In 2003, the American Association of State Highway and Transportation Officials’ Special Committee on Research and Innovation (R&I, formerly the Standing Committee on Research), the governing body for the National Cooperative Highway Research Program (NCHRP), initiated NCHRP Project 25-25, “Research for the AASHTO Committee on Environment and Sustainability.” NCHRP Project 25-25 addressed environmental issues relevant to state departments of transportation (DOTs) and, as a continuing project, was directed by a rotating oversight panel of individuals from state DOTs with diverse expertise in environmental practice. The purpose of the project was to support agency efforts in environmental stewardship and compliance. Individual research tasks conducted under the project, or Tasks, were narrowly focused in order to provide state DOTs with timely research results.

NCHRP Project 25-25 supported 113 Tasks. The total funding was approximately $10 million, the average Task budget was $84,400, and the average Task duration was 12–14 months. Final reports for the remaining Tasks are expected to be released in 2020. Since 2018, environmental research needs have been considered along with all other research topics in the NCHRP main program.

NCHRP 25-25 Tasks addressed a wide range of environmental topics. Figure 1 (below) presents the share of Tasks by topic area. A few Tasks are highlighted by subject area below.

**Figure 1** NCHRP Project 25-25 Tasks by topic area (2003–2019).
**Air Quality**

In the area of air quality, NCHRP 25-25 Tasks often focused on methods to improve and streamline air quality analyses and to provide state DOTs with information on new air quality regulations.

One recent assignment was NCHRP 25-25 Task 108, which developed a new, spreadsheet-based toolkit to simplify emission reductions modeling for 15 typical project types that may be funded under the Federal Highway Administration’s (FHWA’s) Congestion Mitigation and Air Quality Improvement Program (CMAQ). The new, simplified toolkit can save state DOTs and other transportation agencies significant time and cost for CMAQ analyses, as it allows them to enter basic project information and quickly obtain estimates of emission reductions suitable for reporting to FHWA.

Other Tasks related to air quality include the development of programmatic agreement templates for streamlining National Environmental Policy Act–related carbon monoxide modeling, also saving time and costs for state DOTs. The templates initially were developed under Task 78, “Programmatic Agreements for Project-Level Air Quality Analyses Using MOVES, CAL3QHC/R, and AERMOD” in 2015, and were updated and expanded under Task 104, “Streamlining Carbon Monoxide Project-Level Air Quality Analyses with Programmatic Agreements” in 2019.2–3 In addition, the Task 96 study, “Quick Reference Guide for Traffic Modelers for Generating Traffic and Activity Data for Project-Level Air Quality Analyses,” developed a much-needed guide for developing traffic data and forecasts for project-level air quality analyses (see box, at right).

**Community Concerns**

Among the products from NCHRP 25-25 research on community concerns was the Task 36 final report, *Recurring Community Impacts*, released in 2007. This document offers guidance to professionals and others who conduct community impact assessments on how to identify and assess the cumulative effects of past and future transportation projects.4

Task 41, “Implementation of Community and Cultural Resource Commitments,” collected and synthesized information on tools used by state DOTs to track commitments made to communities and regulatory agencies related to places, things, and institutions regarded as having cultural or historic value by any group of people.5 This includes commitments related to Section 106 of the National Historic Preservation Act; the Native American Graves Protection and Repatriation Act; or Section 4(f) of the U.S. DOT Act of 1966, which prohibits U.S. DOT agencies from using publicly owned land unless no alternative exists.

Anticipated for release early this year, Task 114, “Integrating Tribal Expertise into Processes to Identify, Evaluate, and Record Cultural Resources,” identified ways to augment typical archeological and archival research methods with tribal methods and expertise as a way for state DOTs and tribal governments to strengthen their tribal consultation practices.6

---


---


As the use of programmatic agreements has expanded, additional Tasks have provided targeted guidance; for example, Task 107, “Section 106 Delegation Programmatic Agreements: Review and Best Practices,” was completed in 2019.

