

NCHRP Project 25-25

Quick Response Studies for the AASHTO Standing Committee on the Environment

Status Report December 2005

Task Order Project Status

BACKGROUND

The AASHTO Standing Committee on the Environment (SCOE) is called on continuously to provide information for establishing policies and positions of the state highway and transportation departments on issues associated with the nation's transportation system. The Committee needs information, on a reasonably prompt schedule, through a continuing research project geared to its responsibilities. Member departments require timely information on new environmental analysis, streamlining, stewardship, and planning methods and procedures to respond effectively to program-delivery and project-development issues.

A research mechanism is needed that can respond, as necessary, to the needs of the Standing Committee on the Environment on urgent issues, especially related to the states' response to environmental, transportation planning, and program-delivery issues. A quick-response research program is being established to develop improvements to the analytical methods, decision-support tools, procedures, and techniques employed by practitioners in environmental streamlining, environmental stewardship, statewide and metropolitan environmental transportation planning, program delivery, and project development.

Among other objectives, SCOE will need to be responsive to the AASHTO Board of Directors and others involved in legislative matters. When any new or revised federal transportation environmental and planning regulations are proposed or finalized, research will be required to develop new methods, processes, and procedures to ensure effective and timely implementation by the states and metropolitan planning organizations (MPOs).

OBJECTIVE

The objective of Project 25-25 is to provide flexible, ongoing, quick-response research on environmental issues in transportation. This research will be designed to develop improvements to analytical methods, decision support tools, procedures, and techniques employed by practitioners to support statewide and metropolitan transportation planning, programming, and development.

Budget Status: **\$90,000 held in reserve for quick response issues arising in FY2005**
\$600,000 has been approved for FY2006

Task Summaries:

Task 1 - Synthesis on data needs for EA and EIS Documentation

Objective: to research the nationwide experiences regarding NEPA data needs to develop a better understanding of the optimum and appropriate level of documentation needed to make a decision.

Completed: January 2005

Task 2 – Transportation Impacts and Comprehensive Planning (“Smart Growth”)

Objective: to determine how the impact of comprehensive planning (“smart growth”) laws on land use development and transportation decisions in states and Metropolitan Planning Organizations (MPOs).

Completed: May 2004

Task 3 - Analysis of Assessment and Mitigation Strategies for Land Development Impacts of Transportation Improvements

Objective: address several critical issues pertaining to secondary and cumulative impacts, without duplicating work completed in NCHRP Report 403 “Guidance for Estimating the Indirect Effects of Proposed Transportation Projects” and work pending in Project 8-38 “Consideration of Environmental Factors in Transportation Systems Planning.”

Completed: March 2005

Task 4 - Environmental Stewardship Best Practices for Road Construction and Maintenance.

Objective: to develop a compendium of best practices for integrating environmental stewardship into highway operations, construction, and maintenance activities.

Completed: September 2004

Task 5 - Assessing the Current State of the NEPA Environmental Review Process

Objective: to compile and analyze new and objective quantitative evidence from state DOTs about potential sources of delay associated with the NEPA process; and produce a set of succinct project case studies that illustrate the findings.

Completed: March 2005

Task 6 - Preparing State DOTs for Implementation of the 8-hour ozone and PM 2.5 standards

Objective: to assist AASHTO to analyze, develop comments on, and prepare a response from the state DOT perspective on EPA's notice of proposed rulemaking (NPRM) for implementing the 8-hour ozone standard (published in the 6/2 Federal Register).

Completed: February 2004

Task 7 - Evaluation of Mobile Models: MOBILE 6.1, MOBILE 6.2 and MOBILE6/CNG

Objective: to evaluate MOBILE6.1/6.2 for accuracy and to understand and assess the validation of these modules. This should include assessments of the emission factors related to PM, the emission factors related to air toxics, and the emission factors when compressed natural gas (CNG) is specified as the fuel.

Completed: June 2004

Task 8 - Developing Performance Data Collection Protocol For Stream Restoration

Objective: to develop protocols for the collection and analysis of performance data that would show the effectiveness of stream restoration in removing pollutant loads and improving ecological benefits.

Draft report under review

Task 9 - Use of Existing Data in Decision making

Objective: to review ESA provision and pertinent regulations and guidance and, along with relevant case studies, clarify regulatory standards and expectations regarding use of best available data and assess the net benefits of acquiring new information.

In development

Task 10 - Alternative Mitigation Strategies/Early Mitigation: Streamlining and Achieving Net Benefits for the Natural Environment

Objective: to identify alternative methodologies for accomplishing early mitigation/conservation and addressing both DOT and resource agency needs.

