TRB Snap Search: Innovation

TRB’s involvement in research on Innovation from 2022-2023

The Transportation Research Board (TRB) provides innovative, research-based solutions to improve how we move. TRB is part of the National Academies of Sciences, Engineering, and Medicine, an independent, non-profit institution that provides objective advice on scientific, engineering, and medical issues.

A resource to the nation and to the transportation community worldwide, TRB provides an extensive portfolio of services:

- Opportunities for information exchange on current transportation research and practice
- Management of cooperative research and other research programs
- Analyses of national transportation policy issues and guidance on federal and other research programs
- Publications and access to research information from around the world

All available Snap Searches can be accessed online here: [http://www.trb.org/InformationServices/Snap.aspx](http://www.trb.org/InformationServices/Snap.aspx)

TRB Research

TRID – The world’s largest and most comprehensive bibliographic source on all modes and disciplines of transportation

- Click here to view search results on TRB published research on Innovation in the past year.

Specialty Websites

- Transformational Technologies

Specialty Reports

- Critical Issues in Transportation 2019
- COVID-19 Addendum to Critical Issues in Transportation
- Racial Equity Addendum to Critical Issues in Transportation

Recent Reports & Publications

- Airport Cooperative Research Program (ACRP)
  - Report 241 - Toward a Touchless Airport Journey
  - Synthesis 120 - Airport Software Solutions and Services Sourcing
  - WebResource 11 - Construction Safety and Phasing Plans
- CRP Special Release (CRP)
  - Report 1 - Evaluation of the Asphalt Binder Quality Tester
- Innovations Deserving Exploratory Analysis (IDEA)
  - Safety Report 45 - Development of a Fatigue Load for Railway Bridges
  - Safety Report 44 - Laser-Based Non-destructive Spike Defect Inspection System
  - Safety Report 42 - Railroad Tunnel Inspections for Maintenance and Replacement Prioritization Using Untethered Ground Penetrating Radar and LIDAR Capable Unmanned Aerial Vehicles (UAVs)
  - Safety Report 39 - Non-Contact Scour Monitoring System for Railroad Bridges
  - Safety Report 38 - Minimization of Weld Failures by Means of Gas and Shrinkage Porosity Reduction
  - Safety Report 37 - Measuring Behavior of Railroad Bridges under Revenue Traffic using Lasers and Unmanned Aerial Vehicles (UAVs) for Safer Operations: Implementation
- National Cooperative Highway Research Program (NCHRP)
  - NCHRP 06-18 - Guide for Snow and Ice Control Operations
  - IDEA Report 228 - A Retroreflective Road Lane Marking Tape 1,000X Brighter than Existing Technology
  - IDEA Report 218 - Development of Three Point Bending Cylinder (3PBC) Asphalt Mixture Fatigue Test System
  - IDEA Report 217 - A Real-Time Proactive Intersection Safety Monitoring and Visualization System Based on Radar Sensor Data
Current & Upcoming Projects

Transit Cooperative Research Program (TCRP)

- **IDEA Report 210** - Material Characteristics of Cu-Based Superelastic Alloys for Applications in Bridge Columns to Improve Seismic Performance
- **IDEA Report 207** - MILDGLASS: GFRP Strand for Resilient Mild Pre-Stressed Concrete
- **IDEA Report 206** - Rule-Based Automated Safety Monitoring System for Work Zone Safety
- **IDEA Report 205-A** - Bio-Inspired "MRI" of Concrete Bridges using Waveform-Based Ultrasonic Tomography
- **IDEA Report 190** - Self-de-icing LED Signals for Railroads and Highway Intersections
- **Report 1007** - Evaluation of Bonded Concrete Overlays on Asphalt Pavements
- **Report 992** - Guide to Pedestrian Analysis
- **Synthesis 587** - Use of Smart Work Zone Technologies for Improving Work Zone Safety
- **Web-Only Document 329** - Bonded Concrete Overlays on Asphalt Pavements: Resources for Evaluation
- **Web-Only Document 322** - Alternative Technologies for Mitigating the Risk of Injuries and Deaths in Work Zones: Conduct of Research

- **Transportation Research Circulants**
  - **E-Circular 279** - Advancing Low- and Zero-Emission Marine Vessel Technology Options Workshop
  - **E-Circular 278** - Innovations in Freight Data Workshop
  - **E-Circular 277** - 13th National Conference on Transportation Asset Management

