiliates' benefits include reduced registration fees for the TRB Annual Meeting; a complimentary subscription to *TR News*; discounts on most TRB books and reports—including access to the new TRR Online, the web posting of papers from TRB's journal; use of the TRB library; and assistance with the use of TRB computer-based information services. Indi-

vidual and student affiliates also may subscribe to publications at a substantially reduced rate through a selective distribution program.

Organizational affiliates include government agencies, academic organizations, private organizations, and consultants committed to the advancement of knowledge about the nature and performance of transportation systems and system components. In addition to the range of benefits that individual affiliates receive, organizational affiliates receive most publications at no cost, as well as complimentary registrations for the TRB Annual Meeting. Organizational affiliate contributions range from \$3,250 to \$8,100, depending on the level of benefits selected.

Sustaining affiliates are agencies and organizations—including individual corporations and businesses—that support TRB at a level considerably higher than the direct cost of all of the services and publications received. The minimum annual contribution is \$15,000.

Sponsors are the major source of financial support for TRB's core technical activities. Federal, state, and local government agencies and professional societies and organizations that represent

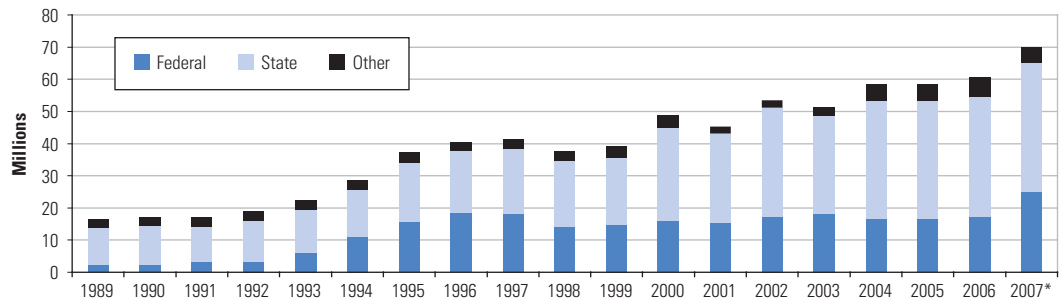


**Michael P. LaPlante**  
Director  
Finance and  
Business Operations



The TRB Finance group management team confers at a weekly meeting: (left to right) Chrystyne M. Talley, Jim Henson, Finance and Business Operations Director Michael P. LaPlante, and Melissa Gollub.

## TRB Activity Level by Year



\* 2007 data use actual data for the first three quarters and an estimate for the fourth quarter.

industry groups are eligible to be TRB sponsors. Fees and services are negotiated to serve each sponsor's needs and to provide fundamental support for the Board's programs and activities of interest to the entire transportation community. The minimum annual sponsor fee is \$60,000. Sponsors are also represented on the TRB Executive Committee. (See pages 59–60 for a list of TRB sponsors and sustaining affiliates.)

## PUBLICATION SALES AND DISTRIBUTION

TRB's timely distribution of publications disseminates the results of transportation research and technology worldwide. TRB also releases selected publications—some exclusively—in electronic format. A list of TRB publications issued from

January 1 through December 31, 2007, appears on pages 55–58.

In 2007 TRB implemented and launched TRR Online<sup>1</sup> to provide Internet access to individual papers published in the *Transportation Research Record: Journal of the Transportation Research Board*. TRR Online includes more than 8,000 papers published in the journal series since 1996 that have undergone rigorous peer review by TRB technical committees. TRR Online allows all visitors to identify papers of interest and to review the abstracts. Access to the full papers is available to service subscribers and employees of TRB sponsors. Individual papers also may be purchased. In the first six months of operation, users downloaded more than 18,000 PDFs of papers from the TRR Online website.

## WEB AND STRATEGIC APPLICATIONS

The TRB Information Technology unit develops and supports many of the applications used by TRB's program divisions and is the liaison for computer network infrastructure to the Information Technology Services office of the National Academies.

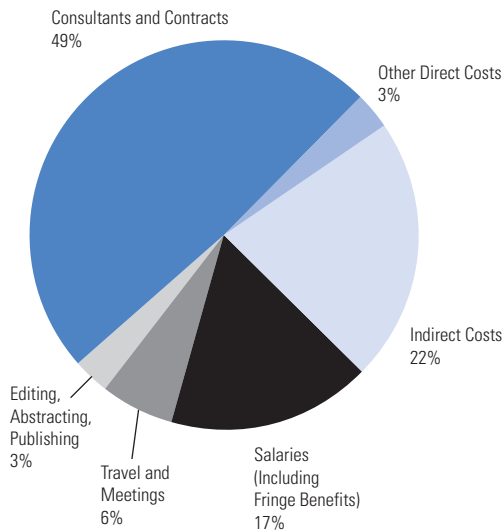
Two major projects occupied much of the unit's work in 2007: implementation of the new TRR Online system, described above, and the updating and improving of the web-based system for submitting research papers for TRB's Annual Meeting. The upgrade to the paper submittal system avoided disruptions for users and increased the efficiency of the system, which processed more than 2,700 papers for the 2008 Annual Meeting.



