

FEMA and FHWA Emergency Relief Funds Reimbursements to State Departments of Transportation

DETAILS

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NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM

NCHRP SYNTHESIS 472

**FEMA and FHWA Emergency
Relief Funds Reimbursements
to State Departments
of Transportation**

A Synthesis of Highway Practice

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NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM

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FOREWORD

Highway administrators, engineers, and researchers often face problems for which information already exists, either in documented form or as undocumented experience and practice. This information may be fragmented, scattered, and unevaluated. As a consequence, full knowledge of what has been learned about a problem may not be brought to bear on its solution. Costly research findings may go unused, valuable experience may be overlooked, and due consideration may not be given to recommended practices for solving or alleviating the problem.

There is information on nearly every subject of concern to highway administrators and engineers. Much of it derives from research or from the work of practitioners faced with problems in their day-to-day work. To provide a systematic means for assembling and evaluating such useful information and to make it available to the entire highway community, the American Association of State Highway and Transportation Officials—through the mechanism of the National Cooperative Highway Research Program—authorized the Transportation Research Board to undertake a continuing study. This study, NCHRP Project 20-5, “Synthesis of Information Related to Highway Problems,” searches out and synthesizes useful knowledge from all available sources and prepares concise, documented reports on specific topics. Reports from this endeavor constitute an NCHRP report series, *Synthesis of Highway Practice*.

This synthesis series reports on current knowledge and practice, in a compact format, without the detailed directions usually found in handbooks or design manuals. Each report in the series provides a compendium of the best knowledge available on those measures found to be the most successful in resolving specific problems.

PREFACE

By Tanya M. Zwahlen
Consultant
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This report compiles and documents information regarding state department of transportation (DOT) experiences with federal disaster reimbursement programs. The report documents existing experiences, knowledge, learning, and practices used by DOTs to efficiently obtain appropriate reimbursements after emergency events. It also summarizes the range of things DOTs are doing to ease their response effort, secure appropriate reimbursements, and simplify cost identification. This report will be immediately useful to highway design practitioners.

Information used in this study was acquired through a literature review, a screening survey of state DOT members of the AASHTO Special Committee on Transportation Security and Emergency Management (SCOTSEM), and follow-up interviews with DOT staff.

Yuko J. Nakanishi and Pierre M. Auza, Nakanishi Research and Consulting, LLC, Forest Hills, New York, collected and synthesized the information and wrote the report. The members of the topic panel are acknowledged on the preceding page. This synthesis is an immediately useful document that records the practices that were acceptable within the limitations of the knowledge available at the time of its preparation. As progress in research and practice continues, new knowledge will be added to that now at hand.

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FEMA AND FHWA EMERGENCY RELIEF FUNDS REIMBURSEMENTS TO STATE DEPARTMENTS OF TRANSPORTATION

SUMMARY Disasters are costly to state departments of transportation (DOTs), which are challenged with expanding roles and responsibilities and increasing public expectations. An important aspect of recovery from any event is cost recovery, and reimbursement processes “play an important role in establishing and maintaining the readiness of resources and should be in place to ensure that resource providers are reimbursed in a timely manner” (*National Incident Management System* 2008, p. 39).

This synthesis focuses on state DOT experiences and practices related to the federal disaster reimbursement programs: FHWA Emergency Relief (ER) and the Federal Emergency Management Agency (FEMA) Public Assistance (PA). Severe weather events can be extremely costly, and with the continuing threat of terrorism, technological hazards, and accidents, state DOTs need efficient and effective ways to manage the processes required for reimbursement programs to obtain their eligible reimbursement amounts. However, the processes and required procedures can be difficult to navigate.

The intention of the FHWA ER and FEMA PA programs is to supplement state and local resources to address the significant expenses caused by extraordinary conditions such as natural disasters. Neither program is intended to reimburse state DOTs fully. The FEMA PA program emanates from the Robert T. Stafford Disaster Relief and Emergency Assistance Act, which authorizes federal assistance to be provided to local, state, tribal, territorial, and insular area governments and certain nonprofit organizations. The FEMA PA program is not an individual assistance program.

Effective practices were identified through an information review, a screening survey to state DOT members of the AASHTO Special Committee on Transportation Security and Emergency Management (SCOTSEM), follow-up telephone calls, and case studies. Thirty-five state DOTs responded to the screening survey. The information review included interviews and communications with panel members, representatives of FHWA and FEMA, two state emergency management agencies (EMAs), and American Public Works Association (APWA); and a literature review of relevant legislation, FEMA PA and FHWA ER guidance, Government Accountability Office (GAO) and Congressional Research Service (CRS) reports, and other relevant information. This process yielded information about the FEMA PA and FHWA ER programs along with ongoing and planned changes. Because of continuing efforts to improve the programs, additional changes that have not been identified in this synthesis are expected.

Case study interviews were performed with the following state DOTs:

- California—Caltrans
- Florida—FDOT
- Iowa—IDOT
- Louisiana—DOTD

- Missouri—MoDOT
- New York State—NYSDOT
- Tennessee—TDOT
- Texas—TxDOT
- Wisconsin—WisDOT
- Vermont—VTrans

Interviews were also performed with the state EMAs for Arizona and California.

State DOTs, in general, have extensive knowledge of FHWA and federal aid processes and procedures. They have developed ongoing professional relationships with their FHWA Division Office representatives and understand their Division Office requirements. State DOTs tend to have less familiarity and knowledge of FEMA processes, procedures, and requirements. The state DOTs that coordinated more closely with their FEMA representatives had better experiences in terms of the reimbursement process.

State DOTs stated that additional training on both programs and funds to provide more training and support to local public agencies (LPAs) would be desirable. State DOTs also noted that they have expended time and resources to assist LPAs because they require substantial assistance on both the FEMA and FHWA programs and look to their state DOTs for leadership and assistance. State DOT experiences of both programs were influenced by specific program components, implementation, and administration methods, as determined by state and local laws, regulations, and guidance. The changes being made to the programs through the Sandy Recovery Improvement Act (SRIA), Moving Ahead for Progress in the 21st Century (MAP-21), the 2013 *National Review of the Emergency Relief Program*, and increased coordination between FHWA and FEMA are expected to result in improvements in the FHWA ER and FEMA PA programs and consequently better experiences for state DOTs. Nonetheless, these changes can pose a challenge to state DOTs during the adjustment period.

Effective practices in the state DOT's business and management functions facilitate the reimbursement process for state DOTs. These functions include accounting and financial management, information management, project management, and procurement. The reimbursement process is also facilitated by the alignment of systems, processes, and technologies with the requirements of the FEMA PA and FHWA ER programs. Such practices are also part of an effective cost management strategy that keeps agency costs and resource utilization under control and supports agency leadership in its planning, analysis, and resource allocation decisions.

A high level of preparedness leads to better outcomes for state DOTs. Useful strategies for state DOT preparedness include establishing effective working relationships with federal, state, and local partners; seeking their input when developing or changing systems and processes; and resolving issues identified in previous disasters. Furthermore, because state DOTs need to meet FHWA ER and FEMA PA program deadlines for emergency work to maximize their eligible reimbursements, measures that streamline emergency work are instrumental in meeting these deadlines.

Useful practices in these topics identified during the synthesis study are summarized in Table 1.

TABLE 1
SUMMARY OF USEFUL PRACTICES REPORTED BY CASE STUDY PARTICIPANT AGENCIES

Useful Practices Reported by Case Study Participants	
Practices related to policy	<ul style="list-style-type: none"> • Creating a formal <i>cost recovery policy</i> • <i>Aligning systems, processes, and technologies</i> used in daily operations with FHWA and FEMA requirements • <i>Establishing relationships</i> with FHWA and FEMA contacts and other federal, state, and local partners • Conducting and implementing <i>After Action Reports</i> to assess and improve reimbursement processes • Preparing <i>administrative packets</i> for emergencies • Designating <i>reimbursement coordinators</i> (both at the headquarters and district levels) and other key roles before disasters occur • <i>Identifying mitigation opportunities</i> to increase resilience against future events • Maximizing eligible reimbursement by <i>meeting deadlines</i> for emergency work • <i>Refraining</i> from requesting FHWA Emergency Relief funds for permanent work <i>until the agency is ready to begin the work</i>
Practices related to accounting/financial management	<ul style="list-style-type: none"> • Using <i>unique project codes</i> for disasters • Performing <i>internal audits</i> prior to submission • Using appropriate <i>management systems</i> • Gaining access to the <i>FHWA Fiscal Management Information System (FMIS)</i> • Creating a <i>uniform invoice system</i> for counties • Including <i>all expenses</i> • <i>Screening for duplication</i> of FHWA Emergency Relief and FEMA Public Assistance costs; automate where possible • Integrating <i>financial, human resources, and payroll systems</i> statewide • Preparing a <i>Narrative Cost Allocation Plan</i> to capture FHWA Emergency Relief Indirect Costs
Practices related to documentation/information management	<ul style="list-style-type: none"> • <i>Systematizing record-keeping</i> and using <i>ICS forms</i> • Keeping data in a <i>central location or drive</i> • Using <i>electronic signatures</i> • <i>Storing data electronically</i> • Using appropriate management systems • Using software with <i>Optical Character Recognition</i> capabilities • <i>Using checklists</i> in FHWA Emergency Relief program guidance documents to determine eligibility • Creating <i>electronic versions</i> of the Detailed Damage Inspection Report (DDIR)/Damage Assessment Form (DAF) • <i>Automating DDIR/DAF distribution system</i> • Combining the Project Worksheet (PW) and Detailed Damage Inspection Report (DDIR) <i>into one form</i>

(continued on next page)

TABLE 1
(continued)

<p>Practices related to training</p>	<ul style="list-style-type: none"> • Conducting <i>disaster assessments</i> • Using scenarios from <i>prior disasters</i> • <i>Providing training</i> on the FHWA Emergency Relief and FEMA Public Assistance programs to <i>personnel responsible for documentation and reimbursement</i> • <i>Providing training to Local Public Agencies</i> on the FHWA Emergency Relief and FEMA Public Assistance programs • <i>Providing training to state EMA personnel</i> on the FHWA Emergency Relief program (because they may be less familiar with this program) • Training state DOT personnel for integration into the state EMA as <i>project officers and project coordinators</i> on FEMA Public Assistance–eligible projects
<p>Practices related to site assessment</p>	<ul style="list-style-type: none"> • Designating <i>assessment teams</i> before disasters occur • Establishing <i>repair or route prioritization methods</i> before disasters occur • Distributing <i>information packets</i> to assessment teams • Using <i>weather information services or systems</i> • Implementing <i>bridge/highway/pavement management systems</i> • Using <i>geospatial data and lidar</i> • <i>Mapping historic data</i> to show <i>repetitive losses</i> • Purchasing a <i>specially equipped vehicle</i> that records damages or predisaster conditions • <i>Forming a partnership</i> with the Civil Air Patrol or similar organizations for <i>aerial imagery services</i> • Developing assessment teams <i>able to be self-sustaining</i> for several days • Using <i>web-based maps</i> to determine whether a road is <i>Federal-aid</i> • <i>Inspecting vehicles and equipment</i> before mobilization
<p>Practices related to asset management</p>	<ul style="list-style-type: none"> • Using <i>Asset Management systems</i> with standardized site codes to track and document predisaster conditions of DOT facilities • Using <i>bridge monitoring systems</i> to predict and assess impacts of disasters on bridges • <i>Equipping snowplows and other vehicles with GPS</i> facilitates emergency response/recovery and tracking and documenting labor and equipment usage
<p>Practices related to appeals</p>	<ul style="list-style-type: none"> • Contacting the <i>FHWA Division Office</i> to discuss the case directly • <i>Citing relevant laws and regulations</i> • <i>Citing prior decisions (precedents)</i>
<p>Practices related to contracting</p>	<ul style="list-style-type: none"> • <i>Standardizing payments to contractors</i> • Designating <i>one point of contact</i> for plans and blueprints • Implementing a <i>contractor database</i> • Using <i>Construction Management</i> system or software • Securing <i>emergency waivers</i> (for example, on environmental and historical preservation approvals) and establishing a <i>blanket approval process</i> for emergency work • Selecting/prequalifying contractors for emergency work who are <i>familiar with the process and documentation required</i> for successful reimbursement

CHAPTER ONE

INTRODUCTION

Costs related to disasters experienced by states and municipalities are formidable. In the year 2012, “there were 11 different weather and climate disaster events with estimated losses exceeding \$1 billion each across the United States. Taken together, these 11 events resulted in over \$110 billion in estimated damages, which would make it the second-costliest year on record” (*The President’s Climate Action Plan 2013*, p. 4). Internationally, economic losses in 2012 were largely driven by Hurricane Sandy (\$65 billion), a U.S. drought (\$35 billion), several severe weather events in the United States (more than \$25 billion), earthquakes in Italy (\$15.8 billion), and several flood events in China (\$14.4 billion) (AON Benfield 2013, p. 5). In addition, Melillo et al. (2014) include the following findings regarding the frequency and severity of severe weather events:

- Intensity, frequency, and duration of North Atlantic hurricanes and Category 4 and 5 hurricanes have increased since the 1980s. Hurricane intensity and rainfall rates are expected to increase.
- Winter storms have increased in frequency and intensity since the 1950s.
- Heat waves have become more frequent and intense, particularly in Western United States. In the Southwest, droughts and heat waves are expected to increase in intensity.
- In the last three to five decades, heavy downpours have been increasing, especially in the Midwest and Northeast (pp. 16–17).

The number of disaster declarations reached a high of 99 in fiscal year (FY) 2011, compared with 68 in FY 2004 (“Disaster Declarations by Year” 2014). During the period from FY 2004 to FY 2011, more than \$90 billion in disaster assistance had been obligated by Federal Emergency Management Agency (FEMA) for 629 disaster declarations [*Federal Disaster Assistance* (GAO-12-838) 2012, p. 14].

The focus of this synthesis report is on FEMA’s Public Assistance (PA) and FHWA’s Emergency Relief (ER) funds reimbursements to state departments of transportation (DOTs). State DOTs are increasingly being called upon to go beyond their usual roles and responsibilities. For example, for two recent disasters, the New York State DOT (NYSDOT) was directed by an executive order of the governor to assist local public agencies (LPAs) with emergency repairs and debris removal from local roads. The budgetary impact of these

additional responsibilities and normal responsibilities during disasters and emergencies can be significant. Therefore, the knowledge of the reimbursement programs and processes is a strategic asset for state DOTs.

State DOTs need to efficiently secure reimbursements for which they are eligible. However, state DOTs report that they expend much effort and time in the reimbursement process. Difficulties may arise because the two programs have different documentation procedures and forms, eligibility criteria, federal match percentages, different appeals procedures, equipment rate, contracting requirements, and fringe benefits rate calculations. State DOTs, in some situations, have to apply for reimbursement to both programs, even if it is for the same event at the same site. Efforts at clarifying the two programs have been made in recent years and are still being made, most recently with the enactment of the Moving Ahead for Progress in the 21st Century (MAP-21) Act and the Sandy Recovery Improvement Act (SRIA). Many state DOTs have a better understanding of FHWA requirements and federal aid procedures because they work with their FHWA Division Offices on a regular basis and thus have a better comprehension of the FHWA ER program elements and application process. Because they have less familiarity with FEMA and the FEMA PA program, more effort is required for state DOTs to achieve a good grasp of the requirements.

The goal of this study effort is to improve state DOTs’ knowledge and resources through documentation of existing experiences, knowledge, learning, and practices used by state DOTs to obtain appropriate reimbursements efficiently. This project synthesized the range of practices state DOTs can implement to ease their response effort, secure appropriate reimbursements, and simplify cost identification.

FHWA EMERGENCY RELIEF AND FEDERAL EMERGENCY MANAGEMENT AGENCY PUBLIC ASSISTANCE PROGRAM OVERVIEW

The intention of the FHWA ER and FEMA PA programs is to supplement state and local resources to address the significant expenses caused by extraordinary conditions such as natural disasters. Neither program is intended to reimburse state DOTs fully. The purpose of the FHWA ER program has been to “aid States in repairing road facilities which have suffered widespread serious damage resulting from a natural disaster over a wide area or serious damage from a catastrophic failure”

[Code of Federal Regulations (CFR), Title 23, § 668.105, “Policy”]. Although state DOTs have been allowed to make repairs to match current design standards, the purpose has been replacement in-kind, not to fix “preexisting, non-disaster related deficiencies” (CFR, Title 23, § 668.105, “Policy”). FHWA is part of the U.S. DOT and was established in 1966. FHWA’s mission is “to improve mobility on our Nation’s highways through national leadership, innovation, and program delivery.” The FHWA “supports State and local governments in the design, construction, and maintenance of the Nation’s highway system (Federal-Aid Highway Program) and various federally and tribal-owned lands (Federal Lands Highway Program)” (“About the FHWA” 2012). There are 52 FHWA Division Offices, one in each state, the District of Columbia, and Puerto Rico; there is also one FHWA Resource Center that provides technical assistance, program support, training, and technology assistance.

The FEMA PA program provides assistance to state and local governments and communities to help them respond to and recover from disasters. The scope of the FEMA PA program is broader than that of the FHWA ER program; for instance, the range of eligible facilities and potential applicants is larger. FEMA was established in 1979 by an executive order of President James Earl “Jimmy” Carter to assist communities to prepare for, respond to, and recover from natural and man-made disasters. In 2003, FEMA became a part of the Department of Homeland Security (DHS). FEMA’s mission is “to support our citizens and first responders to ensure that as a nation we work together to build, sustain, and improve our capability to prepare for, protect against, respond to, recover from, and mitigate all hazards” (“About the Agency” 2014). In addition to its headquarters in Washington, D.C., FEMA has 10 regional offices throughout the United States. FEMA also establishes joint field offices (JFOs) to respond to individual declarations.

FEMA and FHWA are the administrators for the FEMA PA and FHWA ER programs, respectively, although they may delegate some responsibilities to the state emergency management agency (EMA) and state DOT.

Program Triggers

A presidential declaration or governor’s proclamation is required for an event to be eligible for the FHWA ER program. A statewide federal share threshold (currently \$700,000) must be met for an event to be eligible for the program (CFR, Title 23, § 668, Subpart A, “Procedures for Federal-Aid Highways”). Heavy maintenance or routine repair is not eligible for FHWA ER funds. If the total federal share is less than the threshold amount, justification as to why the repair exceeds the scope of heavy maintenance or routine repair should accompany the FHWA ER application [CFR, Title 23, § 668.105(j)].

The trigger for the FEMA PA program is a presidential declaration of a major disaster or emergency under the Robert

T. Stafford Disaster Relief and Emergency Assistance Act [United States Code (U.S.C.), Title 42, §§ 5121-5206]. State-wide and countywide federal share impact indicators based on population are also considered when making a major disaster declaration decision. The regulation in CFR Title 44 § 206.48 (“Factors considered when evaluating a governor’s request for a major disaster declaration”) provides that FEMA will adjust these per capita impact indicators. These indicators are published in the *Federal Register*. The statewide per capita impact indicator is \$1.39 for disasters declared on or after October 1, 2013 (“Notice of Adjustment of Statewide Per Capita Impact Indicator” 2013). The corresponding countywide indicator is \$3.50 (“Notice of Adjustment of Countywide Per Capita Impact Indicator” 2013). Per the Stafford Act, Section 320, Limitation on Use of Sliding Scales (U.S.C., Title 42, § 5163), no geographic area shall be precluded from receiving assistance under this Act solely by virtue of an arithmetic formula or sliding scale based on income or population.

Legislative Authority

The FHWA ER program is authorized by Section 125 (“Emergency Relief”) of U.S. Code Title 23. In the Code of Federal Regulations (CFR), Part 668 (“Emergency Relief Program”) of Title 23 pertains to the ER program and provides policy and program guidance for the administration of program funds. Changes to the program were included in the MAP-21 legislation, which went into effect October 1, 2012.

The Robert T. Stafford Disaster Relief and Emergency Assistance Act (the “Stafford Act” for short), signed into law in 1988, provides the federal government with authority to respond to disasters. The Stafford Act allows FEMA to access the Federal Disaster Relief Fund for the purposes specified in the Act. The Stafford Act amended the Disaster Relief Act of 1974 [Public Law (PL) 93-288]. In the U.S. Code, the Stafford Act is largely codified in Title 42, §§ 5121-5206. In the CFR, Part 206 (“Federal Disaster Assistance for Disasters Declared on or After November 23, 1988”) of Title 44 codifies several elements of the Stafford Act, including obtaining a presidential disaster declaration, the types and scopes of federal assistance, and eligibility conditions. FEMA, as an agency within the U.S. DHS, is responsible for leading the federal disaster response and administers the FEMA PA program.

Funding Sources

The Highway Trust Fund is the funding source for the FHWA ER program, although the amount needed for the program has exceeded the amount available in the fund and has required special Congressional appropriations in recent years. Since 1972, \$100 million a year has been authorized by Congress for the FHWA ER program. Because this amount had not changed until October 1, 2012, funding requests by states typically had exceeded this amount. In addition, the maximum cap for each state had been \$100 million for each

disaster or catastrophic failure. Since MAP-21 was enacted, there is no longer a maximum amount per disaster per state, with the exception of the supplemental appropriation for Hurricane Sandy.

The funding source for the FEMA PA program is the Disaster Relief Fund. The Disaster Relief Fund is funded annually by Congressional appropriations based on a request from FEMA. For example, for FY 2013, the congressional justification for the Disaster Relief Fund amounted to \$6,088,926,000 (“Fiscal Year 2013 Budget,” FEMA 2012).

Program Administration

In general, state EMAs administer the FEMA PA program and reimbursement process differently, in part because of differences in state laws and regulations and in part because of resource availability. For instance, according to Florida statute, applicants may receive only one advance funding payment per funding agreement, and the amount requested is not to exceed the cash needed for the initial 3 months of the work [State of Florida, *Florida Statutes*, 216.181 (16) (b)]. Another instance is audit requirements: certain states, such as Arizona, require all projects to be audited. This forces Arizona’s Division of Emergency Management to obtain audit-level documentation from Arizona DOT. States also have differing data retention policies, and permit requirements may vary from state to state as well as from municipality to municipality. Note that each state’s administrative plan describes the “roles, responsibilities, processes, and procedures” for administering the FEMA PA program and is incorporated into the state’s emergency plan (“Public Assistance Administrative Plan Template” 2013).

As mentioned in the 2013 *National Review of the Emergency Relief Program*, FHWA Division Offices implement the FHWA ER program in different ways. For example, some Division Offices perform a higher percentage of final inspections than do others. In addition, Division Offices may allow rates based on different equipment manuals or sources.

Other Programs

Additional programs useful for state DOTs include FEMA’s Fire Management Assistance Grant (FMAG) Program, Hazard Mitigation Grant Program (HMGP), and the Housing and Urban Development’s Community Development Block Grant (CDBG) Program.

- The FMAG program is used by state DOTs to obtain reimbursements for expenses related to fire management support activities.
- The HMGP is authorized by Section 404 of the Stafford Act and provides grants for the implementation of long-term hazard mitigation measures after a major disaster declaration.

- The CDBG program provides flexible grants to communities (cities, counties, and states) to help them recover from presidentially declared disasters, with an emphasis on low-income areas (“Community Development Block Grant Program,” U.S. Department of Housing and Urban Development n.d.).

Although these programs are referenced in parts of the synthesis, they were not covered in depth and were not a specific focus of this synthesis study.

KEY DEFINITIONS

Definitions Used by the FEMA Public Assistance Program

Applicant

An applicant is a state agency, local government, Indian Tribe, authorized tribal organization, Alaska Native village or organization, or one of certain private nonprofit (PNP) organizations that submit a request for disaster assistance under the presidentially declared major disaster or emergency. The terms “applicant” and “subgrantee” are often used interchangeably [*Public Assistance Applicant Handbook* (FEMA P-323) 2010].

Declaration

There are two types of declarations: emergency and major disaster. Both declaration types authorize the president to provide federal disaster assistance. However, the cause of the declaration and the type and amount of assistance differ [*Public Assistance Applicant Handbook* (FEMA P-323) 2010].

Emergency

“Emergency” means any occasion or instance for which, in the determination of the president, federal assistance is needed to supplement state and local efforts and capabilities to save lives and to protect property and public health and safety, or to lessen or avert the threat of a catastrophe in any part of the United States (U.S. Code, Title 42, § 5122 “Definitions”).

Emergency Work

Emergency work is performed to reduce or eliminate an immediate threat to life, protect health and safety, or protect improved property that is threatened in a significant way as a result of a major disaster. Emergency work frequently includes clearance and removal of debris and temporary restoration of essential public facilities and services (Categories A and B) [*Public Assistance Applicant Handbook* (FEMA P-323) 2010].

Facility

A facility is any publicly owned or PNP-owned building, works, system, or equipment (built or manufactured) or certain improved and maintained natural features. Land used for agricultural purposes is not a facility [*Public Assistance Applicant Handbook* (FEMA P-323) 2010].

Hazard Mitigation

Hazard mitigation is any cost-effective action taken to prevent or reduce the threat of future damage to a facility from a disaster event [*Public Assistance Applicant Handbook* (FEMA P-323) 2010].

Major Disaster

A major disaster is any natural catastrophe (including hurricane, tornado, storm, high water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought), or regardless of cause, any fire, flood, or explosion in any part of the United States that, in the determination of the president, causes damage of sufficient severity and magnitude to warrant major disaster assistance under this Act to supplement the efforts and available resources of states, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby (U.S. Code, Title 42, § 5122 “Definitions”).

Permanent Work

Permanent work is that required to restore a facility, through repairs or replacement, to its predisaster design, function, and capacity in accordance with applicable codes and standards (Categories C through G) [*Public Assistance Applicant Handbook* (FEMA P-323) 2010].

Definitions Used by the FHWA ER Program*Applicant*

The state highway agency is the applicant for federal assistance under 23 U.S.C. 125 for state highways and local roads and streets that are a part of the federal aid highways (CFR, Title 23, § 668.103 “Definitions”).

Betterments

Added protective features, such as the rebuilding of roadways at a higher elevation or the lengthening of bridges, or changes that modify the function or character of a highway facility from what existed prior to the disaster or catastrophic failure, such as additional lanes or added access control, are considered betterments (CFR, Title 23, § 668.103 “Definitions”).

Catastrophic Failure

The sudden failure of a major element or segment of the highway system because of an external cause is a catastrophic failure. The failure must not be primarily attributable to gradual and progressive deterioration or lack of proper maintenance. The closure of a facility because of imminent danger of collapse is not in itself a sudden failure (CFR, Title 23, § 668.103 “Definitions”).

Emergency Repairs

Emergency repairs are those including temporary traffic operations undertaken during or immediately after the disaster occurrence for the purpose of:

1. Minimizing the extent of the damage,
2. Protecting remaining facilities, or
3. Restoring essential traffic (CFR, Title 23, § 668.103 “Definitions”).

External Cause

An outside force or phenomenon that is separate from the damaged element and not primarily the result of existing conditions is an external cause (CFR, Title 23, § 668.103 “Definitions”).

Federal-aid Highways

Federal-aid highways are all public roads including bridges that are not classified as local or rural minor collectors (or minor collectors located in rural areas) [U.S.C., Title 23, § 101(a)(5)].

Federal-aid Systems

Federal-aid systems are the Interstate and the National Highway System. The Interstate is the Dwight D. Eisenhower National System of Interstate and Defense Highways. The National Highway System consists of “the highway routes and connections to transportation facilities depicted on the map submitted by the Secretary to Congress with the report entitled ‘Pulling Together: The National Highway System and its Connections to Major Intermodal Terminals’ and dated May 24, 1996” [U.S.C., Title 23, § 103(b)(2)].

Heavy Maintenance

Heavy maintenance is work usually done by highway agencies in repairing damage normally expected from seasonal and occasionally unusual natural conditions or occurrences. It includes work at a site required as a direct result of a disaster that can reasonably be accommodated by a state or local road authority’s maintenance, emergency, or contingency program (CFR, Title 23, § 668.103 “Definitions”).

Natural Disaster

A natural disaster is a sudden and unusual natural occurrence, including but not limited to intense rainfall, flood, hurricane, tornado, tidal wave, landslide, volcano eruption, and earthquake, that causes serious damage (CFR, Title 23, § 668.103 “Definitions”).

Permanent Repairs

Permanent repairs are those undertaken (usually after emergency repairs have been completed) to restore the highway to its comparable facility. Permanent repairs must have prior FHWA approval and authorization unless done as part of the emergency repairs.

Proclamation

A proclamation is a declaration of emergency by the governor of an affected state (CFR, Title 23, § 668.103 “Definitions”). These definitions undoubtedly meet or exceed the definitions of “emergencies” used by state DOTs to initiate emergency procurement procedures, despite that DOTs have varying definitions and triggers for emergency procurement procedures (Gransberg and Loulakis 2012, p. 33).

Serious Damage

Serious damage is heavy, major, or unusual damage to a highway that severely impairs the safety or usefulness of the highway or results in road closure. Serious damage must be beyond the scope of heavy maintenance (CFR, Title 23, § 668.103 “Definitions”).

Key Budget Terms

The following terms pertaining to the federal budgetary process are used in the reimbursement process. The source of these terms is the Government Accountability Office publication GAO-05-734SP, *A Glossary of Terms Used in the Federal Budget Process* (2005).

Allocation

For the purposes of budgeting, an allocation means a delegation, authorized in law, by one agency of its authority to obligate budget authority and outlay funds to another agency. (The appropriation or fund from which the allocation is made is generally referred to as the *parent appropriation* or *fund*.) An allocation is made when one or more agencies share the administration of a program for which appropriations are made to only one of the agencies or to the president. When an allocation occurs, the Department of the Treasury establishes a subsidiary account called a “transfer appropriation account,”

and the agency receiving the allocation may obligate up to the amount included in the account (*A Glossary of Terms Used in the Federal Budget Process* 2005, p. 9).

Appropriations

Appropriations are the budget authority to incur obligations and to make payments from the U.S. Treasury for specified purposes. Appropriations do not represent cash actually set aside in the Treasury for purposes specified in the appropriation act; they represent amounts that agencies may obligate during the period of time specified in the respective appropriation acts. An appropriation act is a statute, under the jurisdiction of the House and Senate Committees on Appropriations, that generally provides legal authority for federal agencies to incur obligations and make payments out of the Treasury for specified purposes. Under the rules of both houses, an appropriation act should follow enactment of authorizing legislation (*A Glossary of Terms Used in the Federal Budget Process* 2005, p. 14).

Cost-Benefit Analysis

Also called benefit-cost analysis (BCA), this is an analytic technique that compares the costs and benefits of investments, programs, or policy actions to determine which alternative or alternatives maximize net benefits (economic efficiency). The costs and benefits included depend on the scope of the analysis. Net benefits of an alternative are determined by subtracting the present value of costs from the present value of benefits (*A Glossary of Terms Used in the Federal Budget Process* 2005, p. 36).

Fiscal Year

The fiscal year for the federal government begins on October 1 of each year and ends on September 30 of the following year; it is designated by the calendar year in which it ends (*A Glossary of Terms Used in the Federal Budget Process* 2005, p. 55).

Obligation

An obligation is a definite commitment that creates a legal liability of the government for the payment of goods and services ordered or received, or a legal duty on the part of the United States that could mature into a legal liability by virtue of actions on the part of the other party beyond the control of the United States. Payment may be made immediately or in the future. An agency incurs an obligation, for example, when it places an order, signs a contract, awards a grant, purchases a service, or takes other actions that require the government to make payments to the public or from one government account to another (*A Glossary of Terms Used in the Federal Budget Process* 2005, p. 70).

Obligational Authority

Obligational authority is defined as the sum of (1) budget authority enacted for a given fiscal year, (2) unobligated balances of amounts that have not expired brought forward from prior years, (3) amounts of offsetting collections to be credited and available to specific funds or accounts during that year, and (4) budget authority transferred from other funds or accounts. The balance of obligational authority is an amount carried over from one year to the next if the budget authority is available for obligation in the next fiscal year. Not all obligational authority that becomes available in a fiscal year is obligated and paid out in that same year. Obligated balance is the already incurred portion of the obligational authority for which payment has not yet been made. The unobligated balance is the portion that has not yet been incurred (*A Glossary of Terms Used in the Federal Budget Process* 2005, p. 71).

Reimbursements

A reimbursement is defined as a sum (1) that is received by an agency as a payment for commodities sold or services furnished either to the public or to another government account and (2) that is authorized by law to be credited directly to specific appropriation and fund accounts. Reimbursements between two accounts for goods or services are usually expenditure transactions/transfers. Anticipated reimbursements are, in the case of transactions with the public, estimated collections of expected advances to be received or expected reimbursements to be earned. In transactions between government accounts, anticipated reimbursements consist of orders expected to be received for which orders have been accepted. Agencies cannot obligate against anticipated reimbursements without specific statutory authority (*A Glossary of Terms Used in the Federal Budget Process* 2005, p. 84).

BACKGROUND

The useful practices that state DOTs adopt when attempting to recover costs from the FHWA ER and FEMA PA programs are set against a context of cost management concepts, resource management, information management, and the National Incident Management System (NIMS). This context is one that changes over time because legislation necessarily affects the FHWA ER and FEMA PA programs in significant ways.

Recent Reports on the FHWA ER and FEMA PA Programs

The Government Accountability Office (GAO) and the Congressional Research Service (CRS) periodically publish reports on the FHWA ER and the FEMA PA programs. These two government bodies serve different purposes, and these purposes result in differences between their reports. The GAO reports assess the performance of programs (e.g., FHWA ER

and FEMA PA programs), in accordance with the GAO's role as an independent, nonpartisan "congressional watchdog" ("About GAO" n.d.). On the other hand, the CRS reports provide an orientation to these programs. For example, many CRS reports carry the word "Primer" in the title. In addition, many CRS reports are updated periodically as events warrant.

Recent Reports on the FHWA ER Program

Recent reports on the FHWA ER program include a 2011 GAO report and a 2014 CRS report. The CRS report (Kirk 2014) is updated periodically as events warrant.

A GAO analysis of the FHWA ER program resulted in the recommendations given in the report GAO-12-45 *Highway Emergency Relief: Strengthened Oversight of Project Eligibility Decisions Needed* (2011). The GAO reviewed 83 emergency relief project files in three FHWA state offices and found instances of missing or incomplete documentation. GAO's recommendations to the FHWA included (1) time frames to limit states' requests for emergency relief funds and to close completed projects, and (2) standardized procedures for reviewing emergency relief documentation and making eligibility decisions. The status of these recommendations can be found on GAO's web page for report GAO-12-45 (<http://www.gao.gov/products/GAO-12-45>).

The CRS primer for the FHWA ER program is *Emergency Relief for Disaster Damaged Roads and Transit Systems* (Kirk 2014). The report discusses the eligibility of federal-aid roads and bridges for the FHWA ER program. The report emphasizes the relationship between state DOTs and the FHWA Division Offices: namely, this relationship facilitates "a quick, coordinated response to disasters" (p. 2). The FHWA ER program is funded through a permanent annual authorization (\$100 million in 2014) and supplemental appropriations. This CRS report is updated periodically as events warrant. A previous version by the same author is dated November 1, 2012, under the title *Emergency Relief Program: Federal-Aid Highway Assistance for Disaster-Damaged Roads and Bridges*.

Recent Reports on the FEMA PA Program

The FEMA PA program is the focus in two recent GAO reports and one report from the CRS. The GAO reviewed FEMA PA grants related to the 2005 Gulf Coast hurricanes. The results and recommendations are published in GAO-09-129 *Disaster Recovery: FEMA's Public Assistance Grant Program Experienced Challenges with Gulf Coast Rebuilding* (2008). Another report (GAO-12-838) examines FEMA PA obligations in the period fiscal years 2004 through 2011: *Federal Disaster Assistance: Improved Criteria Needed to Assess a Jurisdiction's Capability to Respond and Recover on Its Own* (2012). The CRS report is the *Congressional Primer on Responding to*

Major Disasters and Emergencies by McCarthy and Brown (2013) and is updated periodically as events warrant.

