



BEHAVIORAL TRAFFIC SAFETY
COOPERATIVE RESEARCH PROGRAM
2019 ANNUAL REPORT

The National Academies of
SCIENCES • ENGINEERING • MEDICINE



TRANSPORTATION RESEARCH BOARD

TRANSPORTATION RESEARCH BOARD 2019 EXECUTIVE COMMITTEE*

OFFICERS

Chair: 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.

Vice Chair: Carlos M. Braceras, Executive Director, Utah Department of Transportation, Salt Lake City

Executive Director: Neil J. Pedersen, Transportation Research Board

MEMBERS

Michael F. Ableson, CEO, Arrival Automotive–North America, Detroit, MI

Ginger Evans, CEO, Reach Airports, 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

A. Stewart Fotheringham, Professor, School of Geographical Sciences and Urban Planning, Arizona State University, Tempe

Diane Gutierrez-Scaccetti, Commissioner, New Jersey Department of Transportation, Trenton

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

Stephen W. Hargarten, Professor, Emergency Medicine, Medical College of Wisconsin, Milwaukee

Chris T. Hendrickson, Hamerschlag University Professor of Engineering, Carnegie Mellon University, Pittsburgh, PA

S. Jack Hu, Vice President for Research and J. Reid and Polly Anderson Professor of Manufacturing, University of Michigan, Ann Arbor

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

Susan A. Shaheen, Adjunct Professor, Co-Director, Transportation Sustainability Research Center, University of California, Berkeley

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

EX OFFICIO MEMBERS

Ronald Batory, Administrator, Federal Railroad Administration, U.S. Department of Transportation, Washington, D.C.

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

Edward N. Comstock, Independent Naval Architect, Sunbury, MD

Stephen Dickson, Administrator, Federal Aviation Administration, Washington, D.C.

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

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

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

Raymond Martinez, Administrator, Federal Motor Carrier Safety Administration, Washington, D.C.

Nicole Nason, Administrator, Federal Highway Administration, Washington, D.C.

James Owens, Deputy Administrator and Acting Administrator, National Highway Traffic Safety Administration, U.S. Department of Transportation

Leslie S. Richards, General Manager, SEPTA, Philadelphia, PA

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

Karl Schultz (Admiral, U.S. Coast Guard), Commandant, U.S. Coast Guard, Washington, D.C.

Karl Simon, Director, Transportation and Climate Division, U.S. Environmental Protection Agency, Washington, D.C.

Paul Skoutelas, President and CEO, American Public Transportation Association, Washington, D.C.

