

TRB TRANSPORTATION RESEARCH BOARD

TRB Snap Search: Bridges & Other Structures

TRB's involvement in research on Bridges & Other Structures from 2021-2023

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>

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 Bridges & Other Structures within the past two years.

Specialty Report

- [Critical Issues in Transportation for 2024 and Beyond](#)
- [Critical Issues in Transportation 2019](#)
- [COVID-19 Addendum to Critical Issues in Transportation](#)
- [Racial Equity Addendum to Critical Issues in Transportation](#)

Recent Reports & Publications

- [Innovations Deserving Exploratory Analysis \(IDEA\)](#)
 - [Safety Report 45](#) - Development of a Fatigue Load for Railway Bridges
 - [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 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 \(NCHRP\)](#)
 - [IDEA Report 220](#) - Bridge Deck Sealer Monitor: Thermal Sealcheck
 - [IDEA Report 210](#) - Material Characteristics of Cu-Based Superelastic Alloys for Applications in Bridge Columns to Improve Seismic Performance
 - [IDEA Report 205-A](#) - Bio-Inspired "MRI" of Concrete Bridges using Waveform-Based Ultrasonic Tomography
 - [Letter Report](#) - Long-Term Infrastructure Program – January 31, 2022
 - [Report 1048](#) - Corrosion Protection of Steel Bridges Using Duplex Coating Systems
 - [Report 1045](#) - Improved Cross-Frame Analysis and Design: Wide-Flange T-Shape Sections
 - [Report 1031](#) - Determining Scour Depth Around Structures in Gravel-Bed Rivers
 - [Report 1026](#) - Toughness Requirements for Heat-Affected Zones of Welded Structural Steels for Highway Bridges
 - [Report 1024](#) - Evaluation of Bridge Rail Systems to Confirm AASHTO MASH Compliance
 - [Report 1013](#) - Roadside Barrier Designs near Bridge Rail Ends with Restricted Rights-of-Way: A Guide
 - [Report 999](#) - Design and Construction of Deck Bulb Tee Girder Bridges with UHPC Connections
 - [Report 994](#) - Use of 0.7-in. Diameter Strands in Precast Pretensioned Girders
 - [Report 989](#) - Reliability-Based Geotechnical Resistance Factors for Axially Loaded Micropiles
 - [Report 971](#) - Revised Clear-Water and Live-Bed Contraction Scour Analysis
 - [Report 965](#) - Mitigation of Weldment Cracking in Steel Highway Structures Due to the Galvanizing Process
 - [Report 962](#) - Proposed Modification to AASHTO Cross-Frame Analysis and Design
 - [Report 958](#) - Electrochemical Test Methods to Evaluate the Corrosion Potential of Earthen Materials

- [Report 607](#) - Critical Findings for Tunnel Functional Systems
- [Report 602](#) - Resilient Design with Distributed Rainfall-Runoff Modeling
- [Synthesis 604](#) - Practices for Adding Bicycle and Pedestrian Access on Existing Vehicle Bridges
- [Synthesis 603](#) - Practices for Steel Bridge Fabrication and Erection Tolerances
- [Synthesis 601](#) - Practices for Local Calibration of LRFD Geotechnical Resistance Factors
- [Synthesis 585](#) - Bridge Element Data Collection and Use
- [Synthesis 581](#) - Rehabilitation of Culverts and Buried Storm Drain Pipes
- [Synthesis 580](#) - Practices for Ensuring the Smoothness of Concrete Bridge Decks
- [Synthesis 577](#) - Collaborative Practices for Performance-Based Asset Management Between State DOTs and MPOs
- [Synthesis 571](#) - Load Rating of Bridges and Culverts with Missing or Incomplete As-Built Information
- [Synthesis 566](#) - Practices for Bridge Approach Systems
- [Synthesis 562](#) - Repair and Maintenance of Post-Tensioned Concrete Bridges
- [Web-Only Document 353](#) - Risk-Based Inspection and Strength Evaluation of Suspension Bridge Main Cable Systems
- [Web-Only Document 334](#) - Roadside Barrier Designs near Bridge Rail Ends with Restricted Rights-of-Way: A National Survey and Testing Reports
- [Web-Only Document 326](#) - Design Guidelines for Test Level 3 through Test Level 5 Roadside Barrier Systems Placed on Mechanically Stabilized Earth Retaining Walls
- [Web-Only Document 315](#) - Details of the Study on the Use of 0.7-in Diameter Strands in Precast Pretensioned Girders
- [Web-Only Document 314](#) - Updating the AASHTO LRFD Movable Highway Bridge Design Specifications
- [Web-Only Document 307](#) - Recommended Guidelines for the Selection of Test Levels 2 Through 5 Bridge Railings
- [Web-Only Document 294](#) - Revised Clear-Water and Live-Bed Contraction Scour Analysis Training Manual
- [Transportation Research Circulars](#)
 - [E-Circular 282](#) - Building Information Modeling for Bridges and Structures: From Design to Construction Workshop
 - [E-Circular 273](#) - History and Future Perspectives on Foundation Design for Transportation Structures
 - [E-Circular 272](#) - Technology Exchange on Local Roads Bridge Programs

