

National Cooperative Highway Research Program Announcement of FY 2010 Surface Transportation Security Research Projects

December 2009

Surface transportation agencies are recognizing that they are uniquely positioned among civilian government agencies to swiftly take direct action to protect lives and property due to their broad policy responsibility, public accountability, large and distributed workforces, heavy equipment, and robust communications infrastructure. Their institutional heft also provides a stable base for campaigns to mitigate or systematically reduce risk exposure over time through all-hazards capital investments.

The **National Cooperative Highway Research Program** (NCHRP) is supported on a continuing basis by funds from participating member departments of the American Association of State Highway and Transportation Officials (AASHTO), with the cooperation and support of the Federal Highway Administration, U.S. Department of Transportation. The NCHRP is administered by the National Research Council's Transportation Research Board (TRB). The NCHRP is an **applied contract** research program totally committed to providing timely solutions to **operational problems** facing highway and transportation engineers and administrators.

Each year, AASHTO refers a research program to the TRB consisting of high-priority problems for which solutions are urgently required by the states. In August 2007, through a joint 3-day meeting with what is now the AASHTO Special Committee on Transportation Security and Emergency Management (SCOTSEM) and with interested federal agencies, the NCHRP 20-59 project panel identified \$2 million in research needs to be addressed over 3 program years. In August 2009, the NCHRP 20-59 project panel selected projects for the Fiscal Year 2010 program.

Interested in being a panel member?

This announcement contains problem statements that are preliminary descriptions of the selected projects. Panels are being formed to develop detailed project statements and oversee these projects. **Recommendations for panel members may be made by completing the**

Cooperative Research Programs' Nomination Form and sending it and a resume to Ms. Adrienne Blackwell (ablackwell@nas.edu) by January 15, 2010.

Interested in proposing on these NCHRP Projects?

Detailed project statements, formally soliciting proposals for these projects, are expected to be released starting in April 2010. NCHRP project statements will be available only at the program [website](#). Each project statement will be announced by email, and information on registering for this service and other details on the NCHRP are available at that site.

Proposals should evidence strong capabilities gained through extensive, successful experiences. Any research agency interested in submitting a proposal should first make a frank and thorough self-appraisal to determine whether or not it possesses the capability and experience necessary to ensure successful completion of the project. The specifications for preparing proposals are set forth in a brochure entitled [Information and Instructions for Preparing Proposals](#), available on the website referenced above. Proposals will be rejected if they are not prepared in strict conformance with the section entitled "Instructions for Preparing and Submitting Proposals."

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TRANSPORTATION RESEARCH BOARD
OF THE NATIONAL ACADEMIES

NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM
Project 20-59, Surface Transportation Security Research

Project 20-59(36)

Catastrophic Transportation Emergency Management Guidebook

FUNDS: \$ 100,000
NCHRP STAFF: Stephan A. Parker, 202-334-2554

BACKGROUND

On January 16, 2009, the Homeland Security Council Interagency Policy Coordination Subcommittee for Preparedness and Response to Radiological and Nuclear Threats released the guide “*Planning Guidance for Response to a Nuclear Detonation.*”¹ The purpose of the guidance is to provide emergency planners with nuclear detonation-specific response recommendations to maximize the preservation of life in the event of an urban nuclear detonation. The target audiences for the guidance are response planners including transportation planners and their leadership. However, the specific concerns of transportation are not addressed in the detail that provide transportation planners, transit planners, metropolitan planning organizations staff, and decisionmakers and others involved in transportation with the level of detail they need to develop the detailed catastrophic plan necessary to address this type of disaster.

Radiological and nuclear threats are not the only catastrophic disasters for which transportation departments must plan and manage. However, developing guidance that addresses disasters at the far end of the spectrum will provide those at transportation departments who will develop the plans with the most extreme circumstances for which they must prepare.

