

*Transportation Research Board (TRB)
of the National Academies*

National Cooperative Highway Research Program (NCHRP)

Update

AASHTO
Highway Subcommittee on Construction
August 1, 2007

**Crawford Jencks
Deputy Director
Cooperative Research Programs**

NCHRP: What's it to you?

Hopefully, a lot, it's your program

- Be interested, be involved
- Use and champion results

National Cooperative Highway Research Program (NCHRP)

Managed by: Transportation Research Board (TRB)

Sponsored by: American Association of State Highway
and Transportation Officials (AASHTO)
i.e., the state DOTs

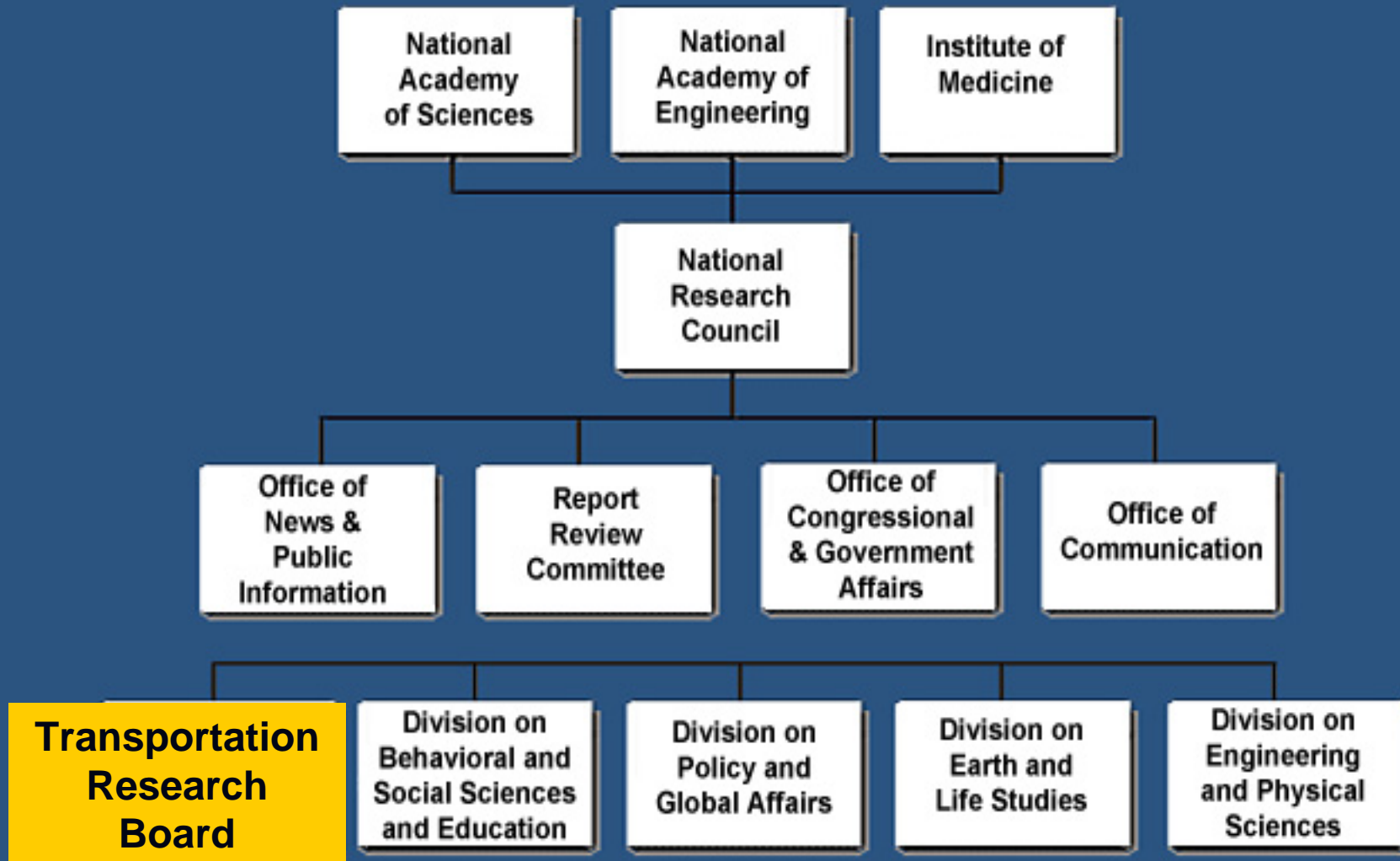
Assisted by: Federal Highway Administration
(FHWA)