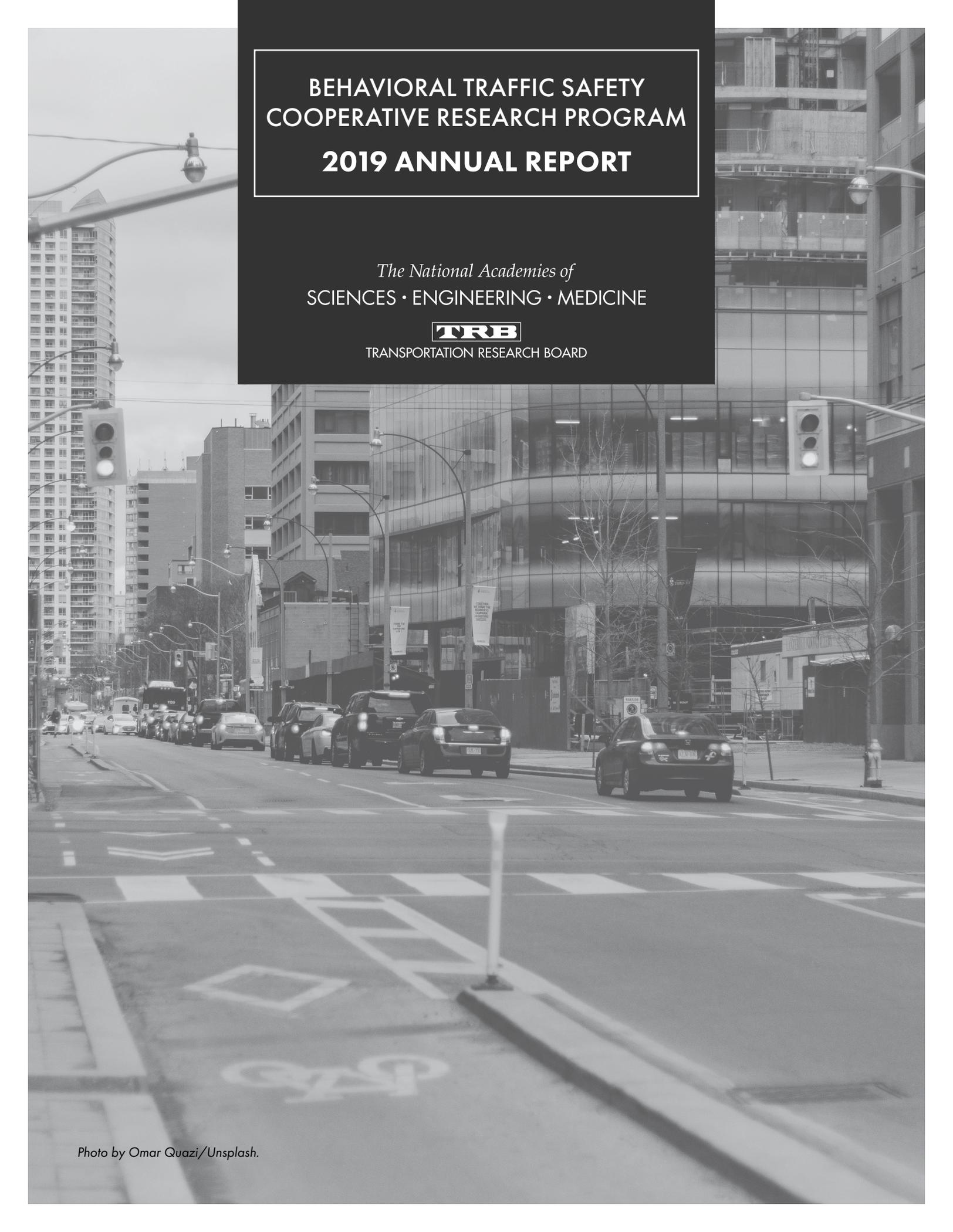
Scott A. Spellmon (Major General, U.S. Army), Deputy Commanding General for Civil and Emergency Operations, U.S. Army Corps of Engineers

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

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

K. Jane Williams, Acting Administrator, Federal Transit Administration, U.S. Department of Transportation

* Membership as of November 2019.



BEHAVIORAL TRAFFIC SAFETY COOPERATIVE RESEARCH PROGRAM 2019 ANNUAL REPORT

The National Academies of
SCIENCES • ENGINEERING • MEDICINE



TRANSPORTATION RESEARCH BOARD

The National Academies of SCIENCES • ENGINEERING • MEDICINE

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

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.national-academies.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 provide leadership in transportation improvements and innovation through trusted, timely, impartial, and evidence-based information exchange, research, and advice regarding all modes of transportation. The Board's varied activities annually engage about 8,000 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.

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



Photo by Sean Benesh/Unsplash.

The Behavioral Traffic Safety Cooperative Research Program is jointly managed by the National Highway Traffic Safety Administration and the Governors Highway Safety Association and carried out by the Transportation Research Board.

GOVERNORS HIGHWAY SAFETY ASSOCIATION (GHSA)

GHSA is a 501(c)(3) nonprofit representing the state and territorial highway safety offices that implement federal grant programs to address behavioral highway safety issues. Its mission is to provide leadership and advocacy for the states and territories to improve traffic safety, influence national policy, enhance program management, and promote best practices. The goals of GHSA are to (1) promote traffic safety as a national priority; (2) expand and deliver member support services; (3) develop new and strengthen existing partnerships; (4) encourage innovative approaches in the states' safety programs; and (5) ensure sufficient resources to support association services and priorities.

