



TRANSPORTATION RESEARCH BOARD
Geotechnology Overview

TRB at a Glance

The mission of the Transportation Research Board (TRB) is to provide leadership in transportation innovation and progress through research and information exchange, conducted within a setting that is objective, interdisciplinary, and multimodal.

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.

More info at www.trb.org

TRB's Transportation Research Information Services (TRIS)

TRIS includes the TRB Library and the TRIS Databases (listed below) which are available for 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:

TRID – The world's largest and most comprehensive bibliographic source on all modes and disciplines of transportation
trid.trb.org

Practice Ready Papers (PRP) Database - Papers with information that is ready for immediate implementation or requires minimal additional research or implementation effort.
prp.trb.org

Publications Index (PubsIndex) Database – The papers, articles and reports published by the Transportation Research Board, Highway Research Board, Strategic Highway Research Programs or the Marine Board
pubsindex.trb.org

Research in Progress (RiP) Database – Current or recently completed transportation research projects
rip.trb.org

Research Needs Statements (RNS) – Research needs as identified by TRB Technical Activities standing committees
rns.trb.org

More information about TRIS is available online at: <http://www.trb.org/InformationServices/InformationServices.aspx>
Contact the Library at TRBLibrary@nas.edu or 1 (202) 334-2989

Upcoming Events

- Conferences:
 - September 4, 2016 Guimarães, Portugal **3rd International Conference on Transportation Geotechnics**
- Webinars:



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View TRB webinars here: <http://www.trb.org/ElectronicSessions/ConferenceRecordings.aspx>

Technical Committees

- Standing Committees:
 - Design and Construction Group (AF000)
 - Section - Geology and Properties of Earth Materials (AFP00)
 - Engineering Geology (AFP10)
 - Exploration and Classification of Earth Materials (AFP20)
 - Soil and Rock Properties (AFP30)
 - Physicochemical and Biological Processes in Soils (AFP40)
 - Seasonal Climatic Effects on Transportation Infrastructure (AFP50)
 - Engineering Behavior of Unsaturated Soils (AFP60)
 - Mineral Aggregates (AFP70)
 - Section - Soil Mechanics (AFS00)
 - Transportation Earthworks (AFS10)
 - Geotechnical Instrumentation and Modeling (AFS20)
 - Foundations of Bridges and Other Structures (AFS30)
 - Subsurface Soil-Structure Interaction (AFS40)
 - Subsurface Drainage (AFS60)
 - Geosynthetics (AFS70)
 - Cementitious Stabilization (AFS80)
 - Chemical, Mechanical, and Asphalt Stabilization (AFS90)

To become Friend of any committee visit MyTRB.org

Cooperative Research Program (CRP)

- NCHRP Reports
 - NCHRP Report, Issue: 789 - Characterization of Cementitiously Stabilized Layers for Use in Pavement Design and Analysis.
 - NCHRP Report, Issue: 724 - Application of LADAR in the Analysis of Aggregate Characteristics.
 - NCHRP Report, Issue: 717 - Scour at Bridge Foundations on Rock.
 - NCHRP Report, Issue: 701 - Proposed Specifications for LRFD Soil-Nailing Design and Construction.
 - NCHRP Report, Issue: 697 - Design Guidelines for Increasing the Lateral Resistance of Highway-Bridge Pile Foundations by Improving Weak Soils.
 - NCHRP Report, Issue: 675 - LRFD Metal Loss and Service-Life Strength Reduction Factors for Metal-Reinforced Systems.
- NCHRP Synthesis of Highway Practice
 - NCHRP Synthesis of Highway Practice, Issue: 467 - Visualization of Geotechnical Data for Hazard Mitigation and Disaster Response.
 - NCHRP Synthesis of Highway Practice, Issue: 445 - Practices for Unbound Aggregate Pavement Layers.
 - NCHRP Synthesis of Highway Practice, Issue: 430 - Cost-Effective and Sustainable Road Slope Stabilization and Erosion Control.
 - NCHRP Synthesis of Highway Practice, Issue: 429 - Geotechnical Information Practices in Design-Build Projects.
 - NCHRP Synthesis of Highway Practice, Issue: 428 - Practices and Procedures for Site-Specific Evaluations of Earthquake Ground Motions.
 - NCHRP Synthesis of Highway Practice, Issue: 418 - Developing Production Pile Driving Criteria from Test Pile Data.
- NCHRP Research Results Digests
 - NCHRP Research Results Digest, Issue: 391 - Modulus-Based Construction Specification for Compaction of Earthwork and Unbound Aggregate.

