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. 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.

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](http://www.TRB.org).

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National Cooperative Highway Research Program

Systematic, well-designed, and implementable research is the most effective way to solve many problems facing the administrators and engineers at state departments of transportation (DOTs). Often, highway problems are of local interest and can best be studied by state DOTs individually or in cooperation with their state universities and others. However, the accelerating growth of highway transportation has resulted in increasingly complex problems of wide interest to highway authorities. These problems are best studied through a coordinated program of cooperative research.

In 1962, recognizing this need, the Chief Executive Officers of the American Association of State Highway and Transportation Officials (AASHTO) initiated an objective national highway research program using scientific techniques—the National Cooperative Highway Research Program (NCHRP). Funded by participating member states of AASHTO, NCHRP also receives critical technical support from the Federal Highway Administration (FHWA), United States Department of Transportation (USDOT).

The Transportation Research Board (TRB), part of the National Academies of Sciences, Engineering, and Medicine, was requested by AASHTO to administer the research program because of TRB's recognized objectivity and understanding of research practices. TRB is uniquely suited for this purpose for many reasons:

- TRB maintains an extensive volunteer committee structure from which authorities on any highway transportation subject may be drawn.
- TRB possesses avenues of communications and cooperation with federal, state, and local governmental agencies, universities, and industry.
- TRB's relationship to the National Academies is an insurance of objectivity.
- TRB maintains a full-time staff of specialists in highway transportation matters and research project management to bring the findings of research directly to those in a position to use them.

The annual research program is developed on the basis of research needs identified by chief administrators and other staff of the highway and transportation departments, by committees of AASHTO, and by FHWA. Topics of the highest merit are selected by the AASHTO Special Committee on Research and Innovation (R&I), and each year R&I's recommendations are proposed to the AASHTO Board of Directors, the National Academies, and FHWA. The scopes of research projects to address these topics are defined by NCHRP, and qualified research agencies are selected on the basis of their submitted proposals. Administration and oversight of research contracts are the responsibilities of the National Academies and TRB.
Each year, NCHRP produces dozens of research results that offer guidance on a wide range of topics that are important to state DOTs as well as others within the highway industry. In some instances, the benefits of applying NCHRP research results are evident immediately, whereas the impact of applying other research results may not be understood or realized for several years. While there are no easy predictors or uniform measures of outcomes and impacts, the use of NCHRP research results has consistently and repeatedly generated value to practitioners, researchers, and decisionmakers from state DOTs and other transportation agencies and, consequently, to the general public.

The NCHRP Impact Report 2020, a follow-up to reports produced in 2018 and 2019, attempts to document and present that value, in the form of outcomes and impacts, of the application of NCHRP research results. Containing data and anecdotes compiled from various sources, this report presents an overview of recent NCHRP research results, how the results are disseminated, and the impacts of their application.

Despite the challenges faced in 2020, NCHRP continued to produce high-quality research products, engaged thousands of practitioners in our webinars, and provided value and benefits to all of our stakeholders at state DOTs, governmental agencies, educational institutions, the private sector, and other organizations.

This report reflects the three distinct goals of NCHRP’s approach—Generating Knowledge, Disseminating Knowledge, and Producing Impacts—and examines how state DOTs and other stakeholders benefit from each part.
GENERATING KNOWLEDGE
NCHRP produced new knowledge and resources at record levels

In 2020, NCHRP produced a record **80 research products across five series**, our largest output ever.

These 80 research products cover **15 different subject areas**, extending across all facets of a state DOT’s operations.

The size of the boxes above is relative to the number of research products that fall under that subject area.
Diverse project panels lead to better NCHRP research products

NCHRP project panel members assume key responsibilities for helping ensure the quality of NCHRP research and to help develop the best products possible—products that are objective and credible and significantly advance the state of knowledge or practice. Experience has shown that NCHRP gets the best results when receiving guidance from panels of subject-matter experts, who bring diverse perspectives and experiences to bear on any given topic and can gauge the effectiveness of proposed research approaches and successfully monitor the research. The quality of our research reflects the growing diversity of NCHRP panel compositions in terms of gender, ethnicity, and professional affiliations.
DISSEMINATING KNOWLEDGE
NCHRP webinars are reaching more practitioners

In 2020, NCHRP research products were the focus of **25 webinars** attended by over **8,900 participants**, up from 4800 participants in 2019. These webinars covered a wide range of topics as shown below.

