

# Aviation Logistics at Burning Man Festival

#### PLUS

Data for Transportation Decisions: Findings from the States

**Rural Public Transportation** 

**50 Years of NEPA** 

100 YEARS MOVING IDEAS:
ADVANCING SOCIETY

The National Academies of SCIENCES • ENGINEERING • MEDICINE

TRANSPORTATION RESEARCH BOARD

#### SCIENCES · ENGINEERING · MEDICINE

The National Academy of Sciences was established in 1863 by an Act of Congress, signed by President Lincoln, as a private, nongovernmental institution to advise the nation on issues related to science and technology. Members are elected by their peers for outstanding contributions to research.

The National Academy of Engineering was established in 1964 under the charter of the National Academy of Sciences to bring the practices of engineering to advising the nation. Members are elected by their peers for extraordinary contributions to engineering. Dr. John L. Anderson is president.

The National Academy of Medicine (formerly the Institute of Medicine) was established in 1970 under the charter of the National Academy of Sciences to advise the nation on medical and health issues. Members are elected by their peers for distinguished contributions to medicine and health. Dr. Victor J. Dzau is president.

The three Academies work together as the National Academies of Sciences, Engineering, and Medicine to provide independent, objective analysis and advice to the nation and conduct other activities to solve complex problems and inform public policy decisions. The National Academies also encourage education and research, recognize outstanding contributions to knowledge, and increase public understanding in matters of science, engineering, and medicine.

Learn more about the National Academies of Sciences, Engineering, and Medicine at www.nationalacademies.org.

The **Transportation Research Board** is one of seven major programs of the National Academies of Sciences, Engineering, and Medicine. The mission of the Transportation Research Board is to increase the benefits by providing 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 Department of Transportation, and other organizations and individuals interested in the development of transportation.

Learn more about the Transportation Research Board at www.TRB.org.



#### TRANSPORTATION RESEARCH BOARD 2020 EXECUTIVE COMMITTEE\*

Chair: Carlos M. Braceras, Executive Director, Utah Department of Transportation, Salt Lake City Vice Chair: Susan A. Shaheen, Adjunct Professor, Co-Director, Transportation Sustainability Research Center, University of California, Berkeley

Executive Director: Neil J. Pedersen, Transportation Research Board

Michael F. Ableson, CEO, Arrival Automotive-North American, Birmingham, MI

Marie Therese Dominguez, Commissioner, New York State Department of Transportation, Albany Ginger Evans, CEO, Reach Airports, LLC, Arlington, VA Nuria I. Fernandez, General Manager/CEO, Santa Clara Valley Transportation Authority, San Jose, CA

Nathaniel P. Ford, Sr., Executive Director-CEO, Jacksonville Transportation Authority, Jacksonville, FL

Michael F. Goodchild, Professor Emeritus, Department of Geography, University of California, Santa Barbara, CA Diane Gutierrez-Scaccetti, Commissioner, New Jersey Department of Transportation, Trenton

Susan Hanson, Distinguished University Professor Emerita, Graduate School of Geography, Clark University,

Stephen W. Hargarten, Professor, Emergency Medicine, Medical College of Wisconsin, Milwaukee Chris T. Hendrickson, Hamerschlag University Professor of Engineering, Carnegie Mellon University,

S. Jack Hu, Senior Vice President for Academic Affairs and Provost, University of Georgia, Athens Roger B. Huff, President, HGLC, LLC, Farmington Hills, MI

Ashby Johnson, Executive Director, Capital Area Metropolitan Planning Organization (CAMPO), Austin, TX Geraldine Knatz, Professor, Sol Price School of Public Policy, Viterbi School of Engineering, University of Southern California, Los Angeles

William Kruger, Vice President, UPS Freight for Fleet Maintenance and Engineering, Richmond, VA Julie Lorenz, Secretary, Kansas Department of Transportation, Topeka

Michael R. McClellan, Vice President, Strategic and Network Planning, Norfolk Southern Corporation, Norfolk, VA

Melinda McGrath, Executive Director, Mississippi Department of Transportation, Jackson