PROPOSED RESEARCH

This scope of work will address how transportation planners, transportation operations, and decisionmakers will (1) become knowledgeable with catastrophic disasters including the science in order to be comfortable to develop appropriate plans, (2) offer ways that the transportation community is brought into the larger emergency response community that is far more familiar with this and other catastrophic – and therefore, less likely to occur – disasters, and (3) provide the information planners and operators will need in order to develop and execute evacuation plans that address disasters of this magnitude. A successful document will discuss contamination of infrastructure; what, if any, decontamination that can be undertaken; and, however sketchy, the timetable a locality would need to recover from a contaminated site.

¹ The document is available on line by using the title of the document. Accessed 11/30/09 at <http://www.epa.gov/rpdweb00/docs/er/planning-guidance-response-nuclear-detonation-FINAL.pdf>.

Project 20-59(37)

Debris Management Handbook for State and Local DOTs: with Successful Practices by DOTs to Obtain State and FEMA Public Assistance Reimbursement

FUNDS: \$150,000
NCHRP STAFF: Stephan A. Parker, 202-334-2554

BACKGROUND

Much of the debris from any incident—whether a traffic incident, collapse of aging infrastructure, or major disasters such as a hurricane or tornado—falls on the roads. These roads must be cleared rapidly because they are part of the planned network of emergency routes to bring in first responders, as well as provide the necessary mobility to get the injured to appropriate medical care or to shelters. In the aftermath of a storm, it is essential to restore the transportation system and other public utilities as quickly as possible. This involves clearing debris, repairing road signs, repairing and/or replacing traffic signals, and repairing other critical roadside infrastructure.

During most incidents with limited scope, state and local DOTs are responsible for clearing debris from roads. However, during catastrophic events with large quantities of debris that must be removed and with Federal government involvement, the Department of Homeland Security, using the National Response Framework, assigns to the U.S. Army Corps of Engineers, as the lead Federal Agency for Public Works and Engineering (or Emergency Support Function #3) to support state and local efforts in clearing debris, including that which lies on the roads. Thus, the state and local DOTs need to be better equipped—in terms of equipment, training, and expertise—in debris clearance to serve as the lead for clearing roads during incidents. In order for states to succeed, they must equip those that do debris removal for routine incidents—often the Public Roads Departments—with the tools necessary to produce a comprehensive debris management plan that meet the FEMA requirements for reimbursement and federal assistance as outlined in the FEMA Catastrophic Planning Initiative and the National Response Framework. Numerous lessons learned and good practices exist in a variety of forms from a variety of groups. This includes issues such as how to hire contractors for large debris clearance efforts, how to use existing governmental resources to a locality’s best advantage, how to pay for and get reimbursed for debris removal efforts, and so on. This body of knowledge should be consolidated and presented in one source to improve state and local DOT capacities to manage debris removal for small through larger incidents and as a basis for training programs.

OBJECTIVE

The two-part objective of this research is to:

1. Consolidate debris management information including, but not limited to, fact sheets, brochures, and resource information material developed by FEMA; the U.S. Army Corps of Engineers; the American Public Works Association; and others into a handbook appropriate for state and local DOTs. As part of this effort, the handbook should ensure that no gaps remain that would limit states and local governments from developing a comprehensive debris

management plan. The Handbook will include a glossary of terms consistent with the National Incident Management System (NIMS), and

2. Provide successful practices or examples of where state and local DOTs have understood debris management effectively to make use of FEMA's Guidelines for the successful reimbursement of these costs.