Current & Upcoming Projects

- **Current Projects**
  - **ACRP 01-41** - Airport Blockchain Implementation Guidebook
  - **ACRP 01-46** - A Guide for Geospatial Data Governance Policies and Procedures
  - **ACRP 01-47** - A Guide to Developing a Culture of Innovation at Airports
  - **ACRP 03-49** - Effective Collaboration to Plan and Respond to Communicable Disease Threats
  - **ACRP 03-63** - Modernizing Air Cargo Operations and Infrastructure at U.S. Airports
  - **ACRP 04-25** - Airports and Communicable Diseases—Preparedness and Response
  - **ACRP 05-03** - Guidebook on Airport Cybersecurity and Incident Response
  - **ACRP 07-12** - Update to ACRP Report 40: Airport Roadway Analysis and Curbside Congestion Management Strategies
  - **ACRP 10-32** - U.S. Airport Industry Adoption of Automated Ground Vehicle Systems
  - **ACRP 11-02/Task 37** - Periodic Report on Transformative Technology at Airports
  - **ACRP Synthesis 11-03/Topic S02-22** - Airport Programs that Reduce Landside Vehicle Carbon Emissions
  - **ACRP Synthesis 11-03/Topic S03-18** - Communication, Implementation, and Outcomes of Airport Economic Impact Studies
  - **ACRP Synthesis 11-03/Topic S06-07** - Impacts of COVID to Airport Work Models and Strategies
  - **BTS/CRP BTS-06** - MPO and SHSO Coordination on Behavioral Traffic Safety
  - **BTS/CRP BTS-12** - State Practices Promoting Older Driver Safety
  - **BTS/CRP BTS-14** - Informing the Selection of Countermeasures by Evaluating, Analyzing, and Diagnosing Contributing Factors that Lead to Crashes
  - **BTS/CRP BTS-15** - Highway Safety Strategies for Rural Communities
  - **BTS/CRP BTS-20** - Strategies to Address Misreporting of Impaired and Distracted Driving in Motor Vehicle Crashes
  - **BTS/CRP BTS-22** - Guidelines for Selecting Communication Channels to Deliver Traffic Safety Messaging
  - **NCHRP 03-128** - Business Intelligence Techniques for Transportation Agency Decision Making
  - **NCHRP 03-135** - Wrong-Way Driving Solutions, Policy, and Guidance
  - **NCHRP 03-140** - Guidelines for Applications of RFID and Wireless Technologies in Highway Construction and Asset Management
  - **NCHRP 03-142** - Evaluating the Impacts of Real-Time Warnings and Variable Speed Limits on Safety and Travel Reliability during Weather Events
  - **NCHRP 03-144** - Leveraging Existing Traffic Signal Assets to Obtain Quality Traffic Counts
  - **NCHRP 05-22A** - Gaps and Emerging Technologies in the Application of Solid-State Roadway Lighting
- Emerging Issues: Impact of New Disruptive Technologies on the Performance of DOTs
- Guide for Preventing and Mitigating the Risk of Bridge and Tunnel Strikes by Motor Vehicles
- Risk Management at State DOTs: Building Momentum and Sustaining the Practice
- Best Practices for Data Fusion of Probe and Point Detector Data
- Verifying Quantities of Materials Used in Asphalt Mixtures at Production Facilities
- Modern Solutions to Safe and Efficient Work Zone Travel
- Model Procedures for Post-Event Bridge Damage Assessment and Engineering Evaluation
- Utility Conflict Impacts During Highway Construction
- Guideline for Depicting Existing and Proposed Utility Facilities in Design Plans
- Assessing Safety Effectiveness of Treatments and Technologies at Highway-Rail Grade Crossings
- Transitioning Fuel Tax Assessments to a Road Usage Charge
- Collective and Individual Actions for State Departments of Transportation Envisioning and Realizing the Next Era of America's Transportation Infrastructure – Phase I