In report GAO-09-129 *Disaster Recovery* (2008), the GAO identified challenges that slowed rebuilding projects in (1) project development, (2) information sharing and tracking, (3) project approvals and appeals, and (4) human capital. The report notes some of the actions the U.S. DHS has taken to address these challenges. The GAO makes other recommendations to DHS in the report; the current status of these recommendations can be found on the report's web page (<http://www.gao.gov/products/GAO-09-129>).

In report GAO-12-838 *Federal Disaster Assistance* (2012), the GAO reviewed FEMA's anticipated obligations for 508 declarations with PA during fiscal years 2004 through 2011. GAO's analysis shows that FEMA primarily relied on the per capita damage indicator to determine whether to recommend to the president that a jurisdiction receive public assistance (PA) funding. However, the indicator was found to be artificially low because FEMA's per capita indicator did not reflect the increase in per capita personal income or inflation. As a result, the GAO recommended that FEMA (1) develop a methodology to more accurately assess a jurisdiction's capability to respond to and recover from a disaster without federal assistance, (2) develop criteria for 100% cost adjustments, and (3) implement goals for and track administrative costs. The current status of these recommendations can be found on the GAO-12-838 report's web page (<http://www.gao.gov/products/GAO-12-838>).

The *Congressional Primer on Responding to Major Disasters and Emergencies* by McCarthy and Brown (2013) discusses the role that the FEMA PA and FHWA ER programs play as federal-aid programs for disasters and emergencies. For the benefit of readers new to both programs, the primer discusses the role of the National Response Framework (NRF) and the process of declaring major disasters and emergencies. In addition to the FEMA PA and FHWA ER programs, this CRS report mentions that other federal aid is available through several other sources:

- Small Business Administration (which provides disaster loans to businesses and homeowners),
- U.S. Department of Agriculture, and
- Department of Housing and Urban Development (HUD) (in the form of Community Development Block Grant funds being made available for unmet disaster needs).

However, these other sources of federal aid are beyond the scope of this synthesis. McCarthy and Brown (2013) discuss the ways in which congressional offices are resources and sources of information to constituents in need of disaster aid; this CRS report is also updated periodically as events warrant. A previous version by the same author is dated May 23, 2012, under the title *Congressional Primer on Major Disasters and Emergencies*.

National Incident Management System

NIMS is a "unified national framework for incident management" (*National Incident Management System 2008*, p. 5). NIMS applies to all aspects of incident management—prevention, protection, response, mitigation, and recovery. The framework enables interoperability among a diverse set of NIMS users. Incident Command System (ICS), an important element of NIMS, is an organizational structure composed of the following major functions: command, operations, planning, logistics, and finance/administration. ICS allows federal, state, tribal, and local agencies, nongovernmental organizations (NGOs), and private sector organizations from different jurisdictions to work together on any incident using this standardized structure.

Each of the sections has responsibilities related to documentation and resource management, which can affect the outcome of the reimbursement effort.

The Financial/Administration Section includes the Time Unit, which ensures recording for personnel time; the Procurement Unit, which works with the Supply Unit in the Logistics Section and local jurisdictions to identify sources for needed resources; and the Cost Unit, which provides cost analysis and identifies and maintains cost information for assigned resources. The Finance/Administration Section chief is responsible for the following tasks:

- Manage all financial aspects of an incident.
- Provide financial and cost analysis information as requested.
- Ensure compensation and claims functions are being addressed relative to the incident.
- Develop an operational plan for the Finance/Administration Section and fill Section supply and support needs.
- Maintain daily contact with agency(s) headquarters on finance matters.
- Ensure that personnel time records are completed accurately and transmitted to home agencies.
- Ensure that all obligation documents initiated at the incident are properly prepared and completed.
- Brief agency administrative personnel on all incident-related financial issues needing attention or follow-up.

The Planning Section contains the Resources Unit and the Documentation Unit. The Resources Unit ensures that all resources have checked in at the incident and categorizes and provides the resource status during the incident. The Documentation Unit maintains incident files and records actions taken, and files, maintains, and stores incident files. The responsibilities of the Planning Section Chief involve the oversight of all data gathering and analysis related to incident operations and assigned resources. More specifically, he or she will

- Collect and manage all incident-relevant operational data.
- Reassign out-of-service personnel within the ICS organization already on scene, as appropriate.

- Compile and display incident status information.
- Determine need for specialized resources.
- Assemble and disassemble Task Forces and Strike Teams not assigned to Operations.
- Establish specialized data collection systems as necessary (e.g., weather).
- Assemble information on alternative strategies.
- Provide periodic predictions on incident potential.
- Report significant changes in incident status.
- Oversee preparation of the Demobilization Plan.

The Logistics Section Chief is responsible for projecting resource needs and providing the support needs through the Service Branch and the Support Branch. The Service Branch supplies communications, medical care, and food services. The Support Branch includes the supply unit, which orders, receives, processes, stores, inventories, and distributes needed supplies, including personnel and tools. The Ground Support Unit provides all ground transportation for the incident and is responsible for maintaining and supplying vehicles, recording vehicle usage, and creating traffic plans. The Facilities Unit is responsible for setting up, maintaining, and demobilizing facilities, including the Incident Command Post, Incident Base, and Camps.

The Operations Section is responsible for the management of tactical activities and implementation of the Incident Action Plan.

Organizational charts for the sections are presented in Figures 1–3.

Resource Management

NIMS resource management concepts and principles can assist agencies in the FEMA PA and FHWA ER reimbursement processes by standardizing resource classification and

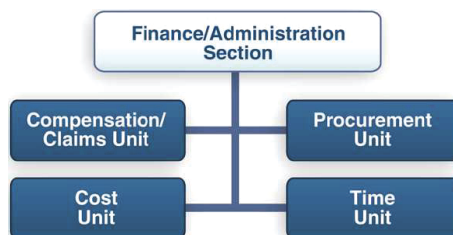


FIGURE 2 Finance/Administration Section.

tracking methods; through planning, training, and exercises; through the use of standing agreements and contracts; through resource categorization by category, kind, and type; by identifying, ordering, mobilizing, and tracking resources; and acquisition procedures, management of information, and redundant systems. Acquisition procedures include “just in time” procurement and advance acquisition or stockpiling (*National Incident Management System 2008*, p. 33). National resource typing helps to identify and inventory resources and mobilize resources for mutual aid purposes, and it represents the minimum criteria for the resource component and capability. Credentialing workers confirms their identity and attributes and is an important aspect of resource typing.

NIMS categorizes resource management into (1) preparedness initiatives (resource typing, inventorying, and credentialing) and (2) resource management activities during an incident. As seen in Figure 4, after an incident, the key resource management steps are as follows.

Step 1—Identify requirements, by determining:

- What is needed.
- How much is needed.
- Where and when it is needed.
- Who will be receiving it and using it.

Step 2—*Order and Acquire*. Usually, initial requirements are filled by local resources, but for needed resources that are not available locally, resource-ordering procedures are used.

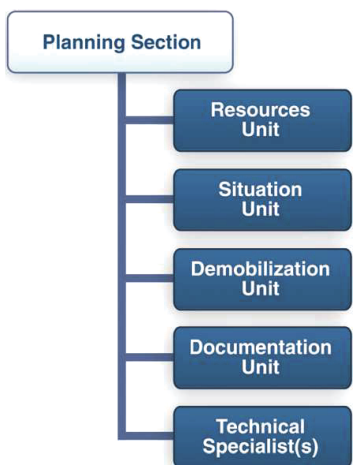


FIGURE 1 Planning Section organization.

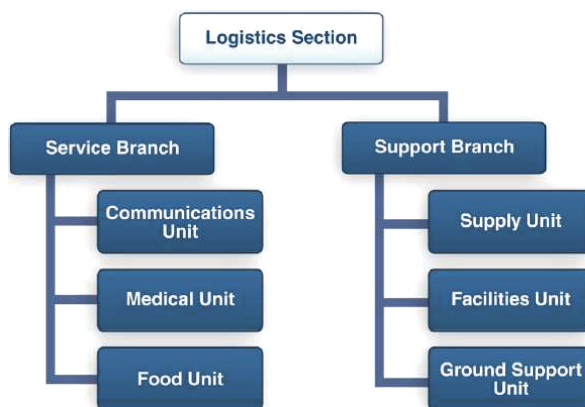


FIGURE 3 Logistics Section organization.

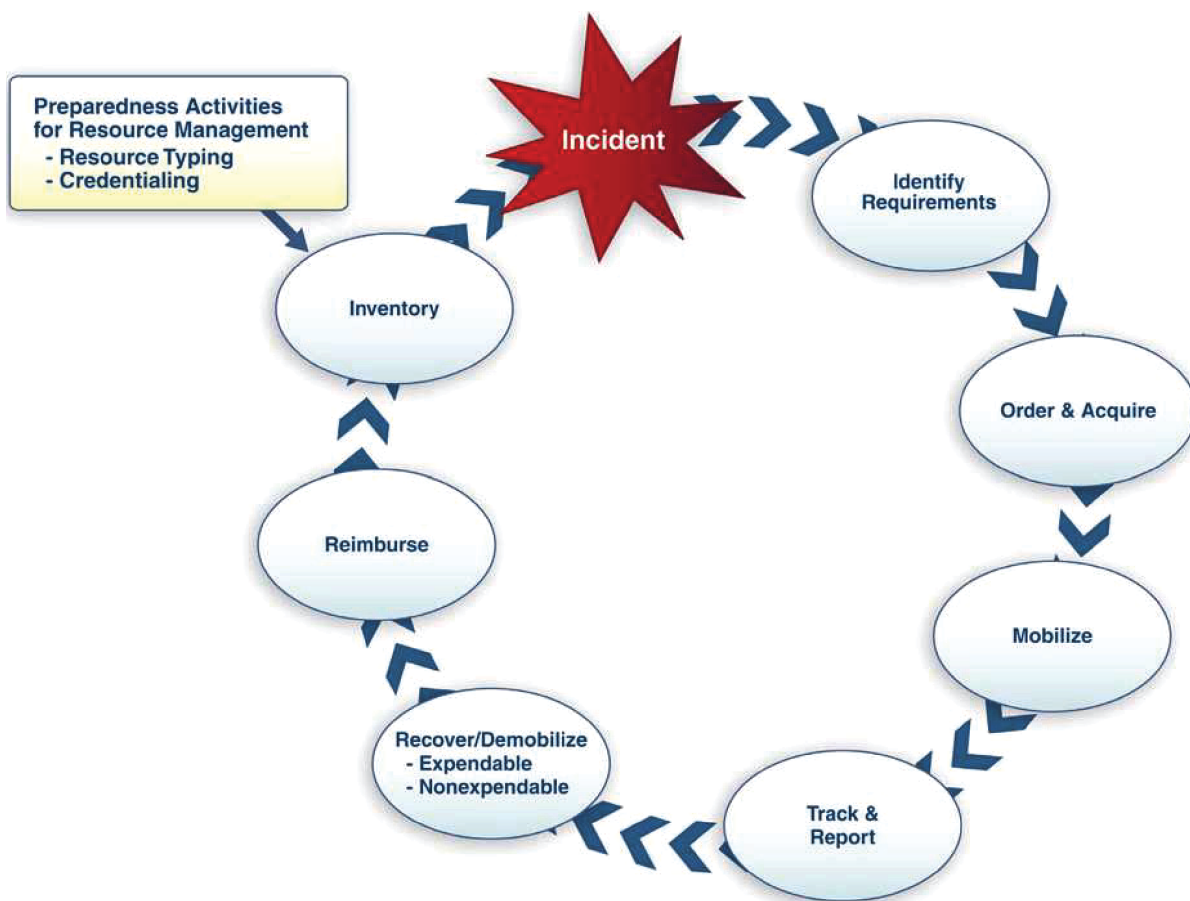


FIGURE 4 Resource management steps (Source: *National Incident Management System 2008*, p. 35).

Step 3—Mobilize and Deploy. Mobilization involves the movement of personnel for the purpose of incident response. Specific information, such as the time of departure and arrival, reporting location and assignment, incident number, resource order number, applicable cost, and funding codes, are provided to the personnel. As resources arrive to the incident location or staging areas, a formal check-in process occurs.

Step 4—Track and Report. Resource tracking (knowing where resources are) is an important part of resource management, helps in preparations of personnel to receive the resources, and improves the safety and security of the personnel as well as the resources. Reconciliation, accounting, auditing, and inventorying are involved in resource tracking.

Step 5—Recovery/Demobilize. Recovery is the final disposition of all resources, and demobilization is the return of a resource, including personnel, to its original location and status and notifying relevant personnel of its return; a part of the recovery/demobilization process involves the restoration of personnel and equipment to their fully functioning state; expendable resources (one-time-use supplies) should be monitored carefully so that all expended resources are accounted for; documentation of the demobilization activities should be collected for reimbursement purposes.

Step 6—Reimbursements. Reimbursements replenish funds used for the incident but must follow program guidelines or agreed-upon terms in mutual-aid and assistance agreements.

Step 7—Inventorying. Inventory systems can assist agencies in providing real-time information on resource supply, keeping accurate account of their resources, and should be able to flag potential double-counting of personnel or equipment. Technologies such as Global Positioning System (GPS), radio frequency identification (RFID), and bar codes can supplement these systems. Resource typing identifies categories for which the resource is used along with kind, components, measures, and type. “Kind” describes like resources. “Components” are elements that comprise the resource. “Measures” express a resource’s capability or capacity. “Type” identifies the level of resource capability (*National Incident Management System 2008*, pp. 42–43).

Helpful references include the following:

- The FEMA National Integration Center’s Resource Typing Library Tool is an online resource typing tool cataloguing national resource typing definitions and job titles/position qualifications. It can be found at the following hyperlink: <https://rtlt.ptaccenter.org/Public> (“Resource Typing Library Tool” n.d.).

- “Resource Management,” Federal Emergency Management Agency (FEMA), U.S. Department of Homeland Security, Washington, D.C., last updated Nov. 29, 2013 [Online]. Available: <http://www.fema.gov/resource-management>.
- Appendix A of the NIMS Core document *National Incident Management System* (2008).
- “National Resource Typing Criteria,” *NIMS Guide 0001*, Federal Emergency Management Agency (FEMA), U.S. Department of Homeland Security, Washington, D.C., March 27, 2008.

Incident Command System Forms

The following ICS forms can be used to help track resources during incidents:

- ICS 201—Initial incident briefing form captures essential information, including map and description of event.
- ICS 202—The first page of the Incident Action Plan (IAP), this form contains incident information, IC’s objectives, weather information, a general safety message, and a table of contents.
- ICS 203—The second page of the IAP, this form provides the list of incident management and supervisory personnel and their assignments.
- ICS 204—The Assignment List form contains assigned resources, leader, and number of personnel assigned to each resource.
- ICS 207—Incident Organization Chart showing ICS position assignments, including the individuals responsible for specific reimbursement-related activities.

- ICS 209—Incident status summary provides a detailed description of the incident and resources required.
- ICS 211—Incident check-in list records personnel and equipment arriving at the incident, arrival times, and method of travel.
- ICS 214—Activity log records activity of labor and equipment.
- ICS 215—The form used for the incident planning meeting helps develop tactical assignments and identify needed resources.
- ICS 315—Operational planning worksheet provides details of resource assignment decisions.
- ICS 218—This form supports vehicle and equipment tracking.
- ICS 220—Air operations information is summarized on this form.
- ICS 210—Changes in resource status are recorded on this form.

Mutual Aid Agreements and Assistance Agreements

During large incidents, aid from other states, the National Guard, the private sector, and NGOs may be necessary. Pre-established coordination systems and mutual aid agreements facilitate the process of requesting and receiving aid, and reimbursement. A JFO consisting of federal agencies including FEMA is established. Assistance flows from the JFO to state and local emergency operations centers (EOCs), agencies, and entities, whereas requests for assistance are issued from them to the JFO, as shown in Figure 5 (*National*

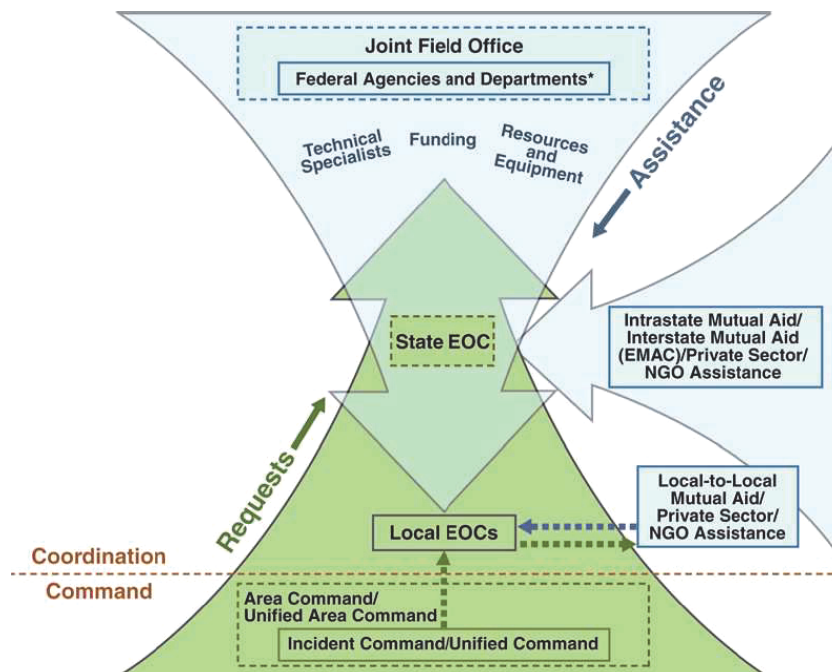


FIGURE 5 Flow of requests and assistance during large-scale incidents (Source: *National Incident Management System* 2008, p. 36).

Incident Management System 2008, p. 26). The Multiagency Coordination System (MACS) integrates facilities, equipment, personnel, and procedures into a unified system to coordinate resources and support emergency operations. FEMA's *Mutual Aid Agreements for Public Assistance and Fire Management Assistance* policy (2012), Disaster Assistance Policy 9523.6, applies to Emergency Management Assistance Compact (EMAC) agreements and allows the reimbursement of eligible FEMA PA or FEMA FMAG costs to the requesting entity from providing entities.

The EMAC, administered by the National Emergency Management Association (NEMA), facilitates emergency assistance through prearranged agreements, allowing states to send resources (personnel, equipment, and commodities) to other states. The EMAC was established in 1993 and ratified by Congress in 1995; all 50 states, the District of Columbia, and the U.S. territories are now members of EMAC. The state EMA of the receiving state collects cost documentation submitted by the providing state, audits it, and then reimburses the providing state. Models for EMAC Mission Ready Packages, which use NIMS typing and EMAC agreements, are available through the Emergency Management Resource Center of the American Public Works Association (APWA) ("Resource Center: Emergency Management" n.d.; <http://www.apwa.net/ResourceCenter/Category/Emergency-Management>).

For Tropical Storms Irene and Lee 10 states requested mutual aid, and 25 states responded. Of the total of 1,126 personnel, 778 were deployed to Vermont, 158 to New York, and 155 to New Jersey. There were a total of 68 missions, of which 40.8% were National Guard resources provided to Vermont. Costs of the deployment were \$10.3 million for Vermont, \$2.2 million for New York, and \$281,000 for New Jersey (*Hurricane Irene and Tropical Storm Lee: After Action Report Critique* 2012).

The After Action Report for Tropical Storms Irene and Lee presented numerous lessons learned and areas of accomplishment. One of the major findings was that states that had a high level of EMAC event preparation had a much higher level of success than did other states; trained and qualified personnel enhanced the facilitation of mutual aid assistance. In addition, the following lessons learned were provided in the report:

- Deployed personnel are responsible for organizing and submitting all receipts for expenses they incur.
- Some deployed personnel did not have adequate guidance on recordkeeping and reimbursement procedures—both assisting states and providing states can provide better guidance.
- Early provision of guidance sped up the reimbursement process.
- Some financial personnel may not fully understand EMAC or the Req-A process for cost estimating.

- State should have financial personnel participate in training and exercises on EMAC requisitions and reimbursement procedures; also, states that are not experienced with disaster response and reimbursements can request assistance from A-Teams from other states trained in logistics, operations, and finance/administration.
- Knowing the type of disaster management system used by a requesting state allows the providing state to provide just-in-time training to its personnel.
- Early request for assistance and early predisaster declarations by governors were also cited as improving the chances of success.
- Assisting states sending a smaller unit for advance information on conditions in the requesting state was beneficial.
- Resource requests are to be as clear as possible. To that end, NIMS resource typing was useful in ensuring that the request was clear and that the correct resource was provided.
- There is a need for executive level training on EMAC (*Hurricane Irene and Tropical Storm Lee: After Action Report Critique* 2012).

The following were described in the report as "best practices."

- Louisiana developed and provided reimbursement packages with instructions for accurate documentation for both request and providing states. Louisiana created an EMAC unit and also provides exercises for personnel to maintain proficiency in the EMAC process.
- Minnesota requires all of its deployed personnel to sign a Code of Conduct before leaving the state to ensure that the state is represented well in other states (*Hurricane Irene and Tropical Storm Lee: After Action Report Critique* 2012).

INFORMATION MANAGEMENT

A key element of the reimbursement process for both programs is documentation, which requires information management. The three key stages of information management are document (or capture), administer (store and manage), and retrieve (*Improving Management of Transportation Information* 2013, p. 121).

Information-sharing technologies and tools help FEMA and FHWA communicate important information, such as project decisions, with their staff, regional/state representatives, and applicants. These technologies and tools can also alleviate negative consequences of personnel changes.

As shown in Table 2, documentation includes different information types in different formats—Word files, spreadsheets, databases, text files, geographic information system (GIS) maps, and computer-assisted drafting (CAD) files for engineering diagrams.

TABLE 2
TYPES OF TRANSPORTATION INFORMATION BY FUNCTION

Functions	Information types	Formats				
		Documents	Data tables	CAD	GIS	Graphics
Project information	Engineering (e.g., drawings)			■		
	Specification	■		■		
	Performance test		■			■
	Planning study	■	■	■	■	
	Technical reports (e.g., materials research)		■			■
	Environmental report	■	■		■	
System condition/performance	Traffic data		■		■	■
	Safety data		■			
	Performance report	■	■		■	■
Research	Research report	■	■		■	■
Administration	Financial		■			
	Contact information		■			
Inventory	GIS data				■	
	Asset inventory database		■			

Source: NCHRP Report 754: *Improving Management of Transportation Information* (2013, p. 121).

In storing and managing the information, issues that need to be addressed include tools and techniques for managing information; getting the “right content to the right audience on the right device and under the right circumstances”; governance; and data management plans, metadata, storage management, and data standards.

The research done for *Improving Management of Transportation Information* (2013) resulted in the following recommendations for state DOTs:

- Establish agency goals for improving management of data and information.
- Establish policies and procedures within a governance framework to define the roles and responsibilities of the business units and librarians in managing data and information for the agency.
- Demonstrate the return on investment for investing in methods and tools to improve the management of transportation data and information.
- Develop data business plans as an option.
- Share data and information.
- Use the Information Management Lifecycle and apply the appropriate competencies for each stage of the life cycle.
- Use improved technology tools to help the business units and information managers manage, store, and retrieve information for all customers in an easily understandable format.
- Use formal communication channels to support the sharing and exchange of information among business

units, information managers, and internal and external customers (*Improving Management of Transportation Information* 2013, p. 124)

The following approaches were recommended for each of the three information management stages—capture, administer, and retrieve:

Capture

- Require the use of metadata, define the metadata standards to be used, and provide examples of the types of metadata to be used at the DOT.
- Establish agency policies for the collection and capture of transportation information.
- Use both data and content management practices for managing information.
- Use technology tools to facilitate the capture of data and information.
- Use a single portal for access to and distribution of information.
- Develop relationships internally with business units and externally with peer DOTs and other national and international transportation agencies to capture, share, and exchange data and information.

Administer

- Establish governance policies for managing data and information across the agency.

- Establish a data business plan to help manage data and information.
- Follow a multistep, multiphase approach for implementing data management programs.
- Participate in a peer group.
- Find a champion.
- Assign resources and appropriate competencies.
- Establish mission and vision statements for managing data and information at the DOT.
- Establish categorization schemes for data and information at the DOT to ensure organized, methodical management of data and information.
- Use semantic schemes.
- Use authoritative glossaries and vocabularies.
- Use business intelligence tools to facilitate integration and sharing of data in an easily understandable format.
- Use multiple types of business intelligence tools to improve management of data and information.
- Use taxonomies for classifying and grouping transportation information at the point of storage.
- Use the cloud for storing large data sets.
- Use technology.
- Use taxonomy management tools.
- Develop policies for archiving of data rooted in the business with consideration for privacy of data and information.
- Develop formal records retention policies and procedures to support preservation of important current and historical documents for a DOT.
- Use state libraries and national transportation libraries to supplement the archives maintained by the DOT's libraries and business units.
- Use digital preservation.
- Provide content (data and information) in an electronic format to enable delivery to the widest audience possible.
- Select methods for distribution of information and data from the most effective available technology tools, including the web and social media.
- Use visualization tools (e.g., maps) for delivery and dissemination of data and information.
- Use market information management techniques, such as a newsletter to advertise the types of transportation information available from the DOT to the user community.

Retrieve

- Explore the use of available technology tools for retrieval of information (*Improving Management of Transportation Information* 2013, p. 126).

Other Useful Technologies

Technologies such as cloud technologies, document-sharing and collaboration tools, and electronic signatures make information management more efficient.

Electronic Forms and Signatures

Transportation work requires many forms (change orders, permits) that must be completed and signed by one or more persons. Therefore, good document management practices and technologies, such as electronic signatures and use of electronic forms, are important. At the same time, safeguards to ensure the authenticity of electronic signatures should be in place. Software systems that allow the attachment of various files to electronic forms facilitate document handling, storage, and retrieval.

Cloud Technologies

Cloud technologies can greatly expand an agency's storage capabilities. Cloud-based storage systems can also be accessed from any location with Internet access. Three downsides to cloud technologies are security concerns, the need for Internet access, and time required to scan documents. The security concerns may be addressed through cloud security. The second issue may become an issue during disasters; it may be addressed by storing items on a PC or mobile device and then uploading them to the cloud storage site once Internet access becomes available. The third issue can be addressed through appropriate policy formulation based on available staff and resources—a policy requiring 100% electronic storage could backfire if delays are caused due to the scanning time.

Importance of Cybersecurity

As state DOTs transition from analog to digital storage for all of their documentation, cybersecurity needs to be an integral part of this process.

Consistent, Automated Backup

Consistent backup of important documents is an important practice. This can be facilitated by automated backup tools and systems that are now widely available.

IMPACT OF RECENT LEGISLATION ON FHWA EMERGENCY RELIEF AND FEDERAL EMERGENCY MANAGEMENT AGENCY PUBLIC ASSISTANCE PROGRAMS

Impact of the Map-21 Act

MAP-21, transportation legislation that was enacted on July 6, 2012, and went into effect on October 1, 2012, affected the FHWA ER program in a number of ways. It also had an impact on the FEMA PA program's debris removal element. The following are the key changes to the program indicated in Section 1107 of the MAP-21 legislation:

- \$100 million per event per state limit has been eliminated (with the exception of supplemental appropriation for Hurricane Sandy, which reinstated the limit for the Sandy funds).

- Replacement of the term “pre-disaster condition” with “comparable facility.”
- In certain instances debris removal previously eligible under FHWA ER funding will be eligible only under FEMA PA funding.
- Transit service costs if a detour is not possible are now eligible.
- The 180-day period for emergency repairs for 100% eligibility may be extended if a site cannot be accessed [U.S.C., Title 23, § 120(e)(3)].
- In certain cases, the federal share for permanent repairs may be increased to 90% [U.S.C., Title 23, § 120(e)(4)].
- The list of eligible sites and costs need to be submitted to FHWA within 2 years of the date of the disaster.
- Climate change risk mitigation measures are now eligible (“MAP-21: Emergency Relief (ER) Questions & Answers” 2013).

Further guidance on these and other changes are provided in FHWA’s revised 2013 *Emergency Relief Manual*. However, note that the amount of the annual FHWA ER authorization has not changed and remains at \$100 million per year. Supplemental Appropriations up to \$500 million per state may be provided under the Disaster Relief Assistance Act of 2013 (“MAP-21: Emergency Relief (ER) Questions & Answers” 2013). The Disaster Relief Assistance Act of 2013 is Division A of PL 113-2.

Impact of the SRIA

The impact of Hurricane Sandy in 2012 was immense. According to the AON Benfield *Annual Global Climate and Catastrophe Report* (2013), Hurricane Sandy resulted in 254 deaths, an economic loss of \$65 billion, and insured losses of \$28.2 billion (AON Benfield 2013, p. 5). SRIA of 2013 (Division B of PL 113-2) was signed into law on January 29, 2013. The SRIA law pertains to permanent work and debris removal and adds section 428 to the Stafford Act. The affected components are sections 403(a)(3)(A), 406, 407, and 502(a)(5) of the Stafford Act. SRIA authorizes a pilot program that allows applicants to use alternative procedures for permanent work and debris removal projects eligible under the FEMA PA program. Additional information about these alternative procedures is provided in chapter two. The goals for the alternative procedures, as stated in PL 113-2, are to further the following goals:

- (1) reducing the costs to the Federal Government of providing such assistance;
- (2) increasing flexibility in the administration of such assistance;
- (3) expediting the provision of such assistance to a State, tribal or local government, or owner or operator of a private nonprofit facility; and
- (4) providing financial incentives and disincentives for a State, tribal or local government, or owner or operator of a private nonprofit facility for the timely and cost-effective completion of projects with such assistance (*Sandy Recovery Improvement Act*, U.S.C. Title 42, 5189f “Public assistance program alternative procedures”).

For an in-depth analysis of the impact of the Stafford Act amendments upon the FEMA PA program, please refer to Brown et al. (2013, pp. 7–16). The changes analyzed include the PA alternative procedures (p. 7) and alternative procedures for debris removal assistance (p. 12). Nonetheless, the SRIA amends several provisions of the Stafford Act, so the FEMA PA program is only one of several affected federal programs (Brown et al. 2013, Summary). Updates and revisions of the Brown et al. source may be published in the future as additional major disasters occur.

IMPACT OF THE 2013 NATIONAL REVIEW OF THE EMERGENCY RELIEF PROGRAM

Further changes to the FHWA ER program are possible based on the recommendations in the 2013 *National Review of the Emergency Relief Program*. The Final Report (*National Review of the Emergency Relief Program* 2013) was based on field reviews in six states conducted by the FHWA Program Management Improvement Team. That team, in the Office of Infrastructure, performed a national review of the FHWA ER program and published the results in May 2013. Information from field reviews done at six state DOTs (Iowa, Kentucky, Tennessee, North Dakota, Oregon, and New Jersey) in February through April 2012 was used in the review and addressed issues highlighted in the GAO report *Highway Emergency Relief* [GAO-12-45] (2011). The GAO had performed its review of the FHWA ER program during the November 2010 to November 2011 time period and produced the following recommendations:

- Establish specific time frames to limit states’ ability to request emergency relief funds years after an event’s occurrence;
- No longer permit states to transfer unobligated allocations from prior emergency relief to a new event {note that in January 2012, FHWA issued guidance to no longer permit this practice and implemented internal controls to track states’ unused funds [GAO-12-45 *Highway Emergency Relief* (2011) Recommendations for Executive Action: <http://www.gao.gov/products/GAO-12-45>]};
- Establish clear time frames for states to close out completed projects to improve FHWA’s ability to assess whether expended program funds are no longer needed and could be deobligated; and
- Establish standardized procedures for FHWA Division Offices to follow in reviewing emergency relief documentation and making eligibility decisions. This includes:
 - Better guidance on approving and retaining detailed damage inspection reports;
 - Verification that emergency repairs are completed within 180 days and only these types of repairs receive 100% federal funding; and

- Consistent standards for approving betterments, including benefit-cost analysis [*Highway Emergency Relief* (GAO-12-45) 2011, p. 40].

The primary recommendations of the 2013 *National Review of the Emergency Relief Program* were as follows:

- FHWA Division Office roles in damage assessments, risk-based oversight of FHWA ER projects, and documentation reviews should be developed.
- The Division Office should create and use a standard operating procedure (SOP) for the implementation of the FHWA ER program.
- The FHWA ER Manual and Detailed Damage Inspection Report (DDIR) form should be updated according to the review results.
- Improved tracking of FHWA ER program application process, allocations, obligations, expenditures, and key project milestones was recommended.
- National, state, and local FHWA ER training should be developed (*National Review of the Emergency Relief Program* 2013, p. 1).

STUDY APPROACH

Effective practices were identified through an information review, a screening survey to state DOT members of the AASHTO Special Committee on Transportation Security and Emergency Management (SCOTSEM), follow-up phone calls, and case studies. The screening survey yielded 35 state DOT respondents and is contained in Appendix A. The survey questions inquired about respondent experiences with the FEMA PA and FHWA ER programs, including the application and documentation processes, eligibility requirements, appeals and audits, amendments, cost-sharing, LPAs, and contractor issues. Additional topics included in the survey were cost tracking, document retention and backup practices, and satisfaction levels. The information review included interviews and electronic communications with panel members and representatives of FHWA, FEMA, state EMAs, and APWA, and a literature review including relevant legislation, FEMA PA and FHWA ER manuals, and GAO and CRS reports on the FEMA PA and FHWA ER programs. This process yielded information about the FEMA PA and FHWA ER programs and ongoing and planned changes.

Chapter Two—Federal Emergency Reimbursement Programs

- Major elements of the FEMA PA and FHWA ER programs are presented in this chapter.

Chapter Three—State Departments of Transportation Experience with Federal Emergency Management Agency Public Assistance and FHWA Emergency Relief Programs

- Major challenges experienced by state DOTs are described in this chapter. Because the survey did not achieve an 80% response rate, the survey response is not considered representative, so no summary tables presenting responses in terms of percentages are included.

Chapter Four—State Departments of Transportation Case Examples

- This chapter contains the case study findings and the strategies and practices identified in the synthesis study. The major topic areas covered include roles and responsibilities, role of state emergency management agencies, disaster assessment, financial management systems and project codes, documentation and information management, cost sharing, local public agencies, contracting, appeals, and reimbursement time.
- The case study interview guide is contained in Appendix C, and the entire contents of the case studies and a list of case study participants are found in Appendix D.

Chapter Five—Conclusions

- In addition to the conclusions, this chapter includes a summary of the effective practices identified in the synthesis study, a list of helpful FEMA PA and FHWA ER resources, and items requiring additional research.

Appendices

- Appendix A presents the survey developed for this synthesis.
- Appendix B provides examples of presidential declarations and a list of recent presidential disaster declarations for case study states.
- Appendix C contains the Case Study Interview Guide.
- Appendix D contains the list of case study participants and the case examples.
- Appendices E through I present supplemental information relevant to the case studies.
- Appendix J presents FEMA Public Assistance Data for state DOTs. The data for the period October 1, 2007 through October 24, 2012, have been summarized in the following charts: Number and Type of Declarations, Number of Project Worksheets, Project Worksheets by FEMA Region, Event Types by FEMA Region, and Project Worksheets by Work Category.

FEDERAL EMERGENCY REIMBURSEMENT PROGRAMS

Chapter two describes the Federal Emergency Management Agency Public Assistance (PA) and the FHWA Emergency Relief (ER) programs and some of the key changes being made to the programs by FEMA and FHWA. FEMA is making improvements and changes to the FEMA PA program through the Sandy Recovery Improvement Act (SRIA) and its Alternative Procedures Pilot Program. FEMA's most recent handbook for applicants is FEMA P-323, the *Public Assistance Applicant Handbook* (2010). FEMA's PA Division is engaged in an endeavor to update and consolidate all policies and program and process guidance into a single reference document (FEMA Headquarters Public Assistance Division Staff, personal communication, April 30, 2014).

FHWA's most recent ER program manual, the *Emergency Relief Manual (Federal-Aid Highways)*, is dated May 31, 2013, and contains program changes made by MAP-21 (PL 112-141). FHWA is also updating its guidance to its Division Offices on the FHWA ER program based on the National FHWA ER Review. Furthermore, FHWA and FEMA are seeking to align elements of the two programs and state procedures with the assistance of the APWA (FHWA Construction and Contract Administration Team Leader and FEMA Headquarters Public Assistance Division Staff, personal communication, June 6, 2013).