TRB Activity

- TRB in general
- Other cooperative programs
- SHRP 2
- NCHRP

THE NATIONAL ACADEMIES

Private, Nonprofit Institution



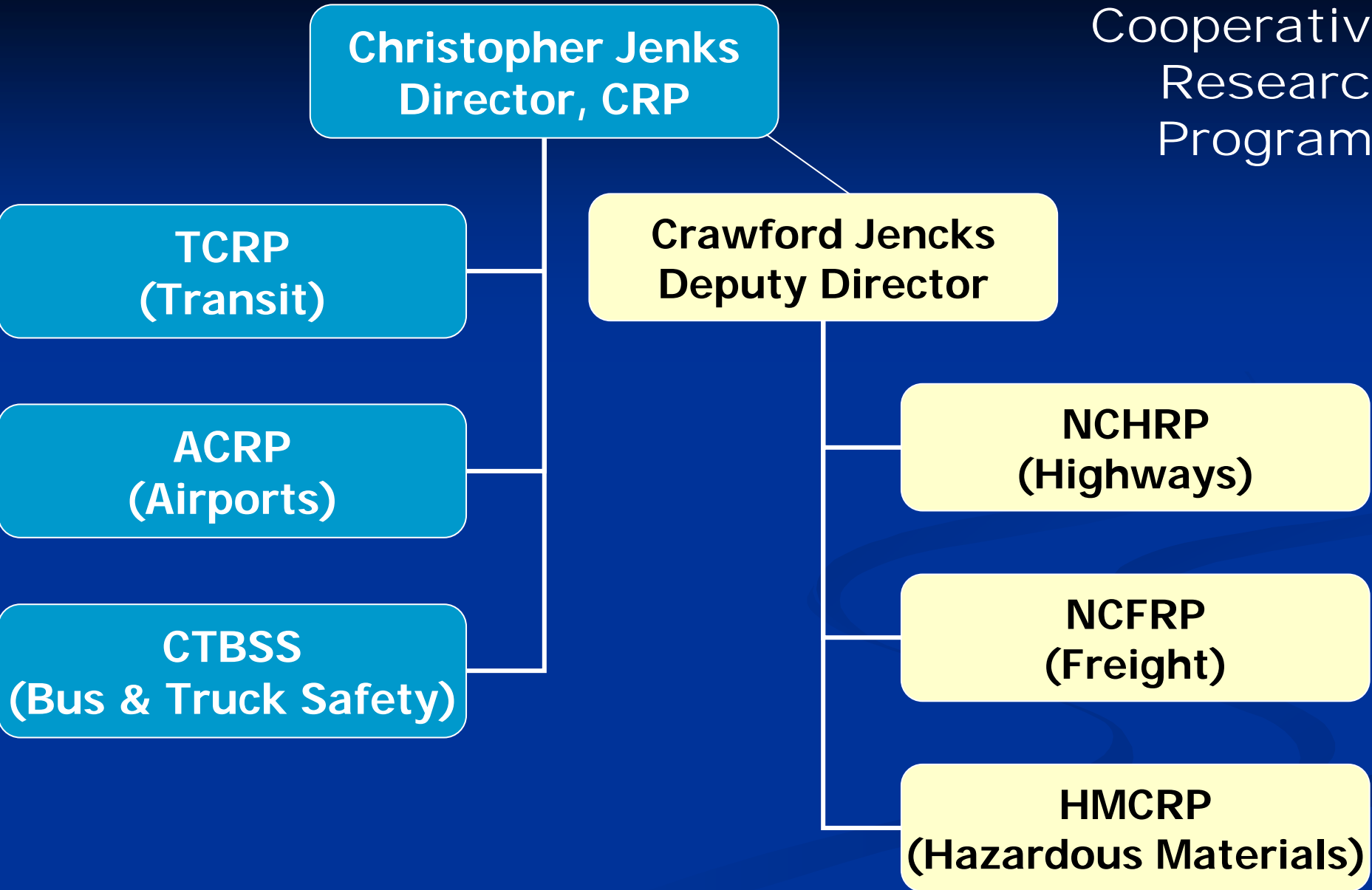
TRANSPORTATION RESEARCH BOARD



Transportation Research Board
of the National Academies

TRB's Cooperative Research Programs

| Program | Established | \$ Millions/yr |
|----------------------------|-------------|----------------|
| NCHRP (Highways) | 1962 | 35 |
| TCRP (Transit) | 1992 | 9 |
| ACRP (Airports) | 2004 | 10 |
| NCFRP (Freight transport) | 2006 | 2.6 |
| HMCRP (HazMat transport) | 2006 | 0.9 |
| CTBSSP (Truck/ Bus Safety) | 2001 | 0.3 |



