

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

The Transportation Research Board 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, and which is jointly administered by the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine. 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 Transportation, and other organizations and individuals interested in the development of transportation.

The National Research Council was organized by the National Academy of Sciences in 1916 to associate the broad community of science and technology with the Academy's purposes of furthering knowledge and advising the federal government. Functioning in accordance with general policies determined by the Academy, the Council has become the principal operating agency of both the National Academy of Sciences and the National Academy of Engineering in providing services to the government, the public, and the scientific and engineering communities.

www.TRB.org

TRANSPORTATION RESEARCH BOARD 2011 EXECUTIVE COMMITTEE*

Chair: Neil J. Pedersen, Administrator, Maryland State Highway Administration, Baltimore Vice Chair: Sandra Rosenbloom, Professor of Planning, University of Arizona, Tucson Executive Director: Robert E. Skinner, Jr., Transportation Research Board

J. Barry Barker, Executive Director, Transit Authority of River City, Louisville, Kentucky Deborah H. Butler, Executive Vice President, Planning, and CIO, Norfolk Southern Corporation, Norfolk, Virginia William A. V. Clark, Professor, Department of Geography, University of California, Los Angeles

Eugene A. Conti, Jr., Secretary of Transportation, North Carolina Department of Transportation, Raleigh

James M. Crites, Executive Vice President of Operations, Dallas-Fort Worth International Airport, Texas

Paula J. Hammond, Secretary, Washington State Department of Transportation, Olympia

Michael W. Hancock, Secretary, Kentucky Transportation Cabinet, Frankfort

Adib K. Kanafani, Cahill Professor of Civil Engineering, University of California, Berkeley (Past Chair, 2009)

Michael P. Lewis, Director, Rhode Island Department of Transportation, Providence

Susan Martinovich, Director, Nevada Department of Transportation, Carson City

Michael R. Morris, Director of Transportation, North Central Texas Council of Governments, Arlington (Past Chair, 2010)

Tracy L. Rosser, Vice President, Regional General Manager, Wal-Mart Stores, Inc., Mandeville, Louisiana

Steven T. Scalzo, Chief Operating Officer, Marine Resources Group, Seattle, Washington

Henry G. (Gerry) Schwartz, Jr., Chairman (retired), Jacobs/Sverdrup Civil, Inc., St. Louis, Missouri

Beverly A. Scott, General Manager and Chief Executive Officer, Metropolitan Atlanta Rapid Transit Authority, Atlanta, Georgia

David Seltzer, Principal, Mercator Advisors LLC, Philadelphia, Pennsylvania

Lawrence A. Selzer, President and CEO, The Conservation Fund, Arlington, Virginia

Kumares C. Sinha, Olson Distinguished Professor of Civil Engineering, Purdue University, West Lafayette, Indiana Thomas K. Sorel, Commissioner, Minnesota Department of Transportation, St. Paul

Daniel Sperling, Professor of Civil Engineering and Environmental Science and Policy; Director, Institute of Transportation Studies; and Interim Director, Energy Efficiency Center, University of California, Davis

Kirk T. Steudle, Director, Michigan Department of Transportation, Lansing

Douglas W. Stotlar, President and Chief Executive Officer, Con-Way, Inc., Ann Arbor, Michigan

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

Peter H. Appel, Administrator, Research and Innovative Technology Administration, U.S. Department of Transportation (ex officio)

J. Randolph Babbitt, Administrator, Federal Aviation Administration, U.S. Department of Transportation (ex officio)

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

Anne S. Ferro, Administrator, Federal Motor Carrier Safety Administration, U.S. Department of Transportation (ex officio)

LeRoy Gishi, Chief, Division of Transportation, Bureau of Indian Affairs, U.S. Department of the Interior, Washington, D.C. (ex officio)

John T. Gray, Senior Vice President, Policy and Economics, Association of American Railroads, Washington, D.C. (ex officio)

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

David T. Matsuda, Deputy Administrator, Maritime Administration, U.S. Department of Transportation (ex officio)