The information contained in this chapter reflects FEMA and FHWA guidance, pertinent legislation and Code of Federal Regulations (CFR), and the information review including information received from FHWA ER and FEMA PA program representatives. Because these changes are ongoing, it is advisable for state DOTs to check up-to-date guidance on program elements to confirm their accuracy.

In addition, brief descriptions of FEMA's Fire Management Assistance Grant (FMAG) program and Hazard Mitigation Grant Program (HMGP) are provided in this chapter.

The FHWA ER and FEMA PA programs have significant differences. The FHWA ER program addresses federal-aid highways, whereas the FEMA PA program is broad in scope. In addition, the Stewardship/Oversight Agreements required by Section 106 ("Project Approval and Oversight") of United States Code (U.S.C.) Title 23 designate state DOTs to be administrators of the FHWA ER program. Federal cost shares are different for each program. FHWA's eligible costs are funded at 100% if repairs are completed within 180 days

(*Emergency Relief Manual* 2013, p. 13). However, permanent repairs require prior approval, and the federal cost share for permanent repair typically is a minimum of 90% for Interstate and 80% for non-Interstate federal-aid highways. There is a sliding scale for states with higher percentages of federally owned public lands (*Emergency Relief Manual*, p. 52). The Stafford Act establishes a federal cost share for the FEMA PA program that is not less than 75% of the eligible costs for both emergency work and permanent restoration [*Public Assistance Applicant Handbook* (FEMA P-323) 2010, p. 6]. Furthermore, eligibility criteria and minimum thresholds, reimbursement rate schedules, and application procedures, including documentation requirements, also vary. Table 3 highlights these differences.

FEDERAL EMERGENCY MANAGEMENT AGENCY PUBLIC ASSISTANCE PROGRAM

The Stafford Act authorizes the president to assist states and local public agencies (LPAs) when disasters and emergencies occur. The last update to the Stafford Act was in April 2013. This assistance is coordinated and delivered through the FEMA PA program. The 2010 *Public Assistance Applicant Handbook* (FEMA P-323) describes the policies and application procedures of the program. The contents of the *Public Assistance Applicant Handbook* (2010) include details on eligibility requirements, categories of emergency and permanent work, funding options, how agencies are paid by FEMA, project worksheets and documentation requirements, cost estimation, project changes and appeals processes, project closeout, and audits. Supplemental information about special considerations is provided in the Appendices to the *Handbook*.

SRIA of 2013 (Division B of PL 113-2) was signed into law on January 29, 2013. The SRIA law pertains to permanent work and debris removal, and adds section 428 to the Stafford Act. The affected components are sections 403(a)(3)(A), 406, 407, and 502(a)(5) of the Stafford Act. SRIA authorizes a pilot program that allows applicants to use alternative procedures for permanent work and debris removal projects eligible under the FEMA PA program. This pilot program applies to major disasters declared on or after May 20, 2013, and for projects under previously declared disasters for which permanent work has not yet started. The pilot will continue until FEMA establishes implementing regulations. The pilot program for debris removal applies to major

TABLE 3
FEMA PA AND FHWA ER PROGRAM ELEMENTS

Program Elements	FEMA Public Assistance	FHWA Emergency Relief
Facility	Non federal-aid facilities, except for debris	Roads and bridges on federal-aid highways
Cause	Major disaster or emergency	Natural disaster, catastrophic failure due to external cause
Cause—Fire	If there is an uncontrolled forest, woodland, or grassland fire, consider seeking FEMA FMAG funding.	
Declaration required	Presidential declaration	Presidential declaration or governor’s declaration/proclamation
Declaration impact indicators/minimum thresholds	Impact indicators: Statewide per capita impact indicator, \$1.39; countywide per capita impact indicator, \$3.50 (cf. 44 CFR 206.48; impact indicators updated annually in the <i>Federal Register</i>)	Minimum thresholds for federal share: \$700,000 statewide [23 CFR 668, Subpart A; exceptions are listed in 23 CFR 668.105(j)]
Scope	N/A	Wide area affected (e.g., multiple counties)
Project size	Differentiates between small and large projects	Does not differentiate between small and large projects
Applicant	Subgrantees: state and local governments, tribes, eligible PNP	State DOT
Emergency repair/work (federal share)	Minimum of 75% (p. 2, FEMA P-323, 2010)	100% (p. 13, <i>ER Manual</i> , 2013)
Permanent restoration (federal share)	Minimum of 75% (p. 2, FEMA P-323, 2010)	Minimum of 90% for Interstate, 80% for other federal-aid highways. (p. 52, <i>ER Manual</i> , 2013)
Project form	Project worksheet usually prepared by FEMA	DDIR/DAF completed by state DOT
Documentation retention	Minimum of 3 years from the date of the final status report	Minimum of 3 years after FHWA’s closeout of final voucher

N/A = not applicable.

Minimum per project for FEMA PA projects has been increased from \$1,000 to \$3,000. For FEMA PA projects, the president may increase the federal share and occasionally has done so for limited emergency work if severe damage is noted (e.g., Hurricane Sandy in 2012 and the Gulf Coast disasters of 2005). Further, there is a federal cost share increase under standard procedures for alternate projects (FEMA Headquarters Public Assistance Division Staff, April 30, 2014). Note that the state determines how the nonfederal share is assigned to each of its subgrantees.

disasters declared on or after June 28, 2013. Participation in the pilot programs by subgrantees is voluntary and on a project-by-project basis (*Public Assistance Alternative Procedures, Version 2 2013*, p. 2). The goals for the alternative procedures, as stated in PL 113-2, are to further the following goals:

- (1) reducing the costs to the Federal Government of providing such assistance;
- (2) increasing flexibility in the administration of such assistance;
- (3) expediting the provision of such assistance to a State, tribal or local government, or owner or operator of a private nonprofit facility; and
- (4) providing financial incentives and disincentives for a State, tribal or local government, or owner or operator of a private

nonprofit facility for the timely and cost-effective completion of projects with such assistance (*Sandy Recovery Improvement Act*, U.S.C. Title 42, § 5189f “Public assistance program alternative procedures”).

Grantee and Subgrantee

The grantee is a state or tribal government, usually the state emergency management agency (EMA), responsible for administering the FEMA PA grants. The subgrantee is an eligible applicant who receives a FEMA PA reimbursement grant for performing eligible disaster work. State DOTs and LPAs are considered subgrantees. A funding agreement needs to be executed between the grantee and subgrantee,

and the project needs to be funded or obligated before any funds can be disbursed (“Public Assistance Grant Program Briefing” 2013).

The FEMA PA process involves the key steps shown in Figure 6. After a disaster event has occurred, a preliminary damage assessment (PDA) is performed and a governor’s request, which includes the results of the assessment, is made to FEMA. Some states may also perform a pre-PDA windshield assessment to ensure that there are sufficient damages. Upon review and recommendation of the FEMA administrator, a presidential declaration is issued, which may authorize funding under the FEMA PA program.

The grantee conducts an applicants’ briefing, in which information about the FEMA PA process is provided to state DOTs, LPAs, and other applicants. The request for assistance is formally submitted, and FEMA and the grantee meet with each eligible applicant at kickoff meetings to discuss damaged facilities and recovery strategies. Then project formulation occurs with the development of the project worksheets (PWs). When the PWs have been successfully reviewed, the project is approved and funding becomes available to the state EMA. The state EMA then disburses the funding at appropriate times to the subgrantee, the state DOT. Once the project has been completed, the state EMA performs final inspection, verifies that work was completed, and closes out the project (“Public Assistance Grant Program Briefing” 2013).

Expedited Payments

Individual applicants may request expedited payments for projects without special considerations. FEMA then obli-

gates 50% of the federal share of the estimated cost of emergency work. Payment will be made no later than 60 days after the declaration date and 90 days after the completion of the preapplication form [*Public Assistance Applicant Handbook* (FEMA P-323) 2010, p. 11].

FHWA EMERGENCY RELIEF PROGRAM

The purpose of FHWA ER funds is to provide reimbursement for the cost of repairing or reconstructing federal-aid facilities damaged by a natural disaster or catastrophic failure. There are two FHWA ER methods, traditional and quick release, based on the damage assessment method used (see Table 4).

Under the traditional expedited method, damage assessment teams conduct detailed site assessments and develop Detailed Damage Inspection Reports (DDIRs). Once the program of projects containing all DDIRs is approved by the FHWA Division Office, permanent repair work may begin (*Emergency Relief Manual* 2013, p. 48). The disaster assessment methods and DDIR development and documentation procedures are described in subsequent sections of this chapter.

Quick Release Method

The quick release process is used in large disasters, such as Hurricane Sandy, for which FHWA ER eligibility is apparent. The process was revised on October 2, 2013, to streamline the process of FHWA ER funds allocation. Expedited quick release amounts have averaged between \$1 and \$2 million. Follow-up quick releases are allowable. The U.S. secretary

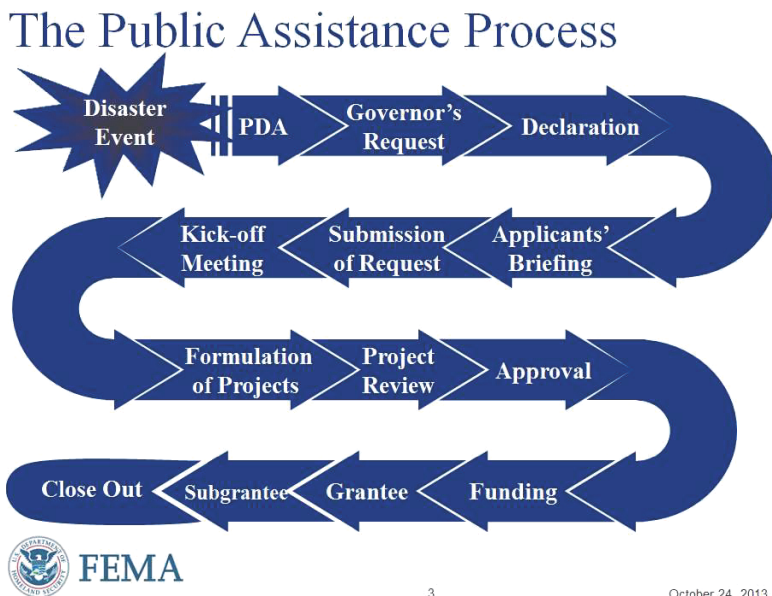


FIGURE 6 Public Assistance process flowchart (Source: “Public Assistance Grant Program Briefing” 2013).

TABLE 4
COMPARISON OF TRADITIONAL AND QUICK RELEASE METHODS

FHWA ER Method	Description	Time Required
Traditional	Detailed inspections for most sites	6–10 weeks
Traditional expedited	Windshield survey or sampling of sites (at least one site per county is visited)	2–3 weeks
Quick release (revised October 2, 2013)	\$1 million–\$2 million on average; follow-up releases based on oral communications with FHWA Division Administrator	Immediate (1–2 days)

Sources: *Emergency Relief Manual* (2013); “Special Federal-aid Funding” (2013).

of transportation may initiate a quick release funding allocation request based on oral communications with state DOTs. (The method described in the 2013 *Emergency Relief Manual* required a request letter addressed to the Division Office.) The initial assessment process requires only media reports and aerial surveys. The FHWA Division Office then obligates the funds once FHWA ER eligibility is determined. If the FHWA ER funds are not obligated within 6 months of the allocation date, FHWA may withdraw them (Waidelich 2013). The obligation process is depicted in Figure 7.

Two Disasters Treated as One

If two disasters occur closely in time at similar locations, they may be combined into one disaster for the purpose of FHWA ER funding because the cause of the damages may be indistinguishable. This combination method streamlines the processing of the DDIRs and the needed repair projects because only one approval would be needed for projects affected by both disasters. It should be noted that the 180-day period for 100% federal reimbursement starts from the date of the earlier disaster (*Emergency Relief Manual* 2013, p. 34).

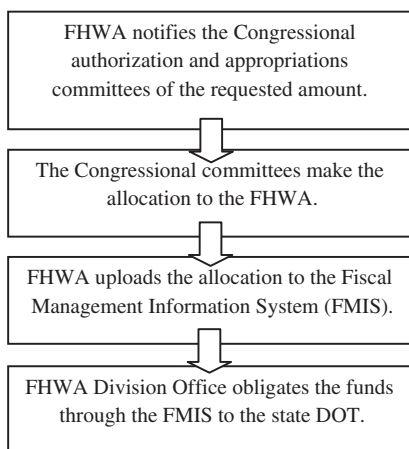


FIGURE 7 Obligation process flowchart (Source: Waidelich 2013).

Program of Projects

A program of projects (PoP) must be submitted by the state DOT to the FHWA Division Office as soon as it is available. A PoP lists emergency repair work and proposed permanent repair projects.

Once the PoP is approved by the FHWA Division Office, the state DOT may proceed with the permanent restoration projects. If FHWA ER funding is an issue, Congress may appropriate additional FHWA ER funds (*Emergency Relief Manual* 2013, p. 48). Otherwise, other funding options (e.g., regular federal-aid highway funds) may be considered. Funds allocated but not obligated during a fiscal year will be withdrawn (p. 46). In addition, the Division Administrator reserves the right to undertake final inspections on all FHWA ER projects (p. 50).

ROLES AND RESPONSIBILITIES

Roles and responsibilities of key FEMA and FHWA personnel are described in this section.

FEMA

- FEMA Regional Administrator (RA)—Reviews results of PDAs and sends the governor’s declaration request to the FEMA Administrator, who then makes a recommendation to the president. Adjudicates first-level appeals and grants time extensions when appropriate. The FEMA RA may also be appointed as the Disaster Recovery Manager (DRM).
- Federal Coordinating Officer (FCO)—The FCO, the primary federal representative for Stafford Act events, executes Stafford Act authorities and issues mission assignments to other federal departments or agencies.
- State/Tribal/Territorial Coordinating Officer (SCO/TCO) and other local, state, tribal, territorial, and insular area response officials interact with the FCO to determine the priority of needs and set objectives.

- **Public Assistance Officer (PAO)**—The federal official specifically responsible for administering the FEMA PA program during disaster operations; advises the FCO, manages staff operations, coordinates with other arms of federal disaster recovery, and works with state counterparts to ensure that applicant needs are met. (A state PAO with similar responsibilities is also designated and has additional responsibilities of informing and educating applicants and resolving problems.)
- **State Representative (also Applicant Liaison or State Liaison)**—Provides applicants with specific information on state regulations, documentation and reporting requirements as well as technical assistance.
- **Disaster Recovery Manager (DRM)**—Coordinates the FEMA recovery programs for the disaster.
- **FEMA PA Group Supervisor**—Manages the FEMA PA program at the JFO; coordinates with other federal agencies and state counterparts, and ensures compliance with laws, regulations and policies.
- **FEMA PA Crew Leader**—Assists on the details of the reimbursement process and answers questions regarding eligibility and project cost approvals. Reviews and approves project worksheets.
- **Public Assistance Coordinator (PAC)**—Assists applicants from declaration to funding approval. The PAC also manages the case management file and records of meetings, conversations, and special issues.
- **Project Officer (PO)**—Works with the applicant to develop scopes of work and cost estimates for large projects. The PO is knowledgeable about eligibility and special consideration issues.
- **Project Specialist**—Works with grantee and subgrantee to assess damage, develop scopes of work, estimate costs, and prepare project worksheets. Submits them to the Public Assistance Crew Leader.
- **Technical Specialist**—Assists with special issues, including debris, insurance, cost estimation, hazard mitigation, historic preservation, environmental compliance, and flood plain management [*Public Assistance Applicant Handbook* (FEMA P-323) 2010, p. 4; “Public Assistance Roles and Responsibilities” 2014; *Recovery Federal Interagency Operational Plan* 2014].

State Emergency Management Agency

The state is usually the grantee and manages the FEMA PA program jointly with FEMA [*Public Assistance Applicant Handbook* (FEMA P-323) 2010, p. G-3]. Once funds have been obligated to the state, the state will be responsible for the management and disbursement of the funds (p. 10).

LPAs

LPAs are among the public entities that are eligible applicants [*Public Assistance Applicant Handbook* (FEMA P-323) 2010, p. 7]. As such, in FEMA PA subgrant applications, LPA

officials must identify damages and provide sufficient information to FEMA so that a scope of work and cost estimate may be developed (p. 35). For the FHWA ER program, LPAs have limited institutional requirements. LPAs do not provide information directly to the FHWA but work through state DOTs to provide required FHWA ER documentation (FHWA Construction and Contract Administration Team Leader, personal communication, June 6, 2013).

FHWA

According to the 2013 *Emergency Relief Manual*, FHWA’s responsibilities include the following:

1. Administer the ER (Emergency Relief) program through coordination and implementation of disaster relief policies and procedures;
2. Provide assistance to State, Federal or other highway agencies in applying for funds and determining eligibility; and,
3. Support the State, Federal or other highway agencies in the technical review, design, repair, and reconstruction of damaged highway facilities (*Emergency Relief Manual* 2013, p. 1).

When a disaster occurs, the FHWA Division Office contacts the state DOTs to determine if an FHWA ER-eligible event has likely occurred, if FHWA ER funds will be requested, and if there is a need for a quick release of funding. A Disaster Coordination Engineer for the particular disaster will be assigned. FHWA Division Office engineers provide guidance on project formulation, approve DDIRs, and also perform final inspections. Allocation requests are sent from the FHWA Division Office to Headquarters and, once approved, they are sent to the appropriate congressional committee.

State DOT Main Office Role

State DOTs administer the FHWA ER program on behalf of the FHWA. They will review and approve the DDIRs submitted by LPAs and disburse the reimbursements to the LPAs. If the state DOT meets the funding threshold, it will request reimbursement from FHWA. The 2013 *Emergency Relief Manual* states that all requests should be consistent with billing procedures followed for other federal-aid projects; the procedures are contained in the Federal-aid Policy Guide, 23 CFR Part 140. The 2013 *Emergency Relief Manual* states that all billings “should result from the project cost records and the accounting system” (*Emergency Relief Manual* 2013, p. 38).

FEDERAL EMERGENCY MANAGEMENT AGENCY DECLARATION PROCESS

The president must issue a major disaster or emergency declaration before FEMA can provide disaster assistance through the FEMA PA program. FEMA considers factors such as the severity, magnitude, and impact of a disaster event before making a recommendation to the president.

Generally, the request for a presidential declaration is received by the FEMA regional office from the governor. The governor needs to “certify that the severity and magnitude of the disaster exceed state and local capabilities; certify that Federal assistance is necessary to supplement the efforts and available resources of the state and local governments, disaster relief organizations, and compensation by insurance for disaster related losses; confirm execution of the state’s emergency plan; and certify adherence to cost sharing requirements” (“Declaration Process Fact Sheet” 2012). The governor will contact the state DOT and other agencies to determine the extent of the damage. Note that per SRIA, presidential declaration requests can also be issued by tribes.

FEMA and the state EMA conduct a PDA to assess damages along with estimates of emergency and permanent work and estimate the needed federal assistance before the governor’s request. State DOTs may request to participate in the PDAs. After the PDAs have been performed, the FEMA RA reviews and sends the governor’s declaration request to the FEMA Administrator, who then makes a recommendation to the president. Once a major disaster declaration has been issued, a JFO is established. When there is a significant event, the declaration process may be expedited. The FEMA RA or one of his or her staff will be appointed as the DRM, who will coordinate FEMA programs for the disaster.

Appendix B provides sample presidential major disaster declarations, along with a list of recent declarations for case example states. Appendix J contains data analyses based on information provided by FEMA Headquarters.

FEMA Headquarters Public Assistance Division Staff provided data that present the number and type of declarations with subgrant applications for the period from October 1, 2007, to October 24, 2012 (see Appendix J). According to an analysis of these data from FEMA, most declarations have been severe storms (62.5%), whereas hurricanes have comprised 11.7%, floods (8.5%), and snow (8.5%) of the declarations. However, the proportion of event types vary based on region and state.

As shown in the chart “Event Type by FEMA Region” in Appendix J, Region IV, followed by Region I and Region III, had the highest number of declarations. All regions experienced severe storms and flooding, and in fact the most common declarations in most regions were for severe storms. Region VI had the largest variety of declaration types. Region IX had the greatest proportion of fire declarations, and Region III had the greatest proportion of snow declarations.

Project amount and obligated amount data by state are presented in Appendix J. Total project amount per state for the period October 1, 2007, to October 24, 2012, ranged from \$17,705 to \$95,350,755. The average project amount was \$12,726,732. Total obligated amounts per state ranged from \$4,093 to \$73,101,212. The average obligated amount was \$9,320,303.

ELIGIBILITY CRITERIA

The eligibility criteria for FEMA PA and FHWA ER are similar but not the same. Both programs differentiate between emergency work and permanent work, and define emergency work similarly. The FHWA ER program permits restoration of highways to a “comparable facility,” a change based on MAP-21 legislation, whereas the FEMA PA program allows restoration to “pre-disaster design, capacity and function.” Table 5 presents a summary of the eligibility criteria for each program:

FHWA ER Program Eligibility Criteria

FHWA ER eligibility criteria are discussed in this section. The criteria may be categorized into eligible cause, eligible elements, and eligible work. Eligible work may be emergency repairs or permanent repairs. Also described are work completion methods, including force account, solicited contract, and negotiated contract.

Eligible Cause

To be eligible for FHWA ER funding, the disaster event must have been caused by a natural event or catastrophic failure. More specifically, the natural occurrence must have been “sudden, unusual, and caused serious damage to Federal-aid highways” and “the extent of serious damage to Federal-aid highways must cover a wide area (CFR, Title 23, § 668.105)” (*Emergency Relief Manual* 2013, p. 36). The disaster event must also have inflicted “unusual heavy economic loss to the State and its subdivisions or other organizations or agencies.” A catastrophic failure is “the sudden failure of a major element or segment of a Federal-aid highway due to an external cause.” It must not have been primarily caused by a lack of maintenance or gradual and progressive deterioration.

Eligible Elements

As stated in the 2013 *Emergency Relief Manual*, “all elements within the cross section of a highway that are damaged as direct result of a disaster are eligible for repair under the ER (Emergency Relief) program” (p. 3). Such elements include pavement, shoulders, slopes, embankments, guardrail, signs, traffic control devices, bridges, culverts, bike and pedestrian paths, fencing, and retaining walls. The damages must have been caused by a natural disaster or catastrophic failure from an external cause. Preexisting damages or nondisaster-related damages are not eligible (p. 3).

Eligible Repair Work

The purpose of FHWA ER funds is to provide reimbursement for the cost of repairing or reconstructing a comparable facility.

TABLE 5
ELIGIBILITY CRITERIA FOR FEMA PUBLIC ASSISTANCE AND FHWA EMERGENCY RELIEF PROGRAMS

Measure Needed	FEMA PA	FHWA ER
Emergency work/repair	Categories A and B: performed “before, during, and following a disaster to save lives, protect public health and safety, or eliminate immediate threat of significant damage to improved public and private property through cost effective measures” (FEMA P-323 2010, p. 14)	Performed during or immediately after a disaster to <ul style="list-style-type: none"> • Restore essential traffic, • Minimize the extent of damage, or • Protect the remaining facilities (<i>ER Manual</i> 2013, p. 3).
Debris removal (Category A)	Debris removal from non-federal-aid highways. Given a presidential declaration and a FEMA determination, removal of debris from federal-aid highways may be eligible under sections 403, 407, or 502 of the Stafford Act. Requirements in 44 CFR 206.224 apply (<i>ER Manual</i> 2013, p. 10).	Debris removal under certain circumstances. Disaster-related debris removal that is eligible for FEMA funding is not eligible for FHWA ER funds (<i>ER Manual</i> 2013, p. 10).
Emergency protective measures (Category B)	Examples include: <ul style="list-style-type: none"> • Emergency evacuations • Protection for an eligible facility • Security in the disaster area • Warning of risks and hazards (FEMA P-323 2010, p. 14) 	N/A
Permanent work/repair	<ul style="list-style-type: none"> • Must repair, restore, or replace disaster-damaged facilities in accordance with regulations • Must restore to predisaster design, capacity, and function in accordance with applicable codes and standards (FEMA P-323 2010, p. 15) • Must be required as a result of the disaster (FEMA P-323 2010, p. 6) • May include cost-effective hazard mitigation measures (FEMA P-323 2010, p. 23) • Project improvements or alternative projects may be proposed 	Undertaken after a disaster to restore the highway to a comparable facility. Comparable facility is defined as “a facility that meets the current geometric and construction standards required for the types and volumes of traffic that the facility will carry over its design life” (<i>ER Manual</i> 2013, p. 2). Note that “[f]eatures that will improve the resilience of repaired federal aid highways should be considered and evaluated consistent with risk, cost effectiveness and regulatory conditions” (<i>ER Manual</i> 2013, p. 60).
Eligible cause	Presidentially declared disaster or emergency (FEMA P-323 2010, p. 1)	Natural disaster or catastrophic failure (<i>ER Manual</i> 2013, p. 1).
Eligible elements	Non-federal-aid highways (except for debris removal) and other facilities	Elements within the cross section of a federal-aid highway (<i>ER Manual</i> 2013, pp. 1 and 3).

N/A = not applicable.

Sources: *Emergency Relief Manual* 2013; “Special Federal-aid Funding” 2013.

A comparable facility is defined as “a facility that meets the current geometric and construction standards required for the types and volumes of traffic that the facility will carry over its design life” (*Emergency Relief Manual* 2013, p. 2). An example would be the addition of a feature, such as a guard-rail, that is now required because of a change in standards used by the state DOT. However, the addition of a travel lane would be considered a betterment, which would require additional support.

Eligible repair work is categorized into emergency repairs and permanent repairs.

Emergency Repairs The 2013 *Emergency Relief Manual* notes that state DOTs and LPAs “should begin emergency repairs immediately to restore essential traffic service and to prevent further damage to Federal-aid highway facilities” (*Emergency Relief Manual* 2013, p. 30). Prior FHWA authorization is not needed to begin emergency repairs, which may be completed by force account, negotiated contract, or solicited contract. Work completion methods are described on page 53 of the FHWA *Emergency Relief Manual*.

The 20 items of eligible work are described in the 2013 *Emergency Relief Manual* (pp. 3–16). Fourteen items are also

explicitly declared as ineligible for FHWA ER (pp. 16–20). Betterments incorporate added protective measures or modify the function or character of the facility and thus require justification (p. 24).

Equipment Rates The 2013 *Emergency Relief Manual* advises that FHWA-approved rates or the state DOT's established rates be used but not a combination of both. If equipment is rented, the *Manual* notes that the rates should be reasonable based on the *Associated Equipment Distributors Manual* or a recognized agency (p. 15).

Permanent Repairs Permanent repairs may involve design work and geotechnical and other engineering studies and environmental reviews. They are preceded by emergency repairs unless the permanent repair is “the most economical and feasible” way to restore traffic (p. 21). According to the 2013 *Emergency Relief Manual*, the following are the types of permanent repair projects performed using FHWA ER funds.

Types of Permanent Repair Projects

- *Restoration in-kind* is the project type most often chosen by applicants for FHWA ER-funded permanent repair work. Any additional protective features or changes to the function or character from the predisaster facility require justification (e.g., cost, feasibility, resiliency) (p. 22).
- *Replacement in-kind* is chosen if restoration in-kind is not technically or economically feasible. FHWA recommends applicants consider incorporating features that will enhance resiliency (p. 23).
- *Betterments* “are added protective features or changes that modify the function or character of a facility from what existed prior to the disaster or catastrophic failure” (p. 24).

FEMA PA Program Eligibility Criteria

To be eligible for FEMA PA funding, the roadway, bridge, or other facility must meet criteria in the following categories: facility, work, cost, and applicant. As public entities, state DOTs and local public agencies are eligible applicants.

Facility-related criteria are as follows:

- It must be the legal responsibility of the eligible applicant;
- It must have been in active use at the time of the disaster;
- It must have been damaged as a result of the declared disaster; and
- It must be located in the designated disaster area.

Work-related criteria are as follows:

- It must be the applicant's responsibility;
- It must not be under the authority of another federal agency (e.g., FHWA);

- It must be disaster related; and,
- It must be located in the designated disaster area.

FEMA PA Work Categories

FEMA PA Work Categories A (debris removal) and B (emergency protective measures) are considered emergency work. Category C (roads and bridges) is considered permanent work. In the period from October 1, 2007 to October 24, 2012, state DOT PA PW data indicate that most state DOT PWs have been Category C, followed by Category B and Category A. These data were provided by the FEMA Headquarters Public Assistance Division Staff (see Appendix J). The distribution of state DOT PWs by category is shown in Figure 8.

When the data were analyzed by region, Category C dominated projects in Regions I, II, III, and IV. For Regions II, III, and IV, the next two highest categories were Category A (debris removal) and B (emergency protective measures). For Region I, they were Category G (recreational or other) and Category B (emergency protective measures). For the remainder of the regions except Region IX, Category B (emergency protective measures) appears to dominate. FEMA PA Work Categories by state for the period from October 1, 2007, to October 24, 2012, are presented in Appendix J.

Category A Emergency Work, Debris Removal. This work is eligible in the following cases:

- It eliminates “an immediate threat to life, health, and safety,”
- It eliminates “immediate threats of significant damage to improved public or private property when the measures are cost-effective,”
- It ensures “the economic recovery of the affected community to the benefit of the community-at-large,” or
- It mitigates “the risk to life and property by removing substantially damaged structures as needed to convert property acquired using FEMA hazard mitigation program funds to uses compatible with open space, recreation, and wetland management practices” [*Public Assistance Applicant Handbook* (FEMA P-323) 2010, p. 13].

New debris removal work alternative procedures were established as part of the SRIA alternative procedures in 2013. These procedures include the following:

- Permits applicants to retain income from debris recycling without an offset from their grant.
- Allows the use of a sliding scale for applicants' debris removal cost share to incentivize speedier and more cost-efficient debris removal.
- Permits the establishment of financial incentives for a FEMA-approved predisaster debris management plan and at least one prequalified debris contractor.

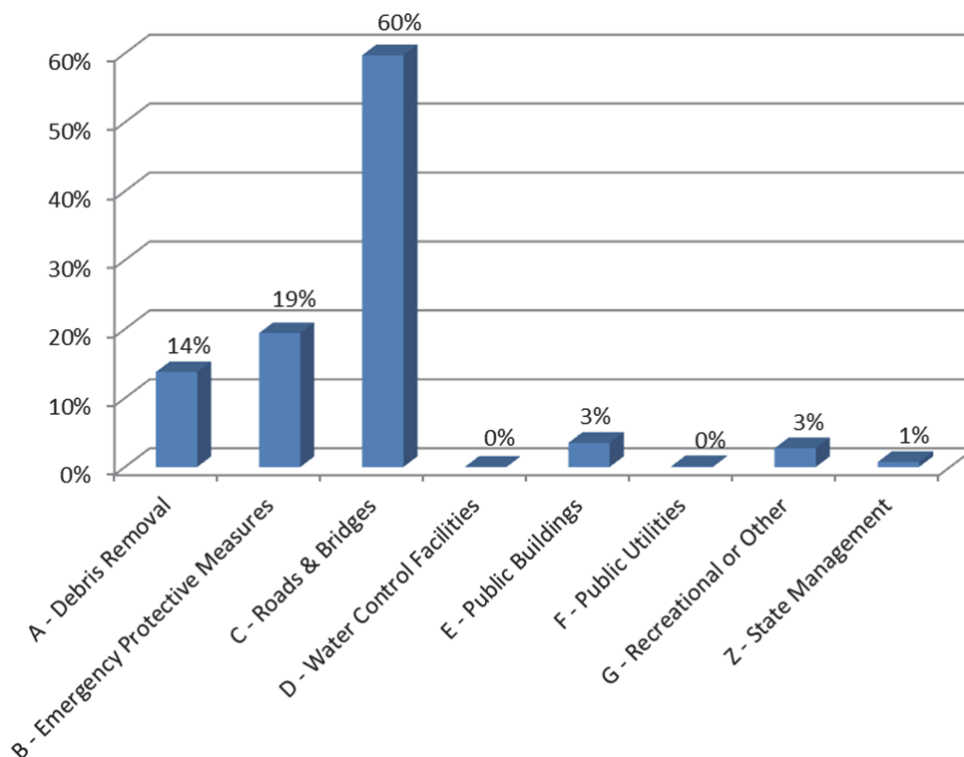


FIGURE 8 Public Assistance work categories (Courtesy: State DOT Public Assistance Project Worksheets Data, October 1, 2007–October 24, 2012, provided by the FEMA Headquarters Public Assistance Division Staff).

- Permits the reimbursement of straight time force account labor costs for applicants' employees performing debris removal work ("Sandy Recovery Improvement Act of 2013 and FEMA's Recovery Directorate—Fact Sheet" 2013).

Because MAP-21 has instituted changes with regard to Category A (debris removal eligibility), it is advisable to check for updated guidance.

Category B Emergency Work, Protective Measures. This work includes actions that are taken "before, during, and after a disaster to eliminate/reduce an immediate threat to life, public health, or safety, or to eliminate/reduce an immediate threat of significant damage to improved public and private property through cost-effective measures" ("Public Assistance: Eligible Work" 2013).

Category C Permanent Work, Roads and Bridges. This work is the category of permanent restoration that is most applicable to state DOTs.

Cost-Related Criteria Costs must be:

- Reasonable and necessary to accomplish the work;
- Compliant with federal, state, and local requirements for procurement; and
- Reduced by all applicable credits, such as insurance proceeds and salvage values ("Eligible Costs" 2012).

According to the FEMA *Public Assistance Guide* [FEMA 322] (2007), the following categories of costs may be eligible:

- Labor (p. 42)
- Materials (p. 48)
- Equipment (p. 48)
- Contracts (p. 51)
- Project supervision and grant management costs (p. 61).

Some categories of cost are explicitly not eligible (for example, loss of revenue and surveys for damage) (p. 55). Other categories of cost offset or reduce the replacement cost (such as salvage value and mutual aid agreements) (p. 50).

Equipment Rates FEMA's schedule of equipment rates for applicant-owned equipment in good condition with any required attachments is available on FEMA's website at <http://www.fema.gov/schedule-equipment-rates> ("Schedule of Equipment Rates" 2013). The FEMA equipment rates include ownership and operation of equipment, including depreciation, overhead, all maintenance, field repairs, fuel, lubricants, tires, and OSHA equipment and are also included in the PW workbook.

Labor All types of labor expense—regular, temporary, part-time, and volunteer—are to be documented. It is important to differentiate between regular and overtime hours. For emergency protective measures, work and debris removal performed by force account labor, straight time force account

labor costs can now be reimbursed by FEMA under the SRIA pilot program, provided the work is not typically performed by the workers (“Sandy Recovery Improvement Act of 2013 and FEMA’s Recovery Directorate—Fact Sheet” 2013). It should be noted that FEMA will not pay for disaster work if payment is contingent on receiving FEMA PA funding.

FEDERAL EMERGENCY MANAGEMENT AGENCY AND FHWA MINIMUM PROJECT THRESHOLDS

Table 6 lists the minimum site thresholds for the FEMA PA and FHWA ER programs. The estimated or actual cost of the work for a site must be greater than or equal to the minimum thresholds for each program. Combining of sites (grouping) is allowed for sites with similar damage within a reasonable distance and efficiency in contracting out the repair work and/or similarity in corridor features, but each site’s eligibility must still be documented individually to determine its dollar amount. For both programs, if any other program or insurance covers the damage, it will be ineligible for reimbursement or reimbursement will be reduced by the amount of the insurance.

FEMA and FHWA Project Grouping Methods

For both the FHWA ER and FEMA PA programs, sites can be grouped together into one project if there is a relationship among the sites. However, each site’s eligibility must still be documented individually. Grouping methods include the following:

- Type of damage
- Geographic divisions or boundaries
- Method of work completion.