STRATEGIC HIGHWAY RESEARCH PROGRAM 2 (SHRP 2)

- New TRB Division
- \$51.25M/yr. (\$36M/yr) for 4 years
- Themes: Safety, **Renewal**, Reliability, Capacity
- First RFPs issued in September 2006
- TRB.org/SHRP2

SHRP 2 Renewal—2006

- R01: Utilities Location Technology Advancements
- R02: Geotechnical Solutions for Soil Improvement, Rapid Embankment Construction and Stabilization of the Pavement Working Platform
- R04: Innovative Bridge Designs for Rapid Renewal
- R06: High-Speed, Non-Destructive Testing Procedures for Both Design Evaluation and Construction Inspection
- R07: Performance and Incentive-Based Specifications and Performance-Based Warranties

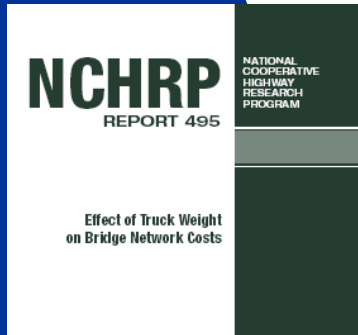
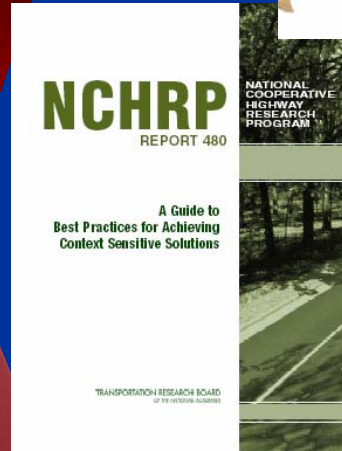
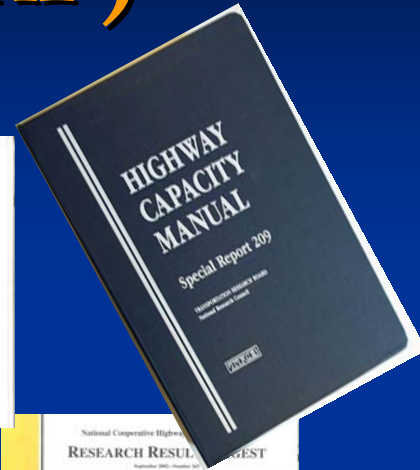
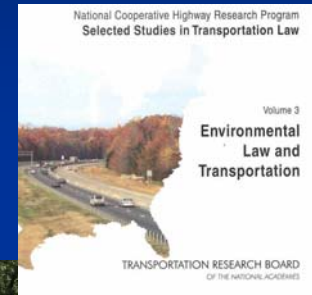
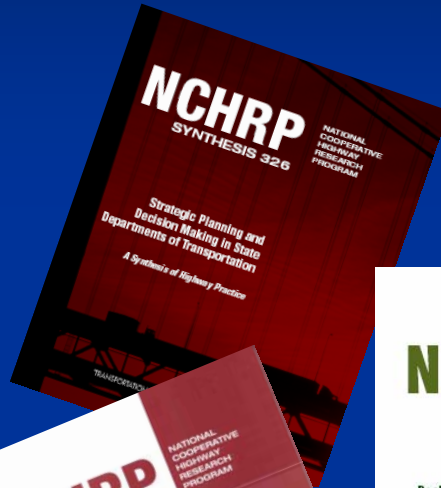
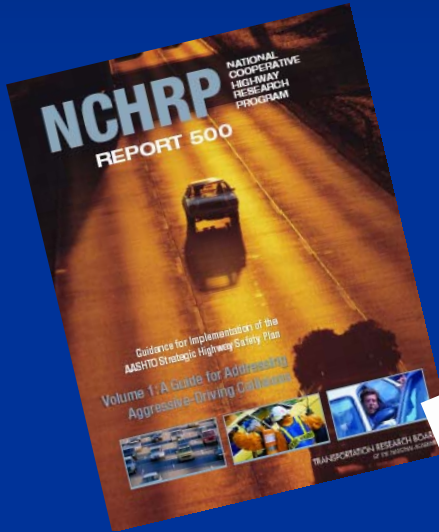
SHRP 2 Renewal—2006 Cont'd