GHSA traces its history back to the Highway Safety Act of 1966; which established the State and Community Highway Safety Grant Program (U.S.C. Title 23, Section 402), and created a unique partnership among federal, state, and local governments and set the foundation for the creation of State Highway Safety Offices. In each state and territory, governors select a representative to administer the program. In 1967, several governor(s) representatives organized into the National Conference of Governors' Highway Safety Representatives (NCGHSR). The organization incorporated in February 1975 and received nonprofit status in June 1976. In March 1978, the organization transitioned from a conference to an association, becoming NAGHSR. In November 2002, the name was changed to the Governors Highway Safety Association. Learn more about the GHSA at www.ghsa.org.

NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION (NHTSA)

NHTSA, a part of the U.S. Department of Transportation, is responsible for reducing deaths, injuries, and economic losses resulting from motor vehicle crashes. This is accomplished by setting and enforcing safety performance standards for motor vehicles and motor vehicle equipment, and through grants to state and local governments to enable them to conduct effective local highway safety programs.

NHTSA also conducts research on driver behavior and traffic safety to develop the most efficient and effective means of bringing about safety improvements. Learn more about NHTSA at www.nhtsa.gov.

TRANSPORTATION RESEARCH BOARD (TRB)

TRB 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 that transportation contributes to society 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 the component administrations of the U.S. 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.

2019-2020 GHSA EXECUTIVE BOARD

OFFICERS



**Darrin Grondel
(Chair)**

Director,
Washington Traffic
Safety Commission



**Lee Axdahl
(Treasurer)**

Director,
South Dakota Office
of Highway Safety



**Lauren Stewart
(Secretary)**

Director,
Maine Bureau of
Highway Safety



**Chuck DeWeese
(Vice Chair)**

Assistant Commissioner,
New York Governor's
Traffic Safety Committee

GHSA RESEARCH COMMITTEE MEMBERS



**Thomas R. Glass
(Chair)**

Manager,
Program Services,
Division of Highway
Safety & Traffic
Operations, Pennsylvania
Department of
Transportation



Chris Bortz

Traffic Safety
Program Manager,
Kansas Department
of Transportation



Staci Hoff

Research Director,
Washington Traffic Safety
Commission



**Lora B.
Hollingsworth**

Chief Safety Officer,
Florida Department of
Transportation



Tim Kerns

Director,
Maryland Motor Vehicle
Administration



Jason Siwula

Acting Executive Director,
Kentucky Office of
Highway Safety,
Kentucky Transportation
Cabinet



Lauren Stewart

Director,
Maine Bureau of
Highway Safety

THE BEHAVIORAL TRAFFIC COOPERATIVE RESEARCH PROGRAM

The Behavioral Traffic Safety Cooperative Research Program (BTSCR) is a forum for coordinated and collaborative research to address issues integral to the Governors Highway Safety Association (GHSA), the National Highway Traffic Safety Administration (NHTSA), and traffic safety professionals at all levels of government and the private sector. BTSCR provides practical, ready-to-implement solutions to save lives, prevent injuries, and reduce costs of road traffic crashes associated with unsafe behaviors.



HOW IS BTSCR FUNDED?

Moving Ahead for Progress in the 21st Century (MAP-21), Subsection 402(c) created the National Cooperative Research and Evaluation Program (NCREP). The program was continued in Fixing America's Surface Transportation (FAST) Act. Funding was set at \$2,500,000 and is withheld from the Section 402 grant program each federal fiscal year. In October 2017, GHSA entered into an agreement with TRB to manage the program's research activities. The name of the program was changed to the Behavioral Traffic Safety Cooperative Research Program to clarify its purpose and to distinguish it from other TRB research programs.



HOW IS BTSCR GOVERNED?

The GHSA Executive Board serves as the Governing Board for the BTSCR. The Board consists of representatives of the 10 NHTSA regions and appoints the GHSA Research Committee, which monitors and facilitates the activities of BTSCR. Its ultimate goal is to oversee a quality research program that is committed to addressing research issues facing State Highway Safety Offices and to promote research findings that improve highway safety.