However, if a site has a special considerations issue, combining it with other sites could delay funding for work on the other sites in the project. For the FHWA ER program, emergency work and permanent work can be combined only when permanent work is incidental to emergency work (*Emergency Relief Manual* 2013). The FHWA *Emergency Relief Manual* (2013) further states that permanent work during emergency work is permitted when it is “the most economical and feasible operation to quickly restore essential traffic”

(*Emergency Relief Manual* 2013, p. 21). For the FEMA PA program, emergency work and permanent work may be combined only when the emergency work is incidental to the permanent work. The FEMA P-323 *Public Assistance Applicant Handbook* (2010) states that emergency work and permanent work will be evaluated separately to ensure that each meets varying eligibility requirements (p. 36).

According to SRIA, permanent work categories may now be combined. Consolidated subgrants combine two or more fixed estimates into a single subgrant and can be used to more efficiently manage multiple eligible costs. However, if one of the facilities has complex special considerations issues, it may be better to exclude that facility from the consolidated subgrants. Consolidated subgrants offer subgrantees flexibility in the use of excess funds. For example, if actual costs for one facility are in excess of estimated costs but if there are excess funds from another facility in the consolidated subgrant, the subgrantee may use the excess funds for the former facility. Subgrant consolidation requests must be made within 12 months of the declaration date (“Frequently Asked Questions—Public Assistance Alternative Procedures Pilot Program” 2013). The following example for a county road is provided in the FEMA *Public Assistance Alternative Procedures Pilot Program Guide for Permanent Work, Version 2* (2013):

A county road crosses a water course and its adjacent floodplain, using five (5) culverts. During the disaster, floodwaters overtop the road and damage the crossings, either by washing out the culverts or by damaging the roadway and headwalls. FEMA prepares and approves a subgrant with five (5) site sheets to repair or replace each culvert crossing, including hazard mitigation measures to increase the size of the culverts. Subsequently, the Subgrantee requests that the aggregate funding for the five crossings be used to replace the current configuration with one (1) bridge (p. 6).

APPLICATION PROCESSES FOR FEDERAL EMERGENCY MANAGEMENT AGENCY PUBLIC ASSISTANCE AND FHWA EMERGENCY RELIEF

FEMA PA Application Process

The state DOT is considered a FEMA PA program applicant and submits the request for public assistance (RPA) at the applicants’ briefing. The state DOT must submit the RPA

TABLE 6
FEMA PA AND FHWA ER MINIMUM SITE THRESHOLDS*

Damage	FEMA PA	FHWA ER
Site damage—minimum threshold	Must be greater than or equal to the minimum threshold, currently \$3,000 per project (“Rules and Regulations 10685,” <i>Federal Register</i> , Vol. 79, No. 38, February 26, 2014)	Must be greater than or equal to the minimum threshold, currently \$5,000 per site (<i>ER Manual</i> 2013, p. 2)

*A site may be a combination of multiple sites.
Sources: *Public Assistance Applicant Handbook* (FEMA P-323) 2010; *Emergency Relief Manual* 2013.

within 30 days after a county has been designated for assistance. FEMA then assigns a Public Assistance Crew Leader (PACL), and the state EMA assigns a state representative to the state DOT.

FHWA ER Application Process

The state DOT is considered the applicant to the FHWA ER program. Prior to the activation of the FHWA ER program, there must be a presidential declaration of a major disaster under the Stafford Act or at least a governor’s emergency or disaster proclamation with concurrence by the FHWA. Once a governor’s proclamation has been issued, a letter of intent must be submitted to the FHWA Division Office with the proclamation immediately after or during the event. FHWA will respond with an acknowledgement letter, and the state DOT will start conducting initial damage assessments, often in conjunction with the FHWA Division Office engineers (*Emergency Relief Manual* 2013, p. 31).

Application Process Deadlines for Both Programs

Table 7 shows important deadlines during the application process for both the FEMA PA and FHWA ER programs.

WORK COMPLETION DEADLINES FOR BOTH PROGRAMS

The completion deadlines for emergency work are essentially the same for both the FEMA PA and FHWA ER programs: 6 months and 180 days, respectively. For permanent work, FHWA provides an additional 6 months for the agency to proceed to construction obligation. See Table 8 to compare the two programs.

For both programs, state DOTs may request extensions of these deadlines (with justifications) for emergency work and permanent work.

For the FHWA ER work, the 2013 *Emergency Relief Manual* states that “100 percent eligibility of emergency repairs may be extended if a State cannot access a site to evaluate damages and the cost of repair” (*Emergency Relief Manual* 2013, p. 46).

For the FEMA PA work, the state EMA can provide time extensions with justification for extenuating circumstances, if there have been no changes in scope or cost. In addition:

- For emergency work, the state EMA may provide an additional 6 months or a total of 12 months.

TABLE 7
IMPORTANT PROCESS DEADLINES FOR BOTH PROGRAMS

Action	FEMA PA	FHWA ER
What is the application deadline?	Within 30 days of the designation of the declared disaster area (FEMA P-323 2010, p. 9)	Within 2 calendar years of the disaster date (<i>ER Manual</i> 2013, p. 31)
What is the deadline for formulating small projects?	Within 60 days of the kickoff meeting for validation (FEMA P-323 2010, p. 30)	N/A
What is the deadline for new site identification (including fixed estimate subgrants for permanent work)?	Within 60 days of the kickoff meeting (FEMA P-323 2010, p. 50)	Within 2 calendar years of the disaster date (<i>ER Manual</i> 2013, p. 47)
What is the deadline for permanent work fixed estimate subgrant cost estimates?	Agreement must be reached within 9 months of the declaration date	N/A
What is the deadline for consolidating projects?	Request must be made within 12 months of the declaration date (“Frequently Asked Questions—Public Assistance Alternative Procedures Pilot Program” 2013)	N/A
What is the deadline for appeals?	Within 60 days of the receipt of notice of the action being appealed (FEMA P-323 2010, p. 50)	Within 30 days of the determination of eligibility finding being appealed (<i>ER Manual</i> 2013, p. 40)
What is the deadline for obligating funds that have been allocated?	N/A	6 months for a quick release project; 1 year for a traditional project (Waidelich 2013)

N/A = not applicable.

Sources: *Public Assistance Applicant Handbook* (FEMA P-323) 2010; *Emergency Relief Manual* 2013; and “Frequently Asked Questions—Public Assistance Alternative Procedures Pilot Program” 2013.

TABLE 8
WORK COMPLETION DEADLINES FOR BOTH PROGRAMS

FEMA PA Emergency Work	FEMA PA Permanent Work	FHWA ER Emergency Work	FHWA ER Permanent Work
Work needs to be completed within 6 months of declaration date (FEMA P-323 2010, p. 49).	Work needs to be completed within 18 months of declaration date (FEMA P-323 2010, p. 49).	Work needs to be completed within 180 days of declaration date for 100% federal funding. (Any eligible work not completed within 180 days may still receive a minimum of 80% Emergency Relief funding (<i>ER Manual</i> 2013, p. 46).	Work needs to have proceeded to construction obligation before the end of the second fiscal year following the year in which the disaster occurred (<i>ER Manual</i> 2013, p. 50).

Sources: *Public Assistance Applicant Handbook* (FEMA P-323) 2010; *Emergency Relief Manual* 2013.

- For permanent work, the state EMA may grant up to an additional 30 months or a total of 48 months.
- The FEMA RA may be able to approve additional time if there is sufficient justification [*Public Assistance Applicant Handbook* (FEMA P-323) 2010, p. 49].

Once permanent work projects are completed, the final inspections for FHWA ER projects are conducted by the state DOT and possibly the FHWA as well, and the state DOT should submit a final billing of eligible costs to FHWA promptly after the final inspection (*Emergency Relief Manual* 2013, p. 38). For FEMA PA projects, the state EMA conducts the final inspections; at times, FEMA may also perform inspections of the completed work [*Public Assistance Applicant Handbook* (FEMA P-323) 2010, p. 57].

SMALL VERSUS LARGE PROJECTS IN FEDERAL EMERGENCY MANAGEMENT AGENCY PUBLIC ASSISTANCE

Projects are categorized into two groups—small and large—based on the dollar amount of the damages. If a project exceeds the annually updated cost threshold amount, the project is considered a large project. The threshold is updated every October 1. For FY 2014, the threshold is \$120,000 (federal share) (“Rules and Regulations 10685,” *Federal Register*, Vol. 79, No. 38, Feb. 26, 2014). The annual value of the threshold is based on the Consumer Price Index [CFR, Title 44, § 206.203(c)(1) and § 206.203(c)(2)] and is published in the *Federal Register* every year [*Public Assistance Applicant Handbook* (FEMA P-323) 2010, p. 29]. Table 9 compares FEMA PA small and large projects.

Although the state DOT is expected to complete the PWs for small projects, the state DOT has the option of requesting that FEMA/state EMA complete the PW. For large projects, PWs have been developed by FEMA with the input of the state DOT and other key stakeholders. The state DOT now has the option of completing the PW for large projects as well as for small projects on its own.

Small Project Payment

The payment method used for small projects has facilitated faster payments for small projects. FEMA obligates funds (after successful validation of a sample of the projects by FEMA) and payment is made using the estimated project amount upon the approval of the PW. FEMA does not deobligate the funds in cases where the actual cost or scope of work differs slightly from the estimated cost. It is possible to request additional funds if the actual cost is significantly more than the estimated cost. In this case, FEMA will require an appeals process with a deadline of within 60 days of the completion of the last small project. In addition, all small projects for the event will be subject to audit by FEMA.

The state will typically certify that the project is in compliance with all applicable laws and regulations. Completed work does not need to be inspected and approved by FEMA.

Large Projects

A FEMA Project Specialist will work with state DOTs to prepare PWs for large projects and consult with FEMA Technical Specialists to address technical issues and oversight. If there are special considerations, they need to be addressed before funding is provided.

The large project funding process proceeds as follows:

1. PW development by FEMA Project Specialist
 - a. State DOT identifies damages and required work, takes photos, identifies special issues, develops cost estimate
2. FEMA PA/CL Approves Project
3. FEMA obligates funds to the state
4. State DOT submits documentation of work progress and requests funds periodically
5. State draws down and disburses funds to state DOT as work is accomplished
6. Completed project is inspected by the state EMA
7. The state EMA reconciles the actual and estimated costs
8. FEMA reviews the cost information and obligates/deobligates funds as needed.

TABLE 9
COMPARING SMALL VERSUS LARGE PROJECTS FOR FEMA PUBLIC ASSISTANCE

Comparison Factor	FEMA PA Small Projects	FEMA PA Large Projects Standard Procedures	FEMA PA Large Projects Alternative Procedures
When is the project funded?	Upon project approval, prior to the completion of actual work (p. 30).	As work is accomplished (p. 29).	Upon project approval, prior to the completion of actual work (p. 5).
What is funding based on?	Initial cost estimate (p. 29).	Actual costs incurred (p. 32).	Fixed estimates (p. 5).
Who completes the PWs?	The state DOT has the option of completing its own PWs (p. 31).	The state DOT furnishes required information to FEMA (p. 33).	The state DOT has the option of completing its own cost estimates (p. 7).
What is the federal share?	Minimum of 75% (p. 6).	Minimum of 75% (p. 6).	Same as for Standard Procedures.
What happens if there is a cost overrun?	If there is a significant overrun on the cost of all small projects, the state DOT may appeal for more funds. However, every project is then subject to a complete audit (p. 30).	The actual and estimated costs will be reconciled with the state at the end of the project (p. 32).	Additional funds will not be approved (p. 6).
What happens if there is a cost underrun?	If the state DOT spends less than the amount approved by FEMA, no adjustment is made (p. 58).	The actual and estimated costs will be reconciled with the state at the end of the project (p. 32).	If the state DOT spends less than the amount approved by FEMA, excess funds can be used for FEMA PA program-related purposes (p. 12).

Sources: *Public Assistance Applicant Handbook* (FEMA P-323) 2010 for Small Projects and Large Projects—Standard Procedures; *Public Assistance Alternative Procedures Pilot Program Guide for Permanent Work, Version 2* (2013) for Large Projects—Alternative Procedures.

The cost is estimated using the FEMA Cost Estimating Format tool based on forward-pricing methodology. The method uses prices based on current average costs from states and LPAs for typical work during disaster recovery. The method is based on construction industry standards and is completed in the following parts:

- Part A—base cost of the project, including labor, materials, and equipment.
- Part B—construction costs not itemized in Part A (e.g., the general contractor’s supervision costs).
- Part C—construction cost contingencies and budgetary risks attributable to project complexity during the design process.
- Part D—the contractor’s overhead, insurance, bonds, and profit.
- Part E—cost escalation.
- Part F—fees for special reviews, plan checks, and permits.

- Part G—change orders, hidden damages, and differing site conditions revealed after construction.
- Part H—design and construction management costs.

If the project is more than 90% complete when the PW is prepared, the actual data for the completed work should be used. If the project is 90% or less complete, cost estimation is performed with FEMA. Once funding has been approved based on the estimated cost of the project, FEMA will obligate the federal share to the state EMA.

Scope of work (SOW) and cost deviations need FEMA approval, and a version or amendment to the PW may need to be prepared. These versions typically are prepared by FEMA and not by the state DOT. The SOW changes may affect environmental impact as well as the eligibility of the project for FEMA PA funds. SOW and cost deviations need to be submitted to the FEMA Project Specialist and state FEMA PA representative for FEMA approval.

With regard to amendments or versions, the FEMA Headquarters Public Assistance Division Staff provided state DOT Public Assistance Project Worksheets data for the period from October 1, 2007, to October 24, 2012. These data reveal that most PWs have required no amendments and only 10% of them have required one amendment. A very small percentage has required two or more amendments.

Allowed Contract Types

For both large and small projects, the following contract types are allowed by FEMA:

- Lump sum for a clearly defined scope;
- Unit price for work performed item by item; or
- Cost plus fixed fee, which is either a lump-sum or unit price contract with a fixed fee.

Time and materials contracts are discouraged unless the need is immediate and there is not sufficient time to develop an SOW. Cost plus a percentage of cost and “piggyback” or expansion of a previously awarded contract are not eligible.

Project Closeout

The state DOT informs the state EMA of project completion. The state EMA is responsible for verifying that costs were incurred based on the approved SOW and certifying that the work has been completed in accordance with FEMA’s standards/policies. The state EMA may perform audits and reconcile actual costs with the cost estimate that was included in the PW. FEMA reviews the project cost documentation and may conduct a final inspection. Depending on the results of the review, FEMA may obligate additional funds or deobligate funds [Public Assistance Guide (FEMA 322) 2007, p. 109].

LARGE PROJECTS USING PERMANENT WORK ALTERNATIVE PROCEDURES

Through SRIA’s alternative work procedures, large projects can now be based on estimated costs instead of actual costs and state DOTs can prepare the PWs themselves. The

state DOT may request this alternative procedure by signing a fixed estimate agreement before the 9-month deadline to agree to an estimate and before the start of construction. To participate in the alternative procedures for permanent work, subgrants must be large projects and based on fixed cost estimates. In FY 2014, beginning October 1, 2013, the threshold was \$120,000 (federal share) (“Rules and Regulations 10685,” *Federal Register*, Vol. 79, No. 38, Feb. 26, 2014). The FEMA document *Public Assistance Alternative Procedures Pilot Program Guide for Permanent Work, Version 2* (2013) provides additional guidance on this topic:

If the actual costs exceed the approved fixed estimate, additional funding will not be approved by FEMA (*Public Assistance Alternative Procedures Pilot Program Guide for Permanent Work, Version 2*, 2013, p. 6).

Optional Features of the Pilot Program

Optional features in the *Public Assistance Alternative Procedures Pilot Program Guide for Permanent Work, Version 2* (2013) include the following:

- Consolidation of multiple fixed subgrants
- FEMA validation of subgrantee-provided estimates (prior to acceptance)
- Elimination of reduced eligible funding for alternate projects
- Use of excess funds
- Review of estimates by an expert panel for projects with a federal share of \$5 million or greater (prior to acceptance).

Timeline for FEMA

The timeline for preparing cost estimates for fixed estimate subgrants is described in Figure 9.

Identification of all damages is expected within 60 days of the Kick-off Meeting. Agreement on the cost estimate is expected within nine (9) months of the declaration (*Public Assistance Alternative Procedures Pilot Program Guide for Permanent Work, Version 2*, 2013, p. 6).

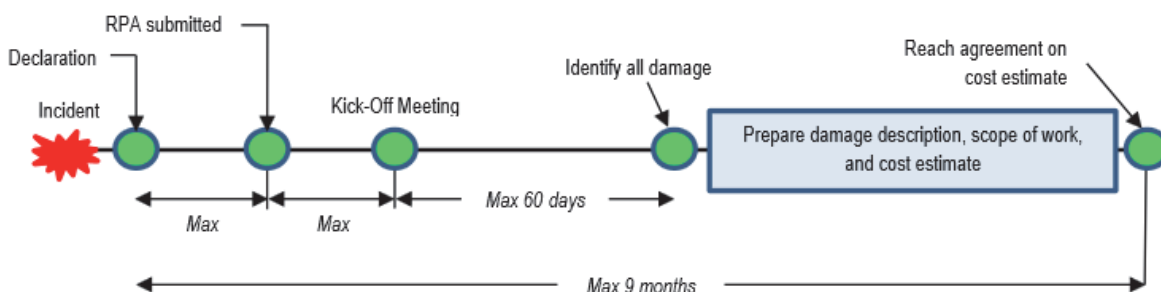


FIGURE 9 Timeline for preparing permanent work fixed estimate subgrants (Source: *Public Assistance Alternative Procedures Pilot Program Guide for Permanent Work, Version 2* 2013, p. 7).

DISASTER ASSESSMENT

FHWA ER Program Disaster Assessment

Disaster assessment typically consists of an initial damage survey and subsequent detailed site inspections. The damage survey results are reported in the Damage Survey Summary Report (DSSR), and site inspection results are compiled and reported in the DDIR. The DSSR results are used by the FHWA Division Administrator to make the ER eligibility determination. Once the determination has been made, or is expected to be made, the disaster assessment teams perform detailed site inspections, which are necessary to develop the DDIRs.

The objectives of initial disaster inspections by the FHWA are to ensure that funds are promised to eligible jurisdictions (not ineligible ones) and that priority sites are approved first and expeditiously. When a disaster is apparent (e.g., bridge collapse), the funds approval process will be rapid because there is no question that the disaster is FHWA ER-eligible. However, in marginal cases, the verification process can take weeks to complete. If FHWA has sufficient engineers for the assessments, FHWA engineers will accompany state DOTs and assess the damage, method of repair, costs, and other issues together. Currently, there is no formal provision for joint assessments between FHWA and FEMA.

Detailed damage inspections are required for all FHWA ER methods; although they may not be initially required for the expedited method or the quick release method, they are required at a later time. The expedited form of inspections is performed using “windshield” surveys. These surveys are performed by driving through disaster sites and recording and photographing the damages. The quick release method allows the use of available information (media reports and aerial photographs or videos). Table 10 compares windshield and detailed assessment methods.

Damage Survey Summary Report

The purpose of the DSSR is to provide information and documentation to the FHWA Division Administrator to enable a finding that a natural disaster or catastrophic failure has occurred. The nature and extent of the emergency situation and damages to federal-aid highway facilities should be described. The “sudden and unusual” nature of the event, rather than a long-term issue, and evidence of an external

cause must be provided. A DSSR is required for both the traditional and quick release methods [U.S.C., Title 23, § 125 and CFR, Title 23, § 668.105(j)].

The DSSR may be submitted by the state DOT to the FHWA Division Office along with the governor’s proclamation or the governor’s request for a presidential disaster declaration and the state DOT’s request letter for FHWA ER funds. The FHWA Division Disaster Coordination Engineer will prescribe the needed information to the FHWA field engineers, who will relay this to the state DOT. This information may be gathered through a windshield or aerial survey. Supplemental information from FEMA, U.S. Weather Bureau, U.S. Geological Survey, media reports, photos and damage reports from other agencies, and interviews with local citizens is also considered by FHWA (*Emergency Relief Manual* 2013, p. 42).

Detailed Damage Inspection Report

The DDIR is the primary vehicle for FHWA ER documentation and damage assessments. The DDIR is based on damage inspections conducted by disaster assessment/inspection teams and may be performed in conjunction with the disaster assessment as long as it does not delay the completion of the DSSR. Note that state DOTs may use the Damage Assessment Form (DAF), instead of the DDIR. [Examples of DAFs are contained in the California and Tennessee DOT (Caltrans and TDOT, respectively) case examples.]

Detailed damage inspections are usually performed together by the state DOT damage inspection teams and FHWA Division Office personnel at the disaster site. The state DOT determines the cause of the damage and identifies the normal design and construction practice by which the damage is to be repaired. The state DOT completes the DDIRs. FHWA engineers typically make eligibility recommendations at the site. If they do not agree on a particular item, the state DOT can appeal by submitting a written request to the Division Administrator within 30 days after the initial finding. The state DOT compiles DDIRs into a package and submits it to the FHWA Division Office. Coordination with other agencies, such as environmental agencies, the U.S. Forest Service, Park Service, Bureau of Indian Affairs, and the Bureau of Land Management, is advisable (*Emergency Relief Manual* 2013, p. 37).

TABLE 10
DISASTER ASSESSMENT METHODS

Comparison Factor	Windshield Surveys	Detailed Assessment
Approximate time to complete	2–3 weeks	6–10 weeks
How it is done	At least one site per county is visited by state DOT and FHWA	Every site is visited and inspected by state DOT and FHWA

Disaster Coding

A disaster code is assigned by FHWA when a finding of FHWA ER eligibility is made to help ensure that all disaster-related items and expenses are assigned to the correct event. FHWA ER-funded projects need to be designated with the prefix “ER,” whereas the prefix “ER-ERFO” designates projects that receive funding from both the FHWA ER program and the FHWA Emergency Relief for Federally Owned Roadways program. The FHWA code also includes the two-letter state/territory code, the fiscal year of the initial damage, and the sequence number of the disaster. The sequence number is related to the number of disasters submitted by a state. For example for the first disaster submitted by Alabama for FY 2013, “AL2013-1” would be used. The FHWA Division Office inputs the code into the Fiscal Management Information System (FMIS) so that FHWA ER disaster obligations can be ascertained through this system. Project coding can also conform to other federal-aid project coding (four digits for the route number and three digits for the agreement number) as long as the FHWA ER prefix is used. A new field is being added to the FMIS to allow tracking of FHWA ER allocations by event by linking these program codes with FHWA ER events (*Emergency Relief Manual* 2013, p. 52).

FEMA PA Program Damage Assessment

A PDA documents the scope and impact of the disaster and helps the governor determine whether federal assistance is to be sought.

FEMA PA Documentation

FEMA places the responsibility of documentation directly on the subgrantee. As FEMA states in the P-323 *Public Assistance Applicant Handbook* (2010), “You are responsible for substantiating all costs and your records must be complete and organized” (p. 55). State DOTs are to maintain all documentation related to each PW because it may be requested for amendments to the PW, audits, and project closeouts. Without proper documentation, FEMA may deobligate funds that have been approved. The following caveat is provided by FEMA regarding audits and the importance of proper documentation in case of an audit:

All documents are subject to audit by the State, FEMA, and the U.S. Department of Homeland Security Office of Inspector General. Because failure to properly document any claimed expenses may result in loss of funding, working within your approved scope of work and costs and documenting each project thoroughly are critical [*Public Assistance Applicant Handbook* (FEMA P-3230) 2010, p. 58].

Therefore, documentation and document retention, accurate financial management and accounting systems, having

a reliable backup system, and being able to easily retrieve it when requested are essential. FEMA recommends the documentation be retained for a minimum of 3 years after the date of the last Final Status Report [*Public Assistance Applicant Handbook* (FEMA P-3230) 2010, p. 56].

More specifically, FEMA recommends the following documentation (p. 53):

- Records that demonstrate the presence of an immediate threat;
- Drawings, sketches, and plans of predisaster facility design (to scale);
- Drawings and sketches of disaster-related damages (to scale);
- Drawings and sketches of completed or proposed repair (to scale); and
- Calculation sheets detailing specific dimensions and quantities of damage.

To document costs and repair work, the following should be created and retained (p. 54):

- Force account labor records (i.e., payroll information, time sheets, and administrative policies)
- Temporary hire labor records (i.e., work for which the labor was needed, payroll information, and time sheets)
- Fringe benefit calculations
- Force account equipment usage information and rate schedules
- Records of materials from inventory
- Rental and lease agreements
- Photographs of site, overall facility, specific damage, and repairs
- Subgrant applications (PWs)
- Site location maps
- Flood Insurance Rate Maps (FIRMs)
- Facility maintenance records (e.g., for roads or debris basins)
- Facility inspection/safety reports (as may be available for bridges and dams)
- Engineering/technical reports and specifications for repair
- Codes and standards governing repairs/replacements
- Insurance information (i.e., policies, proof of loss statements from insurance company, deductible information, etc.)
- Documents supporting compliance with environmental and historical preservation issues
- Hazard mitigation proposals (as allowed under Section 406 of the Stafford Act)
- Justification for requests for a relocation, improved, or alternate project
- Records of donated labor, materials, and equipment, including location, description of work, name of worker, hours worked, value per hour, and certification

- Contracts or contractor bids (including invoices and copies of payments)
- Inspection logs
- Permits
- Correspondence
- Invoices/warrants/checks
- Job orders
- Mutual aid agreements and records of mutual aid requests and receipt.

FEMA recommends the following documentation techniques (p. 55):

- Maintain accurate disbursement and accounting records to document the work performed and the costs incurred.
- Designate a coordinator to manage the documentation. An internal auditor may be helpful. Establish a file for each project.
- Maintain records showing specific costs and SOWs by site.
- File all of the documentation pertaining to a project with the corresponding PW and maintain the files as the permanent record of the project.
- Ensure documentation can be retrieved by the project number assigned on the PW.

Project Worksheets

FEMA and the state EMA typically complete the forms for documentation, the PWs, on behalf of state DOTs as well as LPAs. PWs convey the location, damage, SOW, and cost estimate of emergency or permanent work. For small projects (and now for large projects under the SRIA), state DOTs may choose to complete the PW themselves. The PW is a form approved by the Office of Management and Budget. A fillable form of the PW using Microsoft Excel worksheets can be used. New instructions for the PW require certain information (location, damage description and dimensions, and SOW) to be entered directly into the FEMA database, the Emergency Management Mission Integrated Environment (EMMIE). Forms used in the project formulation process periodically are updated and are available through the FEMA PA Interactive Forms Library: <http://www.fema.gov/interactive-forms-library> (“Interactive Forms Library” 2013).

The PW (FEMA Form 90-91) contains a table of contents sheet, site sheet summary listing the cost for each site, cost summary roll-up listing the costs for each cost category, site sheets with detailed costs and cost descriptions, a sheet for force account labor, a sheet for contracts, force account equipment, rental equipment, and a sheet for direct administrative costs. The site costs and any hazard mitigation costs can be entered on the PW. FEMA notes that it is important to include the cost descriptions along with the source of costs. Backup documentation, such as maps, sketches, and photos, can be attached to each PW.

REIMBURSEMENT PROCEDURES

FEMA PA Reimbursement Procedures

State EMAs are responsible for managing FEMA PA projects and disbursing funds to subgrantees using wire transfer. Once small projects are validated, they are authorized and obligated, and payments based on the estimated costs are made. For large projects, invoices are based on incurred costs and sent periodically to the state EMA. They are processed as they are received, and cost reconciliation occurs at project closeout. Alternative procedures under SRIA now allow payments for large projects to be made based on fixed cost estimates as well.

FHWA ER Reimbursement Procedures

Once the PoP has been approved and funds are made available to the FHWA Division Office by FHWA Headquarters, the FHWA Division Office will disburse the funds to the state DOT based on federal-aid procedures. For both emergency work and permanent work, billings are submitted by the state DOT to the FHWA Division Office according to guidance in the Federal-aid Policy Guide (CFR, Title 23, § 140, “Reimbursement”). Billings are subject to audit by state and federal representatives on standard contract administration requirements, such as FHWA form 1273 and Buy America, for all emergency and permanent work.

TRAINING AND RESOURCES

Training on FEMA PA

The following are FEMA SOPs that assist FEMA, the state EMA, and applicants with the reimbursement process:

- Kickoff Meeting (9570.4)
- Public Assistance Coordinator (9570.2)
- Project Formulation (9570.5)
- Validation of Small Projects (9570.6)
- Cost Estimating Format for Large Projects (9570.8)
- Historic Review (9570.90).

FEMA offers an independent study (IS), Course 634: Introduction to FEMA’s Public Assistance Program, and a 4-day course at FEMA’s Emergency Management Institute facility in Maryland. The IS course is open to the public, online, on an on-demand basis, and free of charge. The IS course provides a background and foundation of the FEMA PA program, the steps in the FEMA PA process, eligibility, and project formulation and documentation. The on-site course provides an introduction to program laws, regulations, policies, FEMA PA process, grants management, eligibility, hazard mitigation, compliance with other federal laws and regulations, and project formulation. Completion of the online Course 634 is a prerequisite. In addition, as noted in the case examples, the state EMAs often offer relevant FEMA PA training to state DOTs and LPAs.

Training on ER

The FHWA Division Offices may provide FHWA ER training. The state DOTs’ FHWA ER coordinators often provide relevant training to state DOT personnel in the main office and districts and may also provide training to LPAs. FHWA developed a set of video training modules; however, the modules were created before the effective date of MAP-21 and have not been updated.

APPEALS

FEMA PA Appeals Process

If the applicant disagrees with a FEMA decision, the decision may be appealed. The typical FEMA PA appeals process is shown in Figure 10.

The FEMA database of appeals contains various appeals for different categories of work made to FEMA.

FEMA has established a pilot program, the FEMA PA Dispute Resolution Pilot Program, as part of SRIA for resolving disputes. Decisions made by the panel are binding on all par-

ties. The program, which includes an independent arbitration review panel, is available for:

- Disputes in an amount of at least \$1 million; and
- Projects with a nonfederal cost share requirement; and
- Applicants that have completed a first appeal pursuant to 44 C.F.R. § 206.206.
- Requests submitted by December 31, 2015 (“Sandy Recovery Improvement Act of 2013 and FEMA’s Recovery Directorate—Fact Sheet” 2013)

FEMA is integrating appeals tracking into its information management system EMMIE to alleviate having to request another set of documentation for appeals.

FEDERAL EMERGENCY MANAGEMENT AGENCY AND FHWA SPECIAL CONSIDERATIONS

FEMA and FHWA special considerations and contract requirements can affect a project’s SOW and eligibility for funding. Special consideration issues apply to both programs and include the following:

- Environmental Protection
- Insurance

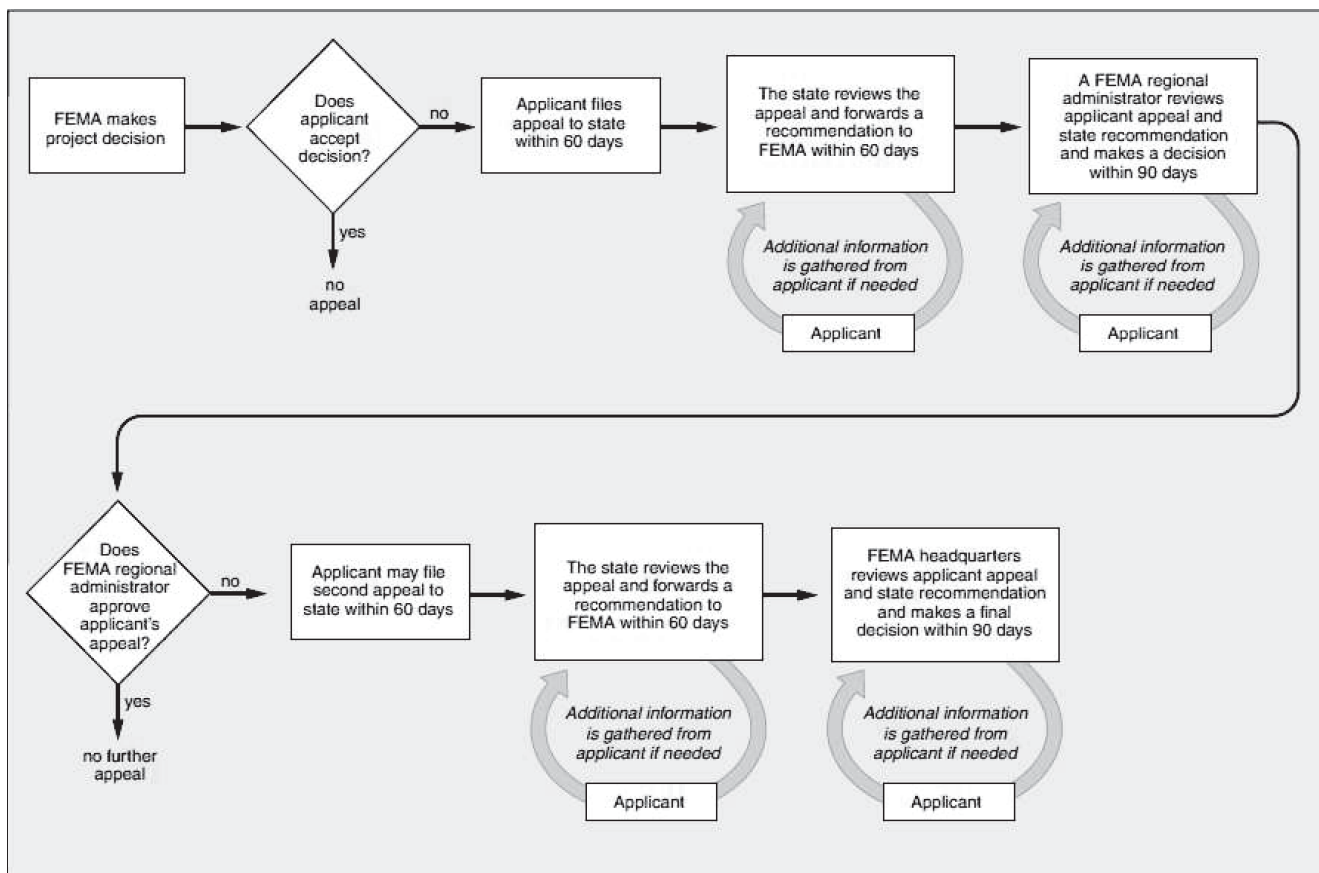


FIGURE 10 FEMA appeals process [Source: Disaster Recovery: FEMA’s Public Assistance Grant Program Experienced Challenges with Gulf Coast Rebuilding (GAO-09-129) 2008, p. 35].

- Hazard Mitigation
- Historic Preservation and Cultural Resources
- Floodplain Management.

Environmental Protection

FEMA-funded projects need to comply with all environmental protection laws and regulations, including the following:

- National Environmental Policy Act (NEPA)
- Endangered Species Act (ESA)
- Clean Water Act (CWA)
- Clean Air Act (CAA).

The review is done before funding and is performed collaboratively by FEMA, the state, applicants, tribal entities, and local organizations. More extensive reviews may be needed for construction of new facilities or alternate projects and projects that expand or modify or mitigate existing facilities.

The NEPA of 1969 requires federal agencies to consider the environmental impact of projects using federal funds. NEPA requires the preparation of an Environmental Impact Statement (EIS) if the project is expected to have a significant environmental impact. An Environmental Assessment (EA) is prepared if a project is expected to have limited or uncertain impacts. However, emergency actions, such as permanent restoration to predisaster condition and debris removal, are exempted through statutory exclusion or categorical exclusion. It should be noted that only 1% of FEMA PA projects require an EIS or EA.

Other environmental regulations include the Clean Air Act and Section 6(f) of the Land & Water Conservation Act of 1965:

- The Federal Clean Air Act was signed into law on December 31, 1970 “to foster the growth of a strong American economy and industry while improving human health and the environment.” The last major amendment was in 1990.
- Section 6(f) of the Land & Water Conservation Act of 1965 focuses on the preservation, development, and assurance of the quality and quantity of outdoor recreation resources.