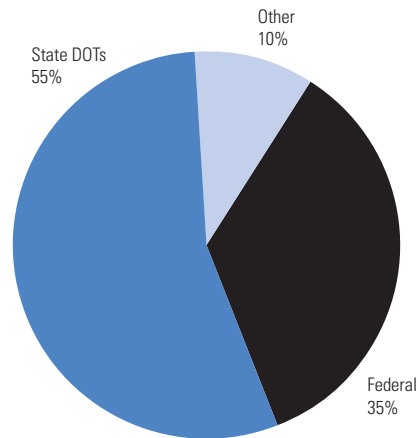
Attendees at the 2007 TRB Annual Meeting browse TRB publications for the latest offerings.

<sup>1</sup> [www.TRB.org/news/blurb\\_detail.asp?id=7420](http://www.TRB.org/news/blurb_detail.asp?id=7420).

## Distribution of TRB Expenditures



## TRB Funding Support



Each year, nearly 90 percent of the papers are uploaded during the final three days of the website submittal period, creating the potential for a massive, technical logjam. The successfully implemented upgrade to the system ensures that TRB will be able to handle increases in the number of Annual Meeting papers for many years to come.

Activities planned for 2008 include updates to the electronic bookstore, enhancements to TRB affiliate and participant data management systems, and implementation of a new content management system.



Staff in the Information Technology group developed strategies and techniques for managing the massive influx of online paper submissions at the August 1 deadline, avoiding backlogs, delays, and system overloads.

## STAFF NEWS

- **Michael P. LaPlante** rejoined TRB in May as Director of Finance and Business Operations, a position he previously held from 2002 to 2005.
- Four staff members received promotions: **Jessica R. Wu**, to Supervisor, Customer Service; **Jeff C. Isenhour**, to Manager, Information Technology; **Eric A. Grim**, to Senior Program Analyst; and **Chrystyne M. Talley**, to Financial Officer.
- Joining the division in Information Technology are Programmer Analyst **Bianca D. Popa** and Web Specialist **Dionna D. Green**; in Publication Sales, **Cyndi Johnson**, Customer Service Assistant; and in Finance, **Sharon J. C. Greaver**, Financial and Administrative Associate, and **Kwame A. Obeng**, Accounting and Financial Assistant.
- Financial and Contract Officer **Melissa N. Gollub**, Senior Accounting and Financial Assistant **Anthony T. Bailey**, and Information Technology and Financial Specialist **Daniel R. B. Somerset** were transferred to the Finance unit from the TRB Cooperative Research Programs.