- R09: Guide for the Process of Managing Risk on Rapid Renewal Contracts
- R15: Strategies for Integrating the Priorities of Utilities and Transportation Agencies in Highway Renewal Projects
- R19: Durable Bridges for Service Life beyond 100 Years
- R21: Composite Pavement Systems

SHRP 2 Renewal—2007 RFPs

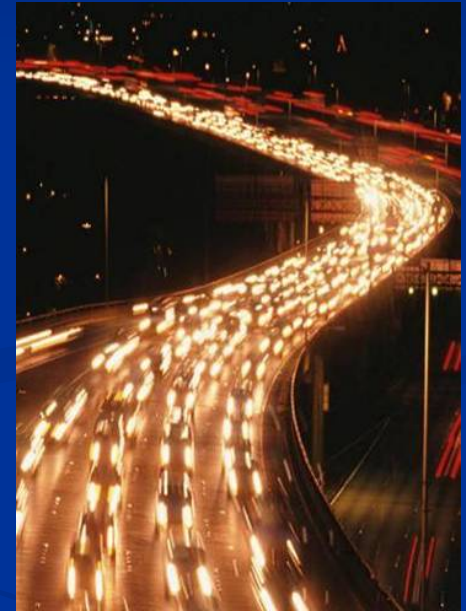
- R05: Modular Pavement Technology -- \$1M
- R16: Railroad-DOT Institutional Mitigation Strategies -- \$400K
- R19A: Bridges for Service Life Beyond 100 Years: Innovative Systems, Subsystems, and Components -- \$2M
- R23: Using Existing Pavement in Place and Achieving Long Life -- \$1M
- R26: Preservation Approaches for High Traffic Volume Roadways -- \$250K

National Cooperative Highway Research Program (NCHRP)



AASHTO's Research Program - Since 1962

- **State DOTs**
 - Funds (5.5% of SP&R funds)
 - Leveraged funds
 - Problems (Approved by AASHTO)
- **Applied research focus**
 - National issues (emerging concerns)
 - Shared issues (common problems)
- **Contract research**
 - Panels
 - Research contractors
 - TRB management/facilitation





Problem Submittals and Selections

- **Authorized sources**
 - State Departments of Transportation
 - AASHTO committees
 - Federal Highway Administration
- **Selection of recommended NCHRP projects by AASHTO Standing Committee on Research**
- **Approved by AASHTO Board of Directors (2/3rds vote)**

HSOC's Recommendations NCHRP Research Problems

- 2008-D-03, Bid Alternates Using Life-Cycle Determinations (part of NCHRP Project 10-75)
- 2008-D-02, Analysis of Nighttime Construction Activities and Impacts to Safety, Quality, and Productivity (contingency pending availability of additional money)

HSOC's Recommendations

NCHRP Project 20-05, Syntheses

- **Performance Based Contractor Prequalification, U.S. and International Practice (selected)**
- **Maintenance of Traffic When “Construction Window” is Limited (selected as alternate)**
- **Methods for Post Construction-Maintenance Feedback (not selected)**

NCHRP Special Projects “Subprograms”

- 20-5 Synthesis Program (\$1.2M)
- 20-6 Legal Studies (\$75K to \$150K)
- 20-7 AASHTO Highways Com. (\$1M)
- 20-24 Adm. of State DOTs (for CEOs) (\$1M)
- 20-30 NCHRP-IDEA (\$1.25M)
- 20-36 International Info. Sharing (\$850K)
- 8-36 AASHTO Planning Com. (\$600K)
- 25-25 AASHTO Environmental Com. (\$600K)
- 20-65 AASHTO Public Transportation Com. (\$300K)
- 20-68 US Domestic Scan Program (\$500K)

Recent NCHRP Reports

- 553: Crashworthy Work-Zone Traffic Control Devices
- 560: Guide to Contracting ITS Projects
- 561: Best-Value Procurement Methods for Highway Construction Projects
- 581: Design of Construction Work Zones on High-Speed Highways

Active NCHRP Projects

- 10-58(01): Time-Related Incentive and Disincentive Provisions in Highway Construction Contracts
- 10-58(02): Using Contractor-Performed Tests in Quality Assurance
- 10-68: Guidelines for the Use of Highway Pavement Warranties
- 21-09: Intelligent Soil Compaction Systems

Recent NCHRP Syntheses (20-05)

- 360: Rock-Socketed Shafts for Highway Structure Foundations
- 361: Visualization for Project Development
- 365: Preserving and Using Institutional Memory Through Knowledge Management Practices
- 366: State of Tribal Transportation Programs
- 372: Technologies for Construction Delivery (pending)