Completed: October 2005

Task 11 - Secondary/Indirect and Cumulative Effects Analysis

Objective: to review, summarize and evaluate statutory and regulatory requirements and implementing guidance related to assessment and mitigation of secondary/indirect and cumulative impacts of transportation projects.

Active: March 2006

Task 12 - Design-Build Environmental Compliance Process and Level of Detail Required

Objective: compile information about the level of design and environmental approval done prior to bringing on a design-build contractor.

Completed: January 2005

Task 13 - Agency use and approach to FHWA approved Programmatic Agreements

Objective: document the reasons that FHWA-approved programmatic agreements are not recognized by other federal agencies, and to identify strategies for DOTs to achieve that recognition.

Completed: May 2005

Task 14 - A Summary of Existing Research on Low-head Dam Removal Projects

Objective: develop a tool for determining the costs and benefits of low-head dam removal projects as a stream restoration technique and as a stream impact mitigation technique.

Completed: September 2005

Task 15 - A historic context for historic bridge types

Objective: develop a historic context for the most common 50 historic bridge types in the United States.

Completed: October 2005

Task 16 - Staffing and Organizational Structure of State Transportation Agencies to Address NPDES Phase II Requirements

Objective: The research will focus on determining how state transportation agencies have addressed the change in effort to ensure compliance with NPDES Phase II requirements. Research will be directed toward determining staffing and organizational structure throughout the entire agency to address NPDES Phase II compliance for construction activities as well as the stormwater management program as a regulated MS4.

Active: March 2006

Task 17 - Assessment of Greenhouse Gas Analysis Techniques for Transportation Projects

Objective: The research will focus on determining what methods are available for transportation agencies to accurately estimate greenhouse gas emissions from transportation activities. If no methods are available, an estimate will be provided on the necessary level of effort needed to develop an acceptable methodology.

Active: March 2006

Task 18 - Recommended Approaches to Communicating Air Toxics Issues and Transportation Project-Related Analyses in NEPA Documents

Objective: The goal of this short-term research project is not to develop new science for the discussion of transportation-related air toxics emissions. Rather, it is to bring respected neutral guidance to outlining the air toxics issues in order to provide technical analysts with the best possible approaches for presenting air toxics impacts and

communicating health risks and assessments triggered by air toxics analysis included in air quality discipline reports.

Active: August 2006

Task 19 - Historic bridge rehabilitation / replacement decision making

Objective: This proposed study will identify best practices and any existing guidelines and standards on historic bridge rehabilitation versus replacement. The study will also include recommendations (based on these best practices and guidelines and standards) on how engineers, transportation planners, and preservationists can make informed decisions concerning historic bridge rehabilitation versus replacement.

Active: September 2006

Task 20 – The Role of State DOTs in Support of Transit Oriented Development (TOD)

Objective: This study will address the roles that state DOTs and their other state partners can play in order to reduce barriers to TOD. It will include techniques such as: streamlined permitting; clear land disposition policies; and funding agreements

Active: March 2006

Task 21 - Assessment of Geophysical Remote Sensing Opportunities at State Departments of Transportation for Incorporation into Archaeological Investigations

Objective: To inform State Departments of Transportation staff where they can access geophysical technology and expertise for incorporation into archaeological studies, including resources within their own department; and provide access to information on current uses of the technology and interpretation of results in cultural resource and planning contexts.

Active: June 2006

Task 22 - Land Use Forecasting for Indirect Impacts Analysis

Objective: The objective of this study is to review, evaluate, and summarize available approaches for transportation project build and no-build land use forecasts; to identify best practices; and to develop suggested methodologies based on best practices. Methodologies should cover comparisons of population size and composition; land use distribution; and location and timing of growth.

Active: August 2006

Task 23 - Environmental performance measurements related to transportation project planning, design, construction, maintenance and operations

Objective: The proposed study will identify existing transportation agency and environmental agency practices for determining their environmental goals and for tracking and measuring environmental performance and their existing agency

environmental goals and related performance measurements, guidelines and standards.

Active: November 2006

Task 24 - Climate Change and U.S. Transportation

Objective: This TRB policy study will provide U.S. transportation officials with an overview of the scientific consensus on climate change; summarize current and projected contributions of all modes of U.S. transportation to climate change; summarize possible consequences for U.S. transportation infrastructure; analyze transportation policy options for adapting to impacts; examine strategies to mitigate future climate impacts through reduced transportation emissions; and recommend critical areas of research.