## STATEMENT OF ACTIVITIES

### FUNDING SUPPORT BY PROGRAM AND EXPENDITURES

Calendar Years 2006 and 2007

|  | 2006 (Actual)       | 2007 (Projected) <sup>1</sup> |
|--|---------------------|-------------------------------|
| <b>Core Technical Activities</b>                                 |                     |                               |
| <b>State Highway and Transportation Departments (State DOTs)</b> | \$6,785,000         | \$7,400,000                   |
| <b>Federal Government</b>  |                     |                               |
| Federal Highway Administration (FHWA)                            | 1,825,000           | 1,300,000                     |
| Research and Innovative Technology Administration (RITA)         | 300,000             | 300,000                       |
| National Highway Traffic Safety Administration (NHTSA)           | 188,000             | 188,000                       |
| Federal Transit Administration (FTA)                             | 200,000             | 200,000                       |
| U.S. Army Corps of Engineers                                     | 60,000              | 60,000                        |
| Federal Aviation Administration (FAA)                            | 60,000              | 60,000                        |
| Federal Motor Carrier Safety Administration (FMCSA)              | 60,000              | 70,000                        |
| Federal Railroad Administration (FRA)                            | 60,000              | 60,000                        |
| National Aeronautics and Space Administration                    | 60,000              | 0                             |
| <b>Subtotal, Federal Government</b>                              | <b>\$2,813,000</b>  | <b>\$2,238,000</b>            |
| <b>Other</b>   |                     |                               |
| Association of American Railroads                                | 60,000              | 60,000                        |
| American Transportation Research Institute                       | 60,000              | 60,000                        |
| American Public Transportation Association                       | 60,000              | 60,000                        |
| Fees and Sales   | 2,030,305           | 4,762,000                     |
| <b>Subtotal, Other</b>   | <b>\$2,210,305</b>  | <b>\$4,942,000</b>            |
| <b>Total, Core Technical Activities</b>                          | <b>\$11,808,305</b> | <b>\$14,580,000</b>           |
| <b>Marine Board Core Program</b>                                 |                     |                               |
| U.S. Coast Guard   | 147,537             | 100,000                       |
| U.S. Army Corps of Engineers                                     | 0                   | 25,000                        |
| Maritime Administration  | 10,000              | 20,000                        |
| Minerals Management Service                                      | 25,000              | 30,000                        |
| U.S. Navy  | 25,000              | 0                             |
| Office of Naval Research   | 0                   | 40,000                        |
| National Oceanic and Atmospheric Administration                  | 25,000              | 30,000                        |
| <b>Total, Marine Board Core Program</b>                          | <b>\$232,537</b>    | <b>\$245,000</b>              |
| <b>Cooperative Research Programs<sup>2</sup></b>                 |                     |                               |
| National Cooperative Highway Research Program (State DOTs)       | 32,478,372          | 30,357,973                    |
| Transit Cooperative Research Program (FTA)                       | 6,252,097           | 7,010,000                     |
| Airport Cooperative Research Program (FAA)                       | 1,164,332           | 4,710,000                     |
| Hazmat Cooperative Research Program (PHMSA)                      | 48,143              | 90,000                        |
| Freight Cooperative Research Program (FMCSA)                     | 41,324              | 230,000                       |
| <b>Total, Cooperative Research Programs</b>                      | <b>\$39,984,267</b> | <b>\$42,397,973</b>           |
| <b>Strategic Highway Research Program 2 (SHRP 2)</b>             | <b>\$1,702,182</b>  | <b>\$5,508,000</b>            |
| <b>Continuing Programs</b>                                       |                     |                               |
| <b>Pavement Research Program Review (FHWA)</b>                   | \$280,589           | \$150,000                     |
| <b>Research and Technology Coordinating Committee (FHWA)</b>     | \$138,594           | \$170,000                     |
| <b>Innovations Deserving Exploratory Analysis (IDEA)</b>         |                     |                               |
| NCHRP IDEA (State DOTs)  | 1,050,461           | 890,000                       |
| ITS/High-Speed Rail IDEA (FRA)                                   | 458,468             | 390,000                       |
| Transit IDEA (FTA)   | 448,398             | 500,000                       |
| Safety IDEA (FRA and FMCSA)                                      | 266,957             | 230,000                       |
| <b>Subtotal, IDEA Program</b>                                    | <b>\$2,224,284</b>  | <b>\$2,010,000</b>            |

|   | 2006 (Actual)       | 2007 (Projected) <sup>1</sup> |
|---|---------------------|-------------------------------|
| <b>Synthesis Programs</b>                         |                     |                               |
| NCHRP Synthesis (State DOTs)                      | 1,145,186           | 1,060,000                     |
| TCRP Synthesis (FTA)                              | 505,771             | 500,000                       |
| Commercial Truck and Bus Safety Synthesis (FMCSA) | 388,380             | 220,000                       |
| ACRP Synthesis (FAA)                              | 155,228             | 620,000                       |
| <b>Subtotal, Synthesis Programs</b>               | <b>\$2,194,564</b>  | <b>\$2,400,000</b>            |
| <b>Legal Programs</b>                             |                     |                               |
| NCHRP Legal (State DOTs)                          | 208,380             | 240,000                       |
| TCRP Legal (FTA)                                  | 198,383             | 120,000                       |
| ACRP Legal (FAA)                                  | 24,363              | 60,000                        |
| <b>Subtotal, Legal Programs</b>                   | <b>\$431,126</b>    | <b>\$420,000</b>              |
| <b>Total, Special Continuing Programs</b>         | <b>\$5,269,157</b>  | <b>\$5,150,000</b>            |
| <b>Policy Studies</b>                             | <b>\$2,486,990</b>  | <b>\$2,390,000</b>            |
| <b>Conferences and Workshops</b>                  | <b>\$1,972,587</b>  | <b>\$1,820,000</b>            |
| <b>TRB TOTAL</b>                                  | <b>\$63,456,025</b> | <b>\$72,090,972</b>           |
| <b>Sources of Funds</b>                           |                     |                               |
| Federal   | 17,114,592          | 24,901,547                    |
| State DOTs  | 42,045,730          | 40,310,135                    |
| Other   | 4,295,703           | 6,879,291                     |
|   | <b>\$63,456,025</b> | <b>\$72,090,972</b>           |
| <b>Expenditures by Major Cost Category</b>        |                     |                               |
| Salaries (Including Fringe Benefits)              | 10,512,233          | \$12,090,029                  |
| Travel and Meetings                               | 3,922,785           | \$4,287,714                   |
| Editing, Abstracting, and Publishing              | 2,226,896           | \$2,214,901                   |
| Consultants and Contracts                         | 31,263,029          | \$33,675,144                  |
| Other Direct Costs                                | 1,813,778           | \$2,191,819                   |
| Indirect Costs                                    | 13,717,305          | \$15,629,060                  |
| <b>Total Expenditures</b>                         | <b>\$63,456,025</b> | <b>\$70,088,667</b>           |

#### TRB Reserve Fund

|   |                    |                    |
|---|--------------------|--------------------|
| Fund balance, end of previous fiscal year                         | <b>\$5,404,630</b> | <b>\$5,404,630</b> |
| Plus (minus) current fiscal year income over (under) expenditures | <b>0</b>           | <b>2,000,000</b>   |
| Balance, current fiscal year                                      | <b>\$5,404,630</b> | <b>\$7,404,630</b> |

In 1965, the TRB Executive Committee approved a reserve fund to provide for orderly adjustments in the event of a temporary shortfall in anticipated revenues for TRB Technical Activities. This fund, built up over the years from surplus income in excess of expenditures from nonfederal sources for any one fiscal year, is reserved for expenditures in excess of income for any later fiscal year under a fixed budget approved triennially by the TRB Executive Committee.