WHERE DO THE RESEARCH IDEAS ORIGINATE?

Anyone can write or contribute to preparing an idea or problem statement in conjunction with a State Highway Safety Office; however, only State Highway Safety Offices, the GHSA Executive Board members, GHSA Committees, or NHTSA can submit a problem statement to BTSCR. Submitters are strongly encouraged to do a literature search before submitting, to ensure the problem hasn't been solved or isn't being studied already. There is an annual request for problem statements posted on www.trb.org/BTSCR.



WHO SELECTS THE RESEARCH TOPICS?

NHTSA and TRB staff review the submitted research problem statements and provide feedback to the GHSA Executive Board. The GHSA Executive Board gives final approval of the annual research projects. Emphasis is placed on selecting projects that will result in applied research products that highway safety stakeholders will be able to use immediately upon the completion of the research.



WHAT HAPPENS AFTER RESEARCH TOPICS ARE SELECTED

TRB follows a cooperative research process that it has used successfully for more than 50 years in other programs. First, TRB forms a project panel of individuals with expertise and interest in the topic area. This project panel uses the original problem statement to develop a detailed scope of work that serves as a basis for a Request for Proposal (RFP). The RFP is prepared and posted on www.trb.org/BTSCR. Those previously expressing interest via the BTSCR website are notified immediately. The weekly TRB E-Newsletter provides notice for others. Individuals and agencies then respond to the RFP by submitting proposals to do the work. The project panel reviews the proposals and selects the contractor to perform the work. The panel then provides technical guidance, reviews deliverables, and provides general oversight throughout the life of the project.

CURRENT PROJECTS

BTSCR-01: Guidance for Employer-Based Behavioral Traffic Safety Programs in the Workplace



Funds: \$350,000

Overview: Workers may drive motor vehicles as their main job or as incidental to their main jobs, but in either case, traffic crashes are the leading cause of workplace fatalities in the United States. While engineering, enforcement, education, and emergency response efforts have significantly reduced traffic-related fatalities in recent decades, road user behavior remains the most common risk factor associated with traffic crashes. The objective of this research is to (1) document the components of existing U.S. and international employer-based traffic safety programs for workers who operate motor vehicles for any part of their job duties; (2) use behavioral change theory to identify the essential components of the programs; (3) identify and describe measures of program effectiveness; and (4) develop guidance that incorporates the essential components necessary to plan, implement, and evaluate an employer-based behavioral traffic safety program.



Contractor: Texas A&M Transportation Institute



Project team discussion of the literature review and employer interviews: (front row; left to right) Stephanie Payne, Winfred Arthur, Dennis Perkinson, Eva Shipp, (back row; left to right) Katie Womack, Amber Trueblood, Laura Higgins. Photo by Texas A&M Transportation Institute.

BTSCR-02: Guide for Behavioral Traffic Safety Messaging on Variable Message Signs



Funds: \$350,000

Overview: Several studies have investigated the usefulness and effectiveness of variable message signs (VMS) safety messages, in particular, how messages influence driver behavior, how attentive the public is to the message, and ways agencies could optimize safety messages on VMS. However, there are several unanswered questions about this practice, including: Which states display behavioral safety messages on VMS? What messages are currently being used? When and where are the messages displayed? What administrative policies and procedures regulate this initiative? And, what are the barriers hampering optimal use of this practice? The objective of this research is to develop a guide for the use of VMS to deliver behavioral traffic safety announcements. The guide will address issues such as the (1) current state of the practice, both nationally and internationally; (2) administrative policies and procedures to determine the use of safety messages; (3) who, when, where, how, and why of message selection; (4) strategies that could enhance the understanding of various driver groups; (5) differences between rural and urban environments; (6) impacts, both intended and unintended, and effectiveness of traffic safety messaging; (7) barriers to implementation; and (8) recommendations to enhance coordinated traffic safety strategies.



Contractor: Texas A&M Transportation Institute



Example of a variable message sign. Photo by Texas A&M Transportation Institute.