**Natural Resources**

NCHRP 25-25 research on natural resources includes the following studies on water quality:

- Task 35, “Water Quality Analyses for NEPA Documents: Selecting Appropriate Methodologies” (2008);
- Task 53, “Stormwater Treatment with Vegetated Buffers” (2009);
- Task 101, “Stormwater Monitoring Program Goals, Objectives, and Protocols for State Departments of Transportation” (2017); and

**Environmental Review Processes**

From the beginning, applied research on environmental review processes has been a major area of focus for NCHRP 25-25. In 2003, the Task 5 final report, *Causes and Extent of Environmental Delays in Transportation Projects*, offered valuable insights that are still relevant today, as the transportation industry continues to seek to improve transportation project delivery timelines. Programmatic agreements were examined in 2005 in the Task 13 final report, *Agency Use of and Approach to FHWA-Approved Programmatic Agreements*.

**Cultural Resources**

Cultural resources topics included studies of best practices in evaluating historic resources and the use of programmatic agreements between state DOTs and regulatory agencies.

Several NCHRP 25-25 Tasks have addressed historic bridges. In 2005, the Task 15 final report, *A Context for Common Historic Bridge Types*, was released. This report describes historic factors that shaped the design of bridges from the 1500s to the 1950s. The report also catalogs common truss, arch, girder, and beam designs, explaining the historical significance of each design type.

Task 66, “Best Practices and Lessons Learned on the Preservation and Rehabilitation of Historic Bridges,” presented a series of case studies in 2012 highlighting ways to balance historic preservation with safety and bridge function via thoughtful bridge management programs that encourage collaboration between bridge engineers and historians. Task 118, “Context-Sensitive Design Options for Workhorse Bridges in Rural Historic Districts,” expanded upon these ideas with targeted guidance on design choices for rural historic contexts and a practitioner guide to adopting a context-sensitive design process tailored to this unique resource.

![The 100-year-old 3rd Avenue Bridge in Minneapolis, Minnesota, is undergoing renovations with an emphasis on preserving its historic design elements.](https://apps.trb.org/cmsfeed/TRBNetProjectDisplay.asp?ProjectID=1288)

![Photo: Groveland Media, Flickr](https://apps.trb.org/cmsfeed/TRBNetProjectDisplay.asp?ProjectID=1543)
Transportation Planning: The Current State of Practice.

Taken together, the NCHRP 25-25 Tasks offer a rich compendium of practice in a wide range of environmental topics. The reports provide insights into early responses to regulatory changes as well as later reviews to identify practices that have stood the test of time. Although specific regulations may change over time, the NCHRP 25-25 Task reports are resources that will continue to be of value to environmental practitioners seeking analysis methods, decision-support tools, monitoring techniques, and process improvements to support their environmental stewardship efforts.

For a full list of Tasks, please visit https://apps.trb.org/cmsfeed/TRBNetProjectDisplay.asp?ProjectID=761.

13

Comments on NCHRP 25-25

“The peer exchange under Task 99, ‘Lessons Learned from State DOT NEPA Assumption,’ was very successful in encouraging productive dialogue between states with NEPA assignment, states considering NEPA assignment, and FHWA headquarters.”

—Leo Tidd, WSP

“Most recently, I have found Task 72 (‘Current Practices to Address Construction Vibration and Potential Effects to Historic Buildings Adjacent to Transportation Projects’) very useful in providing a process to monitor vibration from reconstruction projects that could affect historic buildings and districts.”

—Valerie J. Barbie, North Dakota DOT

“NCHRP 25-25 was a great tool for transportation and environmental professionals because of the quick turn-around and practitioner focus. Serving on a 25-25 Task panel was also my first introduction to TRB and NCHRP, for which I am grateful.”

—Tim Sexton, Minnesota DOT


A bioswale collects stormwater runoff in Washington, D.C. Stormwater management, including vegetated buffers like this one, are a focus of NCHRP 25-25.