<sup>1</sup> CY 2007 data use actual data for the first three quarters and an estimate for the fourth quarter.

<sup>2</sup> The total level of activity for the Cooperative Research Programs appears lower than its full funding level because several CRP activities are shown under Continuing Programs.



# TRB Conferences and Workshops

January 1, 2007–December 31, 2007

## JANUARY

- 16–19 Geosynthetics Conference 2007\*
- 21–25 TRB 86th Annual Meeting

## FEBRUARY

- 8–9 Disaster Planning for the Carless\*

## APRIL

- 17–18 18th Biennial Symposium on Visibility and Traffic Control Devices
- 25–26 National Summit on Agricultural and Food Truck Transport for the Future\*

## MAY

- 2 Traffic Monitoring Data: Successful Practices in Collection and Analysis
- 6–9 National Conference on Pavement Management\*
- 6–9 11th National Transportation Planning Applications Conference
- 9–11 9th Annual Harbor Safety Committee Conference\*
- 15 North American Freight Transportation Workshop
- 20–23 Freeway and Tolling Operations in the Americas
- 31–June 1 TRB Aviation Group Midyear Meeting

## JUNE

- 3–7 21st Annual Southeastern States Equipment Managers Conference\*
- 3–8 1st North American Landslide Conference\*
- 18 Executive Forum: Reducing Traffic Congestion—Real Opportunities
- 18–21 11th International Conference on Mobility and Transport for Elderly and Disabled People
- 24–27 3rd Urban Street Symposium
- 24–27 9th International Conference on Low-Volume Roads

## JULY

- 6 Transforming Transportation Organizations: Tools and Techniques for Organizational Development
- 6–7 Environmental Analysis in Transportation Committee Workshop

\* TRB is cosponsor of the meeting.

- 7–9 32nd Annual Summer Ports, Waterways, Freight and International Trade Conference

- 7–9 Summer Conference

- 8–11 Waste Management and Resource Efficiency in Transportation Committee Summer Meeting and Workshop

- 8–11 46th Annual Workshop on Transportation Law

- 9–10 Meeting Freight Data Challenges Workshop

- 9–11 2007 Transportation Planning and Air Quality Conference\*

- 9–12 4th International Driving Symposium on Human Factors in Driver Assessment, Training, and Vehicle Design\*

- 16–18 Water Resources and the Highway Environment: Impacts and Solutions

- 22–24 2007 International Conference on Transportation Engineering\*

- 22–25 Historic and Archeological Preservation in Transportation Committee Summer Conference and Meeting

- 22–25 2007 TRB Noise and Vibration Summer Meeting

- 22–26 Workshops on Cooperative Intersection Collision Avoidance Systems and Vehicle–Infrastructure Integration and Vehicle Infrastructure

- 23–25 Regional Transportation Systems Management and Operations Committee Summer Meeting

- 26–27 Second SHRP 2 Safety Symposium

- 29–Aug. 1 Highway Capacity and Quality of Service Committee Summer Meeting

## AUGUST

- 8–10 5th International Conference on Maintenance and Rehabilitation of Pavements and Technological Control

- 21–24 Policy Agenda for Reducing Greenhouse Gases from Transportation\*

- 26–28 Best Practices: Coordination of Transit, Regional Transportation Planning, and Land Use Conference

- 26–29 Establishing the Next Generation of Surface Transportation Security\*

## SEPTEMBER

- 5–7 Interagency–Aviation Industry Collaboration on Planning for Pandemic Outbreaks: A Workshop

- 9–12 3rd National–1st International Conference on Performance Measurement

- 16–19 Smart Rivers 2007\*

- 19–21 1st International Conference on Recent Advances in Concrete Technology\*

- 20–21 Workshop on Advanced Research in Geospatial Information Technologies for Transportation

- 25–27 8th International Symposium on Cold Region Development\*

- 28 Technical Session on Draped Rockfall Protection Systems

## OCTOBER

- 11 Seismic Accelerated Bridge Construction Workshop

- 15 Symposium on Differential Weathering of Rock Slopes

- 17–19 European Transport Conference\*

- 22–23 Research Issues in Freight Transportation—Congestion and System Performance

## NOVEMBER

- 6–8 New Directions in Asset Management and Economic Analysis: 7th National Conference on Asset Management