FHWA’s environmental requirements are similar to those of FEMA. Although FHWA ER program projects need to comply with the NEPA of 1969, emergency repairs and in-kind replacements usually receive categorical exclusions. However, a project that includes a betterment can require environmental evaluation. Categorical exclusions for emergency repairs are provided by MAP-21 [CFR, Title 23, § 771(c)(9)] for

repair, reconstruction, restoration, retrofitting, or replacement of damaged eligible facilities if the work: 1. occurs within the existing right-of-way and in a manner that substantially conforms to the

preexisting design, function, and location as the original (which may include upgrades to meet existing codes and standards as well as upgrades warranted to address conditions that have changed since the original construction); and 2. is commenced within a 2-year period beginning on the date of the declaration.

State DOTs have units that specialize in addressing federal, state, and local environmental laws. In addition, the FHWA offers an Environmental Review Toolkit Resources page accessible at <http://www.environment.fhwa.dot.gov/index.asp> (“Environmental Review Toolkit” n.d.).

Recent efforts to streamline the environmental review process are found in MAP-21 and the executive order signed on March 22, 2012: Improving Performance of Federal Permitting and Review of Infrastructure Projects.

Historic Preservation and Cultural Resources

Section 106 of the National Historic Preservation Act (NHPA) of 1966 and its amendments protect historic and archeological resources. Section 106 “requires federal agencies to consider the effects on historic properties of any project carried out by them or that receives federal financial assistance, permits, or approvals, and provide the ACHP an opportunity to comment on these projects prior to making a final decision” (“Office of Federal Agency Programs Section 106 Fact Sheet” 2011). Properties listed on or eligible for listing on the National Register of Historic Places need to be considered for Section 106 review. For more information, refer to *NEPA and NHPA: Handbook for Integrating NEPA and Section 106* (2013).

Insurance

Eligible FEMA PA and FHWA ER costs will be reduced by anticipated or actual insurance proceeds to avoid a duplication of benefit. Therefore, if there is any insurance coverage for the damage, claims are to be filed as soon as possible and FEMA and FHWA made aware of this coverage.

Hazard Mitigation

For FEMA PA projects, hazard mitigation measures can be considered if the facility has been damaged frequently. The measures must be cost-effective and can be built into only damaged elements of a facility to be eligible for Section 406 assistance; other mitigation opportunities through FEMA’s Hazard Mitigation Grant and Pre-disaster Mitigation programs may be available for undamaged elements.

Floodplain Management

Floodplain management uses various measures to prevent and reduce flood damage in flood-prone areas. Any project, whether it is a FEMA or FHWA project, within the floodplain

or wetlands must meet the requirements of federal laws and executive orders, including Executive Order 11988 (“Floodplain Management”), Executive Order 11990 (“Protection of Wetlands”), and the Clean Water Act (PL 92-500).

Contracting Procedures for FHWA ER-Funded Projects

Permanent work needs to be performed through a contract awarded by a competitive bidding process. Exceptions are noted in CFR Title 23 § 635.204, determination of a more cost-effective method or an emergency. Contracts for FHWA ER emergency and permanent work also need to comply with federal requirements. FHWA uses Form 1273 to confirm state DOT compliance with these requirements, which include the following:

- Davis-Bacon Act (U.S.C., Title 23, § 113)—All laborers and mechanics employed for construction work on federal-aid highways, except for work that is debris-removal only, shall be paid at rates no less than prevailing wages determined by the Secretary of Labor.
- Buy America (U.S.C., Title 23, § 313 and CFR, Title 23, § 635.410)—The Buy America provision requires all steel and iron that is to be permanently incorporated into the work be produced in the United States.
- Disadvantaged Business Enterprises (DBEs)—DBE requirements are applicable to all FHWA ER-funded projects.

Americans with Disabilities Act (ADA)—ADA regulations apply to all FHWA ER-funded projects. No waivers are available even for emergency situations.

Equal Employment Opportunity (EEO)—EEO requirements set forth in CFR Title 23 § 35, CFR Title 23 §1630, CFR Title 41 §60, and U.S.C. Title 23 §140 prohibit discrimination and require that contractors implement affirmative action to assure equal opportunity.

Convict Labor—The use of convict labor is prohibited under U.S.C. Title 23, § 114.

Use of Suspended or Debarred Contractors—Recipients of federal funds are prohibited from doing business with suspended or debarred contractors.

Design Standards—MAP-21 legislation states that “the total cost of a project funded under U.S.C. Title 23 § 125 may not exceed the cost of repair or reconstruction of a comparable facility.” A “comparable facility” is a facility that meets current standards required for the types and volume of traffic that the facility will carry over its design life. This expanded allowance enables the addressing of future needs but still applies to the damaged section of the facility.

State Emergency Manual or Emergency Operations Plan—State procedures and regulations during emergencies need to be considered when doing both emergency and permanent work. The requirements and guidance may vary from state to state.

Section 4(f) of the DOT Act of 1966—Section 4(f) protects lands such as public parks and recreation areas from transportation impacts.

CHAPTER THREE

STATE DEPARTMENTS OF TRANSPORTATION EXPERIENCE WITH FEDERAL EMERGENCY MANAGEMENT AGENCY PUBLIC ASSISTANCE AND FHWA EMERGENCY RELIEF PROGRAMS

State DOT experiences with the FEMA PA and FHWA ER programs were identified through the screening survey, information review, and case examples. The survey was developed by pilot testing an initial survey and integrating suggested changes. The finalized survey was distributed to AASHTO's Special Committee on Transportation Security and Emergency Management (SCOTSEM) members, of whom representatives from 35 unique state DOTs responded. Upon the recommendation of the panel on June 6, 2013, the contractor with the assistance of the panel sought to obtain additional responses, but they were not forthcoming. The survey questions addressed respondent experiences with the FEMA PA and FHWA ER programs, including the application and documentation processes, eligibility requirements, appeals and audits, amendments, cost sharing, local public agencies (LPAs), and contractor issues. Additional topics included in the survey were cost tracking, document retention, and backup practices and satisfaction levels. The information review included a literature review and interviews and communications with panel members, representatives of FHWA and FEMA, two state emergency management agencies (EMAs), and the APWA.

Both FEMA and FHWA are attempting to address program differences, as feasible, by working in tandem (FHWA Construction and Contract Administration Team Leader and FEMA Headquarters Public Assistance Division Staff, personal communication, June 6, 2013). Furthermore, interviews with the case study participants indicate that there has already been a series of dialogues among state DOTs in the Northeast to identify possible solutions to these challenges. FEMA has been implementing Sandy Recovery Improvement Act (SRIA)-related changes to the FEMA PA program and adding flexibility to the FEMA PA program eligibility criteria (FEMA Headquarters Public Assistance Division Staff, personal communication, April 30, 2014). In addition, a FEMA PA consistency initiative is being implemented to provide consistency during disasters and address personnel rotations [Recommendations for Executive Action, *Disaster Recovery* (GAO-09-129) 2008]. FHWA has been implementing MAP-21 changes to the FHWA ER program and improvements recommended by the 2013 *National Review of the Emergency Relief Program*.

CHALLENGES TO KEEP IN MIND

Survey respondents and case example participants identified several key challenges related to the programs. They include understanding the programs and program differences; eligibility criteria; project formulation; variations in accepted rates, prices, and contracting guidelines; state-to-state variations in regulations and guidance; and FEMA PA implementation practices by the state EMAs.

Specific state DOT observations about application time, audits, contractor issues, and deadlines follow.

Application Time

State DOTs expressed concern about the time required to complete the applications; some noted a shortage in available state DOT personnel to assist with and manage reimbursement applications. According to the survey respondents, the average time it took to complete a FEMA PA application was 68 person-hours, whereas the average amount of time spent by state DOT personnel working on FHWA ER applications was 40 person-hours. Twelve respondents stated that the application process was time-consuming for their staff. A few respondents indicated that they do not apply for reimbursement when the perceived value (benefits) of the reimbursement is low compared with the resources they must expend.

Audits

Several state DOTs noted that they have been audited, that audits can be resource intensive, and that there was a change in their total reimbursement amount because of the audit. Audit findings included the following:

- Documentation and invoice discrepancies, such as missing invoices and differences between costs in the accounting system compared with the actual invoice.
- Insufficient materials cost documentation, which required the state DOT to return \$5 million to FEMA.
- Calculation of overtime and fringe benefits. The state DOT that received this finding decided to appeal the decision; the matter is pending.

Contractor Issues

Contractor issues included the following:

- Contractor payment;
- Integrating federal requirements into contracts; and
- Rented or leased equipment issues.

Deadlines

With regard to both programs, delays in performing site assessments (usually because of the inaccessibility of the disaster sites) were a cause of significant concern. This concern is especially salient in cases of prolonged flooding and snow storms because of the emergency work deadlines state DOTs are required to meet.

Program Differences and Changes Over Time

State DOT experiences were influenced by the programs' different eligibility criteria, documentation requirements, contract requirements, definitions, and acceptable rates for labor, equipment, and materials. In addition, the changes being made to the programs through SRIA, MAP-21, the 2013 *National Review of the Emergency Relief Program*, internal FHWA and FEMA initiatives, and increased coordination between FHWA and FEMA are expected to result in improvements to the FHWA ER and FEMA PA programs and consequently better experiences for state DOTs. Nonetheless, these changes and any other changes yet unforeseen will require an adjustment period, which poses its own challenges.

At a regional meeting of Northeastern states, the topic of streamlining the two programs was raised by the FHWA administrator. He inquired about the issues concerning the differing requirements of the FHWA ER and FEMA PA programs and the benefits of minimizing the differences between the programs. A key benefit that was cited by meeting participants included the significant cost savings for state DOTs and LPAs. APWA involvement and assistance in the coordination process between the two programs may also be sought. During the meeting, the following specific initiatives were proposed:

- Joint briefings for the two programs. [Note that Vermont's DOT (VTrans) has already decided to combine the briefings.]
- Combined Damage Assessment Form (DDIR) and project worksheet (PW) documentation form. VTrans has taken on this initiative by creating a combined form (VTrans case example interview, personal communication.)

State-to-State Variations

State variations in FHWA ER and FEMA PA implementation procedures and guidance provided by FHWA Division

Offices and state EMAs can affect state DOT experiences with the programs. Some of these differences are a result of differences in state laws. Each state's administrative plan describes the "roles, responsibilities, processes, and procedures" for administering the FEMA PA program and is incorporated into the state's emergency plan ("Public Assistance Administrative Plan Template" 2013). The plan may include the following items:

- Development and review of PWs—level of state support provided to the applicant during this effort;
- Project funding and requirements, including requesting fund advances and reviewing insurance policies;
- Processing appeals, reinspections, and requests for time extensions;
- Making project approval and appeals recommendations to FEMA;
- Project completion and final inspection procedures;
- Standards for financial management systems;
- Procurement procedures;
- Quarterly reporting procedures; and
- State audit requirements.

Table 11 describes the state-to-state variations in requirements identified through the survey and follow-up communications.

Project Formulation

Project formulation/documentation-related comments have been summarized in Tables 12 and 13.

FEMA Personnel Rotation and Relationship Building

State DOTs that have a better understanding of FEMA's internal structure, organization, and policies tend to experience better reimbursement outcomes. Because FEMA rotates personnel, state DOTs can expect to have contact with different FEMA staff for the subsequent disaster. FEMA's PA Consistency Initiative addresses FEMA personnel rotations through a Mid-level Managers Hiring Initiative to deploy mid-level managers to provide consistency during disasters and PA Consistency Training to train stakeholders in the implementation and administration of the FEMA PA program and relevant systems and processes. In addition, FEMA has developed protocols to facilitate the field staff rotation process and will be communicating personnel changes to applicants. Furthermore, FEMA's PA Division is using online sites to promote knowledge sharing and centralized storage of relevant PA information [Recommendations for Executive Action, *Disaster Recovery* (GAO-09-129) (2008)].

In addition, FEMA PA guidance may be intentionally general compared with FHWA ER guidance because the latter is

TABLE 11
STATE-TO-STATE VARIATIONS

<p>Cost accounting</p> <ul style="list-style-type: none"> State cost accounting principles may differ. Caltrans, for instance, needs to follow accounting principles contained in the <i>California Uniform Construction Cost Accounting Commission Cost Accounting Policies and Procedures Manual</i>.
<p>Documentation</p> <ul style="list-style-type: none"> Additional documentation. States may require documentation in excess of FEMA requirements. For example, Arizona State statutes require audits on all projects, large and small. Project worksheet development. Some state EMAs may complete the project worksheets on behalf of state DOTs, whereas others may require varying degrees of technical assistance. Documentation retention policies vary by state.
<p>Equipment rates</p> <ul style="list-style-type: none"> FHWA Division Offices may allow reimbursement of equipment based on different manuals or schedules.
<p>Environmental laws</p> <ul style="list-style-type: none"> Environmental laws and requirements may vary by state as well as by locality.
<p>Contracting procedures</p> <ul style="list-style-type: none"> Contracting and emergency waiver requirements may vary by state as well as by locality.
<p>Role in emergency organization</p> <ul style="list-style-type: none"> Some state DOTs play a bigger role in their state's emergency organization and thus may have better control of documentation and record-keeping procedures. For example, Tennessee DOT (TDOT) is considered a first responder in the state of Tennessee, and in fact, TDOT personnel have been the state's Incident Commander during disasters and emergencies.
<p>State EMA FEMA PA administration</p> <ul style="list-style-type: none"> There are state-to-state variations in the manner in which state EMAs administer the FEMA PA program; some of the variations are due to differing state laws, regulations, and practices, whereas others are due to different administration methods and resource availability. The way in which the state EMA administers the FEMA PA process affects the experience of state DOTs. One state DOT had noted that the amount of documentation required by its state EMA was excessive. However, other state DOTs stated that its state EMA has been helpful during the FEMA PA process and serves as an effective FEMA liaison. Florida's EMA provides a web-based portal through which various documents may be uploaded, and Louisiana's EMA has implemented an Express Pay System that makes 75% of the reimbursement amount available to Louisiana DOTD within 10–14 days.

TABLE 12
PROJECT FORMULATION COMMENTS FOR BOTH FHWA ER AND FEMA PA PROGRAMS

<ul style="list-style-type: none"> <i>Definition of emergency repairs versus permanent repairs, and predisaster conditions.</i> One state DOT observed that doing permanent repairs along with emergency repairs was cost effective in some cases. However, they had no assurance that the permanent repairs done without obtaining FHWA approval would be reimbursed. <i>Determining the cause of damage</i> when landslides and rockslides occur and when two disasters occur within a short period of time <i>Equipment/facility eligibility and rates</i> <ul style="list-style-type: none"> <i>Equipment rates</i>—Rates approved by FHWA may not be acceptable to FEMA, and vice versa. For example, the 2013 <i>Emergency Relief Manual</i> recognizes the <i>Associated Equipment Distributors Manual</i> for equipment rentals (p. 15) and the <i>Rental Rate Blue Book</i> for equipment usage (p. 53). In contrast, FEMA's schedule of equipment rates is available online at the following hyperlink: http://www.fema.gov/schedule-equipment-rates ("Schedule of Equipment Rates" 2013). Equipment-related questions focused on rented or leased equipment and equipment rates. Using equipment owned by another agency caused reimbursement issues for one state DOT. <i>Facilities</i>—Eligibility becomes more challenging to ascertain in cases of reimbursement for work performed on facilities owned by another agency or for work performed on behalf of state DOTs by other agencies.

TABLE 13
ADDITIONAL PROJECT FORMULATION COMMENTS FOR FHWA ER AND FEMA PA PROGRAMS, SEPARATELY

FHWA ER program
<ul style="list-style-type: none"> • <i>Site definition</i>—Defining the dimensions of a single site was an issue that was raised by a state DOT.
FEMA PA program
<ul style="list-style-type: none"> • <i>Reimbursements vs. estimated costs</i>—Respondents and case study participants mentioned that small project reimbursements based on estimated costs are received sooner than large project reimbursements. New SRIA procedures for large projects allow subgrantees to voluntarily request large project reimbursements based on estimated costs. • <i>Duplicate documentation requests</i>—State DOTs noted that they have had to provide the same documentation to FEMA for different purposes. Some state DOTs stated that the documentation process and document retrieval are resource intensive. (FEMA’s electronic database, EMMIE, stores PWs and accompanying documents. This database reduces the need for FEMA to ask applicants for duplicate documents and assists FEMA and state EMAs in tracking and managing projects. In addition, good information management practices, including documentation, storage, and backup procedures, on the part of state DOTs will assist them in responding to any FEMA information request or audit.) • <i>PW amendments</i>—Several state DOTs noted that they at times had not been notified about the creation of PWs and PW amendments and would appreciate notification. FEMA PA staff has confirmed that FEMA notifies the grantee, who should then notify subgrantees (FEMA Headquarters Public Assistance Division Staff, personal communication, April 30, 2014).

intended for a limited number of projects, whereas the former is for the myriad projects FEMA encounters.

Better “peace time” coordination between state DOTs and FEMA regional coordinators may be beneficial: that is, coordinating during the planning and preparedness phases *before* a disaster occurs (rather than coordinating only during the postdisaster recovery phase) may support relationship-building efforts that could result in better cost recovery outcomes (FEMA Headquarters Public Assistance Division Staff, personal communication, June 6, 2013). In addition, several case example state DOTs report that there are benefits to fostering a positive working relationship with their state EMA (in addition to their relationship with FEMA).

Training

State DOTs noted that they would appreciate additional training on FEMA PA and FHWA ER programs and procedures, and the funds needed to deliver such training to their staff and to LPAs.

Interacting with LPAs

During the synthesis study, state DOT representatives identified, through the survey responses and case examples, the challenges they encountered while interacting with LPAs. Such anecdotal information is not necessarily representative; indeed, such information may exaggerate the negative aspects of the interaction at the expense of the positive aspects. Nonetheless, these responses suggest the challenges that a state DOT could potentially face in its cost recovery efforts.

State DOTs observed that LPAs often require assistance in the application processes because of questions regarding eligibility requirements and application procedures of the two

programs. Given the limited size and geographic scope of LPAs and employee turnover and shortages, LPAs often lack knowledge of federal aid, of federal programs such as FEMA PA and FHWA ER, and of state contracting procedures. Thus, state DOTs must expect to take a leadership role, spend time in assisting LPAs, and review and revise the DDIRs that the LPAs have submitted.

One survey question concerns the extent of state DOT interactions with LPAs. For the FHWA ER program, 18 of 32 state DOTs responding to the LPA interaction question stated that they submit FHWA ER applications to the FHWA on behalf of LPAs. Fourteen of these 18 survey respondents noted that they provide training or resources to their LPAs primarily on FHWA ER reimbursement procedures. Because FEMA PA applications typically are submitted directly to FEMA through the state EMA by LPAs, the state EMAs provide FEMA PA assistance/training to the LPAs, whereas state DOTs do not. To support their state EMAs in helping LPAs, Iowa (IDOT) and Missouri (MoDOT) provide FHWA ER training to state EMA staff. Comments by respondents on their challenges in serving LPAs are provided in Table 14.

GENERAL FINDINGS

FHWA ER Program

In general, state DOTs revealed that they had excellent working relationships with their FHWA Division Offices. They coordinate with the same members of the offices usually on a daily basis on many federal-aid topics and programs and are familiar with federal-aid rules and procedures. This significant level of coordination is already being practiced on a normal basis, and excellent understanding of FHWA policies and procedures is helpful during disasters in coordinating on the FHWA ER reimbursement process.

TABLE 14
CHALLENGES TO SERVING LOCAL PUBLIC AGENCIES

<ul style="list-style-type: none"> • Lack of sufficient staff and training at their LPAs • Difficulty by LPAs in identifying federal-aid roadways • Turnover issues at their own state DOTs • State DOTs’ need for disaster assistance and training • Smaller LPAs make payments to vendors using IOUs • Submission of excessive FHWA ER documentation to make it audit-proof (requiring the state DOT to scan all received items to meet its agency policy of electronic storage of documents)

Cost Tracking

Costs are primarily tracked in-house, either manually or by means of a spreadsheet, notes, or reports. In addition, financial project coding is used. Other cost-tracking tools and technologies include GPS, maintenance management systems, and disaster configuration integrated into SAP software. Additional information about financial management systems and maintenance management systems and how they are used to track costs is included in chapter four.

Documentation Retention and Backup

State DOTs consistently reported that they back up their information. For both the FEMA PA and the FHWA ER programs, survey respondents retained documentation for an average of 6.4 years.

Denials and Appeals

When FEMA or FHWA denies applications or specific expenses, formal appeals require the state DOT to provide justification, additional information, and reasons the decision should be reversed. The state DOT may also need to review policy or regulations and cite specific sources of legislation. A state DOT respondent noted that the state agency escalated a FEMA field decision to the JFO for reconsideration before filing a formal appeal.

Additional information on appeals experiences of state DOTs are contained in chapter four. Of the 31 survey respon-

dents who answered the survey question on appeals experiences, 18 noted that their PWs had been denied and 19 noted that their Damage Assessment Form (DDIRs) had been denied in the past. Reasons for PW and DDIR denials are provided in Table 15.

FEMA and FHWA Process Satisfaction Levels

FEMA Application Process Satisfaction Levels

In terms of the application process satisfaction levels, the 31 survey respondents who answered the FEMA process satisfaction question expressed mixed perspectives. Eleven were generally dissatisfied, eight were neutral, and 10 were generally satisfied.

FHWA Application Process Satisfaction Levels

In terms of the application process satisfaction levels, the 31 survey respondents who answered the FHWA process satisfaction question also expressed mixed perspectives, although they expressed greater satisfaction with FHWA’s process than with FEMA’s. Three were generally dissatisfied, two were neutral, 16 were generally satisfied, and nine were very satisfied.

As noted, changes are occurring through MAP-21 changes, SRIA, the 2013 *National Review of the Emergency Relief Program*, and other initiatives to engender closer FEMA-FHWA coordination. These changes are aimed at enhancing state DOT experiences with the FHWA ER and FEMA PA programs.

TABLE 15
REASONS FOR DENIAL OF PROJECT WORKSHEET AND DETAILED DAMAGE INSPECTION REPORT

Reasons for project worksheet (PW) denials
<ul style="list-style-type: none"> • Inadequate documentation • Ineligible items • “Work site expense estimate was below minimum threshold” • “Missing deadlines due to flooding events” • “Lack of adequate documentation” • “Contractor working on Time + Materials basis” • “Changed SOW [scope of work] based on other agency requirements” • “Determining whether one storm or the storms caused damages” • Approval of equipment rates/unit prices (note that new post-SRIA procedures will provide more flexibility in equipment rates and unit prices)
Reasons for detailed damage inspection report (DDIR) denials
<ul style="list-style-type: none"> • “Related events that occurred prior to the Governor’s proclamation were denied.” • “Related events in rock fall areas caused difficulty in separating disaster related events from pre-disaster conditions.”

CHAPTER FOUR

STATE DEPARTMENTS OF TRANSPORTATION CASE EXAMPLES

Case example interviews and follow-up communications elicited varying experiences with the FHWA Emergency Response and Federal Emergency Management Agency Public Assistance programs. As discussed in chapter three, differences in state and local laws and regulations contributed to differences in FHWA ER and FEMA PA program implementations and in state DOT experiences with the programs. In addition, standard authorized processes for FEMA PA program reimbursement varied among subgrantees.

When a disaster occurs, state DOT resources, including personnel, are maximized. During this highly stressful time, state DOT personnel must also be cognizant of and fulfill their reimbursement-related duties. Therefore, a high-level of preparedness is essential.

State DOTs' knowledge of FHWA's procedures, especially federal-aid requirements, and good working relationships with their Division Offices facilitate their navigation through the FHWA ER program. Although state DOTs generally had less familiarity with FEMA practices, the state DOTs that had developed good working relationships with their state emergency management agencies (EMAs) and their FEMA Regions fared better. In addition, alignment of state DOT systems, processes, and procedures with the requirements of FHWA ER and FEMA PA programs and effective practices in information management and documentation, asset management, and emergency contracting facilitate reimbursements facilitated navigation through the ER and PA programs.

Useful practices that were identified can be categorized into policy, accounting and financial management, documentation and information management, asset management, site assessment, training, contracting, and appeals. These practices have been summarized and are presented in Table 16. The headquarter cities of the DOTs that participated as case examples are mapped in Figure 11. In the past several years, from October 1, 2007, through September 1, 2014, these states have experienced 112 presidentially declared major disasters covering the gamut of possible disasters from hurricanes and flooding to wildfires, earthquakes, and a plant explosion.

ROLES AND RESPONSIBILITIES

The cost recovery function of state DOTs is dispersed through various units and divisions of their organizations. Therefore, to meet the requirements of the FHWA ER and FEMA PA

reimbursement programs, having predesignated FHWA ER/FEMA PA coordinators within the central office/headquarters of the state DOT and FHWA ER/FEMA PA coordinators within district offices is helpful. The central FHWA ER/FEMA PA coordination roles reside in various units or divisions of state DOTs.

At Tennessee DOT (TDOT), the Headquarters Maintenance Division is responsible for the required documentation and serves as the coordinator of the FEMA PA program. The Program Operations office allocates and obligates the federal funds and assists assessment teams. The Construction Division manages emergency repair contracts and the letting and award process. The Local Programs Office assists municipalities with the execution of contract documents. The Environmental Division prepares necessary environmental documentation and obtains required permits. The Geotechnical Engineering Section provides needed geotechnical analysis. Lastly, the Finance Division processes financial transactions to ensure that eligible expenditures are charged to the correct project.

New York State DOT (NYSDOT), recognizing that during emergencies personnel from different divisions need to work together to address the expanded mission placed upon the agency, established the Emergency Transportation Operations Program in 2006. The Program coordinates emergency activities through the NYSDOT. The Policy and Planning Bureau contains the FHWA ER Unit and Budget and Emergency Funding, whereas FEMA reimbursements, emergency contracts, and emergency travel are included in Administrative Services. The Engineering Division also manages emergency contracts; in addition, the Division includes engineering technical expertise, mitigation projects, hazardous materials, air quality/energy emergencies, and critical infrastructure. The Operations Division is responsible for direct response activities, interagency coordination, employee safety, Traffic Management Centers, fleet administration, snow and ice control, and commercial vehicle safety and security. The Information Technology Division is charged with asset tracking and business continuity/disaster recovery; the Delivery Division with resource sharing, inter-regional coordination, and performance measures; and the Legal Services Division with legal support during emergencies, mutual aid/shared services, and legislation development (*Emergency Transportation Operations Strategic Plan*, NYSDOT 2009).

TABLE 16
SUMMARY TABLE OF USEFUL PRACTICES

	California	Florida	Iowa	Louisiana	Missouri	New York	Tennessee	Texas	Vermont	Wisconsin
Policy or Practice										
Cost Recovery Policy	X									
After Action Reports to Improve Reimbursement Processes	X	X	X	X	X	X	X	X	X	X
ER - Does not request funds for permanent work until ready to begin work						X				
Administrative Packets for Emergencies									X	
Pre-designated Reimbursement Coordinators (HQ & District)	X	X	X	X	X	X	X	X	X	X
Accounting/Financial Management										
Unique project codes for disasters	X	X	X	X	X	X	X	X	X	X
Internal Audits prior to submission			X	X					X	
FHWA FMIS Access	X		X		X	X	X		X	X
Uniform invoice system for counties			X							X
Inclusion of all expenses						X				
System automatically screens for duplication of ER & PA costs			X							
Statewide integrated financial, HR and payroll system			X	X	X					
Narrative Cost Allocation Plan to capture ER Indirect Costs										
Documentation/Information Management										
Systematic Record-Keeping, Use of ICS Forms	X						X		X	
Central location/drive	X	X	X	X	X	X	X	X	X	X
Electronic signature	X		X							X
Electronic storage	X	X	X	X	X	X	X	X	X	X
Optical character recognition software		X								
ER - Use of a Checklist to determine eligibility				X						X
Project Worksheet/DDIR or DAF										
Use of combined PW/DDIR form									X	
Use of electronic DDIR/DAF	X		X			X	X			
Automated DDIR/DAF distribution system			X							

TABLE 16
(continued)

	California	Florida	Iowa	Louisiana	Missouri	New York	Tennessee	Texas	Vermont	Wisconsin
Site Assessment										
Pre-designated assessment teams				X			X		X	
Pre-established repair or route prioritization method	X			X		X	X		X	
Distribution of Information Packet to Assessment Teams			X	X						
Weather information service/system	X		X	X	X					X
Bridge/highway/pavement management system	X	X	X	X	X	X	X	X	X	X
Geospatial Data, lidar			X	X			X		X	
Map Historic Data to Show Repetitive Losses			X						X	
Van to Record Damages and/or Pre-disaster Conditions					X					X
Civil Air Patrol or similar services for aerial imagery					X		X			
Ability to be Self-Sustaining for Several Days					X		X			
Web-based map to determine whether a road is Federal-aid	X		X	X		X	X		X	X
Premobilization Inspection of Vehicles & Equipment	X			X						
Training										
Disaster Assessment	X	X	X	X	X	X	X	X	X	X
Scenarios from Prior Disasters			X				X		X	X
Emergency Relief	X	X	X	X	X	X	X	X	X	X
Public Assistance	X	X	X	X	X	X	X	X	X	X
Training for Local Public Agencies	X	X	X	X	X	X	X	X	X	X
Training for State EMA			X		X					
PA Project Officer & Project Coordinator			X	X						X
Asset Management										
Bridge Monitoring System to predict and assess impact of disasters on bridges			X				X			
Snowplows/other vehicles equipped with GPS			X							X
Contracting										
Standardize Payments to Contractors						X				X
One POC for Plans & Blueprints						X				
Contractor Database					X	X				X
Emergency Waivers for Permits, etc.	X	X	X	X	X	X	X	X	X	X
Contracts Out Most Emergency Work			X							X
Appeals										
Discussion with FHWA Division Office	X	X	X	X	X	X	X	X	X	X
Citation of Relevant Laws	X	X						X		
Citation of Prior Decisions (precedents)								X		

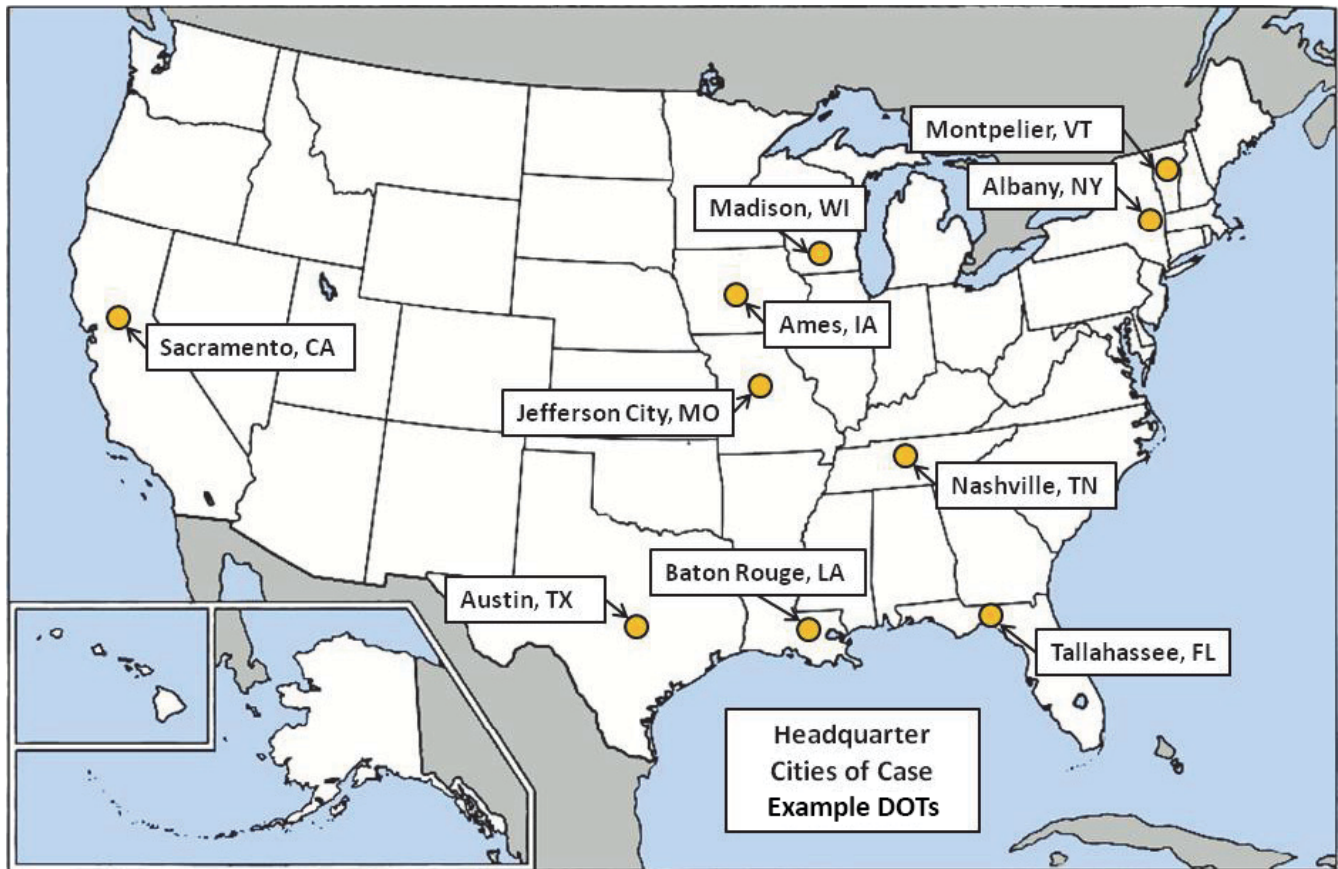


FIGURE 11 Locations of the headquarter cities of state DOTs participating as case examples for this synthesis.

NYSDOT district coordinators manage the site assessments and initial completion of DDIRs and project worksheet (PW) documentation and forward the documents to the Central Office FHWA ER/FEMA PA coordinators. The district coordinators also coordinate with local public agencies (LPAs) within their districts or regions. The Central Office FHWA ER/FEMA PA coordinators review the documentation, track projects, liaise with the FHWA and FEMA and state EMA representatives, and other state DOT unit and divisions.

During disasters, state DOT personnel are integrated into the state emergency organization at the direction of the state EMA. The state DOT usually is the Emergency Support Function One (ESF-1) lead and may be the ESF-3 lead as well. Specific ICS roles typically are delineated in the state's emergency operations plan. A good understanding and implementation of NIMS concepts and principles, including ICS, NIMS resource management procedures, and ICS record-keeping procedures and forms, facilitate successful integration of state DOT personnel into their state's emergency organization and effective reimbursements.

For instance, Louisiana DOTD Headquarters Staff provides liaison officers to the state EOC, staffs the Louisiana State Police Traffic Control Center and the DOTD Emergency

Operations Center, and provides personnel to staff the Emergency Information Center and Call Center. In addition, a team of senior personnel may be provided to the EOC as a future planning team for large or complex operations. District leadership implements guidance and policy decisions from Executive Staff for DOTD's response to a disaster or emergency. In addition, district leadership makes policy decisions and supervises operations in the district; coordinates actions with other state agencies and adjoining departments of transportation and development districts as required; and provides staff and personnel for the implementation of DOTD's ESF-1 and ESF-3 responsibilities and for debris collection/disposal management (see Figure D-58 in Appendix D). The DOTD Emergency Operations Center organizational structure, incorporating the ESF-1 and ESF-3 branches, is shown in Figure D-59 of Appendix D. Louisiana's Debris Operations Task Organization Chart (shown in Figure D-61 of Appendix D) depicts the linkages between the DOTD Debris Manager, FEMA, FHWA, and the Louisiana Governor's Office of Homeland Security and Emergency Preparedness.

Florida DOT (FDOT) District Maintenance Engineers and FHWA engineers meet throughout the year to discuss strategies, such as SOWs, emergency contracts, and asset maintenance contracts to address likely situations during disasters.

NYS DOT Statewide Transportation Information and Coordination Center (STICC) coordinates with the New York State Division of Homeland Security & Emergency Services (NYS DHSES) during disasters and emergencies. The STICC coordinates disasters and emergencies for the regions in tandem with other state and local and emergency response providers. NYS DOT has developed an excellent working relationship with both NYSDHSES and FEMA and schedules meetings with them at disaster sites.