Recently Completed Projects/Final Reports/Pending Publication

- [NCHRP 12-119](#) - MASH Railing Load Requirements for Bridge Deck Overhang
- [NCHRP 22-41](#) - Proposed Modification to AASHTO LRFD Bridge Design Specifications, Section 13—Railing
- [NCHRP IDEA Project 215](#) - Achieving Resilient Multi-Span Bridge by using Buckling-Restrained Braces
- [NCHRP IDEA Project 221](#) - Development of In Situ Cyclic Borehole Shear Soil Test Device
- [NCHRP IDEA Project 222](#) - Mixed Reality Assisted Infrastructure Inspections
- [NCHRP IDEA Project 223](#) - Fatigue Crack Inspection Using Computer Vision and Augmented Reality
- [NCHRP IDEA Project 235](#) - High Bond Steel Fibers for Ultra High Performance Concrete (UHPC)
- [NCHRP IDEA 20-30/IDEA 240](#) - Stainless Steel Coated Rebar for Chloride Resistant Concrete Highways and Bridges

Current & Upcoming Projects

- [Current Projects](#)
 - [NCHRP 08-139](#) - Guide for Preventing and Mitigating the Risk of Bridge and Tunnel Strikes by Motor Vehicles
 - [NCHRP 10-111](#) - Guide for 3D Model Viewers for Construction Inspection
 - [NCHRP 12-95A](#) - Proposed AASHTO Guidelines for Adjacent Precast Concrete Box Beam Bridge Systems
 - [NCHRP 12-115](#) - Guidelines for Risk-Based Inspection and Strength Evaluation of Suspension Bridge Main Cable Systems
 - [NCHRP 12-116A](#) - Proposed AASHTO Specifications for Design of Piles for Downdrag
 - [NCHRP 12-117](#) - Guidelines for Corrosion Protection of Steel Bridges Using Duplex Coating Systems
 - [NCHRP 12-120](#) - Stainless Steel Strands for Prestressed Concrete Bridge Elements
 - [NCHRP 12-121](#) - Guidelines for the Design of Prestressed Concrete Bridge Girders Using FRP Auxiliary Reinforcement
 - [NCHRP 12-122](#) - Proposed AASHTO Guidelines for Applications of Unmanned Aerial Systems Technologies for Element-Level Bridge Inspection
 - [NCHRP 12-123](#) - Proposed AASHTO Guideline for Load Rating of Segmental Bridges
 - [NCHRP 12-124](#) - Design of Stud Shear Connectors in Composite Steel Bridges
 - [NCHRP 14-36\(01\)](#) - Implementation of Bridge Preservation Actions
 - [NCHRP 14-45](#) - Guidelines for Response Planning, Assessment, and Rapid Restoration of Service of Bridges in Extreme Events
 - [NCHRP 20-30/IDEA 243](#) - Establishing NDE Protocols for Use in Early Age Bridge Deck Preservation Strategies