Our participants attended from all 50 states and the District of Columbia, as well as 33 other countries from around the world.

- **62%** of participants were from state DOTs.
- **92%** of participants rated the webinars highly.

The proportion of participants who were from state DOTs.

The average satisfaction rate across 25 webinars — a good indicator of the high quality of our webinar offerings.
More users are accessing NCHRP research products

NCHRP research products were **accessed over 630,000 times** in 2020, a 5% increase over 2019, and nearly 6 times more than 2016.

Given global events during the year, it was unsurprising that *NCHRP Report 769: A Guide for Public Transportation Pandemic Planning and Response* was one of the most accessed NCHRP research products in 2020, with over 4,200 downloads and 2,300 OpenBook Sessions.

Published in 2014, this report provides support to all types and sizes of transportation agencies and organizations as they prepare for pandemics and other infectious diseases.

Having previously averaged about 10 downloads/OpenBook sessions a month, Report 769 saw a **major spike in March and April 2020**, right when the pandemic was beginning to take effect globally.

Highlighting global relevance, the report was **accessed by users in 115 countries**.
Why are NCHRP research products accessed?

NCHRP research products bring value to practitioners, researchers, policymakers, decisionmakers, and the general public. An analysis of nearly 11,000 comments provided by downloaders of our research products in 2020 reveals that nearly three-quarters of all downloads are intended for use in practice, or as reference and in new or additional research.

The value of our research products differs based on who the downloaders are. While using it as a reference or for additional research is a major use for all categories, downloaders from state DOTs also use our research products in practice at their workplace, while downloaders from educational institutions use it as a study or educational tool.
Why NCHRP research products are accessed by state DOTs

**MISSOURI**
To see what guidance is provided for preparing asphalt samples for performance testing. Missouri DOT is moving towards the use of performance testing to accept asphalt mix placed in the field.

**WASHINGTON**
NCHRP Synthesis 548: Development and Use of As-Built Plans by State Departments of Transportation (2020)
I will be using it to consider enhancing our CAD based as-built process and submit findings and suggestions to our Construction Office.

**OREGON**
NCHRP Research Report 934: Traffic Forecasting Accuracy Assessment Research (2020)
Oregon DOT and MPOs are partnering to improve travel demand models and the data collection needed to support them. This report is expected to provide information we can use to support this objective, given the highly competitive nature of funding this work.

**CALIFORNIA**
NCHRP Research Report 941: Bicyclist Facility Preferences and Effects on Increasing Bicycle Trips (2020)
As a Senior Transportation Engineer, I am always trying to add bicycle facilities wherever I can. I like to use these reports for knowledge and guidance when designing and reviewing plans.

**HAWAII**
We will use this document when developing and implementing Hawaii DOT’s Statewide Rockfall Mitigation Program.

**IOWA**
NCHRP publications are great to help me stay in touch with the state-of-the-art for the topic at hand.

**OHIO**
NCHRP Web-Only Document 288: Standard Definitions for Common Types of Pavement Cracking (2020)
My shop at the DOT performs the automated highway network data collection including 3-D downward imaging. We’ll leverage this doc to better understand how we can develop our automated crack and distress identification/quantification.

**NEW YORK**
NCHRP Research Report 952: Guidebook for Managing Data from Emerging Technologies for Transportation (2020)
NYSDOT is in the process of developing requirements for a Statewide data broker along with regional brokers. Understanding the increased importance of Big Data is needed to support the development of a responsive set of requirements.

**PENNSYLVANIA**
NCHRP Research Report 927: Evaluating the Effects of Recycling Agents on Asphalt Mixtures with High RAS and RAP Binder Ratios (2020)
As Chief of the Pavement Testing and Asset Management Section (PTAMS) at PennDOT, I will use this NCHRP Report in my professional state governmental duties and responsibilities.

**MARYLAND**
I am the Fleet Manager for the Maryland Department of Transportation State Highway Administration. I will be using this report to compare our current processes with the report.