BTSCR P-03: Examining the Implications of Legislation and Enforcement on Electronic Device Use While Driving



Funds: \$350,000



Contractor: Texas A&M Transportation Institute

Overview: Distracted driving is a complex and ever-increasing risk to public safety on roadways. Drivers' use of electronic devices significantly diverts human attention away from the driving task. The law enforcement community faces significant challenges as electronic device use has expanded beyond simply texting or talking, and legislation regulating electronic device use while driving is inconsistent in content and implementation. There is a need to systematically examine relevant existing legislation and enforcement practice. The objectives of this research are to (1) examine the essential components of current state and provincial legislation used to address distracted driving while using electronic devices; (2) evaluate the benefits and impediments associated with enacting, enforcing, and adjudicating texting and hands-free legislation; and (3) develop model legislation to deter distract driving while using electronic devices.



Electronic devices are a major contributor to distracted driving. Photo by Melissa Mjoen/Unsplash.

BTSCR P-04: Tracking State Traffic Citation and Adjudication Outcomes



Funds: \$350,000



Contractor: Virginia Tech Transportation Institute

Overview: State Highway Safety Offices and State Traffic Records Coordinating Committees have reported challenges with accessing and analyzing citation and adjudication information. Most states have undergone comprehensive traffic records assessments, including assessment of citation and adjudication data systems; however, this information is not central or shared among states. The objective of this research is to develop methodology that enables and facilitates tracking of cases from citation/arrest to final disposition. The research will (1) examine and document state traffic adjudication/disposition efforts that (a) identify current practices in all states for tracking cases from citation/arrest to final disposition (including driver history); (b) identify commonalities and differences in state practices; (c) describe current challenges and gaps in data collection, quality, tracking, and sharing; (2) suggest methods for data sharing, permissions, and accessibility; and (3) develop a toolkit of innovative strategies to facilitate communication between State Highway Safety Offices and adjudication countermeasures.

BTSCR-06: MPO and SHSO Coordination on Behavioral Traffic Safety



Funds: \$350,000



Contractor: Cambridge Systematics

Overview: Behavioral traffic safety could be greatly enhanced by increased engagement between State Highway Safety Offices (SHSOs) and Metropolitan Planning Organizations (MPOs). The latter have a strong understanding of the regional transportation network, the capability to obtain and analyze local crash data, potentially the means and skills to develop transportation safety plans, and connections to local decision makers who can fund and implement investments. SHSOs administer grant funding provided by the National Highway Traffic Safety Administration to fund effective behavioral safety countermeasures to reduce collisions. Since a large proportion of traffic crashes result from human error, progress toward reducing the frequency and severity of traffic crashes could be better achieved if MPOs and SHSOs initiate steps to work together on regional and local safety needs. The objective of this research is to develop guidance for MPOs and SHSOs to improve coordination on local and regional behavioral safety efforts to reduce the frequency and severity of traffic crashes. The guidance will describe the mutual benefits of enhanced coordination on local and regional traffic safety behavioral issues, introduce best practices, and develop scalable processes and tools to develop a framework for engaging MPOs to work in collaboration with SHSOs.

BTSCR-07/NCHRP 17-91: Assessing the Impacts of Connected, Automated, and Autonomous Vehicles on The Future of Transportation Safety



Funds: \$765,000 (jointly funded by BTSCR and the National Cooperative Highway Research Program)



Contractor: Booz Allen Hamilton

Overview: Acknowledging that the move to autonomous and connected vehicles is relatively minor today, the impacts on the design and operational criteria of the roadways of tomorrow will be substantial. As these new vehicles are introduced, they will have to operate alongside a legacy fleet that lack their safety and operational capabilities. The driver behavioral safety issues will be challenging. The objective of this research is to review and document existing and anticipated future changes to the vehicle fleet, develop an outline of how these changes will likely affect safety performance over time, and what potential changes to design and operational criteria could be developed to maximize the potential benefits. The research will be used to develop a framework and strategic approach for the safety profession to consider in developing and implementing new design criteria and operational approaches that consider these technological advances.