- [NCHRP 15-79](#) - Development of Guidance for Non-Standard Roadside Hardware Installations
- [NCHRP 22-43](#) - Proposed AASHTO Guidelines for Implementation of MASH for Sign Supports, Breakaway Poles, and Work Zone Traffic Control Devices
- [NCHRP 22-50](#) - Crashworthiness of Roadside Hardware on Curbed Roadways
- [NCHRP 22-56](#) - Development of Non-proprietary Prefabricated Solutions for Concrete Barrier Systems for Accelerated Bridge Construction
- [NCHRP 22-59](#) - Safety Risks of Occupant Compartment Damage During Crashes
- [NCHRP 23-08](#) - A Guide for Incorporating Maintenance Costs into a Transportation Asset Management Plan
- [NCHRP 25-61](#) - Development of On-Bridge Stormwater Treatment Practices
- [NCHRP 25-63](#) - Handbook on Deterring and Excluding Bats from Transportation Structures
- [NCHRP IDEA 20-30/IDEA 222](#) - Mixed Reality Assisted Infrastructure Inspections
- [NCHRP IDEA 20-30/IDEA 227](#) - Adjustable Cross-frames for the Erection of Steel Girder Bridges
- [NCHRP IDEA 20-30/IDEA 230](#) - Automated Data and Feature Extraction from Bridge Plan
- [NCHRP IDEA 20-30/IDEA 239](#) - A Real-Time Ice Warning System Empowered by Dielectric Ice Sensors for Bridges
- [NCHRP Synthesis 20-05/Topic 53-12](#) - Practices for Adding Bicycle and Pedestrians Access on Existing Vehicle Bridges
- [NCHRP Synthesis 20-05/Topic 54-09](#) - Hydraulic Engineering Practices for Construction and Temporary Facilities in Streams and Rivers
- [NCHRP Synthesis 20-05/Topic 54-11](#) - Quality Control Checks for Bridge and Structure Analysis Models
- [NCHRP Synthesis 20-05/Topic 54-19](#) - Practices for Controlling Tunnel Leaks
- [NCHRP Synthesis 20-05/Topic 55-17](#) - Practices to Enhance Resiliency of Existing Culverts
- [NCHRP Synthesis 20-05/Topic 55-18](#) - Permitting, Design, and Construction Practices for Aquatic Organism Passage
- [NCHRP Synthesis 20-05/Topic 55-19](#) - Practices for Managing Selected Ancillary Transportation Assets
- [TCRP D-19](#) - Detecting and Mitigating Low-Level DC Fault Currents in Transit Systems (Phase II TCRP Project D-17)
- [Upcoming Projects](#)
 - [NCHRP 10-117](#) - Design and Repair of Glass Fiber Reinforced Polymer Concrete Bridge Barriers
 - [NCHRP 10-118](#) - Effective Timelines and Contractual Strategies for Accelerated Bridge Construction Projects
 - [NCHRP 10-121](#) - Guidelines for the Application of Ground Modification Methods for Highway Structures
 - [NCHRP 10-125](#) - Update Bridge Construction Requirements
 - [NCHRP 12-125](#) - Earthquake-Induced Bridge Displacements
 - [NCHRP 20-123\(16\)](#) - Roadmap for the Transformation to Computer Simulation-Based Assessment of Bridge Railings
 - [NCHRP 20-123\(20\)](#) - Roadmap to Update Section 9 of the AASHTO LRFD Bridge Design Specifications
 - [NCHRP 24-51](#) - Effects of Construction Installation Methods on the Design and Performance of Drilled Shaft Foundations
 - [NCHRP Synthesis 20-05/Topic 55-08](#) - Construction Strategies and Techniques for Planned Bridge Replacements in Complex Scenarios
 - [NCHRP Synthesis 20-05/Topic 55-12](#) - Bridge Construction Inspection Training Resources and Practices
 - [TCRP D-24](#) - Determination of Actual Derailment Loads on Transit Bridges

Reports from the [National Academies Press](#) on Bridges & Other Structures

- [Transportation and Infrastructure » Bridges and Other Structures](#)
- [Corrosion of Buried Steel at New and In-Service Infrastructure](#)
- [Equitable and Resilient Infrastructure Investments](#)
- [Service Life Assessment and Predictive Modeling for an Aging Critical Infrastructure](#)