**SOUTH CAROLINA**
I work in SCDOT’s Design-Build group. Will use for research on our existing project delivery methods and proposed alternative project delivery methods.

**TEXAS**
I work as a biologist for the Texas Department of Transportation and am interested in enhancing wildlife habitats along roadways and preventing butterfly population mortality along roadways.
Why NCHRP research products are accessed by educational institutions

Montana State University
For guidance in making asphalt specimens for lab testing.

Shoreline Community College
NCHRP Web-Only Document 280: Valuing Wildlife Crossings and Enhancements for Mitigation Credits (2020)
To better inform public comments related to supporting wildlife corridors and funding for them.

University of California, Davis
NCHRP Research Report 952: Guidebook for Managing Data from Emerging Technologies for Transportation (2020)
This reference looks like an excellent guide for some of our research in big data for DOTs, e.g., Lidar, pavement, and other geospatial data.

University of Kansas
For research and references to include in NSF grant applications and peer-reviewed journal article submissions.

New Mexico State University
NCHRP Research Report 926: Guidance to Improve Pedestrian and Bicyclist Safety at Intersections (2020)
To use as a guidance for planning commission meetings and plan development.

Texas School for the Blind and Visually Impaired
To aid in understanding signal phasing for pedestrians with blindness and visual impairment.

University of North Texas
In my developing materials for my undergraduate transportation class and in conducting transportation-related research.

University of North Carolina at Asheville
For creation of a policy manual for an institution of higher learning.
PRODUCING IMPACTS
NCHRP research contributes to state research

Each year, the AASHTO Research Advisory Committee (RAC) asks states to identify and document recently completed “high value” research (HVR) projects, innovative projects that impact transportation agencies’ practices and policies and that benefit the traveling public. Compiled into Research Impacts: Better – Faster – Cheaper, this document is a great resource for state DOTs. It provides a quick reference to HVR projects and helps eliminate or reduce duplication of research.

In 2020, 18 HVR projects from 17 states referenced at least one NCHRP research product or project, with a total of 24 NCHRP research products and active research projects being referenced in all.
The full list of NCHRP research products and active research projects referenced by HVR projects in 2020

**ARIZONA** - Evaluation of Pedestrian Hybrid Beacons on Arizona Highways
- NCHRP Research Report 841: Development of Crash Modification Factors for Uncontrolled Pedestrian Crossing Treatments
- TCRP Report 112/NCHRP Report 562: Improving Pedestrian Safety at Unsignalized Crossings

**CONNECTICUT** - Adaptation of 3D Scanning Technology for High-Precision Bridge Inspection
- NCHRP Report 333: Guidelines for Evaluating Corrosion Effects in Existing Steel Bridges

**FLORIDA** - Mainstreaming TSM&O: From Policy to Practice
- NCHRP Project 17-63: Guidance for the Development and Application of Crash Modification Factors
- NCHRP Synthesis 403: Adaptive Traffic Control Systems: Domestic and Foreign State of Practice
- NCHRP Synthesis 321: Roadway Safety Tools for Local Agencies

**GEORGIA** - Validating Change of Sign and Pavement Conditions and Evaluating Sign Retroreflectivity Condition Assessment on Georgia’s Interstate Highways Using 3D Sensing Technologies
- NCHRP Synthesis 403: Adaptive Traffic Control Systems: Domestic and Foreign State of Practice
- NCHRP Synthesis 321: Roadway Safety Tools for Local Agencies

**INDIANA** - Risk-Based Construction Inspection
- NCHRP Synthesis 450: Forecasting Highway Construction Staffing Requirements

**KANSAS** - Initial Analytical Investigation of Overhead Sign Trusses with Respect to Remaining Fatigue Life and Predictive Methods for Inspection
- NCHRP Report 469: Fatigue-Resistant Design of Cantilevered Signal, Sign, and Light Supports

**LOUISIANA** - Adoption of E-Construction Inspection
- NCHRP Synthesis 313: State DOT Outsourcing and Private-Sector Utilization

**MAINE** - Development and Implementation of Culvert Outlet Diffuser to Improve Stream Flow
- NCHRP Report 734: Hydraulic Loss Coefficients for Culverts