- Successful Practices for State Transportation Research Office's Complying with 2 CFR 200 (NCHRP 20-111)
- Workshops on Long-Range Strategic Issues Affecting Preservation, Maintenance, and Renewal of Highway Infrastructure
- Consultant Support for Implementation of Guidebook for Managing Data from Emerging Technologies
- Program Management Insights for the 5310 Program (Including Sub-Grantee Consolidation and Urban 5310)
- Best Practices in Rural Service Assessment
- Realistic Timing Estimates for Automated Vehicle Implementation
- Preparing Transportation Agencies for Connected and Automated Vehicles in Work Zones
- Toolbox for Navigating the Land-Use Impacts of the Automated Vehicle Ecosystem
- Support for AASHTO Committees and Councils
- System Mobility and Emerging Technologies (SMET): Strategic Planning Session and Research Roadmap Development
- Business Case and Communications Strategies for State DOT Resilience Efforts
- Emergency Response: Organizational and Operational Models Used by State DOTs
- A Transportation Agency Data Collection Practice for Use with In-Service Performance Evaluations (ISPEs)
- Understanding and Analyzing Crash Contributing Factors
- Delineation of Linear Roadside Hardware Systems and Roadside Obstacles
- Guidance on Risks Related to Emerging and Disruptive Transportation Technologies
- Implementing and Leveraging Machine Learning at State Departments of Transportation
- Data Governance Design and Implementation - Links Between Governance Approaches and Performance Effects in DOTs
- Effective On-Bridge Treatment of Stormwater
- Preparing Successful No-Effect and No-Adverse-Effect Section 106 Determinations: A Handbook for Transportation Cultural Resource Practitioners
- Practices Leveraging Social Media Data for Emergency Preparedness and Response
- Use of Unmanned Aerial Systems for Highway Stormwater Inspections
- Practices to Identify and Mitigate PFAS Impacts on Highway Construction Projects and Maintenance Operations
- Outsourcing Stormwater Best Management Practice Inspection & Maintenance Activities
- State DOT Innovation Programs and Practices
- Development of an Automated and Rapid Conditioning and Testing Device for Cracking and Rutting
- An Automated System for Large-Scale Intersection Marking Data Collection and Condition Assessment
- A Smart IoT Proximity Alert System for Highway Work Zone Safety
- Adjustable Cross-frames for the Erection of Steel Girder Bridges
- Lab Dielectric Measurement System for Asphalt Mixture Bulk Specific Gravity Determination
- Al Analyzer for Revealing Insights of Traffic Crashes
- NCHRP IDEA 20-30 /IDEA 233 - Development of an Innovative Bio-Mediated Self-Healing Concrete Technology
- TCRP B-47 - Impact of Transformational Technologies on Underserved Populations
- TCRP B-48 - The Provision of Alternative Services by Transit Agencies: The Intersection of Regulation and Program Objectives
- TCRP C-25 - Bus Operator Barrier Design
- TCRP D-19 - Detecting and Mitigating Low-Level DC Fault Currents in Transit Systems (Phase II TCRP Project D-17)
- TCRP F-28 - Practitioner’s Guide to Bus Operator Workforce Management
- TCRP I-05/Topic 19-02 - Legal Issues and Emerging Technologies
- TCRP I-05/Topic 19-03 - Navigating the Complexities of Sensitive Security Information (SSI) and Protected Critical Infrastructure Information (PCI)
- TCRP I-05/Topic 20-01 - Legal Issues in Transit Mega Projects—Case Studies