Patrick K. McKenna, Director, Missouri Department of Transportation, Jefferson City Brian Ness, Director, Idaho Transportation Department, Boise

James M. Tien, Distinguished Professor and Dean Emeritus, College of Engineering, University of Miami, Coral Gables, FL

Shawn Wilson, Secretary, Louisiana Department of Transportation and Development, Baton Rouge

Victoria A. Arroyo, Executive Director, Georgetown Climate Center; Assistant Dean, Centers and Institutes; and Professor and Director, Environmental Law Program, Georgetown University Law Center, Washington, D.C. (ex officio)

Ronald Batory, Administrator, Federal Railroad Administration, U.S. Department of Transportation (ex officio) Michael R. Berube, Acting Assistant Secretary for Sustainable Transportation, U.S. Department of Energy, Washington, D.C

Mark H. Buzby (Rear Admiral, U.S. Navy), Administrator, Maritime Administration, U.S. Department of Transportation

Steven Cliff, Deputy Executive Officer, California Air Resources Board, Sacramento (ex officio) Edward N. Comstock, Independent Naval Architect, Sunbury, MD (ex officio)

Stephen Dickson, Administrator, Federal Aviation Administration, Washington, D.C. (ex officio)

Howard R. Elliott, Administrator, Pipeline and Hazardous Materials Safety Administration, U.S. Department of Transportation

Diana Furchtgott-Roth, Assistant Secretary for Research and Technology, Office of the Secretary of Transportation, Washington, D.C

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

John T. Gray II, Senior Vice President, Policy and Economics, Association of American Railroads, Washington,

Nikola Ivanov, Director of Operations, Center for Advanced Transportation Technology Laboratory, University of Maryland, College Park, and Chair, TRB Young Members Council (ex officio)

James Mullen, Acting Administrator, Federal Motor Carrier Safety Administration, U.S. Department of Transportation (ex officio)

Nicole R. Nason, Administrator, Federal Highway Administration, Washington, D.C. (ex officio)

James C. Owens, Deputy Administrator and Acting Administrator, National Highway Traffic Safety Administration, U.S. Department of Transportation (ex officio)

Leslie S. Richards, General Manager, Southeastern Pennsylvania Transportation Authority (SEPTA), Philadelphia, PA

Craig A. Rutland, U.S. Air Force Pavement Engineer, U.S. Air Force Civil Engineer Center, Tyndall Air Force

Karl L. Schultz (Admiral, U.S. Coast Guard), Commandant, U.S. Coast Guard, Washington, D.C. (ex officio) Karl Simon, Director, Transportation and Climate Division, U.S. Environmental Protection Agency (ex officio) Paul P. Skoutelas, President and CEO, American Public Transportation Association, Washington, D.C. (ex officio)

Scott A. Spellmon (Major General, U.S. Army), Deputy Commanding General for Civil and Emergency

Operations, U.S. Army Corps of Engineers (ex officio)

Katherine F. Turnbull, Executive Associate Director and Research Scientist, Texas A&M Transportation Institute, College Station (voting) (ex officio)

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

K. Jane Williams, Acting Administrator, Federal Transit Administration, U.S. Department of Transportation (ex officio)

<sup>\*</sup> Membership as of February 2020.



Number 325 / January-February 2020

#### 3 Data's Critical Role in Transportation Decisions: Findings from the Transportation Research Board's 2019 State Partnership Visits Program

Analysis and utilization of big data—for innovation, system performance, safety, and more—was the theme of findings from the annual partnership visits to state DOTs, university transportation centers, and transit and other modal agencies by TRB program officers, who have assembled examples and models across all areas of activity.

# 10 Meeting the Transportation Needs of Rural Communities: Lessons That Cannot Be Learned from Urban Transit

#### Peter Schauer

Rural transit differs from urban transit in a few crucial ways: there are no prescribed federal planning requirements for rural transit development plans, the range of vehicles utilized generally is narrower, and even the definition of "rural" is amorphous. The author recounts the history of rural transit in the United States and the advocacy and research collaborations that led to improved transit outcomes for rural communities.