- 6–8 Geographic Information Systems\*

- 7–9 Optimizing Paving Concrete Mixtures and Accelerated Pavement Construction and Rehabilitation\*

- 11 Bus Rapid Transit Forum\*

- 14–16 Road Safety on Four Continents 2007\*

## DECEMBER

- 3–4 International Bridge, Tunnel, and Turnpike Association Transportation Finance Summit\*

- 14 Workshop on Improving National Transportation Geospatial Information: Working Together for Better Decision Making





# TRB Publications

## Transportation Research Records

- 1989 Low-Volume Roads 2007 (Vol. 1 and Vol. 2)
- 1990 Pavement Management; Monitoring, Evaluation, and Data Storage; and Accelerated Testing 2007
- 1991 Management and Maintenance of the Infrastructure
- 1992 Transit: Management, Technology, and Planning
- 1993 Data, Survey Methods, Traffic Monitoring, and Asset Management
- 1994 Crosscutting Techniques for Planning and Analysis 2007
- 1995 Railways 2007
- 1996 Finance, Congestion Pricing, Economics, and Economic Development 2007
- 1997 Innovative Planning Approaches 2007
- 1998 Bituminous and Nonbituminous Materials of Bituminous Paving Mixtures 2007
- 1999 Traffic Flow Theory 2007
- 2000 Intelligent Transportation Systems and Vehicle–Highway Automation 2007
- 2001 Bituminous Paving Mixtures 2007
- 2002 Pedestrians 2007
- 2003 Travel Demand 2007
- 2004 Soil Mechanics 2007
- 2005 Pavement Rehabilitation, Strength and Deformation Characteristics, and Surface Properties–Vehicle Interaction 2007
- 2006 Transit: Intermodal and Capacity; Light Rail, Commuter Rail, and Rail Transit; and Major Activity Center Circulation
- 2007 Aviation 2007
- 2008 Freight Systems
- 2009 Highway Safety, School Transportation, and Emergency Evacuation
- 2010 Behavioral Responses to Policy and System Changes 2007
- 2011 Environmental Issues 2007
- 2012 Freeway Operations and High-Occupancy Vehicle Systems 2007
- 2013 Environmental Justice, Social and Economic Factors, Women’s Travel, and Accessibility and Mobility 2007
- 2014 Activity and Time Use Analysis 2007
- 2015 Maintenance Operations: Work Zones, Pavement Markings, and Weather
- 2016 Geology and Properties of Earth Materials 2007
- 2017 Sustainability, Energy, and Alternative Fuels 2007
- 2018 Human Performance, User Information, Simulation, and Visualization
- 2019 Statistical Methods, Safety Data, Analysis, and Evaluation 2007
- 2020 Concrete Materials 2007
- 2021 Advances in Travel Behavior Analysis 2007
- 2022 Transportation Security; Emergency Response and Recovery
- 2023 Geometric Design and the Effects on Traffic Operations 2007
- 2024 Information Technology, Geographic Information Systems, and Artificial Intelligence

- 2025 Highway Facility Design 2007
- 2026 Geomaterials 2007
- 2027 Highway Capacity and Quality of Service 2007
- 2028 Design of Structures 2007
- 2029 Network Equilibrium Modeling 2007
- 2030 Traffic Control Devices, Visibility, and Rail–Highway Grade Crossings 2007
- 2031 Bicycles and Motorcycles
- 2032 Commercial Fleet and Transit Network Modeling 2007
- 2033 Water Transportation and Port Operations
- 2034 Transit: Marketing, Bus, and Paratransit
- 2035 Traffic Signal Systems and Regional Transportation Systems Management 2007
- 2036 Strategic Management and Productivity 2007; Including 2007 Thomas B. Deen Distinguished Lecture
- 2037 Rigid and Flexible Pavement Design 2007
- 2038 Developing Countries 2007
- 2039 Network Modeling 2007
- 2040 Construction 2007

## Special Reports<sup>1</sup>

- 288 Metropolitan Travel Forecasting: Current Practice and Future Direction
- 289 Building the Road Safety Profession in the Public Sector

## Conference Proceedings<sup>1</sup>

- 39 The Metropolitan Planning Organization, Present and Future

## Conference Proceedings on the Web (online)

- 3 Research to Enhance Rail Network Performance

## Letter Reports (online)

- Committee for Pavement Technology Review and Evaluation, February 23, 2007
- Committee for Review of the Federal Railroad Administration’s Research, Development, and Demonstration Programs, May 1, 2007
- Transit Research Analysis Committee, May 4, 2007
- Committee for a Study of Options for Streamlining Standards for Intelligent Transportation Systems, June 18, 2007
- Research and Technology Coordinating Committee (Federal Highway Administration), September 18, 2007

## Transportation Research Circulars (online)

- 110 Geometric Design Strategic Research
- 111 Integrating Roadway, Traffic, and Crash Data: A Peer Exchange
- 112 Joint International Light Rail Conference: A World of Applications and Opportunities
- 113 Artificial Intelligence in Transportation: Information for Application