Upcoming Projects

- ACRP 01-51 - Improving Airport Organizational Practices to Enhance ACDBE/DBE Participation
- ACRP 02-97 - Update to the Guidelines, Tools, and Resources Related to ACRP Reports 11, 147, and 160
- ACRP 02-103 - Scan of Technologies to Remove Residual PFAS from Airport Firefighting Equipment
- ACRP 03-70 - Incorporating Emerging Technologies into Airport In-Terminal Concession Programs
- ACRP 03-73 - Airport Guide for Transitioning to Unleaded Aviation Gasoline
- ACRP 03-74 - ACRP WebResource to Support Research into Air Traveler Choice Models
- ACRP 04-34 - Best Practices for Building and Improving an Aircraft Rescue and Firefighting Program
- ACRP 09-22 - Guidance for Small Airports on Safe Maintenance of Airfield Electrical Systems
- ACRP 09-23 - Update to the Guidelines, Tools, and Resources Related to ACRP Reports 11, 147, and 160
- ACRP 06-08 - Human Factors in Airport Operations
- ACRP 07-21 - Understanding Opportunities of Deploying Private Wireless Network at Airports
- BTS/CRP BTS-26 - Determining the State of Knowledge, Opportunities for Outreach, and Data-driven Tools for Consumer Education of Advanced Driver Assistance Systems (ADAS)
- NCHRP 03-146 - Guide for Transportation Operations Manual Implementation
- NCHRP 03-148 - Capabilities, Requirements, Planning, and Preparing to Virtually Operate Traffic Management Systems (TMS)
- NCHRP 05-27 - Practitioners’ Guide for Lighting at Innovative Intersections/Interchanges, including Roundabouts
- NCHRP 07-31 - State DOT Usage of Bicycle and Pedestrian Data: Practices, Sources, Needs, and Gaps
- NCHRP 08-128 - Snapshots of Planning Practices
- NCHRP 08-130 - Best Practices in Coordination of Public Transit and Ride Sharing
- NCHRP 08-136 - Guidebook on Using Performance-Based Management Approaches for Maintenance
- NCHRP 08-143 - Guide to the Application of Spatial Segmentation on Travel Time Reliability Measures
- NCHRP 08-144 - Best Practices in Determining Rural Transit Fleet Size – How to Provide Service for Changing Demographics of Rural Ridership (Right-sizing of Rural Transit Fleets)
- NCHRP 08-153 - A Guide for the Development and Use of Truck Traffic Forecasts in Design
- NCHRP 08-155 - Handbook for Addressing Racial Disparities in the Project Delivery Process
- NCHRP 08-156 - Planning for Innovative and Emerging Mobility Futures at Intermodal Passenger Facilities
- NCHRP 08-158 - A Compendium for Communicating the Value of Freight and Community Interactions
- NCHRP 08-165 - Integrating Active Transportation Data into Transportation Decision-Making
- NCHRP 10-112 - Guidelines for Digital Technologies and Systems for Remote Construction Inspection for Highway Infrastructure Projects
- NCHRP 10-115 - Guide on Progressive Design-Build for Transportation Projects
- NCHRP 14-36(01) - Implementation of Bridge Preservation Actions
- NCHRP 14-47 - Tools and Technology for Roadside Landscape Asset Management
- NCHRP 15-79 - Development of Guidance for Non-Standard Roadside Hardware Installations
- NCHRP 17-121 - Using Advanced Technologies to Reduce Commercial Motor Vehicle Crashes in Work Zones
- NCHRP 20-06/Topic 26-03 - Multistate Coordination and Harmonization for AV Legislation
- NCHRP 20-24(147) - Peer Exchange and Research to Identify Best Practices for Testing, Monitoring and Deployment of Automated Transportation Solutions to Support Safety, Equity and Operational Efficiency
- NCHRP 20-102/201 - Preparing the Transportation Workforce for the Deployment of Emerging Technology
- NCHRP 20-102/333 - Safety of Vulnerable Road Users in a CAV Future
- NCHRP 20-129 - Guide for Addressing Encampments on State Transportation Rights-of-Way
- NCHRP 23-11 - Transportation Emergency Management/Security Summit and Exchange
- NCHRP 23-19 - Practices for Transportation Agency Procurement and Management of Advanced Technologies
• NCHRP 25-67 - Cultural Resources Mitigation: What Works and What Doesn’t?
• TCRP B-50 - Accessible Public Bus and Rail Passenger Information for Riders with Vision Disabilities
• TCRP J-05/Topic 20-02 - Liability Insurance Issues for Transit Lawyers: A Primer
• TFPE 04 - Evaluation of FHWA’s Every Day Counts Program
• TFPE 05 - Evaluation of FHWA’s Every Day Counts Innovation Integrating NEPA and Permitting
• TRB/AAMVA 19-01 - RFQ: Demographic and Technological Trends Impacting the DMV of the Future

Reports from the National Academies Press on Innovation
• Innovation, Global Value Chains, and Globalization Measurement
• Human-AI Teaming: State-of-the-Art and Research Needs
• Innovative Data Science Approaches to Identify Individuals, Populations, and Communities at High Risk for Suicide
• Innovation in Electronic Health Records for Oncology Care, Research, and Surveillance
• Catalyzing Innovative Health System Transformation
• Innovation in Cancer Care and Cancer Research in the Context of the COVID-19 Pandemic

Committees & Panels
Sign-up to be a committee "Friend"