New Syntheses (20-05)

- 39-02 Improving the Safety of Moving Lane Closures
- 39-04 Performance Based Contractor Pre-qualifications, US and International Practice
- 39-14 Maintenance of Traffic When
(alt) “Construction Window” is Limited

NCHRP-IDEA (20-30)

- 3D-Centric Model for Integrated Design and Construction of Highway Bridges
- A Screed System to Detect and Measure Segregation in HMA Pavements
- Relocatable Traffic Sensor System for Work Zone Safety and Incident Management
- Basalt Fiber Composite Rebars for Concrete Reinforcement

International Scans (20-36)

- Prefabricated Bridges
- Construction Management
- Oversight of Large and Innovative Projects
- Warm Asphalt Technologies

Upcoming Domestic Scans (20-68)

- Project Delivery Management
- Accelerated Construction Techniques
- Winter Maintenance
- Regional, Multi-Agency Traffic Signal Operations Management
- Bridge Management Decision-Making

Legal Studies (20-6)

- *Selected Studies in Transportation Law* (on CRP-CD-20)
 - Volume 1, Construction Contract Law
 - Volume 2, Environmental Law and Transportation
 - Volume 4, Tort Liability of Highway Agencies

SCOH Tasks (20-07)

- Task 229: Bridge Construction Practices Using Incremental Launching
- Task 233: Development of a Toolkit to Assist State DOTs and Contractors in Uniformly Handling DBE requirements
- Task 248: Utility Encasement Policy for Highway Crossings

Objectives

- Encourage NCHRP interest
 - Use it as a resource
 - Call staff for assistance
- Encourage NCHRP involvement
 - Volunteer for panels
 - Submit problem statements
- Encourage use of NCHRP products
 - Adapt and/or adopt results
 - Champion results (\$\$\$ available for support)

Problem Submittals for FY 2008

NCHRP

- **Research Problem Statements**
 - Due by September 14, 2007 from State DOTs, AASHTO committees, & FHWA
 - Select in March 2008 by AASHTO Research Committee
- **Synthesis Topics**
 - Due by January 31, 2008
 - Select in May 2008 by NCHRP panel
- **Project 20-7 Tasks**
 - Due prior to semi-annual meetings of SCOH
 - Send to chair of 20-7 NCHRP panel (AASHTO website)



Does something look different?

TRB recently revised its website and moved to a different platform.

To report a problem with or comment on the website, [contact the Webmeister](#).

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Cooperative Research Programs

The **National Cooperative Highway Research Program (NCHRP)**, **Transit Cooperative Research Program (TCRP)**, **Airport Cooperative Research Program (ACRP)**, **National Cooperative Freight Research Program (NCFRP)**, and **Hazardous Materials Cooperative Research Program (HMCPR)** are applied, contract research programs that develop near-term, practical solutions to problems facing transportation agencies. Both NCHRP and TCRP include **annual projects addressing ongoing needs**.

- **NEW!** TCRP announces its FY 2007 projects for potential contractors ([Adobe PDF](#) or [Microsoft Word DOC](#)).
- **NEW!** TCRP solicits panel nominations for its FY 2007 program. The solicitation can be found [here](#), and **panel nominations are due no later than January 12, 2007**.
- ACRP announces its [FY 2007 projects](#) (PDF), and RFPs are expected to be posted starting in November 2006.
- NCHRP announces its [FY 2007 projects](#) (PDF).
- In 2004, NCHRP surveyed panel members to learn what they knew about the implementation of their research findings. An additional question asked how panel members would rate the program using four performance factors. [Click here](#) for the results of this survey.
- The *Mechanistic-Empirical Pavement Design Guide*, related documentation, and Version 0.910 of its software are available online for evaluation at <http://www.trb.org/mepdg/>. Software errors can be reported or identified ones reviewed at <http://www.ara-tracker.com/> (free registration required).
- TCRP reports and other products are available at [APTA's Product Dissemination Website](#).
- [NCHRP: Leveraging Resources for Better Transportation](#) (PDF), an informational brochure highlighting 40 years of NCHRP.
- NCHRP's [Summary of Progress](#) (PDF) as of June 2006
- TCRP's [Annual Report 2005](#) (PDF)
- Principal investigators should review [Preparing Your CRP Final Report](#), [Author Guidelines for Submitting CRP Reports](#), [Style Manual](#), [Executive Summary Guidelines](#), and [Quality Checking Figures and Tables](#).

[Sign up](#) to be notified when new requests for proposals are available.

Wanted!

Senior Program Officer
National Cooperative Highway
Research Program