- 114 Research Opportunities in Radio Frequency Identification Transportation Applications
- 115 Challenges of Data for Performance Measures: A Workshop
- 116 Geotechnical Challenges of the Interstate Highway System: The First 50 Years and a Look Ahead
- 117 The Domain of Truck and Bus Safety Research
- 118 Lessons Learned from the AASHTO Road Test and Performance of the Interstate Highway System
- 119 North American Freight Transportation Data Workshop
- 120 Traffic Monitoring Data: Successful Strategies in Collection and Analysis
- 121 Information Assets to Support Transportation Decision Making: Report of a Peer Exchange of State Transportation Organizations
- 122 Asphalt Emulsion Technology: Review of Asphalt Emulsion Residue Procedures
- 123 Traffic Safety and Alcohol Regulation: A Symposium
- 124 Practical Approaches to Hot-Mix Asphalt Mix Design and Production Quality Control Testing

### TR News

Nos. 248–253

### Online Newsletters

Intercity Rail Passenger Systems, No. 12

TRB Transportation Research Electronic Newsletter

### National Cooperative Highway Research Program (NCHRP) Reports<sup>2</sup>

- 500 Guidelines for Implementation of the AASHTO Strategic Highway Safety Plan, Vol. 19: A Guide for Addressing Young Drivers
- 555 Test Methods for Characterizing Aggregate Shape, Texture, and Angularity
- 566 Guidelines for Concrete Mixtures Containing Supplementary Cementitious Materials to Enhance Durability of Bridge Decks
- 570 Guidebook for Freight Policy, Planning, and Programming in Small and Medium-Sized Metropolitan Areas
- 572 Roundabouts in the United States
- 573 Superpave Mix Design: Verifying Gyrations Levels in the  $N_{design}$  Table
- 574 Guidance for Cost Estimation and Management for Highway Projects During Planning, Programming, and Preconstruction
- 575 Legal Truck Loads and AASHTO Legal Loads for Posting
- 576 TransXML: XML Schemas for Exchange of Transportation Data
- 577 Guidelines for the Selection of Snow and Ice Control Materials to Mitigate Environmental Impacts
- 578 Evaluating Air-Entraining Admixtures for Highway Concrete
- 579 Application of LRFD Bridge Design Specifications to High-Strength Structural Concrete: Shear Provisions
- 580 Specification Criteria for Simple Performance Tests for Rutting
  - Vol. 1: Dynamic Modulus ( $E^*$ )
  - Vol. 2: Flow Number and Flow Time
- 581 Design of Construction Work Zones on High-Speed Highways
- 582 Best Practices to Enhance the Transportation–Land Use Connection in the Rural United States
- 583 Effects of Subsurface Drainage on Pavement Performance—Analysis of the SPS-1 and SPS-2 Field Sections
- 584 Full-Depth Precast Concrete Bridge Deck Panel Systems
- 585 Racial and Gender Diversity in State DOTs and Transit Agencies (joint with TCRP Report 120)

- 586 Rail Freight Solutions to Roadway Congestion: Final Report and Guidebook
- 587 Countermeasures to Protect Bridge Abutments from Scour
- 589 Improved Conditioning and Testing Procedures for HMA Moisture Susceptibility
- 590 Multi-Objective Optimization for Bridge Management Systems (with user's manual and software on CD-ROM)
- 591 Factors that Support the Planning–Programming Linkage
- 592 Simplified Live Load Distribution Factor Equations (with web documents)
- 593 Countermeasures to Protect Bridge Piers from Scour (with Web-Only Document 112)
- 594 Guidebook for Integrating Freight into Transportation Planning and Project Selection Processes
- 595 Application of the LRFD Bridge Design Specifications to High-Strength Structural Concrete: Flexure and Compression Provisions

### NCHRP Syntheses of Highway Practice<sup>2</sup>

- 365 Preserving and Using Institutional Memory Through Knowledge Management Practices
- 366 Tribal Transportation Programs
- 367 Technologies for Improving Safety Data
- 368 Cone Penetration Testing
- 369 State DOT Crash Reconstruction Practices
- 370 Animal–Vehicle Collision Data Collection
- 371 Managing Selected Transportation Infrastructure Assets: Signals, Lighting, Signs, Pavement Markings, Culverts, and Sidewalks
- 372 Emerging Technologies for Construction Delivery
- 373 Multidisciplinary Teams in Context-Sensitive Solutions
- 374 Preserving Freight and Passenger Rail Corridors and Service
- 375 Quality Assurance in Design–Build Projects