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- NCHRP Research Results Digest, Issue: 380 - Guidelines for Geofoam Applications in Slope Stability Projects.
- NCHRP Research Results Digest, Issue: 364 - Validation of LRFD Metal Loss and Service-Life Strength Reduction Factors for Metal-Reinforced Systems.
- NCHRP Web Documents
 - NCHRP Web Document, Issue: 187 - Seismic Design of Geosynthetic-Reinforced Soil Bridge Abutments with Modular Block Facing.
 - NCHRP Web Document, Issue: 168 - Precision Estimates of AASHTO T 180: Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.
 - NCHRP Web Document, Issue: 164 - Precision Estimates of AASHTO T265: Laboratory Determination of Moisture Content of Soils.
 - NCHRP Web Document, Issue: 163 - Precision Estimates of AASHTO T267: Determination of Organic Content in Soils by Loss on Ignition.
- Other Reports
 - NCHRP-IDEA Program Project Final Report - An Innovative Hybrid Sensor for Rapid Assessment of Sulfate-Induced Heaving in Stabilized Soils.
 - NCHRP-IDEA Program Project Final Report - Extraction of Layer Properties from Intelligent Compaction Data.
 - Rockfall: Characterization and Control.
 - ACRP Synthesis of Airport Practice, Issue: 34 - Subsurface Utility Engineering Information Management for Airports.
- Current research
 - NCHRP 09-59 - Relating Asphalt Binder Fatigue Properties to Asphalt Mixture Fatigue Performance
 - NCHRP Synthesis 20-05/Topic 46-03 - Performance Specifications for Asphalt Mixtures
 - NCHRP Synthesis 20-05/Topic 46-04 - The Influence of Geotechnical Investigation and Subsurface Conditions on Claims, Change-Orders and Overruns
 - NCHRP Synthesis 20-05/Topic 46-05 - Use of Reclaimed Asphalt Pavement and Recycled Asphalt Shingles in Asphalt Mixtures
 - NCHRP Synthesis 20-05/Topic 46-06 - Use of Mobile IT Devices in the Field for Design, Construction and Asset Management
 - NCHRP Synthesis 20-05/Topic 46-09 - Extending Bridge Service Life through Field Welded Repair and Retrofits
 - NCHRP Synthesis 20-05/Topic 46-11 - Post-Extreme Event Damage Assessment and Response for Highway Bridges
 - NCHRP Synthesis 20-05/Topic 46-12 - Converting Paved Roads to Unpaved
 - NCHRP Synthesis 20-05/Topic 46-13 - Practice of Rumble Strips and Rumble Stripes
 - NCHRP Synthesis 20-05/Topic 46-14 - Practices for High-Tension Cable Barrier (HTCB)
 - NCHRP Synthesis 20-05/Topic 46-15 - Life Cycle Cost Analysis for Management of Highway Assets
 - NCHRP Synthesis 20-05/Topic 46-16 - Minimizing Roadway Embankment Damage From Flooding
 - NCHRP Synthesis 20-05/Topic 46-17 - Training and Certification of Highway Maintenance Workers
 - NCHRP Synthesis 20-05/Topic 47-01 - Control of Concrete Cracking in Bridges
 - NCHRP Synthesis 20-05/Topic 47-02 - Alternate Design / Alternate Bid Process for Pavement Type Selection
 - NCHRP Synthesis 20-05/Topic 47-03 - Current Practices and Guidelines for the Reuse of Bridge Foundations
 - NCHRP Synthesis 20-05/Topic 47-04 - Leveraging Technology for Transportation Agency Workforce Development and Training
 - NCHRP Synthesis 20-05/Topic 47-05 - Data Maintenance Practices
 - NCHRP Synthesis 20-05/Topic 47-08 - Pavement Management Systems: Putting the Data to Work
 - NCHRP Synthesis 20-05/Topic 47-12 - Use of Fiber Reinforced Polymers in Transportation Infrastructure
 - NCHRP Synthesis 20-05/Topic 47-13 - Relationship Between Chemical Makeup of Asphalt Binders and