At TDOT, the Emergency Services Coordinators within the Office of Emergency Operations support the Tennessee state EMA should that agency request assistance within the combined emergency response plan. In such a case, TDOT's primary Emergency Service Coordinator will coordinate field personnel. TDOT's State Aid Offices serve as assessment teams in coordination with city and county representatives.

Although in general state DOTs have a greater role in the FHWA ER program, some state DOTs play active roles in the FEMA PA programs as well. For example, Wisconsin DOT (WisDOT) acts as an advocate for LPAs for FEMA PA reimbursements. In addition, the Wisconsin EMA uses the state DOT in an advisory capacity, especially for establishing reasonable costs for roadway repairs, and assists the state EMA in determining whether FEMA's cost estimation is appropriate. Iowa DOT (IDOT) also provides support to its state EMA and has trained some of its personnel to be able to fill FEMA positions during disasters. Vermont's DOT (VTrans) makes useful information and resources available to LPAs in Vermont. (Additional information on the ways that state DOTs assist LPAs is contained in this chapter in the section "Local Public Agencies.")

EFFECTIVE STRATEGIES AND PRACTICES

This section discusses the effective strategies and practices identified from the synthesis that facilitate state DOT efforts to seek reimbursement through the FHWA ER and FEMA PA programs and expand upon the topics identified in Table 16.

Increased communication and coordination with federal, state, and local partners complement state DOTs' preparedness initiatives. Thus, enhanced relationships through the following efforts have led to better reimbursement outcomes:

- Building strong relationships with FHWA, FEMA, and state EMA.
- Seeking input from such agencies in integrating emergency procedures into emergency operations, including documentation, project formulation, cost tracking, cost estimation, disaster assessment, and contracting.
- Building good relationships with LPAs, as resources allow.

Technologies and systems can facilitate elements of the reimbursement process. Once implemented, training on and

using these technologies and systems in daily operations will help personnel get accustomed to them.

Completing After Action Reports and Lessons Learned exercises after disasters provides excellent opportunities to improve reimbursement procedures.

Training state DOT personnel in the FHWA ER and FEMA PA programs and each of their respective reimbursement policies and processes played an important role in successful reimbursements. Scenarios from past disasters may be used for disaster assessment training and other training. Because personnel from multiple units are involved in disaster response and have reimbursement responsibilities, it is important to cast a wide net when it comes to reimbursement training. State DOTs saw benefits in provision of FHWA ER training to LPAs in terms of better quality FHWA ER submissions. A few state DOTs also provide their state EMAs with FHWA ER training.

DISASTER ASSESSMENT

Disaster assessment practices were found to be useful for successful and efficient documentation of damages by state DOTs and assisted them in meeting programmatic deadlines. Disaster assessment requires qualified personnel, site prioritization, determination of site eligibility, and documentation and damage assessment technologies.

Relevant documentation technologies include smart phones and tablets; mobile disaster documentation technology; and with GPS, location information can be inserted into images taken by these devices. Geospatial information using lidar or similar technologies can help identify damages as well as the cause of the damages. Aviation services, such as the Civil Air Patrol [used by the Missouri DOT (MoDOT)], can be useful in the assessment of otherwise inaccessible disaster sites.

Traffic Management Centers (TMCs) support emergency operations and assist disaster assessment teams in accessing disaster sites safely and efficiently. To this end, TMCs deploy intelligent transportation systems equipment, mapping/geographic information system (GIS) and GPS technology, and Road Weather Information Systems (RWISs). TMCs can assist disaster assessment teams through the detection/verification/monitoring of roadway conditions. TMCs also provide traffic and incident information, including real-time traffic and road closure information, real-time weather alerts and forecasts, and the identification of optimal routes to disaster sites. For instance, MoDOT, NYS DOT, and WisDOT use a winter road information service that provides hourly weather updates, storm briefings, and e-mail/text alerts of current and future adverse weather.

IDOT's Weatherview system integrates maps that display weather information from RWIS stations and from Automated Weather Observing Systems (AWOSs). The weather information in these maps includes air temperature, road and bridge

temperatures, wind speed and direction, wind gusts, dew point, and visibility. These maps use GPS and GIS to provide the work status of maintenance crews, real-time plow truck and plow/spreader locations, and equipment and labor usage. Bridge, highway, and pavement management systems as well as a bridge monitoring system facilitate the assessment process. Historical data are mapped to show repetitive losses—useful in justifying betterments and the inclusion of mitigation measures.

TDOT's bridge monitoring tool, shown in Figure 17, helps TDOT prioritize and schedule disaster assessments for TDOT's bridges. The tool uses information about drainage areas, foundations, and other bridge elements to analyze the impact of specific events on each bridge and determine priorities in assessments.

Although these technologies enhance the assessment process, successful adoption and implementation of new technologies can require substantial effort and senior management support. For instance, VTrans recommends the use of champions who are end-users; states the importance of having the capacity to design and map new processes; and recommends the development of supporting policies and structures. For disaster sites for which utilities are disrupted, MoDOT and TDOT train their disaster assessment teams to be self-sustaining, allowing them to proceed with assessments at these sites. Louisiana DOTD provides an equipment/supply checklist for their damage assessment teams to ensure that teams are fully equipped to perform their responsibilities. The checklist is contained in Appendix I.

The composition and size of disaster assessment teams vary depending on the type and scope of the disaster. For instance, California DOT (Caltrans) team members may include individuals from the following departments: design, hydraulics, geo-tech, structure maintenance investigations, materials engineering and testing services, and environmental and field maintenance. At MoDOT, the disaster assessment team usually has an engineer from the Central Office maintenance division, district maintenance personnel, and superintendents or supervisors familiar with the site. NYSDOT teams are comprised of two or three civil engineers from the design, construction, and maintenance departments. At WisDOT, disaster assessment teams are comprised of two individuals—a region maintenance staff from WisDOT or county highway department staff and a FEMA inspector. For FHWA sites, a Central Office Bureau of Highway Maintenance staff engineer also joins the team. VTrans' Scan Tour was a multidisciplinary group, including engineers and regulatory partners, that toured the state to review every major damage site while response and recovery work was ongoing. The group was tasked with making recommendations on changes or additional work pertaining to the emergency repairs to increase the resiliency of the facilities.

Louisiana DOTD's roadway teams are comprised of four to seven members. DOTD's moveable bridge teams require an

electrical engineer and a structural engineer. DOTD also has fixed bridge teams. Both types of bridge team are composed of four members. Louisiana DOTD's damage assessment teams are trained a minimum of once a year and are provided with special gear and a packet of forms. The Team Leaders report accomplishments and estimated completion dates of repairs to the DOTD Roadway and Minor Bridge Leader or to the Damage Assessment coordinator on a daily basis. The District Forward Point of Contact Coordinator and district personnel ensure that the Damage Inspection Report or Project Worksheet SOW matches the actual repair work being performed for each project. Needed changes are provided by the District Forward Point of Contact Coordinator to the DOTD Roadway or Bridge Team Leader. DOTD's Damage Assessment Team Organizational Chart is shown in Figure D-60 of the Louisiana DOTD case example in Appendix D.

Ensuring that only authorized personnel and vehicles may access disaster sites is important. To this end, DOTD team members are required to wear a current DOTD badge and vest at all times, and each vehicle is required to have a special placard on each side of the vehicle. The District Forward Point of Contact is responsible for coordinating an access plan with local authorities.

FINANCIAL MANAGEMENT SYSTEMS AND PROJECT CODES

State DOTs use a variety of financial management systems, including in-house systems to store and monitor disaster expenditures (labor, equipment, materials, contracted work) and produce needed reports. Some costs, such as travel expenses, may not be accounted for in these systems and need to be included with proper documentation if reimbursement for them is desired. When FEMA- or FHWA-approved rates are not used, preapproval of equipment rates from the sponsoring agency will expedite reimbursements.

Financial management systems keep track of labor-personnel hours, days worked, and activity by project. Maintenance management systems are similar to financial management systems but focus on maintenance activities and also usually monitor equipment and materials usage. Aligning the financial management systems and maintenance management systems eliminates discrepancies in the data stored in the two respective systems. The ability to match hours of equipment use with the individuals using the equipment facilitates the alignment of both systems. Disaster configuration is available for some financial management systems. North Carolina DOT noted that disaster configuration has helped the agency facilitate the reimbursement process. Texas DOT (TxDOT) has a maintenance management system (MMS) that is able to calculate the daily burn rate. The actual labor costs are available through this system, which contains every employee's salary or labor rate. In the past, it was not possible to match equipment hours with labor hours, which was required by FEMA. The MMS was reconfigured so that it can now automatically match the equipment usage with

personnel hours. IDOT has a resource management system (RMS), a module for emergency management that was created with a FEMA PA/FHWA ER billing module to quickly identify costs and associate them to specific PWs or DDIRs.

FHWA Emergency Relief Process Milestones and Project Tracking

State DOTs that have access to the FHWA Fiscal Management Information System (FMIS) stated that the FMIS facilitates their ability to effectively manage the FHWA ER program projects and is an important collaboration tool. For major revisions, authorization requests may be sent to the FHWA Division Office through the FMIS.

Tracking milestones can assist state DOTs in ensuring that the key requirements of the FHWA ER program are being met. Keeping track of individual projects in the FHWA ER program is also important.

TDOT uses FHWA ER process tracking tables with key milestones to monitor and track each FHWA ER milestone

(see Table 17). These tables show the required actions for the FHWA ER program. A detailed FHWA ER project tracking spreadsheet helps manage individual projects (see Table 18).

NYSDOT uses a DDIR Completion Status Report, which is prepared by event and region. The report form records the DDIR number, applicant, federal PINs, anticipated or actual completion date, FHWA approved amounts, final costs, revision or time extension required/approved, anticipated federal dollars needed, date final cost documentation was submitted to the FHWA ER Unit, and date the Accounting Bureau was notified by the FHWA ER Unit to close the federal PIN in FMIS. NYSDOT noted that its staff can make minor changes to the SOW and costs within the FMIS.

FEMA EMMIE Database

FEMA’s Emergency Management Mission Integrated Environment (EMMIE) database assists FEMA, state EMAs, and applicants in tracking and monitoring FEMA PA projects, documentation retention, and information sharing.

TABLE 17
USING EXCEL TO TRACK KEY PROCESS MILESTONES FOR ACTIVE FHWA ER EVENTS

ER Event No.	Date	Counties/ Areas	ER Event Description	Process Milestone																
				Gov Proclamation or Presidential Declaration	Letter of Intent	Acknowledgment	Site Assessment	DSSR	Allocated	Obligated	Final Cost Submittal	Final Cost Approval	Closeout							
ER-TN09-1	January 28, 2009	Lake, Obion	Ice storm	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
ER-NC10-1	October 25, 2009	North Carolina	I-40 rockslide detour and traffic operations	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
ER-TN10-1	November 10, 2009	Polk	US-64 rockslide 1	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
ER-TN10-2	January 19, 2010	Polk	US-64 rockslide 2	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
ER-TN10-3	January 25, 2010	Sevier	US-441/321 rockslide	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
ER-TN10-4	March 14, 2010	Blount	US-129 rockslide	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
ER-TN10-5	April 30 - May 2, 2010	West and Middle Tenn.	Flooding	√	√	√	√	√	√	√	√	%								
ER-TN11-1	February 20, 2011	Grundy	SR-108 rockslide	√	√	√	√	√	√	√	√	√								
ER-TN11-2	April 5, 2011	Sevier	US-441/321 slide	√	√	√	√	√	√	√	√	√								
ER-TN11-3	April 19, 2011	West Tenn.	Storms and flooding	√	√	√	√	√	√	√	√	√								
ER-TN11-4	April 25-28, 2011	East Tenn.	Storms and tornado	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
ER-TN12-1	January 31, 2012	Cocke	I-40 rockslide	√	√	√	√	√	√	√	√	√	%							
ER-TN12-2	March 8, 2012	Campbell	I-75 landslide	√	√	√	√	√	√	√	√	√	%							
ER-TN12-3	March 16, 2012	Blount	US-129 rockslide	√	√	√	√	√	√	√	√	√								
ER-TN13-1	January 15, 2013	East Tenn.	Storms and flooding		√	√	√	√	√	√	√	√								
ER-TN13-2	May 9, 2013	Smith	SR-25 slide				√	√	√	√	√	√								

Green = complete; yellow = in progress; % = partially funded; blue = not started.
Source: TDOT.

TABLE 18
2012 FHWA ER PROGRAM DETAILS

ER Project Number	County(ies)	Description	Emergency Repair	Permanent Restoration	Estimated Project Cost	Estimated PE/ROW/CEI	Total Estimated Cost	Estimated FHWA Participation (%)	Estimated FHWA Share
ER-TN12-1-1	Cocke	I-40 Slide Repair Contract #1	√		\$60,000	\$0	\$60,000	100%	\$60,000
ER-TN12-1-3		State Forces - Emergency Repair			\$60,000	\$6,000	\$66,000		\$66,000
ER-TN12-1-2	Cocke	I-40 Slide Repair Contract #2		√	\$1,000,000	\$0	\$1,000,000	90%	\$900,000
ER-TN12-1-4	Cocke	State Forces - Permanent Restoration			\$50,000	\$0	\$50,000		\$45,000
ER-TN12-1-5	Cocke	Consultant - Records Clearance		√	\$40,000	\$0	\$40,000	90%	\$36,000

ER Project Number	Allocation Amount	Obligated Amount	Estimated State/Local Share	Contract(s)	Letting Date	Project Status (as of 7/24/12)
ER-TN12-1-1			\$0	CNL132		Complete
ER-TN12-1-3		\$62,318	\$0			Complete
ER-TN12-1-2		\$1,338,000	\$100,000	CNL138		Complete
ER-TN12-1-4		\$0	\$5,000			Complete
ER-TN12-1-5		\$0	\$4,000			Pending

Source: TDOT.

Project Coding

Using unique project codes for disasters is a good practice implemented by case example state DOTs. The purpose of the project coding system is to be able to easily identify relevant disaster-related expenses, and the system helps ensure that costs are not confounded with expenses for regular work. A coding schema facilitates differentiation of costs by program (FHWA ER versus FEMA PA), county, disaster versus nondisaster costs, and obligated versus nonobligated costs. To capture all disaster-related costs, early assignment of the codes is useful.

Louisiana DOTD’s project coding system uses unique numbers for the event, as well as unique numbers for FEMA and FHWA, and for major operations activities. Costs are assigned, recorded, and tracked using work breakdown structure (WBS) numbers along with statistical internal order numbers and activity codes. WBS numbers are created when a disaster has occurred or is imminent. WBS numbers can identify, for each project, the district office, whether it is a FEMA or FHWA project, and type of work. For permanent work, WBS numbers are requested by DOTD district offices. Note that WBS numbers are also used in daily operations. Internal order numbers are assigned to specific types of work recorded on a time sheet that is being performed under a disaster-related WBS number.

Activity codes are assigned to specific types of work identified on a work order that is being performed under a disaster-related WBS number. The Emergency Forms used by Louisiana DOTD to track resources during emergencies are provided in Appendix I.

WisDOT assigns a unique project ID number for each county. The number is in the following format: 00XX-YP-ZZ, for which

- XX is the county number (01-72);
- Y is the last digit of the calendar year when the work takes place;
- P is the discretionary project code; and
- ZZ is the number code for the type of work (temporary or permanent repairs).

FEMA has established and released national standard project (subgrant) title numbers, cost codes, and standard comments that went into use in December 2013 at its JFOs and Regional Offices. Appendix A of the December 2013 FEMA guidance provides standard comments for Permanent Work Pilot, and Appendix B provides examples of Permanent Work Pilot cost codes. They include the cost estimate format, subgrantee-provided estimate, expert-panel-provided estimate, change in SOW on a fixed subgrant, fixed subgrant

alternate project, excess funds and codes for consolidated fixed subgrants (*Public Assistance Alternative Procedures Pilot Program Guide for Permanent Work 2013*).

Maintenance Management and Decision Support Systems

Maintenance management and decision support systems typically are designed to (1) predict current and future road conditions based on the forecasted weather and the application of maintenance treatments and (2) recommend optimal maintenance treatments based on available resources. Accurate real-time and predictive adverse weather information as input into these systems can enhance decision making and protect state DOT disaster assessment teams. Although most state DOTs have maintenance management systems, the systems vary by the type of features they offer. The features may include asset inventory, condition assessment, work scheduling and tracking, work needs identification, hours worked, GPS, GIS interface, and interface with other decision processes.

DOCUMENTATION/INFORMATION MANAGEMENT

State DOTs reported that preestablishing documentation forms and record-keeping practices, and training all relevant personnel in these practices facilitate reimbursements. Documents are retained by state DOTs for at least the time required by the FEMA PA and FHWA ER programs; otherwise retention periods vary according to state DOT and state regulations and guidelines.

The importance of capturing clear images of damage is emphasized by case example participants. To this end, training damage assessment personnel on how to capture effective images is deemed beneficial by TDOT. As part of the training, TDOT provides multiple examples of good photos and poor photos. Figures 12 and 13 present some of these examples.



FIGURE 12 Example of a good photo (*Courtesy: TDOT*).



FIGURE 13 Example of a bad photo (*Courtesy: TDOT*).

In addition, effective information management practices, including storage of information in a central location (whether in electronic format or hard copy), can save staff time. Electronic formats can facilitate electronic transmittal of documentation, conserve storage space, and accommodate duplicate requests for documentation, especially if a centralized drive is used. A few downsides include the need for cybersecurity measures and time required to scan hard copy documents. FDOT noted that optical character recognition technology was useful in enhancing the clarity of scanned information.

Electronic Documentation Forms

Electronic documentation forms for the DDIR, the Damage Assessment Form (DAF), and the PW increase efficiency by facilitating the input of data (including input from field sites), their processing and distribution, and the registration of changes to the data. Caltrans, IDOT, NYSDOT, TDOT, and VTrans have reported positive experiences with electronic documentation forms.

Damage Assessment Forms

- Caltrans' new electronic DAFs were created by FHWA with input from Caltrans. The major change to the forms was an allowance to write in realistic preliminary and construction engineering support costs, instead of the standard 10% and 15%, respectively. The forms were recreated in Adobe Acrobat Professional v.9 to allow computer-generated DAFs. The electronic DAF allows changes to be made in the field. Information about Caltrans' DAF is provided in Appendices F and G.
- TDOT incorporates Google Maps into its electronic DAFs to facilitate documentation of the site location. In the Maps Component of the DAF, TDOT includes the functional classification map and Google aerial imagery, as shown in the example in Figure 14. TDOT's functional classification maps, accessible to TDOT personnel through the web, show routes that are color-coded by type.

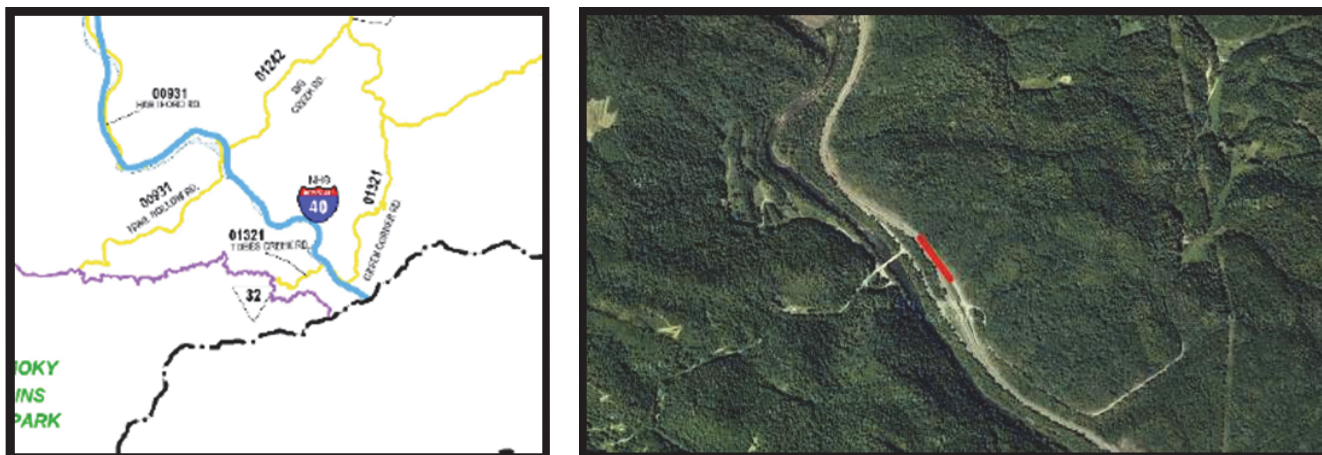


FIGURE 14 Example of images from a DAF map component (Courtesy: TDOT).

Detailed DDIRs and PWs

- IDOT's electronic DDIR system has reduced the time expended to produce a DDIR by 90%. The system processes the DDIR from the start throughout the approval process and automatically sends completed forms and notifies relevant offices of changes to the forms. The new system includes a website, from which any authorized user is able to access the form, and a mapping system that automatically creates a map with latitude/longitude or county/route/milepost. Revisions to the form can be made easily. In addition, photos, plans, and sketches can be attached to the form. Figures D-2 to D-5 in Appendix D present screenshots of a sample IDOT electronic DDIR.
- NYSDOT provides its personnel with clear instructions on how to complete its DDIR form. NYSDOT's DDIR instructions are presented in Appendix E.
- VTrans has created a combined DDIR and PW form that it has recently began using.
- Arizona's state EMA created a labor, equipment, materials, and other (LEMO) workbook, which is useful for subgrantees in gathering needed costs for the PW. The LEMO Workbook was designed to be input directly into the PW and documents only the needed information. It also helps Arizona DOT in working with the Project Specialist on making corrections and modifications. A sample LEMO workbook is included in the Arizona Division of Emergency Management (ADEM) case study in Appendix D.
- WisDOT has provided a completed PW subgrantee application for DR-4141, June 20, 2013, to June 28, 2013. It is included in the WisDOT case study in Appendix D (Figures D-55 through D-57).

Incident Management Systems

Incident management systems (e.g., WebEOC) are used to provide key emergency response stakeholders with a real-

time view of an incident from any location through the Internet. The systems may also be used for information-sharing purposes and for making important documents, forms, and other files available to all emergency response providers. In addition, resource requests, task assignments, and activities performed by personnel; damages, their estimated costs, and cumulative costs; and information about road conditions and closures can be tracked and shared.

Internal Audits

Internal audits can facilitate the reimbursement process by eliminating the need for corrections and revisions to documentation. Internal audits are performed by IDOT and VTrans to screen for irregularities or ineligible items before submission of the documentation to the FHWA ER or FEMA PA program. VTrans has successfully used the narrative cost allocation plan method to capture indirect costs for the FHWA ER program. In addition, activity-based coding helps identify disaster versus regular expenses, along with disaster-related administrative costs.

Predisaster Documentation

To provide information regarding predisaster conditions of state DOT infrastructure and assets, predisaster documentation is important. State DOTs perform bridge inspections on a regular basis; the inspection results are useful in providing predisaster documentation of bridge conditions. In addition, as described in the following section, asset management systems greatly facilitate predisaster documentation by managing and storing up-to-date conditions of state DOT infrastructure and assets.

- TxDOT documents all of the agency's facilities during normal conditions using a combination of on-site photographs and Google imagery. This allows TxDOT to provide evidence of predisaster conditions.

- MoDOT developed the Automatic Road Analyzer (ARAN) Automatic Road Van to document by video normal predisaster road conditions on an annual basis. The videos document location information, including GIS coordinates and mile markers. Screenshots of images from the ARAN van viewer are shown in Figures 15 and 16.
- Louisiana DOTD emphasizes the importance of conducting, before an event, an inspection of damages to or deficiencies in vehicles and equipment and documenting the predisaster conditions.

State DOTs use bridge monitoring tools to document predisaster conditions, monitor conditions and status of bridges, and set priorities for bridges for damage assessment purposes, especially in cases of large-scale disasters. IDOT and TDOT employ bridge monitoring systems that predict and assess the impact of disasters on their bridges. A screenshot of TDOT's system is shown in Figure 17.

Asset Management

The goal of Transportation Asset Management is “to provide a desired level of service and performance for various assets within the transportation network, in a most cost-effective manner” through better resource allocation decisions. The process includes inventory of assets, such as pavements and bridges and field data collection, standardized agencywide asset management procedures, and condition assessment, which enables the quick identification of assets that need immediate attention (“Common Q’s and A’s pertaining to Transportation Asset Management” 2014). MAP-21 requires the creation of a Transportation Asset Management Plan for the National Highway System pavements and bridges.

A Transportation Asset Management Information System “is used to collect, process, store, and analyze information about assets; to develop sound maintenance and rehabilitation strategies; and to schedule, track, and manage work.” Asset management systems include Equipment Management,

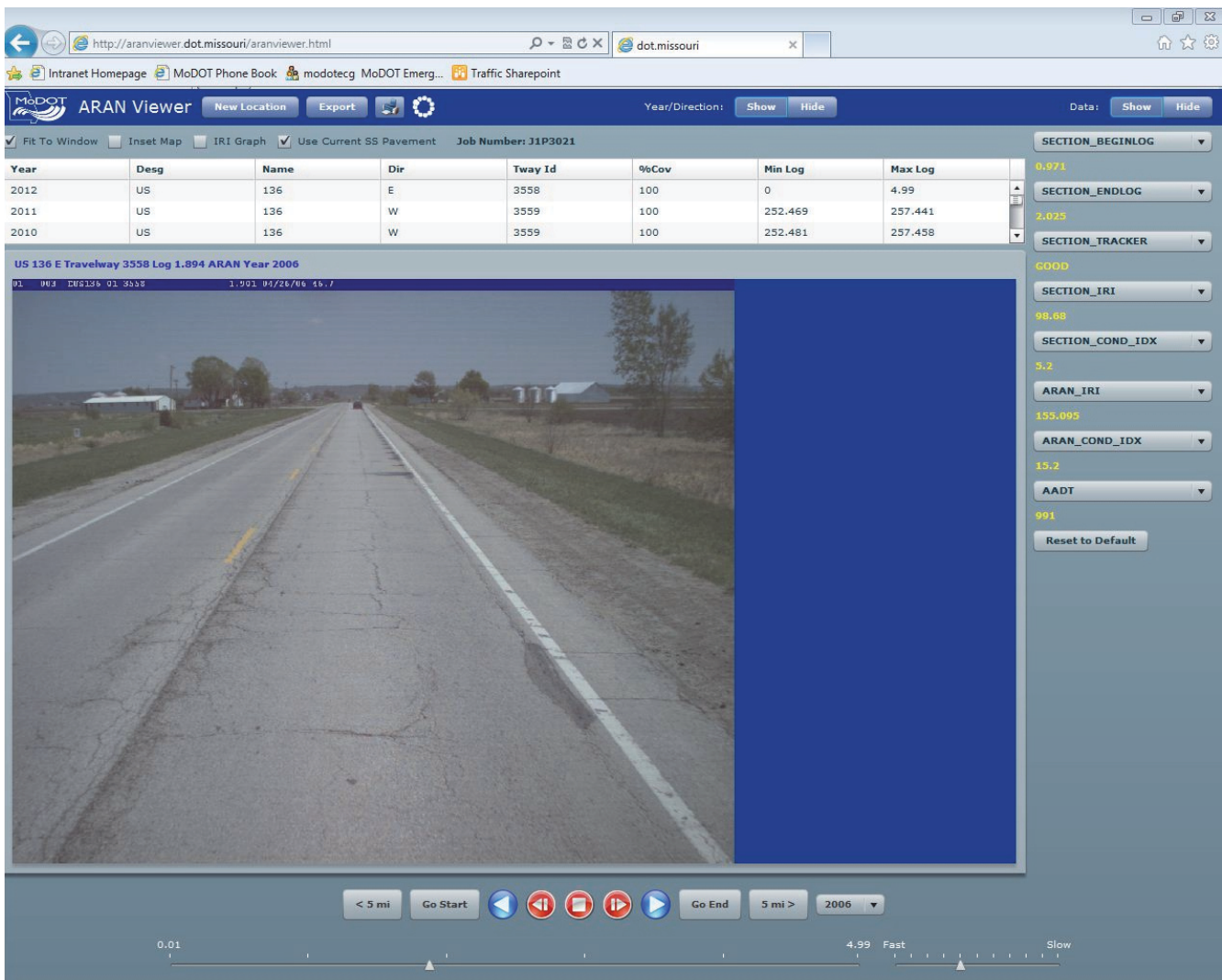


FIGURE 15 Screenshot of ARAN Viewer showing scour location before occurrence of scour (Courtesy: MoDOT).

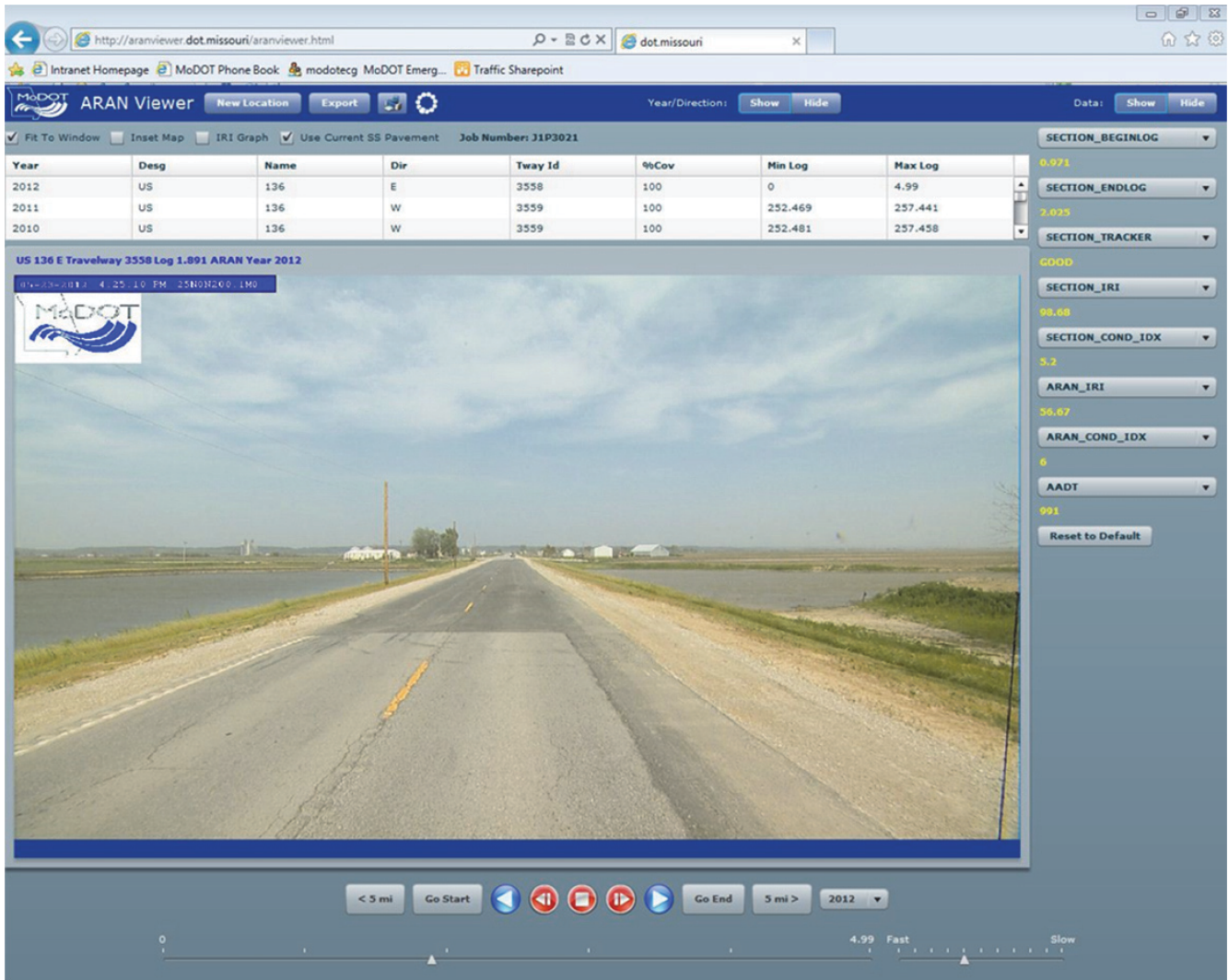


FIGURE 16 Screenshot of ARAN Viewer showing scour location after completion of repair (Courtesy: MoDOT).

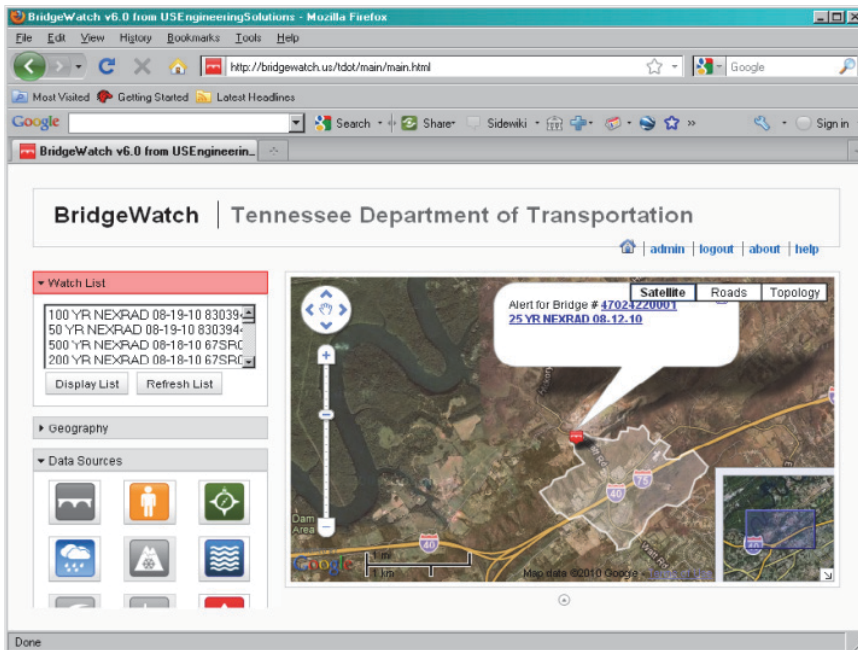


FIGURE 17 Screenshot of TDOT's BridgeWatch tool (Courtesy: TDOT).

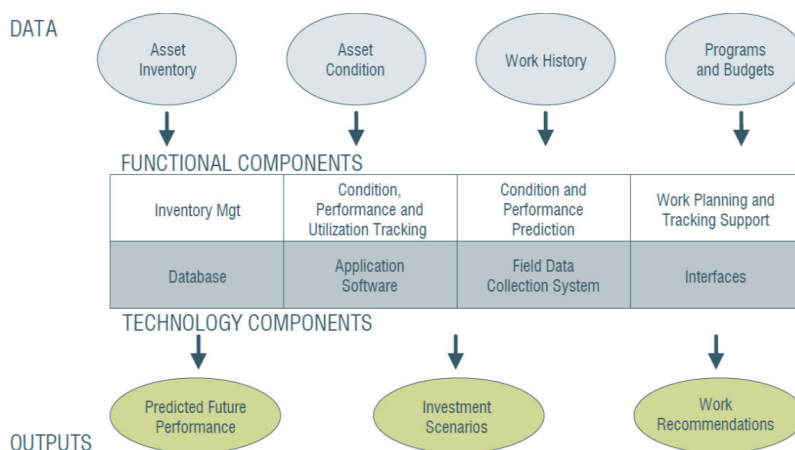


FIGURE 18 Data, functional, and technology components of a transportation asset management information system (Source: AASHTO Transportation Asset Management Guide Executive Summary 2013, p. 34).

Pavement Management, Bridge Management, Roadway Management, Sign Management, and Signal Management.

The key functional components and technology components of a Transportation Asset Management information system are shown in Figure 18. The Condition and Performance Prediction components of the system assist the state DOT in the prediction of future performance. Field data collection techniques range from manual methods to mobile lidar technology. Mapping historic data to show repetitive losses help IDOT and VTrans justify upgrades and mitigation measures.