RESEARCH PROPOSED

Phase I: Part A will begin with a successful, extensive literature search to obtain all appropriate debris management material including, but not limited to, FEMA, other federal agencies, associations such as the American Public Works Association (APWA), and, where appropriate, information from state and local agencies. Examples of the type of information that is appropriate to be included in the handbook can be found in the following documents:

- Debris Management Brochure - FEMA 329
- FEMA 325 Debris Management Guide - July 2007
- Debris Management Fact Sheets (FS) – Series 9500
 - o Debris Removal – Authorities of Federal Agencies - FS No. 95880.202
 - o Debris Monitoring - FS No.9580.203
 - o Debris Operations – Clarification: Emergency Contracting vs. Emergency Work - FS No. 9580.4
- Recovery Strategies
 - o Debris Removal Operations
 - o Debris Recovery Strategy RS-2006-2
- National Mutual Aid and Resource Management Initiative Glossary of Terms and Definitions

Phase I: Part B will provide successful practices or examples of how state and local DOTs (a) have understood debris management and FEMA's guidelines effectively and (b) have been successful in their requests for reimbursement from FEMA.

Phase I tasks may also include interviews and surveys or other appropriate information techniques.

Phase II will be the development and writing of the *Debris Management Handbook for State DOTs*. The writing of the handbook is to include good practices, guidelines on seeking federal and state reimbursements, and a glossary of terms.

Project 20-59(38)

Voice and Data Interoperability for Transportation

FUNDS: \$ 75,000

NCHRP STAFF: Stephan A. Parker, 202-334-2554

BACKGROUND

Transportation agencies and other public organizations are faced with an array of choices with respect to attaining interoperability (i.e., the ability of emergency responders to work seamlessly with other systems or products without any special effort). They require guidance with respect to appropriate decision-making criteria when selecting communication systems. In January 2007, SAFECOM issued reports that outline the interoperability levels in the major urban areas and suggested strategies for improving interoperability; however, most of SAFECOM's work has focused on police, fire, and emergency medical services in the field. For instance, the problem of mass transit in remote areas and the integration of mass transit and road-based transportation personnel and systems into the regional interoperability projects are not addressed. A thorough analysis that will guide transportation agencies in appropriate investments for communications interoperability is lacking and is critically needed because of the role that transportation plays in disaster prevention, preparedness, and response.

PROPOSED RESEARCH

Create a guidebook that will assist transportation and transit agencies in making key decisions with respect to the identification and selection of interoperability hardware and related choices.

Project 20-59(39)***Synthesis of Airport Closings and Emergency Evacuation Problems***

FUNDS: \$ 50,000
NCHRP STAFF: Stephan A. Parker, 202-334-2554

BACKGROUND

There is significant disruption when airports close, whether for a few hours or a day or more. Airports are like cities; thousands of people may be present at any given time. Many of them are unfamiliar with the area and possibly with the English language. They may be mobility-impaired, sick, elderly, and most certainly, aggravated. People's itineraries are altered. Many are stranded. The impact is even more significant when all persons on the premises have to be evacuated. Annoyance at delays and cancellations could quickly turn into fear. Airport and airline personnel face the stress of dealing with the whole situation under adverse conditions. Airport and airline managers need to consider the types of risks that could trigger an emergency evacuation or closing, and their vulnerability to those risks. Many airports and airlines would have trouble answering the following questions:

- Where will the hundreds or thousands of people be directed to go?
- How will they get there?
- What information should be released and how?
- What if they do not understand English?
- How would panic be averted?
- What plans are in place to refer travelers to nearby accommodations?
- Would airport and airline personnel be prepared to assist travelers and would employees know what their specific duties are?
- If people have to leave without their luggage and did not pack important medication in carry on bags, what will be done if they fall ill?
- During an emergency evacuation, passengers traveling with a pet may become separated from the pet or not permitted to bring the pet along. What resistance can be expected and how will this problem be handled?

PROPOSED RESEARCH

The research carried out for this project would include a literature search centered on recent situations where airports had to be closed or evacuated (in part or in whole). The research would cover extreme weather emergencies, crimes, credible threats, and any other causative factors involved.

After each episode is detailed a second phase of research would begin. That phase would focus on survey research at the airports that were closed or evacuated of the problems and outcomes encountered by airline personnel, by airport personnel, by airport vendors and service providers, and by public safety agencies from contiguous jurisdictions. Since the travelers who experienced these emergency situations would obviously no longer be at the airport, there would be a separate method for obtaining their input.