Victor M. Mendez, Administrator, Federal Highway Administration, U.S. Department of Transportation (ex officio)

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

Tara O'Toole, Under Secretary for Science and Technology, U.S. Department of Homeland Security (ex officio)

Robert J. Papp (Adm., U.S. Coast Guard), Commandant, U.S. Coast Guard, U.S. Department of Homeland Security (ex officio)

Cynthia L. Quarterman, Administrator, Pipeline and Hazardous Materials Safety Administration, U.S. Department of Transportation (ex officio)

Peter M. Rogoff, Administrator, Federal Transit Administration, U.S. Department of Transportation (ex officio)

David L. Strickland, Administrator, National Highway Traffic Safety Administration, U.S. Department of

Transportation (ex officio)

Joseph C. Szabo, Administrator, Federal Railroad Administration, U.S. Department of Transportation (ex officio) Polly Trottenberg, Assistant Secretary for Transportation Policy, U.S. Department of Transportation (ex officio)

Robert L. Van Antwerp (Lt. General, U.S. Army), Chief of Engineers and Commanding General, U.S. Army Corps of Engineers, Washington, D.C. (ex officio)

Barry R. Wallerstein, Executive Officer, South Coast Air Quality Management District, Diamond Bar, California (ex officio)

^{*} Membership as of June 2011.



NUMBER 274 MAY–JUNE 2011

PUBLIC-PRIVATE PARTNERSHIPS FOR TRANSPORTATION

3 INTRODUCTION

Public-Private Partnerships for Transportation: Filling Funding Gaps for Infrastructure

Steve DeWitt

The United States is searching—and struggling—for solutions to its critically inadequate transportation funding. Many believe that public—private partnerships could fill some of the gaps. The policy issues and legislative debates, however, have proved substantial and complex; the assembled articles present the legal, policy, and owner perspectives.

4 Challenges Mount for Traditional Transportation Funding: Are Public-Private Partnerships a U.S. Solution?

Pamela Bailey-Campbell

Public–private partnerships (PPPs) increasingly have become a way for public agencies around the world to build or upgrade transportation infrastructure; in the United States, PPPs are still developing. The author looks at successful U.S. programs, draws out rules for success, and recommends three actions at the federal level to make the most of PPPs.

10 International Practices in Public–Private Partnerships: Synthesis and Discussion

Michael J. Garvin

The experience of international counterparts with public–private partnerships offers lessons and practices that may be applicable to the U.S. market. The author reviews arrangements in Europe and Australia and suggests pointers on project identification and selection; market preparation; revenue transfer, tolls, and direct payments; procurement and contract management; and more.

16 Value from Public-Private Partnerships: Balancing Prescriptive and Performance Specifications from Design to Handback

Jonathan Startin

In a long-term concession agreement, the public owners seek to transfer the risks for the asset's condition to the private concessionaire through performance requirements for operation and maintenance and for handback. The author traces out the challenges, which include aligning objectives through a commercial framework, determining measures, and defining benchmarks.

23 Selecting Public-Private Partnerships for Transportation Projects: From Episodic to Programmatic Public-Sector Decision Making Geoffrey S. Yarema

During the 25 years of U.S. experience with public–private partnerships, an evolution has occurred in the way that transportation agencies have selected projects. The author identifies three generations in the evolution, describes the underlying rationales for each, and notes the components of a programmatic approach to integrated project selection.

28 Protecting the Public Interest in Long-Term Highway Concessions Robert W. Poole, Jr.

The author analyzes findings from three U.S. studies of public–private partnerships, as well as initiatives in Florida and Texas, and concludes that long-term concessions for selected large highway projects have merit, and that the public interest can be protected through provisions in the agreement, drawing on the experience of other countries.