Committees & Panels

[Sign-up to be a committee "Friend"](#)

[TRB Standing Committees](#) – Search by transportation mode and committee topic

- [AKB00](#) - Bridges and Structures
- [AKB10](#) - Innovative Highway Structures and Appurtenances
- [AKB20](#) - Steel Bridges
- [AKB30](#) - Concrete Bridges
- [AKB40](#) - Testing and Evaluation of Transportation Structures
- [AKB50](#) - Seismic Design and Performance of Bridges
- [AKB60](#) - Tunnels and Underground Structures

- [AKB70](#) - Culverts, Buried Bridges and Soil Structure Interaction
- [AKC40](#) - Construction of Bridges and Structures
- [AKC70](#) - Fabrication and Inspection of Metal Structures
- [AKM50](#) - Advanced Concrete Materials and Characterization
- [AKG70](#) - Foundations of Bridges and Other Structures
- [AKM70](#) - Durability of Concrete
- [AKT40](#) - Structures Maintenance
- [AKT50](#) - Bridge and Structures Management
- [AKT60](#) - Bridge Preservation
- [AR050](#) - Railroad Infrastructure Design and Maintenance
- [AR060](#) - Rail Transit Infrastructure Design and Maintenance
- [B0162](#) - Review of Federal Highway Administration Infrastructure R&D – Expert Task Group on Bridges

Task Forces - Search for *task force* under committee here

CRP Panels

- [D10121](#) - Performance-based Specification for the Application of Ground Modification Methods for Bridges, Retaining Structures, and Associated Geotechnical Features
- [D10137](#) - NCHRP Project Panel on Specifications for New Construction and Rehabilitation of Movable Bridges
- [D1094](#) - Mitigation of Weldment Cracking of Highway Steel Structures due to the Galvanizing Process
- [D1095](#) - Toughness Requirements for Heat-Affected Zones of Welded Structural Steels for Highway Bridges
- [D12118](#) - Structural Design and Analysis of Post-Tensioned Concrete Structures with Flexible Fillers
- [D12123](#) - Proposed AASHTO Guideline for Load Rating of Segmental Bridges
- [D12124](#) - Design of Stud Shear Connectors in Composite Steel Bridges
- [D12126](#) - Design Method for High-Load Multi-Rotational Disc Bearings for Bridges
- [D12127](#) - Load Rating and Posting of Long-Span Bridges
- [D2007424](#) - Best Practices for the Operations of Movable Bridges from Remote Locations
- [D2563](#) - Handbook on Deterring and Excluding Bats from Transportation Structures
- [SN5318](#) - Moisture Measurement for Foundations and Slopes for Pavements and Structures
- [TD24](#) - Determination of Actual Derailment Loads on Transit Bridges

Councils

- [A001C](#) – Young Members Coordinating Council

Recent and Upcoming Events

Upcoming TRB Conferences – Use left hand menu to filter events

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

TRB Webinar: Using Ultra-High Performance Concrete for Bridges

October 18, 2023

TRB Webinar: Geotechnical Exploration and Workflow for Scour and Erosion Risk Assessment

October 26, 2023

TRB Webinar: Demonstrated Performance of Buried Bridges

October 31, 2023

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

National Conference on Transportation Asset Management

July 8-11, 2023

Boston, MA

Marine Transportation System Innovative Science and Technologies Toward Greater Sustainability

June 19-22, 2023

Washington, D.C.

National Aviation System Planning Symposium

May 15-18, 2023

Irving, CA

International Conference on Road Weather and Winter Maintenance

May 9-10, 2023

Washington, D.C.

TRB's Transportation Research Information Services (TRIS)

TRIS includes the [TRB Library](#) and the [TRIS Databases](#) (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 - The world's largest and most comprehensive bibliographic source on all modes and disciplines of transportation
- **Transportation Research Thesaurus (TRT)** – trt.trb.org – A tool to improve the indexing and retrieval of transportation information.
- **Research in Progress (RiP) Database** – rip.trb.org - Current or recently completed transportation research projects
- **Publications Index (PubsIndex) Database** – 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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