TRB Standing Committees – Search by transportation mode and committee topic
• AED20 - Urban Transportation Data and Information Systems
• AED80 - Visualization in Transportation
• AIE35 - Research Innovation Implementation Management
• AIE50 - Economics and Finance
• AJL40 - Emerging Technology Law
• AKB10 - Innovative Highway Structures and Appurtenances
• AMR50 - Extreme Weather and Climate Change Adaptation
• AP020 - Innovative Public Transportation Services and Technologies
• AP025 - Public Transportation Planning and Development
• AP045 - Passenger Intermodal Facilities
• AT020 - International Trade and Transportation

Panels
• D08130 - Best Practices in Coordination of Public Transit and Ride Sharing
• D08144 - Best Practices in Determining Rural Transit Fleet Size – How to provide service for changing demographics of rural ridership (Right-sizing of rural transit fleets)
• D08157 - Best Practices for Data Fusion of Probe and Point Detector Data
• D2007424 - Best Practices for the Operations of Movable Bridges from Remote Locations
• D2010228 - Best Practices in Work Zones for AVs and CVs
• D2030 - IDEA (Innovations Deserving Exploratory Analysis)
• DA0146 - Geospatial Data Governance—Organizational Factors and Best Practices
• DA0147 - Guide to Airport Innovation--Creating an Organizational Fit for the Future
• DA0344 - Best Practices in Building Air Service through Incentive Programs
• DB022 - Effectiveness of Different Forms of Innovative Traffic Safety Messaging
• DTFPE05 - Evaluation of FHWA’s Every Day Counts Innovation Integrating NEPA and Permitting
• E0005A - Preparing for Automated Vehicles and Shared Mobility
• E1008 - Rail Safety Innovations Deserving Exploratory Analysis
• SN5417 - State DOT Innovation Programs and Practices
• TD21 - Planning for Innovation & Emerging Mobility Futures at Intermodal Passenger Facilities
• TI04 - Transit-innovations Deserving Exploratory Analysis (IDEA)
• T1135 - Diversity and Inclusion Plans, Policies and Best Practices in the Transportation Industry
• X0014 - AASHTO Special Committee on Research and Innovation

Councils
• A001C – Young Members Coordinating Council

Recent and Upcoming Events
Upcoming TRB Conferences – Use left hand menu to filter events

International Conference on Road Weather and Winter Maintenance
May 9-10, 2023
Washington, D.C.
National Aviation System Planning Symposium  
*May 15-18, 2023*  
Irving, CA

Innovations in Travel Analysis and Planning Conference  
*June 4-6, 2023*  
Indianapolis, IN

Marine Transportation System Innovative Science and Technologies Toward Greater Sustainability  
*June 19-22, 2023*  
Washington, D.C.

National Conference on Transportation Asset Management  
*July 8-11, 2023*  
Boston, MA

TRB International Conference on Low Volume Roads  
*July 23-26, 2023*  
Cedar Rapids, IA

**Upcoming Events** – In the Upcoming Events tab under Types, choose what event you are interested in, search titles by keyword

**Past Events** - In the Past Events tab under Types, choose what event you are interested in, search titles by keyword

**TRB’s Transportation Research Information Services (TRIS)**

TRIS includes the [TRB Library](https://library.trb.org) and the [TRIS Databases](https://www.trb.org/Research/Database/Database-FAQ.cfm) (listed below) which are available free on TRB’s website.

The TRB Library provides information services to TRB staff, sponsors, TRB Committee members and panels and researchers. Access to the TRB Library is a benefit to TRB sponsors and TRB committee members.

In cooperation with your State DOT Library or Information Service, the TRB Library provides:

- Reference and research assistance
- Literature searches
- Articles for TRB Committee work

The TRB Library provides training on effective and efficient use of the following TRIS resources:

- **Transportation Research International Documentation (TRID)** – [trid.trb.org](https://trid.trb.org) - The world’s largest and most comprehensive bibliographic source on all modes and disciplines of transportation
- **Transportation Research Thesaurus (TRT)** – [trt.trb.org](https://trt.trb.org) - A tool to improve the indexing and retrieval of transportation information.
- **Research in Progress (RiP) Database** – [rip.trb.org](https://rip.trb.org) - Current or recently completed transportation research projects
- **Publications Index (PubsIndex) Database** – [pubsindex.trb.org](https://pubsindex.trb.org) - The papers, articles and reports published by the Transportation Research Board, Strategic Highway Research Programs or the Marine Board

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