Autonomous vehicles are becoming more commonplace on the nation's roads. Photo by 4X-image/iStock.

BTSCR P-08: Naturalistic Driving Study Database to Improve Teen Driving Safety: Phase 1 Proof of Concept



Funds: \$75,000



Contractor: TransAnalytics

Overview: The risk of motor vehicle crashes is higher among 16- to 19-year-olds than any other age group. Furthermore, per mile driven, teen drivers ages 16–19 are nearly three times more likely than drivers aged 20 and older to be in a fatal crash. The recently completed Strategic Highway Research Program 2 (SHRP2) Naturalistic Driving Study (NDS) offers a robust database of 3,100 study participants ages 16–98, recruited from six states. Vehicles were instrumented with a data acquisition system that included accelerometers, cameras, GPS, forward radar, and vehicle network connections. Almost 500 drivers aged 16–19 (and over 650 drivers aged 20–24) were studied. The NDS offers an opportunity to conduct in-depth analyses of teen driver behavior, with known roadway characteristics, weather, and time of day. The objective of this research is to develop a research agenda for teen driver behavioral safety countermeasures using the SHRP2 NDS data.



Instrumentation acquires data on teenage driving behaviors. Photo by TransAnalytics.

BTSCR P-09: Influence of Infrastructure Design on Distracted Driving



Funds: \$250,000



Contractor: Iowa State University

Overview: Whether because of habitual behaviors or immediate deliberate decision-making, drivers often engage in risky behaviors that shift attention away from the primary tasks of driving, increasing the likelihood of crashes. Features of the external world through which the person is driving can strongly influence the occurrence of distracted driving. Built structures are some of the important features in this world, and research is needed to determine the relationships between the presence, absence, location, or design of different built structures and the occurrence of distracted driving. The objective of this research is to develop and test a conceptual safety framework for evaluating the association between distracted driver behaviors and roadway and roadside infrastructure.

PENDING PROJECTS

BTSCR P-10: E-Scooter Safety Issues and Solutions



Funds: \$490,000



Contractor: TBD

Overview: Research is needed for state and local agencies, and industry partners, to help manage the safety risks of e-scooters more effectively and efficiently. Knowing when and where risky behaviors may occur could inform injury prevention approaches, including education, training, enforcement, policy, and changes to the built environment. The objective of this research is to identify emerging behavioral safety issues arising from the expanding use of e-scooters, both rental and privately owned, and develop comprehensive guidance to help affected agencies plan for and mitigate related safety problems. The guidance should include tools, policy alternatives, educational materials, institutional requirements, and other relevant techniques to mitigate if not eliminate identified risks.



*E-scooter use is rapidly expanding in many U.S. communities.
Photo by Vladimir Popović Photography/iStock.*

BTSCR P-11: Ensuring Child Safety in For-Hire Rideshare Vehicles



Funds: \$350,000



Contractor: TBD

Overview: In the United States, ride share vehicle use offered by services such as Lyft and Uber, has increased dramatically in the last three years. According to the Pew Research Center, in late 2015, only 15% of those surveyed said they had used these services (one-third had never heard of ride sharing); by the end of 2018, 36% had used such services and only 3% had never heard of them. Ride share use in urban and suburban areas seems certain to grow at a rapid pace. One issue that has received little attention is the transportation of children in ride share vehicles, particularly child safety seat installation and use. Car seats, especially for toddlers and small children, can be bulky, heavy, and challenging to handle outside of the vehicle. Inside vehicles, the options for correct installation can be as varied as the combination of vehicles and car seats available, and multiple additional children adds to the complexity. Initial surveys that examined the issue suggest widespread regulatory inconsistency on child seat use and confusion on the part of parents and drivers. The objective of this research is to identify and prioritize the types of interventions needed to improve child passenger safety given the increasing shift to ride share vehicles. The research should include analysis of current use, including challenges and decision-making factors, projected shifts to ride share trips with car seat-aged children, as well as a scan of mandatory child restraint laws applicable to shared ride vehicles across the U.S., leading to model regulations and outreach materials for parents and drivers of ride share vehicles.

