TRB Snap Search: Hydraulics & Hydrology

TRB's involvement in research on Hydraulics & Hydrology from 2021-2024

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 on Hydraulics & Hydrology within the past two years.

Specialty Reports

- 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

- Airport Cooperative Research Program (ACHRP)

- National Cooperative Highway Research Program (NCHRP)
  - IDEA Report 211 - Reducing Stormwater Runoff with Biochar Addition to Roadway Soils
  - NCHRP 20-44(23) - Pilot Test of Climate Change Design Practices Guide for Hydrology and Hydraulics [Final Contractor's Report]
  - NCHRP 20-44(23) - Pilot Test of Climate Change Design Practices Guide for Hydrology and Hydraulics [Contractor's Report: Case Studies and Lessons Learned]
  - Report 1077 - Selection and Application of Manning's Roughness Values in Two-Dimensional Hydraulic Models
  - Report 1031 - Determining Scour Depth Around Structures in Gravel-Bed Rivers
  - Report 971 - Revised Clear-Water and Live-Bed Contraction Scour Analysis
  - Synthesis 617 - Prevention and Mitigation of Surficial Slope Failures on Fill Highway Embankment Slopes
  - Report 614 - Outsourcing Post-Construction Stormwater Best Management Practice Inspection and Maintenance Activities
  - Synthesis 612 - Moisture Measurement for Pavement Foundations and Slopes
  - Synthesis 609 - Use of Unmanned Aerial Systems for Inspection of Stormwater Best Management Practices
  - Synthesis 602 - Resilient Design with Distributed Rainfall-Runoff Modeling
  - Synthesis 599 - Practices for Bioretention Stormwater Control Measures

Updated 6/11/2024
Completed Projects/Pending Publication
- NCHRP 25-61 - Development of On-Bridge Stormwater Treatment Practices

Current & Upcoming Projects

- **Current Projects**
  - NCHRP 01-62 - Impact of Flooding on the Resiliency of Pavement Systems
  - NCHRP Synthesis 20-05/Topic 55-07 - Stormwater Retrofit Programs and Practices Through Third-Party Partnerships
  - NCHRP Synthesis 20-05/Topic 55-11 - Construction Stormwater Program Management, Tracking, Reporting, and Compliance
  - NCHRP Synthesis 20-05/Topic 55-18 - Permitting, Design, and Construction Practices for Aquatic Organism Passage
  - NCHRP 20-44(44) - Implementing the Design Practices Guide for Applying Climate Change Information to Hydrologic and Coastal Design of Transportation Infrastructure
  - NCHRP 24-50 - Rewrite of the AASHTO Drainage Manual
  - NCHRP Synthesis 20-05/Topic 54-19 - Practices for Controlling Tunnel Leaks

- **Upcoming Projects**
  - NCHRP 08-186 - Best Practices for Distributed Rainfall-Runoff Models to Transform Hydrologic and Hydraulic Modeling for Resilient Transportation Planning and Design
  - NCHRP 15-61A - Hydrologic and Hydraulic Design Guide to Incorporate Climate Science in Transportation Infrastructure
  - NCHRP Synthesis 20-05/Topic 56-14 - State DOT Training Programs to Comply with NPDES Stormwater Permit Requirements
  - NCHRP 24-52 - Guidelines for Resilient Erosion- and Sediment-Control Practices
  - NCHRP 25-72 - Field Methods and Interlaboratory Tests to Establish the Accuracy and Precision of Measured Concentrations of Emerging Contaminants in Stormwater Runoff and Stormwater-Treatment System Effluent

Reports from the [National Academies Press](https://www.nap.edu) on Hydraulics & Hydrology

- Potential Hydrodynamic Impacts of Offshore Wind Energy on Nantucket Shoals Regional Ecology: An Evaluation from Wind to Whales
- Future Directions for Southern Ocean and Antarctic Nearshore and Coastal Research
- Exploring Community Flood Impacts, Vulnerabilities, and Adaptation Strategies to Public Health Concerns: Proceedings of a Workshop—In Brief
- Oil in the Sea IV: Inputs, Fates, and Effects
- Reckoning with the U.S. Role in Global Ocean Plastic Waste
- Leveraging Commercial Space for Earth and Ocean Remote Sensing
- Investing in Transportation Resilience: A Framework for Informed Choices
- Mid-Term Assessment of Progress on the 2015 Strategic Vision for Antarctic and Southern Ocean Research
- Next Generation Earth Systems Science at the National Science Foundation
- Global Change Research Needs and Opportunities for 2022-2031
- Progress Toward Restoring the Everglades