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Engineering Performance

- NCHRP Synthesis 20-05/Topic 47-16 - Transportation Worker Safety
 - NCHRP 09-49A - Performance of WMA Technologies: Stage II--Long-Term Field Performance
 - NCHRP 09-50 - Performance-Related Specifications for Asphaltic Binders Used in Preservation Surface Treatments
 - NCHRP 09-51 - Material Properties of Cold In-Place Recycled and Full-Depth Reclamation Asphalt Concrete for Pavement Design
 - NCHRP 09-54 - Long-Term Aging of Asphalt Mixtures for Performance Testing and Prediction
 - NCHRP 09-55 - Recycled Asphalt Shingles in Asphalt Mixtures with Warm Mix Asphalt Technologies
 - NCHRP 09-56 - Identifying Influences on and Minimizing the Variability of Ignition Furnace Correction Factors
 - NCHRP 09-57 - Experimental Design for Field Validation of Laboratory Tests to Assess Cracking Resistance of Asphalt Mixtures
 - NCHRP 09-58 - The Effects of Recycling Agents on Asphalt Mixtures with High RAS and RAP Binder Ratios
 - NCHRP 18-16 - Self-Consolidating Concrete for Cast-in-Place Bridge Components
 - NCHRP 04-39 - Field Performance of Corrugated Pipe Manufactured with Recycled Polyethylene Content
 - NCHRP 01-50 - Quantifying the Influence of Geosynthetics on Pavement Performance
 - NCHRP 01-51 - A Model for Incorporating Slab/Underlying Layer Interaction into the MEPDG Concrete Pavement Analysis Procedures
 - NCHRP 01-52 - A Mechanistic-Empirical Model for Top-Down Cracking of Asphalt Pavement Layers
 - NCHRP 01-53 - Proposed Enhancements to Pavement ME Design: Improved Consideration of the Influence of Subgrade and Unbound Layers on Pavement Performance
 - NCHRP 01-54 - Guidelines for Limiting Damage to Flexible and Composite Pavements Due to the Presence of Water
 - NCHRP 01-55 - Performance-Based Mix Design of Porous Friction Courses
- Upcoming projects
 - NCHRP 09-60 - The Impacts on Pavement Performance from Changes in Asphalt Production
 - NCHRP 18-17 - Entrained Air Void System for Durable Highway Concrete
 - NCHRP 01-57 - Standard Definitions for Comparable Pavement Cracking Data
 - NCHRP 10-90 - Guidance for Complying with EPA Effluent Limitation Guidelines for Construction Runoff
 - NCHRP 10-98 - Development of Standards and Quality Assurance Procedures for the Collection of Network Level Macro-Texture Measures
 - NCHRP 14-37 - Guide Construction Specifications for Pavement Preservation Treatments: Chip Seal and Microsurfacing
 - NCHRP 14-38 - Triggers and Timings for the Placement of Pavement Preservation Treatments for Asphalt Pavements
 - NCHRP 20-106 - Framing Surface Transportation Research for the Nation's Future
 - NCHRP 21-11 - Improving Processes for Characterizing Corrosion Potential of Soils and Fill Materials
 - NCHRP 24-47 - Clear-Water and Live-Bed Scour in Long Contractions
 - SHRP 2 R05(A) - Precast Concrete Modular Pavement Technology Training Materials

Panel Member nominations accepted (<http://www.trb.org/TCRP/CRPInfoPanelMembers.aspx>)

Second Strategic Highway Research Program (SHRP 2)

- SHRP 2 Reports
 - SHRP 2 Report, Issue: S2-R01C-RW-1 - Innovations to Locate Stacked or Deep Utilities.
 - SHRP 2 Report, Issue: S2-R02-RW-2 - Development of the Geoconstruction Information and Technology Selection Guidance System.
 - SHRP 2 Report, Issue: S2-R02-RW-1 - Geotechnical Solutions for Soil Improvement, Rapid Embankment Construction, and Stabilization of the Pavement Working Platform.

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- SHRP 2 Report, Issue: S2-R07-RR-1 - Performance Specifications for Rapid Highway Renewal.
- SHRP 2 Report, Issue: S2-R07-RR-2 - Strategies for Implementing Performance Specifications: Guide for Executives and Project Managers.
- SHRP 2 Report, Issue: S2-R07-RR-3 - Framework for Performance Specifications: Guide for Specification Writers.
- SHRP 2 Project Brief - Geotech Tools: Geoconstruction Information and Technology Selection Guidance for Geotechnical, Structural, and Pavement Engineers.
- SHRP 2 Report - Utility Locating Technology Development Using Multisensor Platforms.
- SHRP 2 Report - Final Phase 2 Summary Report - Geotechnical Solutions for Soil Improvement, Rapid Embankment Construction, and Stabilization of the Pavement Working Platform.
- SHRP 2 Report - Geotechnical Solutions for Soil Improvement, Rapid Embankment Construction, and Stabilization of the Pavement Working Platform: Web-Based Information System Development Report.