BTSCRIP-12: State Practices Promoting Older Driver Safety



Funds: \$300,000



Contractor: TBD

Overview: The most recent figures from the U.S. Census Bureau indicate that as of July 2015, there were 47.8 million people age 65 and older in the United States. That represents 14% of the total population. By 2060, that number is projected to more than double to 98.2 million, which will represent nearly one in four people living in the U.S., and 20 million will be 85 or older. While older adults tend to practice safe driving behaviors, the effects of aging have a profound impact on their driving ability. What makes it difficult for highway safety countermeasures is that there is no specific date or time when any of these effects occur and to what degree someone can be affected. Aging impacts people differently, but the fact remains that older drivers represent 19 percent of all licensed drivers and accounted for 18 percent of the fatalities. The objective of this research is to determine what states are doing to promote older driver safety, the State Highway Safety Offices' (SHSOs') current roles and levels of involvement in supporting older driver safety programs, the challenges SHSOs are facing in this area, best practices, and what can be done to meet the safety needs of the 65 and older driver population.

BTSCRIP-13: Communicating Safe Behavior Practices to Vulnerable Road Users



Funds: \$500,000



Contractor: TBD

Overview: In 2017, vulnerable road users (pedestrians, bicyclists, and motorcyclists) accounted for 11,932 (32%) of the traffic fatalities in the United States. The diversity of these users complicates the design and implementation of effective programs for communicating safe behavior practices. For pedestrian fatalities, 20% were 65 or older, 18% were 14 or younger, 75% occurred during darkness, 80% occurred in urban areas, and 70% were males. Over the years, there have been numerous public communications campaigns designed to curtail high-risk behaviors in these populations, but given the growing number of fatalities, it is time to enhance our understanding of how behavioral safety messages are received by the target populations and what messages or marketing strategies are most effective at altering unsafe behaviors. For all three groups, an audience segmentation approach could present a significant opportunity to improve the impact of behavioral safety interventions at the individual, interpersonal, community, and societal levels. The objective of this research is to develop protocols for states to follow when designing and implementing a media or educational campaign that discourages high-risk pedestrian, bicyclist, and motorcyclist behaviors.



Children exhibit safe road use behaviors by using a crosswalk.
Photo by Katarzyna Bialasiewicz/iStock.

BTSCR-14/NCHRP 22-45: Informing the Selection of Countermeasures by Evaluating, Analyzing, and Diagnosing Contributing Factors that Lead to Crashes



Funds: \$690,000 (jointly funded by BTSCR and the National Cooperative Highway Research Program)



Contractor: TBD

Overview: Research is needed to develop diagnostic tools that leverage crash, roadway, traffic volume, human factors, behavioral, socioeconomic, and demographic data, as well as non-traditional data sources in order to advance the state of the practice in crash diagnostics and countermeasure selection that consider both modal priorities and facility context. The objective of this research is to develop new tools for diagnosing contributing factors leading to crashes that will aid practitioners in selecting appropriate countermeasures in modally diverse contexts. The tools should address a wide variety of contributing factors leading to crashes (e.g., roadway, technological, behavioral, human factors, socioeconomic, demographic, weather, and land use) in order to further practitioner understanding of how to most effectively balance tradeoff decisions in a given modal priority and facility context.