Committees & Panels

**Sign-up to be a committee "Friend"**

**TRB Standing Committees** – Search by transportation mode and committee topic

- **AKB70** – Culverts, Buried Bridges and Soil Structure Interaction
- **AKD50** – Hydrology, Hydraulics, and Stormwater
- **AKG40** – Mechanics and Drainage of Saturated and Unsaturated Geomaterials
Task Forces - Search for task force under committee here

CRP Panels – Select Synthesis Panel and CRP Panel then Search by transportation mode and topic
  o  D1561 - Applying Climate Change Information to Hydrologic and Hydraulic Design of Transportation Infrastructure
  o  D1820 - Structured Design Methodology for Cured In Place Pipe (CIPP) Liners in Gravity Stormwater Conveyance Conduits
  o  D10132 - Improving Bridge Resiliency Through Understanding the Interaction Between Pier and Contraction Scour, Total Scour Components, and Developing Scour Profiles
  o  D2449 - Guidance on the Selection and Use of Flow Resistance Values in Two-Dimensional (2D) Hydraulic Models
  o  D2450 - Rewrite of the AASHTO Drainage Manual
  o  D2561 - Effective On-Bridge Treatment of Stormwater
  o  D2572 - Field Methods and Interlaboratory Tests to Establish the Accuracy and Precision of Measured Concentrations of Emerging Contaminants in Stormwater Runoff and Stormwater-Treatment System Effluent
  o  DA0287 - Determining Airfield Pavement Deicer and Anti-Icer Contributions to Airport Stormwater
  o  D08186 - Best Practices for Distributed Rainfall-Runoff Models to Transform Hydrologic and Hydraulic Modeling for Resilient Transportation Planning and Design
  o  SN4805 - The Renewal of Stormwater Systems Using Trenchless
  o  SN5305 - Practices for Stormwater Bioretention
  o  SN5309 - Use of Unmanned Aerial Systems for Highway Stormwater Inspections
  o  SN5402 - Outsourcing Stormwater Best Management Practice Inspection & Maintenance Activities
  o  SN5409 - Hydraulic Engineering Practices for Construction and Temporary Facilities in Streams and Rivers
  o  SN5507 - Complying with Stormwater Retrofit Permit Requirements Through Third-Party Partnerships
  o  SN5511 - Construction Stormwater Program Management, Tracking, Reporting, and Compliance
  o  SN5613 - Budgetary Practices for Stormwater Permit Compliance Programs
  o  SN5614 - State DOT Training Programs to Comply with NPDES Stormwater Permit Requirements

Councils
  o  A001C – Young Members Coordinating Council

Recent and Upcoming Events

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

  Review of Approaches for Managing Pollutant Loads in Highway Stormwater Runoff Meeting 3
  May 14-15, 2024
  Irvine, CA

  Review of Approaches for Managing Pollutant Loads in Highway Stormwater Runoff Meeting 2
  Feb 21-22, 2024
  Washington, DC

  [Closed] Review of Approaches for Managing Pollutant Loads in Highway Stormwater Runoff Meeting 1
  December 4, 2023
  Contact: Claudia Sauls csauls@nas.edu

  TRB Webinar: Geotechnical Exploration and Workflow for Scour and Erosion Risk Assessment
  Oct 26, 2023

  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’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](http://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](http://trt.trb.org) - A tool to improve the indexing and retrieval of transportation information.
- **Research in Progress (RiP) Database** – [rip.trb.org](http://rip.trb.org) - Current or recently completed transportation research projects
- **Publications Index (PubsIndex) Database** – [pubsindex.trb.org](http://pubsindex.trb.org) - The papers, articles and reports published by the Transportation Research Board, Strategic Highway Research Programs or the Marine Board

Contact or Questions: TRBLibrary@nas.edu