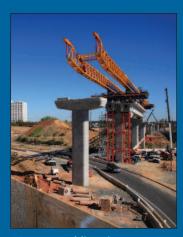
4



16



28



COVER: A public–private partnership is responsible for the design and construction of a major Washington, D.C., Metrorail connection to Dulles International Airport. (Photo by Tom Saunders, Virginia Department of Transportation)

TR NEWS

features articles on innovative and timely research and development activities in all modes of transportation. Brief news items of interest to the transportation community are also included, along with profiles of transportation professionals, meeting announcements, summaries of new publications, and news of Transportation Research Board activities.

TR News is produced by the Transportation Research Board Publications Office

Javy Awan, Editor and Publications Director Lea Camarda, Assistant Editor Jennifer J. Weeks, Photo Researcher Juanita Green, Production Manager Michelle Wandres, Graphic Designer

TR News Editorial Board

Frederick D. Hejl, Chairman
Jerry A. DiMaggio
Charles Fay
Christine L. Gerencher
Edward T. Harrigan
Christopher J. Hedges
Russell W. Houston
Thomas R. Menzies, Jr.
G.P. Jayaprakash, Research Pays Off Liaison

Transportation Research Board

Robert E. Skinner, Jr., Executive Director Suzanne B. Schneider, Associate Executive Director

Mark R. Norman, Director,
Technical Activities
Stephen R. Godwin, Director,
Studies and Special Programs
Michael P. LaPlante, Director,
Administration and Finance
Christopher W. Jenks, Director,
Cooperative Research Programs
Neil F. Hawks, Director, SHRP 2

TR News (ISSN 0738-6826) is issued bimonthly by the Transportation Research Board, National Research Council, 500 Fifth Street, NW, Washington, DC 20001. Internet address: www.TRB.org.

Editorial Correspondence: By mail to the Publications Office, Transportation Research Board, 500 Fifth Street, NW, Washington, DC 20001, by telephone 202-334-2972, by fax 202-334-3495, or by e-mail jawan@nas.edu.

Subscriptions: North America: 1 year \$55; single issue \$10. Overseas: 1 year \$80; single issue \$14. Inquiries or communications concerning new subscriptions, subscription problems, or single-copy sales should be addressed to the Business Office at the address below, or telephone 202-334-3216, fax 202-334-2519. Periodicals postage paid at Washington, D.C.

Postmaster: Send changes of address to *TR News*, Transportation Research Board, 500 Fifth Street, NW, Washington, DC 20001.

Notice: The opinions expressed in articles appearing in *TR News* are those of the authors and do not necessarily reflect the views of the Transportation Research Board. The Transportation Research Board and *TR News* do not endorse products or manufacturers. Trade and manufacturers' names appear in an article only because they are considered essential.

Printed in the United States of America.

Copyright © 2011 National Academy of Sciences. All rights reserved. For permissions, contact TRB.

ALSO IN THIS ISSUE:

33 Research Pays Off Warm-Mix Asphalt Heating Up in Virginia Stacey D. Diefenderfer and Trenton M. Clark

36 Profiles

Transportation landscape architect Scott Bradley and bridge and materials engineer Mohammad S. Khan



33

- 38 News Briefs
- 41 Calendar
- **42 TRB Highlights**Cooperative Research Programs News, 43
- 44 Bookshelf

COMING NEXT ISSUE

With the 10th anniversary of the terrorist attacks of September 11, 2001, approaching, the July–August 2011 *TR News* assembles feature articles exploring the state of security and critical infrastructure protection, including an assessment of U.S. infrastructure resiliency, North American perimeter security and the movement of trade, the security of bridges and tunnels, measures to protect rail and transit from attacks, the effects of piracy on the global supply chain, and the relative threats from airline passengers and air cargo. Also highlighted are findings and applications for state transportation agencies from Cooperative Research Programs projects, including emergency response planning, physical security basics, communicating with vulnerable populations in emergencies, and an all-hazards guide for costing asset protection.



New York City police officers prepare to search trucks entering the Lincoln Tunnel, November 13, 2001. Truck searches at the tunnel are routine since the September 11, 2001, attacks.