BTSCR-15: Highway Safety Strategies for Rural Areas



Funds: \$300,000



Contractor: TBD

Overview: While rural areas account for about 30% of the total miles traveled and only 19% of the population lives in rural areas, nearly half of all traffic fatalities occur in rural areas. Although this certainly shows a need to improve road safety in rural areas, numerous constraints and resource limitations hinder current safety efforts. For example, in most states the vast majority of rural mileage is owned and managed by local governments. The 2012 Census of Governments found a total of 3,031 counties, 19,522 municipalities, and 16,363 townships in the United States. Most are either partially or entirely rural. In addition, the Bureau of Indian Affairs recognizes 573 American Indian tribes and Alaskan Native Villages in the U.S. The sheer number of rural jurisdictions makes it difficult to assure that programs aimed at improving rural transportation safety are effective in reaching all areas. The large number of rural government units vary considerably in the way they are organized, their legal authority, and the available financial and human resources. The vast rural highway mileage is another challenge: rural crashes are often very dispersed, with a considerable degree of randomness in crash locations. This makes it very difficult to apply traditional crash reduction strategies that focus on “hot spots.” The objective of this research is to develop a behavioral safety toolkit that can help rural practitioners reduce the burden of traffic fatalities and serious injuries by applying Vision Zero and other techniques to (1) identify effective methods for organizing multidisciplinary, inter-jurisdictional road safety groups to address the fragmentation of resources constraints of rural communities; (2) review the knowledge of cultural factors that affect road safety; (3) identify best practices to address risky driving behaviors and develop successful techniques for influencing personal behaviors that contribute to rural crash risk reduction; and (4) develop guidance to de-stigmatize alcohol use disorder (AUD) treatment, and identify unconventional channels for distributing AUD treatment information.



Nearly half of all traffic fatalities occur in rural areas. Photo by Alex Potemkin/iStock.

COOPERATIVE RESEARCH PROGRAMS STAFF

DIRECTOR

Christopher J. Hedges

DEPUTY DIRECTOR AND NCHRP MANAGER

Lori L. Sundstrom

ACRP MANAGER

Marci A. Greenberger

TCRP MANAGER

Gwen Chisholm Smith

SENIOR PROGRAM OFFICERS

Velvet Basemera-Fitzpatrick

Mark S. Bush

Camille Crichton-Summers

Waseem Dekelbab

B. Ray Derr

Mariela Garcia-Colberg

Jo Allen Gause

Lawrence D. Goldstein

Matthew Griffin

Amir N. Hanna

Edward T. Harrigan

Ann M. Hartell

David Jared

Inam Jawed

Andrew C. Lemer

Sid Mohan

Joseph D. Navarrete

Stephan A. Parker

William C. Rogers

Theresa H. Schatz

Dianne S. Schwager

Gail R. Staba

ADMINISTRATIVE COORDINATOR

Joseph J. Snell

ADMINISTRATIVE ASSOCIATE

Cynthia E. Butler

PROGRAM COORDINATORS

Deborah Irvin

Brittany Summerlin-Azeez

PROGRAM ASSOCIATE

Sheila A. Moore

TRAVEL SPECIALISTS

Daniel J. Magnolia

Robert Turner II

WEB DEVELOPER

Natassja K. Linzau

SENIOR PROGRAM ASSISTANTS

Anthony P. Avery

Stephanie L. Campbell

Cheryl Keith

Thu M. Le

Jarrel McAfee

Hana Vagnerova

Demisha Williams

DIRECTOR OF PUBLICATIONS

Eileen P. Delaney

ASSOCIATE DIRECTOR OF PUBLICATIONS

Natalie Barnes

SENIOR EDITORS

Ellen M. Chafee

Linda A. Dziobek

Doug English

Hilary Freer

Margaret B. Hagood

Scott E. Hitchcock

Janet M. McNaughton

EDITORS

Kami Cabral

Lea Camarda

Cassandra Franklin-Barbajosa

Sharon Lamberton

Sreyashi Roy

Heidi Willis

PUBLISHING PROJECTS MANAGER

Jennifer J. Weeks

ASSISTANT EDITOR

Jennifer Corroero

SENIOR EDITORIAL ASSISTANT

Kathleen Mion

SYSTEMS ANALYST

Roy N. Mesler

SYNTHESIS PROGRAM CONTRACTORS

Christopher E. Dunne

Thomas J. Helms, Jr.

M. Andre Primus

Tanya M. Zwahlen

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

The nation turns to the National Academies of Sciences, Engineering, and Medicine for independent, objective advice on issues that affect people's lives worldwide.

www.national-academies.org

TRANSPORTATION RESEARCH BOARD
500 Fifth Street, NW
Washington, DC 20001