**MICHIGAN** - Evaluating Long-Term Capacity and Ductility of Carbon Fiber Reinforced Polymer Prestressing and Post-Tensioning Strands
- NCHRP Report 549: Simplified Shear Design of Structural Concrete Members

**MINNESOTA** - Guide for Converting Distressed Low-Volume Paved Roads to Unpaved Roads
- NCHRP Synthesis 485: Converting Paved Roads to Unpaved

**MISSOURI** - Evaluation of Automated Flagger Assistance Devices

**MONTANA** - Guidelines for Chemically Stabilizing Problematic Soils
- NCHRP Web-Only Document 144: Recommended Practice for Stabilization of Subgrade Soils and Base Materials

**NEW JERSEY** - Real-Time Signal Performance Measurement (RT-SPM)
- NCHRP Synthesis 311: Performance Measures of Operational Effectiveness for Highway Segments and Systems

**PENNSYLVANIA** - Regionalized Urban/Suburban Collector Road Safety Performance Functions (SPFs)

**SOUTH CAROLINA** - Sign Life Expectancy
- NCHRP Synthesis 431: Practices to Manage Traffic Sign Retroreflectivity

**VERMONT** - Snow and Ice Control Performance Measurement: Comparing “Grip,” Traffic Speed Distributions, and Safety Outcomes During Winter Storms
- NCHRP Web-Only Document 53: Feasibility of Using Friction Indicators to Improve Winter Maintenance Operations and Mobility
- NCHRP Synthesis 291: Evaluation of Pavement Friction Characteristics

**WASHINGTON** - Bio-Based Renewable Additives for Anti-Icing Applications
- NCHRP Synthesis 344: Winter Highway Operations
- NCHRP Synthesis 449: Strategies to Mitigate the Impacts of Chloride Roadway Deicers on the Natural Environment

**WASHINGTON** - Evaluation of New Rumble Strip Designs to Reduce Roadside Noise and Promote Safety
- NCHRP Report 641: Guidance for the Design and Application of Shoulder and Centerline Rumble Strips

NCHRP Project 12-108: Guide Specification for Service Life Design of Highway Bridges was initiated to provide practical guidance to bridge owners and designers on how to include service life considerations in the planning and design of highway bridges. The main goal of the project was to develop a guide specification for consideration by AASHTO that would implement the concepts of service life design, so as to have an immediate impact on current practice. Recent developments in service life design, in particular the consideration of chloride migration through concrete, now allow for a more rigorous approach to predict service life for new bridge designs.

The project team was led by Modjeski and Masters, Inc., and included expertise from COWI North America, Rutgers University, NCS Georesources, and Dr. John Kulicki. The project included a survey of bridge owners to determine the major issues limiting the service life of bridges, an extensive literature review and gap analysis, and the development of the proposed guide specification. In developing the guide specification, a simplified approach to the probabilistic evaluation of concrete service life was developed to provide designers and owners with a more straightforward path to implementation in design. The probabilistic relationship between concrete permeability, environmental chloride loading, concrete cover over reinforcing, and the resulting service life was developed into a tabular format, allowing designers to implement probabilistic service life design without the need to perform extensive calculations.

Three service life targets were included in the provisions: normal, enhanced, and maximum. In addition, components of the bridge intended to be replaced during the life of the bridge are classified as renewable elements. The developed guide specification consists primarily of two types of provisions: deemed-to-satisfy, and avoidance of deterioration. In the deemed-to-satisfy approach, if a design meets the requirements of the provision, it is deemed to satisfy the requirements. Avoidance-of-deterioration provisions typically result in the removal of the potential deterioration mechanism from the design, for example, by using corrosion-resistant materials.

The research team received valuable input from the stakeholder community during the development of the guide specification, in particular from the AASHTO Committee on Bridges and Structures (CBS) Technical Committee 9 (T-9), Bridge Preservation. The team met with T-9 several times during the development of the guide specification and incorporated their input and suggestions.

The guide specification was adopted by AASHTO in 2019 and was published in 2020 as *Guide Specification for Service Life Design of Highway Bridges, 1st Edition*.
THE 2020 NCHRP PUBLICATIONS SURVEY RESULTS
In late 2020, NCHRP surveyed practitioners, researchers, and decision makers within state DOTs and the larger transportation community to determine what NCHRP research products were used, how they were used, and what benefits they produced. Covering 53 NCHRP publications published in the year 2016, over 400 respondents provided valuable insights.