### NCHRP Research Results Digests<sup>2</sup>

- 312 Guide to Effective Freeway Performance Measurement
- 313 Cost-Allocation Methods for Commuter, Intercity, and Freight Rail Operations on Shared-Use Rail Systems and Corridors
- 314 State DOT Staff Resources for Administering Federal Public Transportation Programs
- 315 Centralized Versus Decentralized State Procurement of Paratransit Vehicles for the Federal Section 5310 Program
- 316 Using Surface Energy Measurements to Select Materials for HMA Pavements
- 317 Prototype Software for an Environmental Information Management and Decision Support System
- 318 An Expert System for Recommending Speed Limits in Speed Zones
- 319 Buy America Issues Associated with State DOT Procurement of Paratransit Vehicles Using FTA Funds
- 320 Current State Issues with Implementing Federal Transit Administration (FTA) Section 5310 and Section 5311 Programs
- 322 Public Information and Education in the Promotion of Highway Safety
- 323 Using the Results of Contractor-Performed Tests in Quality Assurance (with Web-Only Document 115)
- 324 Simulating the Effects of Hot-Mix Asphalt Aging for Performance Testing and Pavement Structural Design
- 325 Continuing Project to Synthesize Information on Highway Problems

### **NCHRP Web-Only Documents (online)**

- 94 Appendixes to NCHRP Report 572: Roundabouts in the United States
- 96 Appendixes to NCHRP Report 573: Superpave Mix Design: Verifying Gradation Levels in the N<sub>design</sub> Table
- 97 Guide to Effective Freeway Performance Measurement: Final Report and Guidebook
- 98 Final Report for NCHRP Report 574: Guidance for Cost Estimation and Management for Highway Projects During Planning, Programming, and Preconstruction
- 99 Appendixes to NCHRP Research Results Digest 314: State DOT Staff Resources for Administering Federal Public Transportation Programs
- 100 Examples of Best Practices for Communicating the Economic Benefits of Transportation
- 101 Procedures for Evaluating Air-Entraining Admixtures for Highway Concrete
- 102 Future Financing Options to Meet Highway and Transit Needs
- 103 Final Report for NCHRP Research Results Digest 317: Prototype Software for an Environmental Information Management and Decision Support System
- 104 Final Report for NCHRP RRD 316: Using Surface Energy Measurements to Select Materials for Asphalt Pavement
- 105 Final Report for NCHRP Report 581: Design of Construction Work Zones on High-Speed Highways
- 106 Criteria for Selecting Hydraulic Models
- 107 Risk-Based Management Guidelines for Scour at Bridges with Unknown Foundations
- 109 Precision Estimates of Selected Volumetric Properties of HMA Using Absorptive Aggregate
- 110 Supplementary Cementitious Materials to Enhance Durability of Concrete Bridge Decks
- 111 Technical Reports for Recommended Performance-Related Specification for Hot-Mix Asphalt Construction: Results of the WesTrack Project
- 112 Integrating Freight into Transportation Planning and Project Selection Processes
- 113 Environmental Effects in Pavement Mix and Structural Design Systems
- 114 Precision Estimates for AASHTO Test Method T 269 Determined Using AMRL Proficiency Sample Data
- 115 Using the Results of Contractor-Performed Tests in Quality Assurance

### **Transit Cooperative Research Program (TCRP) Reports<sup>3</sup>**

- 84 e-Transit: Electronic Business Strategies for Public Transportation, Vol. 8: Improving Public Transportation Technology Implementations and Anticipating Emerging Technologies
- 86 Public Transportation Security, Vol. 13: Public Transportation Passenger Security Inspections: A Guide for Policy Decision Makers
- 95 Traveler Response to Transportation System Changes, Chapter 17: Transit Oriented Development
- 111 Elements Needed to Create High Ridership Transit Systems (with supporting material on CD-ROM)
- 117 Design, Operation, and Safety of At-Grade Crossings of Exclusive Busways
- 118 Bus Rapid Transit: Practitioner's Guide
- 119 Improving ADA Complementary Paratransit Demand Estimation
- 120 Racial and Gender Diversity in State DOTs and Transit Agencies (joint with NCHRP Report 585)

### **TCRP Syntheses of Transit Practice<sup>3</sup>**

- 70 Mobile Data Terminals
- 71 Paratransit Manager's Skills, Qualifications, and Needs
- 72 Use of Biodiesel in a Transit Bus Fleet
- 73 Automatic Vehicle Location Systems for Bus Transit Update

### **TCRP Research Results Digests<sup>3</sup>**

- 81 International Transit Studies Program, Spring 2006 Mission: Coordinated Approaches to Expanding Access to Public Transportation
- 82 Use of Guard/Girder/Restraining Rails
- 83 Performance and Testing Requirements for Portable Track Geometry Inspection Systems
- 84 Audible Signals for Pedestrian Safety in LRT Environments
- 85 International Transit Studies Program, Fall 2006 Mission: Rail Passenger Safety: Equipment and Technologies
- 86 Synthesis of Information Related to Transit Practices

### **TCRP Legal Research Digests<sup>3</sup>**

- 23 The Americans with Disabilities Act: The Federal Transit Administration's Letters of Findings and Compliance Assessments (with FTA Letters of Findings and Compliance Assessments on CD-ROM)