Asset Tracking

Technologies such as GPS and automated vehicle location (AVL) systems and associated software help track the location and use of assets. For instance, IDOT and WisDOT installed GPS in snowplows. Information about equipment use (i.e., when and where the equipment was used and by whom) is archived and used for reimbursement documentation purposes. At Louisiana DOTD, asset tracking procedures have been added to its ESF-1 Operations Plan to identify and direct the use of transportation assets used or controlled by DOTD; control costs and facilitate cost recovery; maintain situational awareness; and document utilized resources. Assets are tracked using a vendor-supplied, web-based GPS tracking system and emergency forms. (See Appendix I for Louisiana DOTD's asset tracking forms and other relevant emergency forms.)

AASHTOWare

AASHTOWare (www.aashtoware.org) pools knowledge and resources, resulting in a significant amount of cost savings to state DOTs and other transportation agency users. AASHTOWare products comply with FHWA regulations, AASHTO standards, and industry practices and also accommodate state-to-state differences. The following products assist state

DOTs in managing construction projects, including proposal preparation, contract administration, and cost estimation.

AASHTOWare Project

AASHTOWare Project enables state DOTs to manage information throughout the entire contract and construction cycle, from cost estimation to proposal preparation, letting bids, construction and material management, and data collection. AASHTOWare Project allows creation of a consistent, integrated view of the contract process during each phase. There is also a module for managing labor and civil rights issues.

AASHTOWare Project SiteManager

AASHTOWare Project SiteManager assists state DOTs with construction management. Its primary functions are:

- Contract administration—Monitor contractor progress, receive payrolls, generate status reports, and provide reference data for vendors and subcontractors.
- Contract records—Record all types of project data.
- Daily work reports—Enable inspectors to capture work performed at the job site on a laptop and upload it for review and approval.
- Contractor payments—Generate estimates, process contract and line item adjustments, and manage retainage.
- Materials management—Record, track, and report on material samples and test results from job sites, plants, and test labs.
- Laboratory inventory management system—Integrate material and lab administration to manage sampling and testing workflow.

An annual Site License is available to any agency/organization desiring to license all the following AASHTOWare Project modules: AASHTOWare Project Cost Estimation,

PES/LAS or AASHTOWare Project Preconstruction, AASHTOWare Project Construction Administration, AASHTOWare Project BAMS/DSS, AASHTOWare Project Civil Rights & Labor, AASHTOWare Project SiteManager, AASHTOWare Project SiteXchange, AASHTOWare Project Expedite, and the AASHTOWare Project Worksheet. The AASHTOWare Project Estimator and AASHTOWare Project FieldNet modules, as well as the AASHTOWare Project FieldManager Suite, are not included in this Site License. An annual license fee costs \$412,000 for unlimited use.

Related software under development by AASHTO is described here.

AASHTOWare Project Construction & Materials

Work on the AASHTOWare Project Construction & Materials initiative is ongoing, with a projected product release date of December 2014. The software will replace the client/server construction, materials, and laboratory information management functionality of existing AASHTOWare Project modules, including AASHTOWare Project SiteManager, AASHTOWare Project FieldManager, and AASHTOWare Project Construction Administration.

AASHTOWare Project Estimation

Work on the AASHTOWare Project Estimation module is ongoing. Functionality of this module will include estimating in and through all phases of a project development life cycle and interacting with various other applications used by agencies for project processing. The application is planned to address all functional/business requirements for an integrated cost estimation web-based application designed to meet the needs of a user base of estimators, business managers, and external/legislative stakeholders. The software will replace the client/server estimation functionality of existing AASHTOWare Project modules, including AASHTOWare Project Cost Estimation, AASHTOWare Project Estimator, and AASHTOWare Project TRACER. Additional information on each of these products can be found at www.aashtoware.org.

COST SHARING

For the FEMA PA program, cost sharing for the nonfederal share typically is provided by the state DOT, the state, or state EMA. One respondent noted that their arrangement is 75% federal, 12.5% state, and 12.5% local. In unusual circumstances the federal government may reimburse at higher rates. For instance, for Hurricane Katrina, the federal share was 100% for emergency work and 90% for permanent work; for Hurricane Sandy, it was 90%.

For the FHWA ER program, cost sharing is needed for permanent restoration projects and for emergency repair work not

completed within 180 days and not granted an extension. The federal cost share typically is 80% for Interstate and 90% for non-Interstate projects. The state DOT is responsible for the nonfederal cost share. Higher shares are possible in states with high percentages of federally owned public lands.

States may assist state DOTs with their nonfederal cost shares.

- Arizona—The Arizona state EMA administers the state governor's emergency fund, which may fund Arizona DOT's nonfederal cost share for the FEMA PA program.
- Texas—The Texas state EMA (Texas Division of Emergency Management) typically supplies TxDOT's nonfederal share for both programs at an early stage.
- Wisconsin—WisDOT noted that half of the agency's cost share may be provided for by a state program; details of this program are provided in the WisDOT case example.

LOCAL PUBLIC AGENCIES

In chapter three, state DOTs' observations of their experiences with LPAs were described. In general, case example state DOTs work closely with LPAs during disasters and may provide various forms of assistance ranging from a web page with helpful resources to technical assistance. The state DOTs typically offer more support for LPAs for the FHWA ER program and may provide formal FHWA ER training, just-in-time training, and/or technical assistance.

- Caltrans' Local Assistance Program is comprised of the Division of Local Assistance in Headquarters and 12 District Local Assistance Offices. It assists local and regional public agencies by ensuring that specific program requirements are met, project applications are processed, and projects are delivered in accordance with federal and state requirements. In addition, easily accessible web-based maps of federal-aid highways are available to Caltrans' district personnel and to LPAs so that they may confirm that a route is federal-aid.
- VTrans' FHWA ER/FEMA PA representatives coordinate with LPAs and provide extensive assistance for FHWA ER and FEMA PA programs. VTrans assists LPAs in the preparation of documentation. VTrans also reviews their FHWA ER submissions and documentation, rejects ineligible submittals, approves eligible items, and processes payments. VTrans also performs closeout inspections on FHWA ER and FEMA PA projects. VTrans helps LPAs through the National Environmental Policy Act (NEPA) process and assists them with FEMA and FHWA appeals and audits.
- WisDOT contracts out routine highway maintenance to its counties and has established a uniform system of invoicing. WisDOT has also created a maintenance management system for its counties. This system and

the close relationship between WisDOT and its counties are useful during disasters when counties are requested to perform emergency and permanent work.

State DOTs, including NYSDOT, have been directed by their states to assist LPAs in emergency road repairs and debris removal during disasters that were particularly severe and overwhelmed local resources. TxDOT provides monetary assistance to LPAs in certain circumstances, contributing the nonfederal cost share for LPAs when they are unable to meet their cost share requirements.

LPA Training

State DOTs provide a range of training to LPAs, including annual or semiannual training, training by request, and just-in-time training. Examples of assistance and training provided by state DOTs include the following:

- California—Caltrans' Local Assistance Academy is a week-long intensive training offered to newer Caltrans' Local Assistance hires. When available, a few spots may be offered to LPAs. The training includes a 30-minute FHWA ER portion and breakout sessions. FHWA offers Caltrans' district offices a 5-hour FHWA ER class that starts with the basics of the FHWA ER program and ends with breakout teams working on the completion of a DAF for a site. Caltrans' website also includes relevant FHWA ER information helpful to LPAs (<http://www.dot.ca.gov/hq/LocalPrograms/programInformation.htm>; "Program Information" 2013).
- Florida—FDOT provides annual FHWA ER training to their district offices and LPAs. The 1-day training is held at each FDOT district office.
- Iowa—IDOT provides FHWA ER and FEMA PA program and disaster assessment training to its personnel and LPAs. Scenarios from previous disasters are used in this training.
- South Dakota—The state's DOT provides video conference and on-site training. It also offers a website page with helpful slides, examples, and resources for LPAs.
- Tennessee—TDOT's Local Programs Development Office provides FHWA ER technical assistance and training to its personnel and LPAs.
- Texas—TxDOT assists LPAs in completing applications and provides just-in-time training to LPAs upon request. The just-in-time classroom training is 8 hours long. In addition, TxDOT provides a web page with information on local government project procedures: <http://www.dot.state.tx.us/business/governments/lgpp.htm> ("Local Government Project Procedures" 2014).
- Vermont—VTrans' FHWA ER/FEMA PA representatives coordinate with LPAs and provide extensive assistance on both programs, including the preparation of documentation, assistance on the NEPA process, and audit preparation.

STATE EMERGENCY MANAGEMENT AGENCIES

As discussed earlier in the synthesis, state EMAs perform important FEMA PA administration functions on behalf of FEMA; advise FEMA on eligibility questions and appeals decisions; request SOW changes; obligate and deobligate funds; and perform final inspections. They are required to follow state regulations and laws, which may contribute to variations in implementation of the FEMA PA program.

In addition, state EMAs assist state DOTs and LPAs along with other applicants and offer a range of training and helpful resources.

- Arizona—Arizona's state EMA is ADEM, which offers various courses on the FEMA PA process. Some courses cover the entire process, whereas others cover specific elements. They can be provided upon request given proper lead time and are free of charge. Some of the training is based on FEMA courses adapted by ADEM for its Arizona applicants and subgrantees.
- Florida—Florida's state EMA provides an online portal for its applicants and subgrantees to use to upload completed forms and documentation. Details of this portal are included in the FDOT case example.
- Louisiana—The Louisiana state EMA delivers a range of emergency training and assists applicants with the FEMA PA process and helps LPAs differentiate between the FEMA PA and FHWA ER programs. DOTD assists the Louisiana state EMA by providing state EMA staff with FHWA ER training.
- New York—New York State's EMA has a disaster recovery web page replete with useful information, manuals, and resources: <http://www.dhSES.ny.gov/oem/recovery/> ("Recovery" n.d.). Disaster-specific information may be provided through the web page. For instance, for DR-412, environmental and historic preservation guidance, including permits, special considerations, debris management, and best management practices, are provided.

CONTRACTING

Initiatives to address contracting issues and good emergency contract management practices assisted state DOTs in meeting reimbursement program deadlines and federal, state, and local requirements. These requirements included:

- Use effective contracting procedures, cost estimates, and repair and reconstruction methods to meet program deadlines.
- Address environmental or other special consideration issues as soon as possible. Obtain emergency waivers.
- Establish and use emergency contracts. Preapproved contracts can facilitate reimbursements.
- Create an emergency contractor database.
- Standardize contractor payments.

- Create administrative packets with needed contracts, forms, and information.
- Use contractors knowledgeable about state and state DOT policies and practices and federal-aid procedures.
- Establish one point of contact for plans and blueprints.

APPEALS

State DOTs do not always file appeals because the justification and support information required make the appeals process a resource-intensive one.

With regard to FHWA ER appeals, state DOTs noted that informal discussions with their FHWA Division Offices have often averted the need for formal appeals. When filing formal FHWA appeals, the following practices resulted in successful outcomes:

- Provision of requested documentation of costs and eligibility.
- Citation of laws.
- Citation of prior decisions. This may require a review of other states' experiences (e.g., approvals for similar situations).

The following are instances in which FHWA denials have been reversed and new precedents have been set:

- TxDOT succeeded in setting a precedent for work performed during the Bastrop County fires in 2011. The work involved clearing dead or dying trees near the Texas State Highway as a protective measure against fires. The appeals decision overturned FHWA's initial rejection.
- VTrans appealed FHWA TE-045 ER guidelines, which precluded reimbursements for the cost of work performed by the National Guard in the aftermath of Hurricane Irene. After meetings and discussions with FHWA on the issue, FHWA decided to change FHWA ER guidelines and now allows these costs.

FEMA appeals are usually filed through the state EMA. Florida Division of Emergency Management (FDEM) provides a web portal through its website at www.FloridaPA.org, through which FDOT may initiate an appeal and store

disaster documentation. Details of the process used by FDEM are included in the FDOT case study in Appendix D.

REIMBURSEMENT TIME

The useful practices identified in this synthesis and described in chapters three and four and in the case examples in Appendix D contribute to prompt reimbursements. These practices are assisted by effective and efficient business and cost management practices; the alignment of systems, processes, and technologies with the requirements of both programs; and a high level of preparedness. In addition, the streamlining of repairs (including site inspection, documentation, and contracting) is instrumental in meeting important deadlines and facilitating reimbursements. A shortage of federal funds, insurance payments, or problems obtaining permits may lengthen reimbursement times.

With regard to FHWA ER reimbursements, access to the FHWA FMIS has assisted state DOTs in their project management functions by providing the status of FHWA ER projects and project funding. TDOT provided an example of its FHWA ER project management method, which is presented in the TDOT case example.

With respect to FEMA PA reimbursements, FEMA's EMMIE database allows FEMA, state EMAs, and applicants to better track and monitor projects, retain project documentation, and share information and, thus, facilitate faster reimbursement times. Reimbursement times can also vary based on the amount of documentation required by the state EMA and the state EMA's payment processing time. Arizona's state EMA noted that it is able to turn around reimbursements within 2 weeks. Large FEMA PA projects and permanent restoration project reimbursements have taken longer than small, emergency work projects because large projects can be more complex and small projects are reimbursed based on their cost estimates at the start of the project. However, the new SRIA procedures that allow the use of cost estimates for large projects may alleviate the issue.

With cost estimates (whether for small or large projects) significant differences between actual and estimated costs may require PW amendments, which cause delays; therefore, good cost estimation practices are important.

CHAPTER FIVE

CONCLUSIONS

Reimbursement programs are an essential aspect of cost recovery for state departments of transportation (DOTs) and local public agencies (LPAs), and “play an important role in establishing and maintaining the readiness of resources and should be in place to ensure that resource providers are reimbursed in a timely manner” (*National Incident Management System* 2008, p. 39). The federal reimbursement programs, the Federal Emergency Management Agency Public Assistance (PA) and FHWA Emergency Relief (ER) programs were the focus of this synthesis project.

The synthesis study involved an information review, screening survey, follow-up calls, and case examples; identified effective practices in FEMA’s PA and FHWA’s ER program fund reimbursements; and documented lessons learned.

FINDINGS—CHALLENGES TO KEEP IN MIND

The synthesis revealed differences in FEMA PA and FHWA ER reimbursement procedures across states because of variations in state and local laws and regulations; variations in implementing guidance provided by the state emergency management agencies (EMAs), FEMA Regions, and FHWA Division Offices; and variations in each state DOT’s guidelines, practices, and constraints.

The Moving Ahead for Progress in the 21st Century (MAP-21) Act and the Sandy Recovery Improvement Act (SRIA) along with recent studies performed by the Government Accountability Office (GAO) and Congressional Research Service (CRS) have engendered changes in policy and program guidance. One of the aims of these changes is to improve coordination between FEMA and FHWA and thus improve state DOT experiences with the programs. In addition, upgrades to FEMA’s information-management system Emergency Management Mission Integrated Environment (EMMIE) and FHWA’s Fiscal Management Information System (FMIS) assist FEMA and FHWA in managing projects and sharing information with their state and regional stakeholders and applicants. Nonetheless, state DOTs are challenged with understanding and adapting to these changes.

In general, state DOTs are more familiar with the processes, procedures, and requirements of FHWA and federal-aid than with those of FEMA. State DOTs also have extensive knowledge of their FHWA Division Office contacts and Division Office requirements. However, state DOTs that closely

coordinated with their FEMA representatives experienced better outcomes.

The synthesis identified the following key challenges that survey respondents and case example participants encountered when working with the FEMA PA and FHWA ER programs:

- Elements of both programs and differences between the programs:
 - Eligibility criteria
 - Project formulation (i.e., combining permanent and emergency work, project grouping)
 - Program deadlines
- Variations between states
 - Differences in program implementation originating from variations in state regulations, policies, and guidance; state EMA FEMA PA administration; contracting/procurement, environmental and historic preservation; and other areas
- FEMA Public Assistance Program
 - State DOTs must expect to invest time and resources to apply for and administer funds from PA. Expect the possibility of FEMA audits.
 - When the FEMA personnel with whom a state DOT is working are assigned to other declared events, state DOTs participating in the case examples sometimes experience an adjustment period. For example, incoming FEMA personnel may request duplicate documentation or may reverse decisions made by their predecessors. However, FEMA’s PA Consistency Initiative, which includes a Mid-level Managers Hiring Initiative and a FEMA PA Consistency Training program, and the development of field staff rotation process protocols seek to address this concern.
 - Positive aspects of the FEMA PA program were also noted by state DOTs. For example, several case example participating DOTs included satisfaction with the small project process and with FEMA’s increased adoption of electronic documentation. SRIA changes may also improve satisfaction with the large project process.
- Training—Several case example state DOTs desired additional training on both programs.
- LPAs—In the event of a major emergency or disaster, LPAs look to their state DOTs for leadership and require

substantial assistance on both the FEMA PA and FHWA ER programs. Consequently, state DOTs must expect to spend time and resources to assist and train LPAs.

FINDINGS—EFFECTIVE PRACTICES

A high level of preparedness and good practices in state DOT business and management functions contribute to successful reimbursements. The effective practices identified by the synthesis study included the following:

- Establish effective working relationships with federal, state, and local partners;
- Resolve issues arising in previous disasters;
- Preassign key roles;
- Train personnel—including disaster inspection teams and financial personnel—on the programs and reimbursement procedures;
- Align the systems, processes, and technologies used in daily operations with FEMA PA and FHWA ER requirements;
- Have a working understanding of National Incident Management System (NIMS) and Incident Command System (ICS) record-keeping procedures and forms. Training facilitates effective documentation of costs and damages during the disaster; and
- To the greatest extent possible, meet all deadlines for emergency work for both programs so that maximum eligible reimbursements can be obtained. To this end, activities that streamline emergency work—site inspection, documentation, and contracting—are important.

A summary of useful practices reported by case example participants is shown in Table 19.

FEDERAL EMERGENCY MANAGEMENT AGENCY PUBLIC ASSISTANCE RESOURCES

The following are useful FEMA PA resources and references:

- Declaration Process Fact Sheet
“Declaration Process Fact Sheet,” Federal Emergency Management Agency, U.S. Department of Homeland Security, Washington, D.C., last updated June 13, 2012 [Online]. Available: <http://www.fema.gov/declaration-process-fact-sheet>.
- The Emergency Management Assistance Compact (EMAC) web page
“Emergency Management Assistance Compact,” EMACWeb.org, National Emergency Management Association, Lexington, Ky. [Online]. Available: <http://www.emacweb.org/>.
- EMAC Mission Ready Packages
“Resource Center: Emergency Management,” American Public Works Association (APWA), Kansas City, Mo. and Washington, D.C., n.d. [Online]. Avail-

able: <http://www.apwa.net/ResourceCenter/Category/Emergency-Management>.

- Mutual Aid Agreements for Public Assistance and Fire Management Assistance
(FEMA Policy Publication 9523.6)
Mutual Aid Agreements for Public Assistance and Fire Management Assistance, Federal Emergency Management Agency, U.S. Department of Homeland Security, Washington, D.C., Aug. 13, 2007 [Online]. Available: <http://www.fema.gov/9500-series-policy-publications/95236-mutual-aid-agreements-public-assistance-fire-management>.
- The Incident Resource Inventory System (IRIS)
“Incident Resource Inventory System (IRIS),” Preparedness-Technology, Analysis, and Coordination (P-TAC) Center, Federal Emergency Management Agency, U.S. Department of Homeland Security, Washington, D.C. [Online]. Available: <https://www.ptaccenter.org/iris/index>.
- Project Formulation Standard Operating Procedure (9570.5)
Project Formulation Standard Operating Procedure (9570.5), Federal Emergency Management Agency, U.S. Department of Homeland Security, Washington, D.C., Sept. 1999, [Online]. Available: <http://www.fema.gov/library/viewRecord.do?id=6298>.
- Interactive Forms Library
“Interactive Forms Library,” Federal Emergency Management Agency (FEMA), U.S. Department of Homeland Security, Washington, D.C., last modified April 11, 2013 [Online]. Available: <http://www.fema.gov/interactive-forms-library>.
- FEMA Online Course—Introduction to FEMA’s Public Assistance Program (IS-634)
“IS-634: Introduction to FEMA’s Public Assistance Program,” FEMA Independent Study Program, Federal Emergency Management Agency (FEMA), U.S. Department of Homeland Security, Washington, D.C., June 27, 2011 [Online]. Available: <http://www.training.fema.gov/EMIWeb/IS/courseOverview.aspx?code=IS-634>.
- “Public Assistance: Policy and Guidance” web page
“Public Assistance: Policy and Guidance,” Federal Emergency Management Agency, Washington, D.C., n.d. [Online]. Available: <http://www.fema.gov/public-assistance-policy-and-guidance>.
- “Public Assistance: Resources and Tools” web page
“Public Assistance: Resources and Tools,” Federal Emergency Management Agency (FEMA), U.S. Department of Homeland Security, Washington, D.C., last updated May 28, 2013 [Online]. Available: <http://www.fema.gov/public-assistance-resources-and-tools>.
- “Resource Management” web page
“Resource Management,” Federal Emergency Management Agency (FEMA), U.S. Department of Homeland Security, Washington, D.C., last updated Nov. 29, 2013 [Online]. Available: <http://www.fema.gov/resource-management>.

TABLE 19
SUMMARY OF USEFUL PRACTICES REPORTED BY CASE STUDY PARTICIPANT AGENCIES

Useful Practices Reported By Case Study Participants	
<p>Practices related to <u>Policy</u></p>	<ul style="list-style-type: none"> • Creating a formal <i>cost recovery policy</i> • <i>Aligning systems, processes, and technologies</i> used in daily operations with FHWA and FEMA requirements • <i>Establishing relationships</i> with FHWA and FEMA contacts and other Federal, State, and Local partners • Conducting and implementing <i>After Action Reports</i> to assess and improve reimbursement processes • Preparing <i>administrative packets</i> for emergencies • Designating <i>reimbursement coordinators</i> (both at the headquarters and district levels) and other key roles before disasters occur • <i>Identifying mitigation opportunities</i> to increase resilience against future events • Maximizing eligible reimbursement by <i>meeting deadlines</i> for emergency work • <i>Refraining</i> from requesting FHWA Emergency Relief funds for permanent work <i>until the agency is ready to begin the work</i>
<p>Practices related to <u>Accounting/Financial Management</u></p>	<ul style="list-style-type: none"> • Using <i>unique project codes</i> for disasters • Performing <i>internal audits</i> prior to submission • Using appropriate <i>management systems</i> • Gaining access to the <i>FHWA Fiscal Management Information System (FMIS)</i> • Creating a <i>uniform invoice system</i> for counties • Including <i>all expenses</i> • <i>Screening for duplication</i> of FHWA Emergency Relief and FEMA Public Assistance costs; automate where possible • Integrating <i>financial, human resources, and payroll systems</i> statewide • Preparing a Narrative Cost Allocation Plan to capture FHWA Emergency Relief Indirect Costs
<p>Practices related to <u>Documentation/Information Management</u></p>	<ul style="list-style-type: none"> • <i>Systematizing record-keeping</i> and using <i>ICS forms</i> • Keeping data in a <i>central location or drive</i> • Using <i>electronic signatures</i> • <i>Storing data electronically</i> • Using appropriate management systems • Using software with <i>Optical Character Recognition</i> capabilities • <i>Using checklists</i> in FHWA Emergency Relief program guidance documents to determine eligibility • Creating <i>electronic versions</i> of the Detailed Damage Inspection Report (DDIR) / Damage Assessment Form (DAF) • <i>Automating DDIR/DAF distribution system</i> • Combining their Project Worksheet (PW) and their Detailed Damage Inspection Report (DDIR) <i>into one form</i>

(continued on next page)

TABLE 19
(continued)

<p>Practices related to <u>Training</u></p>	<ul style="list-style-type: none"> • Conducting <i>disaster assessments</i> • Using scenarios from <i>prior disasters</i> • <i>Providing training</i> on the FHWA Emergency Relief and FEMA Public Assistance programs <i>to personnel responsible for documentation and reimbursement</i> • Providing <i>training to Local Public Agencies</i> on the FHWA Emergency Relief and FEMA Public Assistance programs • Providing <i>training to state EMA personnel</i> on the FHWA Emergency Relief program (as they may be less familiar with this program) • Training state DOT personnel for integration into the state EMA as <i>project officers and project coordinators</i> on FEMA Public Assistance-eligible projects
<p>Practices related to <u>Site Assessment</u></p>	<ul style="list-style-type: none"> • Designating <i>assessment teams</i> before disasters occur • Establishing <i>repair or route prioritization methods</i> before disasters occur • Distributing <i>information packets</i> to assessment teams • Using <i>weather information services or systems</i> • Implementing <i>bridge/highway/pavement management systems</i> • Using <i>geospatial data and LiDAR</i> • <i>Mapping historic data</i> to show <i>repetitive losses</i> • Purchasing a <i>specially equipped vehicle</i> that records damages and/or pre-disaster conditions • <i>Forming a partnership</i> with the Civil Air Patrol or similar organizations for <i>aerial imagery services</i> • Developing assessment teams <i>able to be self-sustaining</i> for several days • Using <i>web-based maps</i> to determine whether a road is <i>Federal-aid</i> • <i>Inspecting vehicles and equipment</i> prior to mobilization
<p>Practices related to <u>Asset Management</u></p>	<ul style="list-style-type: none"> • Using <i>Asset Management systems</i> with standardized site codes to track and document pre-disaster conditions of DOT facilities • Using <i>bridge monitoring systems</i> to predict and assess impacts of disasters on bridges • <i>Equipping snowplows and other vehicles with GPS</i> facilitates emergency response/recovery and tracking and documenting labor and equipment usage
<p>Practices related to <u>Appeals</u></p>	<ul style="list-style-type: none"> • Contacting the <i>FHWA Division Office</i> and discuss the case directly • <i>Citing relevant laws and regulations</i> • <i>Citing prior decisions (precedents)</i>
<p>Practices related to <u>Contracting</u></p>	<ul style="list-style-type: none"> • <i>Standardizing payments to contractors</i> • Designating <i>one point of contact</i> for plans and blueprints • Implementing a <i>contractor database</i> • Using <i>Construction Management</i> system or software • Securing <i>emergency waivers</i> (for example, on environmental and historical preservation approvals) and establishing a <i>blanket approval process</i> for emergency work • Selecting/pre-qualifying contractors for emergency work who are <i>familiar with the process and required documentation</i> for successful reimbursement

- FEMA information page on the Sandy Recovery Improvement Act of 2013
“Sandy Recovery Improvement Act of 2013,” Federal Emergency Management Agency (FEMA), U.S. Department of Homeland Security, Washington, D.C., last updated March 6, 2014 [Online]. Available: <http://www.fema.gov/about-agency/sandy-recovery-improvement-act-2013>.

FHWA EMERGENCY RELIEF RESOURCES

The following are useful FHWA ER resources and references.

- FHWA Emergency Relief Program
“Emergency Relief Program,” Federal Highway Administration (FHWA), U.S. Department of Transportation, Washington, D.C., last updated Oct. 3, 2013 [Online]. Available: <http://www.fhwa.dot.gov/program/admin/erelief.cfm>.
- MAP-21: Emergency Relief (ER) Questions & Answers (FHWA)
“MAP-21: Emergency Relief (ER) Questions & Answers,” Federal Highway Administration, U.S. Department of Transportation, last updated Aug. 8, 2013 [Online]. Available: <http://www.fhwa.dot.gov/map21/qandas/qaer.cfm>.
- Debris Removal on Federal-Aid Highways (FEMA Recovery Fact Sheet 9580.214)
Debris Removal on Federal-Aid Highways (FEMA Recovery Fact Sheet 9580.214), Federal Emergency Management Agency (FEMA), U.S. Department of Homeland Security, Washington, D.C., Oct. 30, 2012 [Online]. Available: <http://www.fema.gov/library/viewRecord.do?id=6640>.
- Environmental Review Toolkit
“Environmental Review Toolkit,” Federal Highway Administration (FHWA), U.S. Department of Transportation, Washington, D.C., n.d. [Online]. Available: <http://www.environment.fhwa.dot.gov/index.asp>.
- Washington Division Emergency Relief Training Course, hosted on FHWA web page
“Emergency Relief Program Overview,” Emergency Relief Washington Division, Federal Highway Administration (FHWA), U.S. Department of Transportation, Washington, D.C. [Online]. Available: <http://www.fhwa.dot.gov/wadiv/emmerelief/>.
- California DOT (Caltrans) home page for the Emergency Relief Program
“Homepage for Emergency Relief Program,” Division of Local Assistance, California Department of Trans-

portation (Caltrans), Sacramento, last updated Feb. 20, 2014 [Online]. Available: <http://www.dot.ca.gov/hq/LocalPrograms/erp/erp.html>.

- Ohio Emergency Management Agency Assistance Toolbox
“ODPS Ohio Emergency Management Agency Assistance Toolbox,” Ohio Emergency Management Agency, Columbus, [Online]. Available: http://ema.ohio.gov/Recovery_DAToolbox.aspx.

CONCLUSIONS

Preparedness actions; building relationships with federal, state, and local partners; good business and management practices; and alignment of systems, processes, and technologies with the requirements of the FHWA ER and FEMA PA programs were important in successful reimbursements. In addition, measures to improve the efficiency of emergency work elements assisted state DOTs in meeting important deadlines for emergency work.

FHWA and FEMA coordination activities being planned for the FHWA ER and FEMA PA programs, the ongoing changes caused by MAP-21, SRIA, and the 2013 *National Review of the Emergency Relief Program* recommendations, and FHWA and FEMA initiatives may be beneficial in improving state DOT experiences with the programs.

FURTHER RESEARCH

Potential research topics identified in this synthesis included the following:

- A joint FEMA-FHWA cost model with easy-to-use interface for common road repair would be useful (FEMA Headquarters Public Assistance Division Staff, personal communication, June 6, 2013).
- Cost-effective damage assessment technologies can assist state DOTs in determining causes of damage and providing eligibility-related documentation for the FHWA ER and FEMA PA programs.
- The feasibility of asset tracking technologies and systems and their usefulness for cost recovery purposes need to be explored.
- Explore the use of web emergency operations centers (EOCs) for cost and resource tracking.
- Research on technology adoption and training methods may be useful.

ACRONYMS

ADA	Americans with Disabilities Act	MMS	Maintenance management system
ADEM	Arizona Division of Emergency Management	NEPA	National Environmental Policy Act
ADOT	Arizona Department of Transportation	NHPA	National Historic Preservation Act
APWA	American Public Works Association	NIMS	National Incident Management System
ARAN	Automatic Road Analyzer	NYSDHSES	New York State Division of Homeland Security and Emergency Services
Caltrans	California Department of Transportation	NYSDOT	New York State Department of Transportation
CFR	Code of Federal Regulations	NYSOEM	New York State Office of Emergency Management
CRS	Congressional Research Service	NYSTA	New York State Thruway Authority
DAF	Damage Assessment Form	PA	Public Assistance
DBE	Disadvantaged Business Enterprise	PACL	Public Assistance Crew Leader
DDIR	Detailed Damage Inspection Report	PDA	Preliminary Damage Assessment
DOTD	(Louisiana) Department of Transportation and Development	PL	Public Law
DSSR	Damage Survey Summary Report	PNP	Private nonprofit
EMA	Emergency Management Agency	PoP	Program of projects
EMAC	Emergency Management Assistance Compact	PW	Project worksheet
EMMIE	Emergency Management Mission Integrated Environment	RA	Regional Administrator (FEMA)
EEO	Equal Employment Opportunity	REOC	Regional Emergency Operations Center
ER	Emergency Relief	RMS	Resource Management System
ESA	Endangered Species Act	RPA	Request for Public Assistance
ESF	Emergency Support Function	SCOTSEM	Special Committee on Transportation Security and Emergency Management
FDOT	Florida Department of Transportation	SHPO	State Historic Preservation Office
FEMA	Federal Emergency Management Agency	SOP	Standard operating procedure
FIRM	Flood Insurance Rate Map	SOW	Scope of work
FMAG	Fire Management Assistance Grant	SRIA	Sandy Recovery Improvement Act
FMIS	Fiscal Management Information System	STICC	Statewide Transportation Information Coordination Center
FY	Fiscal year	TDOT	Tennessee Department of Transportation
GAO	Government Accountability Office	TxDOT	Texas Department of Transportation
GIS	Geographic information system	U.S.C.	United States Code
HMGP	Hazard Mitigation Grant Program	VSA	Vehicle staging area
ICS	Incident Command System	VTrans	Vermont Agency of Transportation
IDOT	Iowa Department of Transportation	WisDOT	Wisconsin Department of Transportation
IITF	Irene Innovation Task Force	WBS	Work breakdown structure
JFO	Joint Field Office		
LPA	Local public agency		

GLOSSARY

COST MANAGEMENT TERMS

Source: *FHWA Planned Special Events: Cost Management and Cost Recovery Primer*, Federal Highway Administration, Washington, D.C., May 2009.

Activity-Based Costing

A method of allocating indirect costs in which the cost of resources consumed is assigned to the activity consuming the resource.

Asset Management

The practice of taking a comprehensive view of the entire portfolio of resources available in order to achieve system-wide agency goals at optimal cost benefit. This includes the ability to show how, when, and why resources were committed.

Cost Analysis

The gathering of various cost tracking information to prepare reports which can be reviewed to determine the nature and relationship of the cost elements.

Cost Driver

The activity that is the best indicator of cost.

Cost Management

Effective, overarching control of an organization's finances across multiple stages.

Cost Objective

A cost objective, also called the cost object or cost target, is the good or service being provided. All costs should be assigned to cost objectives. Costs are allocated to the cost objectives that benefit most from incurring the cost.

Cost Planning

Activities such as cost estimating, forecasting, and budgeting.

Cost Pool

The accumulation of costs whose total is allocated using one allocation base, such as a cost driver.

Cost Recovery

Charging users of a service for that service, rather than the organization absorbing the cost.

Cost Tracking

Following the costs of various activities through the cost management system, relying upon the use of discrete coding of activities and their associated costs. Discrete coding includes methods such as time collection (the use of personnel time sheets) and expense accumulation.

Direct Costs

Costs that are directly linked to a specific service, activity, or department. Direct costs can be identified specifically with a particular final cost objective.

Fixed Cost

Costs that do not vary with increases and decreases in activity.

Indirect Costs

Costs that are not directly linked to a specific service, activity or department. Indirect costs are incurred for a common or joint purpose and may either benefit more than one cost objective or not be readily assignable to the cost objectives specifically benefited without effort disproportionate to the results achieved.

Mixed or Semi Variable Cost

Costs that contain both a variable cost element and a fixed cost element. These costs may vary incrementally with increases and decreases in activity.

Resource Utilization

Examining resources to ensure optimal allocation. Restructuring shifts so that police work fewer overtime hours is an example of resource utilization.

Variable Costs

Costs that vary with increases and decreases in activity.

FHWA EMERGENCY RELIEF AND FEDERAL EMERGENCY MANAGEMENT AGENCY PUBLIC ASSISTANCE PROGRAM TERMS

Applicant

For the Federal Emergency Management Agency Public Assistance (FEMA PA)—a state agency, local government, Indian tribe, authorized tribal organization, Alaska Native village or organization, and certain private nonprofit (PNP) organizations that submit a request for disaster assistance under the presidentially declared major disaster or emergency. The terms “applicant” and “subgrantee” are often used interchangeably. For the FHWA Emergency Response (ER)—the state highway agency is the applicant for federal assistance under 23 United States Code (U.S.C.) 125 for state highways and local roads and streets that are a part of the federal-aid highways [Code of Federal Regulations (CFR), Title 23, § 668.103 “Definitions”].

Applicant Liaison (FEMA PA)

A state representative responsible for providing applicants with state-specific information and documentation requirements. The Applicant Liaison works closely with the Public Assistance Crew Leader (PACL) to provide any technical assistance or guidance the applicant may require. The terms “applicant liaison” and “state public assistance representative” are often used interchangeably.

Applicants’ Briefing (FEMA PA)

A meeting conducted by a representative of the state for potential FEMA PA applicants. The briefing occurs after an emergency or major disaster has been declared and addresses FEMA PA application procedures, administrative requirements, funding, and program eligibility criteria.