The next few pages highlight what our respondents told us about where and how those publications were used and the benefits they produced within the respective organizations.

Where NCHRP research results were applied

180 respondents indicated that their organization had successfully applied NCHRP research results. Each dot on the map below denotes a location where the respondent's organization had applied NCHRP research results.
How NCHRP research results were applied

The same NCHRP research result can often be applied differently by different users. Below are some of the major ways NCHRP research results were applied, according to our 2020 NCHRP publications survey.

Developing/identifying future research needs
- 9 responses

Getting ideas for new/effective practices used by other DOTs
- 64 responses

Implementing a new program
- 15 responses

Implementing new technology
- 45 responses

Recommending or implementing workforce development/workforce training
- 21 responses

Recommending or making changes to standards, specifications, or guidance documents
- 57 responses

Recommending or making changes to the design or layout design or layout of roads/facilities
- 49 responses

Implementing new program
- 40 responses

Recommending or making policy changes
- 45 responses

Using the publication as a guidance document
- 104 responses

Validating current practice
- 59 responses

The size of the boxes and the numbers in them denote the number of responses for that application.
What the benefits of applying NCHRP research results were

The application of NCHRP research often provides several benefits to the transportation system. The following are the major benefits indicated by our 2020 NCHRP publications survey respondents.

- Expedited project delivery: 21 responses
- Improved communications: 39 responses
- Improved community-DOT interaction: 25 responses
- Improved compliance to regulations: 34 responses
- Improved emergency response: 9 responses
- Improved operational efficiency: 35 responses
- Improved planning/preparedness: 57 responses
- Improved safety: 61 responses
- Improved system reliability: 26 responses
- Improved travel time: 17 responses
- Improved workforce skills/training: 28 responses
- Increased revenue generation: 4 responses
- Led to follow-up research: 44 responses
- Long-lasting facilities/improved durability and quality: 32 responses
- Reduced congestion: 19 responses
- Reduced disruption from construction activities: 13 responses
- Reduced environmental impact: 32 responses
- Reduced operating costs: 26 responses

The size of the circles and the numbers in them denote the number of responses for that benefit.
Voices from the field: The benefits of using NCHRP research results

NCHRP Report 819: Self-Consolidating Concrete for Cast-in-Place Bridge Components (2016)
We changed our construction specification for precast box culverts to allow for the use of SCC. This was in part as a result of NCHRP Report 819.

Matt Farrar
Idaho Transportation Department

Improved understanding of the benefits of transport investment.

Murray King
Murray King & Francis Small Consultancy Ltd

Results were applied to our standards and practices related to signing and sheeting levels just last year.

David Boruff
Indiana Department of Transportation

This report led to improved data governance.

John C Milton
Washington State Department of Transportation

NCHRP Report 831: Civil Integrated Management (CIM) for Departments of Transportation, Volume 1: Guidebook (2016)
This report is used to teach university students CIM concepts and applications

John Walewski
Texas A&M University

Improved accommodations for pedestrians in wheelchairs and who are visually impaired.

Corey O’Connor
Massachusetts Department of Transportation

NCHRP Research Results Digest 400: Sample Size Implications of Multi-Day GPS-Enabled Household Travel Surveys (2016)
Reduced sample size of Household Travel Survey and extended the time frame to multi-day. Saved about 25% of data collection costs.

Rebekah Straub Anderson
Ohio Department of Transportation

Better understanding of the state of knowledge.

Ata Khan
Carleton University
Voices from the field: The benefits of using NCHRP research results (continued)

**NCHRP Synthesis 487: Public Perception of Mileage-Based User Fees (2016)**
UDOT implemented an operational Road Usage Charge (i.e., MBUF) program on January 1, 2020. This NCHRP synthesis was used in the early stages of planning our RUC program more than two years ago. It made us aware of public sentiments and concerns such as high administrative costs and privacy concerns. So we designed the program to minimize those and to avoid some related issues that another state DOT had faced with their similar program.

**Cameron Kergaye**
Utah Department of Transportation

**NCHRP Synthesis 490: Practice of Rumble Strips and Rumble Stripes (2016)**
Referenced in developing policy and standards.