### **TCRP Web-Only Documents (online)**

- 33 The Federal Transit Act, as Amended Through August 10, 2005, and Related Laws
- 35 Appendixes to TCRP RRD 84: Audible Signals for Pedestrian Safety in LRT Environments
- 36 Appendixes to TCRP Report 117: Design, Operation, and Safety of At-Grade Crossings of Exclusive Busways
- 37 Rail Base Corrosion Detection and Prevention
- 38 Appendixes to TCRP Report 86: Public Transportation Passenger Security Inspections, Vol. 13: A Guide for Policy Decision Makers
- 39 Appendixes to TCRP Report 118: Bus Rapid Transit Practitioner's Guide

### **Selected Studies in Transportation Law**

- Vol. 8: Transportation Law and Government Relations

### **Cooperative Research Programs CD-ROMs**

- 65 Compilation ADA Material for TCRP Legal Research Digest 23
- 66 Supplemental Material for TCRP Report 111: Elements Needed to Create High Ridership Transit Systems
- 67 User's Manual and Software for NCHRP Report 590

### **Commercial Truck and Bus Safety Synthesis Program (CTBSSP) Synthesis Reports<sup>3</sup>**

- 11 Impact of Behavior-Based Safety Techniques on Commercial Motor Vehicle Drivers
- 12 Commercial Motor Vehicle Carrier Safety Management Certification
- 13 Effectiveness of Commercial Motor Vehicle Driver Training Curricula and Delivery Methods
- 14 The Role of Safety Culture in Preventing Commercial Motor Vehicle Crashes
- 15 Health and Wellness Programs for Commercial Drivers

### **CTBSSP Research Results Digests<sup>3</sup>**

- 6 Commercial Truck and Bus Safety Synthesis Program: A Status Report

### ACRP Reports<sup>3</sup>

- 1 Safety Management Systems for Airports, Volume 1: Overview

### ACRP Syntheses of Airport Practice<sup>3</sup>

- 1 Innovative Finance and Alternative Sources of Revenue for Airports
- 2 Airport Aviation Activity Forecasting
- 3 General Aviation Safety and Security Practices
- 4 Counting Aircraft Operations at Nontowered Airports

- 5 Airport Ground Access Mode Choice Models
- 6 Impact of Airport Pavement Deicing Products on Aircraft and Airfield Infrastructure

### ACRP Research Results Digests<sup>3</sup>

- 2 Model for Improving Energy Use in U.S. Airport Facilities
- 3 Synthesis of Information Related to Airport Practices

<sup>1</sup> Available in print and online.

<sup>2</sup> Publications released since 2001 are available in print and online.

<sup>3</sup> Entire series available in print and online.

### TRB PUBLICATIONS

January 1–December 31, 2007

- |    |   |    |  |
|----|---|----|--|
| 52 | <i>Transportation Research Record: Journal of the Transportation Research Board</i> | 20 | NCHRP Web-Only Documents (online)      |
| 2  | Special Reports   | 8  | TCRP Reports                           |
| 1  | Conference Proceedings  | 4  | TCRP Syntheses                         |
| 1  | Conference Proceedings on the Web (online)  | 6  | TCRP Research Results Digests          |
| 5  | Letter Reports (online)   | 1  | TCRP Legal Research Digest             |
| 15 | Transportation Research Circulars (online)  | 6  | TCRP Web-Only Documents (online)       |
| 6  | issues of <i>TR News</i>  | 1  | Selected Studies in Transportation Law |
| 1  | issue of <i>Intercity Rail Passenger Systems Update</i> (online)                    | 3  | CRP CD-ROMs                            |
| 48 | issues of <i>TRB Transportation Research Electronic Newsletter</i> (online)         | 5  | CTBSSP Syntheses                       |
| 28 | NCHRP Reports   | 1  | CTBSSP Research Results Digest         |
| 11 | NCHRP Syntheses   | 1  | ACRP Report                            |
| 13 | NCHRP Research Results Digests  | 6  | ACRP Syntheses                         |
|    |   | 2  | ACRP Research Results Digests          |



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### **Federal Government**

**Bureau of Indian Affairs, U.S. Department of the Interior**

**National Aeronautics and Space Administration**

**U.S. Army Corps of Engineers**

**U.S. Coast Guard**

**U.S. Department of Transportation**

**Federal Aviation Administration  
Federal Highway Administration  
Federal Motor Carrier Safety Administration  
Federal Railroad Administration  
Federal Transit Administration  
National Highway Traffic Safety Administration  
Research and Innovative Technology  
Administration**

### **Private-Sector Organizations**

**American Association of State Highway  
and Transportation Officials**

**American Public Transportation Association**

**American Transportation Research Institute**

**Association of American Railroads**

### **Marine Board Sponsors**

**Maritime Administration**

**Minerals Management Service, U.S. Department  
of the Interior**

**National Oceanic and Atmospheric Administration**

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**Office of the Supervisor of Salvage and Diving,  
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