Funding provided to TRB Policy Study to complete

Task 25 - Modification and Amendment of Environmental Permits on Design-Build Projects

Although a limited number of Design-Build (D/B) projects have been undertaken nationwide, it appears that there is significant interest in this technique to facilitate more expeditious project delivery and to better manage cost with respect to the DOT's overall capital budget. D/B has been implemented for complex, high cost projects which, in most cases, have involved significant environmental impacts. This task will develop guidance on appropriate methods for insuring environmental commitments are carried forward once the primary responsibility for the project is transferred from the DOT to the D/B entity.

In development

Task 26 - Integration of Charrette Processes into Project Planning

There is growing interest in some quarters in the idea of using focused "charrette" processes to accelerate project planning, give public participants a more direct role in conducting project analysis. This interest is particularly great in urban, urbanized, or urbanizing areas where development densities make it particularly costly and disruptive to plan large-scale transportation projects (whether highway or transit). This task will 1) identify potential flexibilities in federal planning process that allow for incorporation of publicly supported charrette outcomes into traditional project planning process, 2) define what a charrette-oriented process might look like generically if it were incorporated into a traditional transportation planning process, 3) identify categories of project planning that could benefit from a charrette-oriented approach, and 4) identify situations where approaches similar to the approach have been applied, whether highway or transit project-related

In development

Task 27 - Project Management and NEPA

It is very difficult for a project manager to fully understand the issues and concerns related to every environmental factor addressed during the NEPA process. This task will

develop tools and tips to assist project managers in the decision-making process to address how project managers: 1) incorporate scheduling, use of resources, process streamlining, decision-making, risk management into day-to-day decision making; 2) establish performance measures and ensure they are met; and 3) understand how environmental decisions are be integrated into project management/delivery process in a manner to ensure expedited project delivery.

In development

Task 28 - Reevaluations of NEPA documents

At times, delays project development process force the project to wait years before proceeding to construction. All the while, the environmental studies that were conducted early have a shelf life and may need a refreshing prior to the project moving forward. Not only do the NEPA documents have a shelf life, but so do the specific environmental studies to go into it. Every state conducts reevaluations of their NEPA documents and specific studies, but recently several states have had problems with the detail necessary, the processing of these reevaluations and knowing exactly what studies need refreshed, to what degree and how often. This task will develop a guide for NEPA professionals on when reevaluations are needed, to what degree of detail and how often they require to be produced.

In development

Task 29 - Best Practices Library from the Environmental Stewardship Practices in Construction and Maintenance Compendium

The Compendium of Environmental Stewardship Practices for Highway Construction and Maintenance (Compendium), produced under NCHRP 25-25(04) in September 2004, represented an important step in expanding awareness of environmental stewardship in terms of specific practices and procedures as well as general policies and programs. The Guide was well received as an encyclopedic compilation of current practice. This project will develop and initiate the implementation of a process for vetting the practices in the Compendium by conducting and reporting on the results of peer reviews by expert practitioners. The process will involve identifying leading experts in the wide variety of areas covered by the Compendium who will work with and through appropriate AASHTO committees, subcommittees, technical sections, and task forces as they review the material in the guide and reach their conclusions about which are worthy of designation as a “best practice.”

In development

Task 30 - Section 404 Permitting and Roadside Ditches as Jurisdictional Waters

The many districts of the U.S. Army Corps of Engineers (USACE) have differing positions on whether or not roadside ditches are jurisdictional waters of the U.S. This task will determine how USACE districts are asserting jurisdiction over roadside ditches, how the state Departments of Transportation (DOTs) are responding within the Section 404 permitting process, and whether any USACE districts and DOTs have agreed upon

procedures for assessing whether or not a specific roadside ditch segment is jurisdictional. If the research shows a pattern of making viable roadside ditches jurisdictional determinations, the researcher will propose guidelines for nationwide application.

In development

Task 31 - Cost Effective Tools for Achieving PM 2.5 Transportation Air Quality Conformity

The Environmental Protection Agency promulgated a new standard for fine particulate air pollutants (PM 2.5) and designated PM 2.5 air quality non-attainment areas. These non-attainment areas, some of which were in attainment prior to the establishment of new standards, must have long range transportation plans and Transportation Improvement Programs (TIP's) that meet conformity requirements by April, 2006. States that have air quality non-attainment areas must spend their CMAQ funding on transportation projects in air quality non-attainment areas. Air quality non-attainment areas are struggling to identify CMAQ-eligible investment strategies to address the new PM 2.5 requirement. SAFETEA-LU amends Title 23 to make transportation investments that contribute to PM 2.5 attainment and maintenance eligible for CMAQ funds. This study will identify transportation investments for achieving PM 2.5 attainment, regardless of current eligibility and rank those investments based on relative cost effectiveness. For each type of investment, the study will analyze the technical, statutory, regulatory, or administrative impediments to implementation.

In development