14 Public Transit in Native American
Communities: Early Beginnings and Progress

# 17 Supporting Burning Man: Radical Logistics for a Radical Event

#### **Matthew Grunenwald**

The Burning Man Festival convenes people from all over the world in the middle of the Nevada desert for one week each summer. The infrastructure and organization required to transport 80,000 people by land and air to such a remote area—and clean up according to "leave no trace" principles—are examined in this article, particularly the creation, management, and removal of the festival's designated airport.









#### 22 Golden Anniversary of Landmark Legislation: The National Environmental Policy Act of 1969

#### **Martin Palmer**

In the 50 years since the National Environmental Policy Act (NEPA) was signed in 1969, many laws, rules, and guidance have been revised and updated to help transportation agencies comply with the legislation. The environmental crises that led to NEPA, a history of its enactment and implementation, and its lasting effects in transportation are explored in this article.

#### 28 NCHRP PROJECT 25-25

#### Seventeen Years of Environmental Research: Retrospective of a Long-Running Project

#### **Ann Hartell and Christopher Voigt**

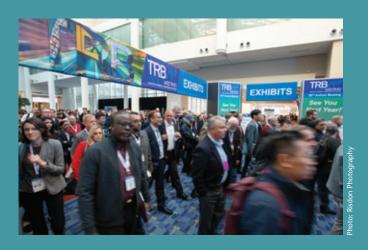
The 113 research tasks conducted as part of NCHRP Project 25-25 addressed environmental issues relevant to state DOTs, in order to support agency efforts in environmental stewardship and compliance. This article offers an overview of the project and its research tasks, which addressed topics ranging from air quality to cultural and natural resources to community concerns.



COVER Burning Man Festival encampment, as viewed from an airplane—the mode of arrival for many of the festival's attendees, and one of the topics of this issue of *TR News*. (Photo: Alaska DOT)

#### Coming Next Issue

A record-setting crowd of nearly 14,000 attendees gathered at the TRB 99th Annual Meeting, January 12–16, 2020, in Washington, D.C. The March–April 2020 *TR News* features photo highlights from the Annual Meeting.



#### 32 TCRP RESEARCH REPORT 195

# Who Is Riding TNCs, and Where Are They Going?

**Colin Murphy** 

The study presented in *TCRP Research Report 195* examined trip data from transportation network companies (TNCs) in major U.S. cities, as well as surveys from thousands of transit and shared mobility users nationwide, to uncover insights into the demographic and other characteristics of TNC trips.

### 39 Training Program for Transportation Research Managers

Cynthia J. Smith, Ines Aviles-Spadoni, and David M. Jared

#### 44 Collaboration Demonstration: New Jersey Hosts State Partnership Visit

Stefanie Potapa, Amanda Gendek, and Glenn Stott

#### Also in This Issue:

46 Profiles

Deborah Flint, Greater Toronto Airports Authority, and K. Larry Head, University of Arizona

**48** Transportation Influencers

Nikola Ivanov, University of Maryland

49 TRB Highlights

50 Calendar

52 Bookshelf

#### **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 Transportation Research Board Publications Staff

Eileen P. Delaney, Director of Publications Lea Camarda, Editor Heidi Willis, Associate Editor Jennifer G. Correro, Assistant Editor

#### TR News Editorial Board

Christine L. Gerencher, Chair Waseem Dekelbab Karen S. Febey Nelson H. Gibson Edward T. Harrigan Ann M. Hartell Micah Himmel Katherine Kortum

#### **Transportation Research Board**

Neil J. Pedersen, Executive Director Russell W. Houston, Associate Executive Director Ann M. Brach, Director, Technical Activities Thomas R. Menzies, Jr., Director, Consensus and Advisory Studies

Gary J. Walker, Director, Administration and Finance Christopher J. Hedges, Director, Cooperative Research Programs

*TR News* (ISSN 0738-6826) is issued bimonthly by the Transportation Research Board, 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 202-334-2986, by fax 202-334-3495, or by e-mail Icamarda@nas.edu.

Subscriptions: North America: 1 year \$75; single issue \$19. Overseas: 1 year \$100; single issue \$19 plus shipping. 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 © 2020 National Academy of Sciences. All rights reserved. For permissions, contact TRB.