**David Boruff**
Indiana Department of Transportation

Improved ways to eliminate bad asphalt concrete pavement mix designs that meet Superpave design criteria, but shouldn't be used because of poor performance. Development, improvement, and validation of specifications to reject and prevent these bad mixes. Improved pavement performance and service life.

**Anonymous**

Helps with first HSIP design of cable barrier in freeway median in our state.

**Scott Thomas**
Alaska Department of Transportation & Public Facilities

We are working on a Life Cycle Cost Analysis for enhanced compaction of asphalt pavements.

**Richard Giessel**
Alaska Department of Transportation & Public Facilities

**NCHRP Synthesis 497: Post-Extreme Event Damage Assessment and Response for Highway Bridges (2016)**
Helped the Department update our post-event inspection practices and resulted in subsequent research project (NCHRP 14-45).

**Anonymous**

Reference for designers.

**David Boruff**
Indiana Department of Transportation

The first couple of chapters with more of the background/basics is very useful. The section on tools has become dated, but much of the rest of the report is still quite relevant and a good foundation to build from.

**Matt Haubrich**
Iowa Department of Transportation

Provides education on traffic safety culture to students in the Master of Transportation Safety Administration Program at Clemson University.

**Terecia Wilson**
Clemson University
Methodology

The NCHRP Impact Report 2020 documents and presents the value, in the form of outcomes and impacts, of the application of NCHRP research results. Containing data and anecdotes compiled from various sources, this report presents an overview of recent NCHRP research results, how the results are disseminated, and the impacts of their application.

NCHRP various data collection and analysis methods to prepare this report. Unless otherwise noted, all data in this report are current as of December 31, 2020.

Page 8 Diverse project panels lead to better NCHRP research products
Data on gender, ethnicity, and professional affiliation based on information self-reported by NCHRP panel members.

Page 10 NCHRP webinars are reaching more practitioners
Data on participant location and professional affiliation based on information self-reported by webinar attendees. Data on average satisfaction based on the results of post-webinar surveys administered at the conclusion of every NCHRP webinar.

Page 11 More users are accessing NCHRP research products
Data from the National Academies Press.

Page 12 Why are NCHRP research products accessed?
Based on nearly 11,000 comments provided by downloaders of NCHRP research products in 2020. The comments were then grouped into five main categories based on key words within each comment, with an “Other” category for comments that did not fall into the five main categories.

Page 13 Why NCHRP research products are accessed by state DOTs
Comments were provided by downloaders of NCHRP research products in 2020. Email domains were used to identify their respective states.

Page 14 Why NCHRP research products are accessed by educational institutions
Comments were provided by downloaders of NCHRP research products in 2020. Email domains were used to identify their respective educational institutions.

Pages 16 - 17 NCHRP research contributes to state research
The content of the research report of each HVR project submitted was analyzed for references to NCHRP research products and projects.

Pages 19 -23 The 2020 NCHRP publications survey results
NCHRP conducted a survey in late 2020 covering 53 NCHRP publications published in 2016, including Research Reports, Syntheses of Highway Practice, Legal Research Digests, and Web-Only Documents. The survey was distributed to two groups of users: (1) publication downloaders — members of state DOTs, private-sector organizations, governmental agencies, and the general public, who had downloaded the publication from the National Academies Press (NAP) site; and (2) RAC members — Members of the AASHTO Research Advisory Committee (RAC). RAC members were encouraged to take the survey themselves and to distribute the survey to as many members of their respective organizations as possible. 608 surveys were completed by 405 distinct respondents.
Acknowledgments
This report, prepared by the National Cooperative Highway Research Program (NCHRP), acknowledges the members of NCHRP project panels, the research teams, the employees of state transportation agencies, and all other users of NCHRP research products who contributed the quantitative and qualitative evidence that forms the basis of this report. NCHRP also acknowledges the significant contributions of Lori Sundstrom, Hilary Freer, Sarah Kosling, Alphonse MacDonald, Elaine Ferrell, Roy Mesler, and Deb Irvin in preparing and editing this report.
Questions about this report should be sent to Sid Mohan at smohan@nas.edu.