Case Management (FEMA PA)

A system approach to provision of equitable and timely service to applicants for disaster assistance. Organized around the needs of the applicant, the system consists of a single point of coordination, a team of on-site specialists, and a centralized, automated filing system.

Case Management File (CMF) (FEMA PA)

A centralized data bank of all applicant activities. Data entered into this bank creates a chronological history of everything that has taken place with an applicant from the time the applicant applies for assistance until the applicant has received all monies and the file has been closed.

Catastrophic Failure

Extraordinary levels of damage, severely affecting the infrastructure or asset (*NCHRP Report 525: Volume 16, Guide to Emergency Response Planning at State Transportation Agencies 2010*).

Closeout

Grant closure occurs when FEMA determines that all applicable administrative actions related to the PA program are complete and all program funds reconciled. At this stage, all PA program projects have been completed, the state has awarded all grant funds and submitted its final expenditure report to FEMA, and FEMA has adjusted the funding level for the program as appropriate. FHWA ER closeouts occur in a similar manner to other project closeouts. FHWA may inspect the disaster site.

Contractor

Any individual, partnership, corporation, agency, or other entity (other than an organization engaged in the business of insurance) performing work by contract for the federal government or a state or local agency, or tribal government.

Cost Estimating Format (FEMA PA)

A forward-pricing methodology for estimating the total cost of repair for large permanent projects by use of construction industry standards. The format uses a base cost estimate and design and construction contingency factors, applied as a percentage of the base cost.

Declarations

There are two types of declarations (emergency and major disaster). Both declaration types authorize the president to provide federal disaster assistance. However, the cause of the declaration and the type and amount of assistance differ.

Designated Area

Any emergency or major disaster-affected portion of a state that has been determined eligible to apply for federal assistance.

Emergency

Any occasion or instance for which, in the determination of the president, federal assistance is needed to supplement state and local efforts and capabilities to save lives and protect

property and public health and safety, or lessen or avert the threat of a catastrophe in any part of the United States.

Emergency Repairs (FHWA ER)

Repairs during and immediately after a disaster to restore essential traffic, minimize the extent of damage, or protect the remaining facilities. These repairs can begin immediately after a disaster, and prior FHWA approval is not required. Properly documented costs are later reimbursed once the FHWA Division Administrator makes a finding that the disaster is eligible for ER program funding.

Emergency Work (FEMA PA)

That work that is performed to reduce or eliminate an immediate threat to life, protect health and safety, or protect improved property that is threatened in a significant way as a result of a major disaster. Emergency work frequently includes clearance and removal of debris and temporary restoration of essential public facilities and services (Categories A and B).

Executive Orders (EOs)

Legally binding orders given by the president to federal administrative agencies. Executive orders generally are used to direct federal agencies and officials in their execution of congressionally established laws or policies. Executive orders do not require congressional approval to take effect, but they have the same legal weight as laws passed by Congress.

Expedited Payments (FEMA PA)

An advance of grants to assist with payment of emergency work after a disaster event. The amount of funding is 50% of the federal share of emergency costs as identified during the Preliminary Damage Assessment. Payment for Category A will be made within 60 days after the estimate was made and no later than 90 days after the preapplication (Request for FEMA Public Assistance) was submitted.

Facility (FEMA PA)

Any publicly or private nonprofit (PNP)-owned building, works, system, or equipment (built or manufactured) or certain improved and maintained natural features. Land used for agricultural purposes is not a facility.

Federal-Aid Highways (FHWA ER)

All public roads including bridges that are not classified as local or rural minor collectors (or minor collectors located in rural areas). Note that urban minor collectors or minor col-

lectors located in urban areas are included in the definition. In the United States, about one-quarter of all public roads are federal-aid based on mileage [23 U.S.C. 101(a)(5)].

FEMA–State Agreement (FEMA PA)

A formal legal document stating the understandings, commitments, and binding conditions for assistance applicable as the result of a major disaster or emergency declared by the President.

Flood Control Works

Facilities constructed for the purpose of eliminating or reducing the threat of flood; for example, levees, floodwalls, flood control channels, and dams designed for flood control.

Force Account

Labor performed by the applicant’s employees and applicant-owned equipment, rather than by a contractor.

Grantee (FEMA PA)

The state, in most cases, acts as the grantee for the FEMA Public Assistance program. The grantee is accountable for the use of the funds provided. The terms “grantee” and “State” are often used interchangeably.

Hazard Mitigation (FEMA PA)

Any cost-effective action taken to prevent or reduce the threat of future damage to a facility from a disaster event.

Heavy Maintenance (FHWA ER)

When a disaster has caused damage requiring heavy maintenance or work frequently performed by the applicant’s maintenance crews, repairs are not eligible. Heavy maintenance is usually performed by highway agencies to repair damage normally expected from seasonal and occasionally unusual natural conditions or occurrences. It includes work at a site required as a direct result of a disaster that can reasonably be accommodated by a state or local road authority’s maintenance, emergency, or contingency program. Examples include work necessary to repair minor damage due to eroded shoulders, filled ditches and culverts, pavement settlement, mud and debris deposits, slope sloughing, and slip-outs in cut or fill slopes.

Improved Property

A structure, facility, or item of equipment that was built, constructed, or manufactured. It includes improved and

maintained natural features. Land used for agricultural purposes is not improved property.

Incident Period

The time interval during which the disaster-causing incident occurs. No federal assistance under the Stafford Act shall be approved unless the damage or hardship to be alleviated resulted from the disaster-causing incident which took place during the incident period or was in anticipation of that incident.

Kickoff Meeting (FEMA PA)

The initial meeting of an applicant, the state FEMA PA Representative (Applicant Liaison), and the FEMA Public Assistance Crew Leader. At this working session, the applicant provides a list of damages and receives comprehensive information about the FEMA Public Assistance program and detailed guidance for the applicant's specific circumstances. This is the first step in establishing a partnership among FEMA, the state, and the applicant and is designed to focus on the specific needs of the applicant. The meeting focuses on the eligibility and documentation requirements that are most pertinent to the applicant.

Large Project (FEMA PA)

An eligible project, either emergency or permanent work that has a damage dollar value at or above the fiscal year threshold for large projects. The threshold is adjusted each fiscal year to account for inflation. Large project funding is based on documented actual costs. With the SRIA changes, subgrantees may voluntarily request that large projects be based on estimated costs.

Major Disaster

Any natural catastrophe (including any hurricane, tornado, storm, high water, wind driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought), or, regardless of cause, any fire, flood, or explosion, in any part of the United States, which in the determination of the President causes damage of sufficient severity and magnitude to warrant major disaster assistance under the Stafford Act to supplement the efforts and available resources of states, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby.

Mutual Aid Agreement

An agreement between jurisdictions or agencies to provide services across boundaries in an emergency or major disaster. Such agreements usually provide for reciprocal services or direct payment for services.

Natural Disaster

Natural disaster means any naturally occurring major emergency. (*Guide to Emergency Response Planning at State Transportation Agencies, NCHRP Report 525, Volume 16, 2010*)

Obligated Funds

The funds FEMA makes available to the grantee for approved public assistance projects. The grantee is then required to make payment of the federal share to the applicant as soon as practicable.

Other Essential Governmental Service Facilities

Private nonprofit (PNP) museums, zoos, performing arts facilities, community arts centers, community centers, libraries, homeless shelters, senior citizen centers, rehabilitation facilities, mass transit facilities, shelter workshops, and facilities that provide health and safety services of a governmental nature. All such facilities must be open to the general public.

Permanent Repairs (FHWA ER)

Repairs undertaken (usually after emergency repairs have been completed) to restore the highway to its comparable facility. Permanent repairs must have prior FHWA approval and authorization unless done as part of the emergency repairs.

Permanent Work (FEMA PA)

That work which is required to restore a facility, through repairs or replacement, to its predisaster design, function, and capacity in accordance with applicable codes and standards (Categories C through G).

Pre-application (FEMA PA)

An applicant's official notification to FEMA of intent to apply for PA funds. The form provides general identifying information about the applicant. The terms "pre-application" and "request for public assistance" are often used interchangeably.

Preliminary Damage Assessment (PDA) (FEMA PA)

A survey performed to document the impact and magnitude of the disaster on individuals, families, businesses, and public property and gather information for disaster management purposes. The information gathered is used to determine whether federal assistance is to be requested by the governor and forms the basis for the disaster declaration request.

Private Nonprofit (PNP) Facilities (FEMA PA)

Educational, utility, irrigation, emergency, medical, rehabilitational, and temporary or permanent custodial care facilities and facilities on Indian reservations, as defined by the president. Other PNP facilities that provide essential services of a governmental nature are eligible and are listed in this Glossary under Other Essential Governmental Service Facilities.

Private Nonprofit (PNP) Organization (FEMA PA)

Any nongovernmental agency or entity that currently has either an effective ruling letter from the U.S. Internal Revenue Service granting tax exemption or satisfactory evidence from the state that the nonrevenue producing organization or entity is a nonprofit one organized or operating under state law.

Project Formulation

The process of identifying the eligible scope of work (SOW) and estimating the costs associated with that SOW for each applicant's projects.

Project Specialist (FEMA PA)

FEMA's specialist who works directly with the applicant in assessing damage sites and developing SOWs and cost estimates. The FEMA Project Specialist will also identify the need for other specialists and work with the FEMA Public Assistance Crew Leader in obtaining their services for projects.

Project Worksheet (PW) (FEMA PA)

Form used to document the location, damage description and dimensions, scope of work, and cost estimate for a project. It is the basis for the grant. The terms "project worksheet" and "subgrant application" are often used interchangeably.

Public Assistance (FEMA PA)

Supplementary federal assistance provided under the Stafford Act to state, local, and tribal governments or eligible PNP's to help them recover from federally declared major disasters and emergencies as quickly as possible.

Public Assistance Crew Leader (PACL)

A FEMA representative who works with the applicant to resolve disaster-related needs and to ensure that the applicant's projects are processed as efficiently and expeditiously as possible. The Public Assistance Crew Leader ensures continuity of service throughout the delivery of the Public Assistance program.

Request for Public Assistance (RPA) (FEMA PA)

An applicant's official notification to FEMA of intent to apply for PA funds. The form provides general identifying information about the applicant. The terms "request for public assistance" and "pre-application" are often used interchangeably.

Small Project (FEMA PA)

An eligible project, either emergency or permanent work, that has a damage dollar value below the fiscal year threshold. The threshold is adjusted each fiscal year to account for inflation. Small project funding is based on estimated costs if actual costs are not yet available.

Special Considerations (FEMA PA)

Factors that must be addressed before federal FEMA PA grant money can be obligated to repair or restore damaged facilities. These factors include, but are not limited to, general and flood insurance, historic preservation, environmental protection, and hazard mitigation.

Stafford Act (FEMA PA)

Robert T. Stafford Major Disaster Relief and Emergency Assistance Act (Stafford Act), Public Law (PL) 100-707, signed into law November 23, 1988; the 1988 law amended the Major Disaster Relief Act of 1974, PL 93-288. This Act constitutes the statutory authority for most federal major disaster response activities, especially as they pertain to FEMA and FEMA programs. The most recent version of the Act was released in April 2013.

State Administrative Plan (FEMA PA)

The state is required to develop a state administrative plan to administer the Public Assistance program. The plan should include the designation of responsibilities for state agencies and staffing for the Public Assistance program. An approved state administrative plan must be on file with FEMA before grants will be approved for any major disaster. The approved state administrative plan should be incorporated into the state's emergency plan.

State Public Assistance (FEMA PA) Representative

An applicant's point of contact, designated by the state, who will help the applicant obtain FEMA assistance. The terms "state PA representative" and "applicant liaison" are often used interchangeably.

Subgrant Application (FEMA PA)

Form used to document the location, damage description and dimensions, scope of work, and cost estimate for a

project. It is the basis for the grant. The terms “subgrant application” and “project worksheet” are often used interchangeably.

Subgrantee (FEMA PA)

A state agency, local government, Indian tribe, authorized tribal organization, Alaska Native village or organization, and certain private nonprofit organizations that submit a request for disaster assistance under the presidentially declared major

disaster or emergency. The terms “subgrantee” and “applicant” are often used interchangeably.

Technical Specialist (FEMA PA)

FEMA’s Technical Specialist is a resource for the applicant. A Technical Specialist has a defined area of expertise, such as debris removal and disposal, roads and bridges, infrastructure, environmental and historic preservation compliance, insurance, cost estimating, or floodplain management.

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Key Guides and Handbooks

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- *FEMA 327 Debris Monitoring Guide*
Public Assistance Debris Monitoring Guide (FEMA 327), Federal Emergency Management Agency, U.S. Department of Homeland Security, Washington, D.C., July 2007.
- *FEMA 329 Debris Estimating Field Guide*
Public Assistance Debris Estimating Field Guide (FEMA 329), Federal Emergency Management Agency, U.S. Department of Homeland Security, Washington, D.C., Sept. 2010.

9500 Series Policy Publications

The following website links to all FEMA Public Assistance program policies formatted for printing:

“9500 Series Policy Publications,” Federal Emergency Management Agency, U.S. Department of Homeland Security, Washington, D.C., n.d. [Online]. Available: <http://www.fema.gov/9500-series-policy-publications>.

For this synthesis, the eligibility information policies, historic preservation policies, and standard operations procedures are most relevant. Not all of the items are accessible from the 9500 Series Policy Publications website but can be found in the FEMA library by means of a search engine.

Eligibility Information

- 9523.6 Mutual Aid Agreements for Public Assistance and Fire Management Assistance
- 9523.9 100% Funding for Direct Federal Assistance and Grant Assistance
- 9523.10 Eligibility of Vector Control (Mosquito Abatement)
- 9523.11 Hazardous Stump Extraction and Removal Eligibility
- 9523.12 Debris Operations—Hand-Loaded Trucks and Trailers
- 9523.13 Debris Removal from Private Property
- 9523.15 Eligible Costs Related to Evacuations and Sheltering
- 9523.17 Emergency Assistance for Human Influenza Pandemic
- 9523.18 Host-State Evacuation and Sheltering Reimbursement
- 9523.19 Eligible Costs Related to Pet Evacuations and Sheltering
- 9523.20 Purchase and Distribution of Ice
- 9524.1 Welded Steel Moment Frame
- 9524.2 Landslides and Slope Failures
- 9524.3 Rehabilitation Assistance for Levees and other Flood Control Works Memo updating Policy 9524.3—August 5, 2009
- 9524.4 Repair vs. Replacement of a Facility under 44 CFR § 206.226(f) (The 50% Rule)
- 9524.5 Trees, Shrubs, and Other Plantings Associated with Facilities
- 9524.8 Eligibility for Permanent Repair and Replacement of Roads on Tribal Lands
- 9524.9 Replacement of Animals Associated with Eligible Facilities

- 9524.10 Replacement of Equipment, Vehicles, and Supplies
- 9525.1 Post-Disaster Property Tax Assessment
- 9525.2 Donated Resources
- 9525.3 Duplication of Benefits—Non-Government Funds
- 9525.4 Emergency Medical Care and Medical Evacuations
- 9525.5 Americans with Disabilities Act (ADA) Access Requirements
- 9525.6 Project Supervision and Management Costs of Subgrantees
- 9525.7 Labor Costs—Emergency Work
- 9525.8 Damage to Applicant-Owned Equipment
- 9525.9 Section 324 Management Costs and Direct Administrative Costs
- 9525.11 Payment of Contractors for Grant Management Tasks
- 9525.12 Disposition of Equipment, Supplies and Salvageable Materials
- 9525.13 Alternate Projects
- 9525.14 Public Assistance Grantee Administrative Costs
- 9525.15 Telecommunications Support Lines for States
- 9525.16 Research-related Equipment and Furnishings
- 9526.1 Hazard Mitigation Funding Under Section 406 (Stafford Act)
- 9527.1 Seismic Safety—New Construction
- 9527.4 Construction Codes and Standards

Historic Preservation

- 9560.1 Environmental Policy Memoranda
- 9560.3 Programmatic Agreement—Historic Review

Standard Operations Procedures

- 9570.2 Standard Operating Procedure—Public Assistance Coordinator
- 9570.4 Standard Operating Procedure—Kickoff Meeting
- 9570.5 Standard Operating Procedure—Project Formulation
- 9570.6 Standard Operating Procedure—Validation of Small Projects
- 9570.8 Standard Operating Procedure—Cost Estimating Format for Large Projects
- 9570.9 Standard Operating Procedure—Historic Review

FEMA Public Assistance Alternative Procedures

The Sandy Recovery Improvement Act (SRIA) of 2013 (PL 113-2) adds section 428, which authorizes alternative procedures for the FEMA Public Assistance (PA) program under sections 403(a)(3)(A), 406, 407, and 502(a)(5) of the Stafford Act. It also authorizes FEMA to implement the alternative procedures through a pilot program. The program will

remain in place until FEMA promulgates and adopts revised regulations that reflect the program changes the law authorizes. Some FEMA sources related to the alternative procedures are listed here.

- “Alternative Procedures,” Federal Emergency Management Agency, U.S. Department of Homeland Security, Washington, D.C., last updated Jan. 14, 2014 [Online]. Available: <http://www.fema.gov/alternative-procedures>.
- “Frequently Asked Questions—Public Assistance Alternative Procedures Pilot Program,” Federal Emergency Management Agency, U.S. Department of Homeland Security, Washington, D.C., May 20, 2013.
- *Determination on the Public Assistance Simplified Procedures Thresholds*, Fiscal Year 2014 Report to Congress (*Analysis Report for Sandy Recovery Improvement Act*), Federal Emergency Management Agency, U.S. Department of Homeland Security, Washington, D.C., Jan. 29, 2014.
- *Public Assistance Alternative Procedures Pilot Program Guide for Debris Removal*, Federal Emergency Management Agency (FEMA), U.S. Department of Homeland Security, Washington, D.C., June 28, 2013.
- *Public Assistance Alternative Procedures Pilot Program Guide for Permanent Work (Version 2)*, Federal Emergency Management Agency (FEMA), U.S. Department of Homeland Security, Washington, D.C., Dec. 19, 2013.
- “Sandy Recovery Improvement Act of 2013 and FEMA’s Recovery Directorate—Fact Sheet,” Federal Emergency Management Agency (FEMA), U.S. Department of Homeland Security, Washington, D.C., Feb. 2013.

OTHER PUBLICATIONS

Papers and Active Projects

“A Guide to Regional Transportation Planning for Disasters, Emergencies and Significant Events,” NCHRP 20-59(32) (active as of May 23, 2013), Transportation Research Board of the National Academies, Washington, D.C. [Online]. Available: <http://apps.trb.org/cmsfeed/TRBNetProjectDisplay.asp?ProjectID=3079>.

Venner, M., “Increased Maintenance Costs of Extreme Weather Events: Preparing for Climate Change Adaptation,” Paper No. 12-3459, presented at the 91st Annual Meeting of the Transportation Research Board, Washington, D.C., Jan. 2012.

Guides

Best Practices in Project Delivery Management (NCHRP Scan 07-01), NCHRP Project 20-68A, U.S. Domestic Scan Program, Transportation Research Board of the National

Academies, Washington, D.C., Oct. 2009 [Online]. Available: http://onlinepubs.trb.org/onlinepubs/nchrp/docs/nchrp20-68A_07-01.pdf

“Chapter 19: Risk Management,” in *Florida DOT Project Management Handbook*, Florida Department of Transportation, Tallahassee, revised March 04, 2008 [Online]. Available: http://www.dot.state.fl.us/projectmanagementoffice/pmhandbook/P1_Ch19.pdf.

Emergency Relief for Federally Owned Roadways (ERFO) Disaster Assistance Manual, Federal Highway Administration, Washington, D.C., April 2011.

Emergency Relief Manual (Federal-Aid Highways), Federal Highway Administration, Washington, D.C., May 2013.

Guide for Managing NEPA-Related and Other Risks in Project Delivery, NCHRP Web-Only Document 183, Transportation Research Board of the National Academies, Washington, D.C., Oct. 2011 [Online]. Available: http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_W183.pdf.

Guide for the Process of Managing Risk on Rapid Renewal Contracts, SHRP 2, Transportation Research Board of the National Academies, Washington, D.C., Feb. 2013 [Online]. Available: <http://www.trb.org/Main/Blurbs/168369.aspx>.

Guide to Emergency Response Planning at State Transportation Agencies, NCHRP Report 525: *Surface Transportation Security, Volume 16*, Transportation Research Board of the National Academies, Washington, D.C., 2005.

Highway Emergency Relief: Strengthened Oversight of Project Eligibility Decisions Needed (GAO 12-45), U.S. Government Accountability Office, Washington, D.C., Nov. 2011, 56 pp.

Molenaar, K., S. Anderson, and C. Schexnayder, *NCHRP Report 658: Guidebook on Risk Analysis Tools and Management Practices to Control Transportation Project Costs*, Transportation Research Board of the National Academies, Washington, D.C., 2010, 119 pp. [Online]. Available: http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_658.pdf.

Project Risk Management: Guidance for WSDOT Projects, Washington State Department of Transportation, Olympia,

July 2010 [Online]. Available: <http://www.wsdot.wa.gov/publications/fulltext/cevp/projectriskmanagement.pdf>.

Project Risk Management Handbook: Threats and Opportunities, Second Edition, California Department of Transportation, Office of Statewide Project Management Improvement, California Department of Transportation, Sacramento, May 2, 2007 [Online]. Available: http://www.dot.ca.gov/hq/projmgmt/documents/prmhb/archive/caltrans_project_risk_management_handbook_20070502.pdf.

Risk Assessment and Allocation for Highway Construction Management, Federal Highway Administration, Washington, D.C., Oct. 2006 [Online]. Available: <http://international.fhwa.dot.gov/riskassess/>.

Risk Management—Principles and Guidelines (ISO 31000:2009), International Organization for Standardization, Geneva, Switzerland, 2009.

Laws and Regulations

Disaster Relief Appropriations Act of 2013 (Public Law 113-2, 127 Stat. 4).

Emergency Relief, U.S. Code, Title 23, § 125.

“MAP-21: Emergency Relief (ER) Questions & Answers,” Federal Highway Administration, U.S. Department of Transportation, Washington, D.C., last updated Aug. 8, 2013 [Online]. Available: <http://www.fhwa.dot.gov/map21/qandas/qaer.cfm>.

Sandy Recovery Improvement Act of 2013 (Public Law 113-2, 127 Stat. 4).

Robert T. Stafford Disaster Relief and Emergency Assistance Act, “*The Stafford Act*,” Public Law 93-288, U.S. Code, Title 42, § 5121-5207.

U.S. National Archives and Records Administration, *Code of Federal Regulations*, Title 23, “Highways,” Part 668, “Emergency Relief Program.”

U.S. National Archives and Records Administration, *Code of Federal Regulations*, Title 44, “Emergency Management and Assistance,” Part 206, “Federal Disaster Assistance.”

APPENDIX A

44-01 Survey

NCHRP Synthesis 44-01 Emergency Relief Funds Reimbursements

Introduction

Dear members of the **AASHTO Special Committee on Transportation Security and Emergency Management (SCOTSEM)**:

The Transportation Research Board (TRB) is preparing a synthesis on ***FEMA and FHWA Emergency Relief Funds Reimbursements to DOTs***. This is being done for NCHRP, under the sponsorship of the American Association of State Highway and Transportation Officials, in cooperation with the Federal Highway Administration.

State Departments of Transportation are increasingly relying on FEMA Public Assistance and FHWA Emergency Relief funds to recover from disasters and emergency events. FHWA provides funds for the repair of Federal-Aid highways or roads on Federal lands seriously damaged by natural disasters over a wide area or by catastrophic failures. The FHWA Emergency Relief (ER) and Emergency Relief for Federally Owned Roads (ERFO) programs are two channels for these funds. Both emergency work and permanent work are allowable under these programs. FEMA, through its Public Assistance (PA) program, provides reimbursement to states for emergency work required as a direct result of a declared major disaster or emergency, when there is an immediate threat to public health and safety. State DOTs have experienced a number of issues related to the differing reimbursement application processes and eligibility criteria. It is important that state DOTs understand and be fully prepared to comply with the requirements of these reimbursement programs before a major disaster or emergency occurs.

The objectives of NCHRP Synthesis Topic 44-01 are to identify effective practices in FEMA's Public Assistance and FHWA Emergency Relief program funds reimbursements, learn about issues and perspectives, and document lessons learned.

This questionnaire is being sent to DOT members of the AASHTO SCOTSEM committee. Your cooperation in completing the questionnaire will ensure the success of this effort. **If you are not the appropriate person at your agency to complete this questionnaire, please forward it to the correct person.**

Please compete and submit this survey by March 12, 2013. We estimate that it should take approximately 25 min to complete. If you have any questions, please contact our principal investigator Dr. Yuko Nakanishi. Any supporting materials can be sent directly to

Dr. Yuko J. Nakanishi.

Email: nakanishi@transresearch.net.

Phone: (347) 512-1959

QUESTIONNAIRE INSTRUCTIONS

1. To view and print the entire questionnaire, Click on the following link and print using "control p". [Link to printable version of survey](#).
2. To save your partial answers and complete the questionnaire later, click on the "Save and Continue Later" link in the upper right hand corner of your screen. A link to the incomplete questionnaire will be emailed to you from *SurveyGizmo*. To return to the questionnaire later, open the email from *SurveyGizmo* and click on the link. We suggest using the "Save and Continue Later" feature if there will be more than 15 minutes of inactivity while the survey is opened, as some firewalls may terminate due to inactivity.
3. To pass a partially completed questionnaire to a colleague, click on the on the "Save and Continue Later" link in the upper right hand corner of your screen. A link to the incomplete questionnaire will be emailed to you from *SurveyGizmo*." Open the email from *SurveyGizmo* and forward it to a colleague.
4. To view and print your answers before submitting the survey, click forward to the page following question 10. Print using "control p."
5. To submit the survey, click on "Submit" on the last page.

Thank you very much for your time and expertise.

The following definitions and acronyms are used in this questionnaire:

- **Major Disaster:** According to the Stafford Act (Public Law 93-288), "major disaster" means any natural catastrophe (including any hurricane, tornado, storm, high water, winddriven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought), or, regardless of cause, any fire, flood, or explosion, in any part of the United States, which in the determination of the President causes damage of sufficient severity and magnitude to warrant major disaster assistance under this Act to supplement the efforts and available resources of States, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering cause thereby.
- **Emergency:** According to the Stafford Act (Public Law 93-288), "emergency" means any occasion or instance for which, in the determination of the President, Federal assistance is needed to supplement State and local efforts and capabilities to save lives and to protect property and public health and safety, or to lessen or avert the threat of a catastrophe in any part of the United States.
- **DDIR:** Detailed Damage Inspection Report
- **ER:** Emergency Relief
- **ERFO:** Emergency Relief for Federally Owned roads
- **LPA:** Local Public Agency
- **PA:** Public Assistance

Please enter the date (MM/DD/YYYY).

Please identify your contact information. NCHRP will email you a link to the online report when it is completed.

First Name * Last Name *

Position/Title

Agency/Organization *

Street Address *

Apt/Suite/Office

City State * ZIP *

Country

Email Address *

Telephone *

Survey - FEMA Reimbursements

(1) Please respond to the following questions on FEMA Reimbursements.

For disasters within the past five (5) years:

1a. How many applications has your Agency submitted for reimbursement?

1b. On average, how soon after you submit the application do you receive the reimbursement?

-- Please Select --
 <1 month
 1-3 months
 4-6 months
 7-12 months
 13-24 months
 25-48 months

1c. Has an application or project worksheet for reimbursement ever been denied?

- Yes
- No

If Yes, please indicate the reason for the denial of the application, and what steps were taken to address it.

Have you ever appealed a FEMA eligibility determination?

- Yes
- No

If Yes, please describe the outcome of the appeal. For example: Was the appeal successful? What steps were taken following the success or failure of the appeal?

1d. On average, how many person hours does it take to complete the application? (in person-hours)

1e. What is the maximum number of amendments (versions) to your project worksheets that has been made?

- None
- 1
- 2
- 3
- 4
- 5
- 5+

Survey - FEMA Reimbursements

1f. Which elements of the project worksheet (related to **Eligibility Requirements**) have caused significant confusion or issues for your Agency?

- Compliance with the National Incident Management System (NIMS)
- Compliance with the National Response Framework (NRF)

- Alignment with (rather than mandatory compliance with) the National Disaster Recovery Framework (NDRF)
 - Compliance with Environmental/Historical Preservation regulations
 - Compliance with _____
 - Definition of pre-disaster conditions
 - Definition of emergency repairs vs. permanent repairs
 - Other: Please specify in comments box below
-

If you have comments on the topic of **Eligibility Requirements**, please note them below:

(1f, cont.) Which elements of the project worksheet (related to **Documentation**) have caused significant confusion or issues for your Agency?

- Documentation of damages
 - Documentation of expenditures including labor
 - Document collection
 - Document retention
 - Document retrieval
 - Other: Please specify in comments box below
-

If you have comments on the topic of **Documentation**, please note them below:

(1f, cont.) Which elements related to the **Application itself** have caused significant confusion or issues for your Agency?

- Amendments required to original application
 - Understanding the application process
 - Other: Please specify in comments box below
-

If you have comments on the topic of **the Application itself**, please note them below:

(1f, cont.) Which elements of *the application or the project worksheet* (related to **Contractor Issues**) have caused significant confusion or issues for your Agency?

- Contractor payment methods
 - Other: Please specify in comments box below
-

If you have comments on the topic of **Contractor Issues**, please note them below:

(1f, cont.) Which elements of the *application or project worksheet* (related to **Training/HR**) have caused significant confusion or issues for your Agency?

- Training personnel in reimbursement procedures
 - Shortage of personnel/hours (e.g., too much time needed to complete the application)
 - Other: Please specify in comments box below
-

If you have comments on the topic of **Training/HR**, please note them below:

(1f, cont.) Additional Comments or Issues? Please specify.

1g. When cost-sharing is required, which entity provides it?

- State
- Local/County
- State EMA
- State DOT
- Other, please provide:

Survey - FHWA Reimbursements

(2) Please respond to the following questions on FHWA ER and ERFO Reimbursements.

For disasters within the past five (5) years:

2a. How many FHWA ER and ERFO applications has your Agency submitted for reimbursement?

	No. of Reimbursements
ER	<input style="width: 50px; height: 15px;" type="text"/>
ERFO	<input style="width: 50px; height: 15px;" type="text"/>

2b. On average, how soon after you submit the application do you receive the reimbursement?

-- Please Select --

- <1 month
- 1-3 months
- 4-6 months
- 7-12 months
- 13-24 months
- 25-48 months

2c. Has a reimbursement application ever been denied?

- Yes
- No

If Yes, please indicate the reason for the denial of the application, and what steps were taken to address it.

Have you ever appealed an FHWA eligibility determination?

- Yes
- No

If Yes, please describe the outcome of the appeal. For example: Was the appeal successful? What steps were taken following the success or failure of the appeal?

2d. On average, how many person hours does it take to complete the application? (in person-hours)

2e. What is the maximum number of amendments (versions) to your applications that has been made?

- None 1 2 3 4 5 5+
-

Survey - FHWA Reimbursements

2f. Which elements (related to **Eligibility Requirements**) of the application process or the Detailed Damage Inspection Report (DDIR) have caused significant confusion or issues for your Agency?

- Compliance with the National Incident Management System (NIMS)
- Compliance with the National Response Framework (NRF)
- Alignment with (rather than mandatory compliance with) the National Disaster Recovery Framework (NDRF)
- Compliance with Environmental/Historical Preservation regulations
- Compliance with _____
- Consultant eligibility
- Definition of pre-disaster conditions
- Definition of emergency repairs vs. permanent repairs
- Other: Please specify in comments box below
-

If you have comments on the topic of **Eligibility Requirements**, please note them below:

(2f, cont.) Which elements (related to **Documentation**) of the application process or the Detailed Damage Inspection Report (DDIR) have caused significant confusion or issues for your Agency?

- Documentation of damages
 - Documentation of expenditures including labor
 - Document collection
 - Document retention
 - Document retrieval
 - Other: Please specify in comments
-

If you have comments on the topic of **Documentation**, please note them below:

(2f, cont.) Which elements (related to the **Application itself**) of the application process or the Detailed Damage Inspection Report (DDIR) have caused significant confusion or issues for your Agency?

- Amendments required to original application
 - Understanding the application process
 - Other: Please specify in comments
-

If you have comments on the topic of **the Application itself**, please note them below:

(2f, cont.) Which elements (related to **Contractor Issues**) of the application process or the Detailed Damage Inspection Report (DDIR) have caused significant confusion or issues for your Agency?

- Contractor payment methods
- Other: Please specify in comments

If you have comments on the topic of **Contractor Issues**, please note them below:

(2f, cont.) Which elements (related to **Training/HR**) of the application process or the Detailed Damage Inspection Report (DDIR) have caused significant confusion or issues for your Agency?

- Training personnel in reimbursement procedures
- Shortage of personnel/hours (e.g., too much time needed to complete the application)
- Other: Please specify in comments

If you have comments on the topic of **Training/HR**, please note them below:

(2f, cont.) Additional Comments or Issues? Please specify.

Survey - Cost Tracking & Document Retention

(3) Please respond to the following questions on Cost Tracking and Document Retention:

3a. How does your Agency provide evidence of damage? Check all that apply.

- Digital photos
- Digital videos

- Notes, reports
- Other, please specify
-

3b. How does your Agency track costs? Check all that apply.

- Manually / spreadsheet
- Uses external service
- RFID
- GPS
- Bar coding
- Financial project coding
- Notes, reports
- Other, please specify
-

3c. How long (in Years) does your Agency retain information used in reimbursement applications?

3d. Does your Agency have a back-up system in place for application documents and images?

- Yes
- No
-

Survey

(4) If your Agency has been audited, was there a change in the total grant award?

- Yes
- No
-

If "Yes" please indicate the results of the audit:

(5) Have you applied for and received federal reimbursement for a disaster from a program or source other than FEMA, FHWA ER and ERFO?

- Yes
 - No
-

If "Yes" please indicate to which program and when:

(6) If your Agency is a state DOT, has your Agency submitted reimbursement applications on behalf of LPAs?

- Yes
 - No
-

6a. How often do you interact with LPAs?

- At least once a week
 - Once a month
 - A few times a year
 - Minimal interaction or no interaction
-

6b. What reimbursement issues have they noted, and how have you handled them?

6c. How time-consuming was the application process? Please choose from "0" for least time-consuming to "5" for most time-consuming

- 0 1 2 3 4 5
- -
 -
 -
 -
 -
-

(6c, cont.) Any comments on 6c?

6d. Does your Agency provide training or resources on reimbursement procedures to LPAs?

- Yes
- No

(6d, cont.) If "Yes", please describe the type of training provided:

(7) If you have an internal FEMA or FHWA reimbursement application manual or other pertinent documents on the application process, would you be willing to provide a copy/copies of it/them?

- Yes
- No

If "yes", you may upload the file(s) below, or you can email it/them to

Dr. Yuko J. Nakanishi.

Email: nakanishi@transresearch.net.

Phone: (347) 512-1959

No file selected

Survey

(8) What is your Agency's degree of satisfaction with the FEMA application process?

- | | | | | |
|-----------------------|---------------------------|-----------------------|------------------------|-----------------------|
| Very
Dissatisfied | Generally
Dissatisfied | Neutral | Generally
Satisfied | Very Satisfied |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

(9) What is your Agency's degree of satisfaction with the FHWA Emergency Relief application process?

Very Dissatisfied Generally Dissatisfied Neutral Generally Satisfied Very Satisfied

(10) What is your Agency's degree of satisfaction with the FHWA ERFO application process?

Very Dissatisfied Generally Dissatisfied Neutral Generally Satisfied Very Satisfied

Please state any General Comments regarding the survey:

Please Review Your Responses

Thank You!

Thank you for taking our survey. Your response is very important to us. If you have any questions or comments, please feel free to contact Dr. Yuko Nakanishi at

Dr. Yuko J. Nakanishi.

Email: nakanishi@transresearch.net.

Phone: (347) 512-1959

APPENDIX B

Presidential Declarations

List of Major Disaster Declarations for Case Study States

10/1/2007 – 9/1/2014

CALIFORNIA (8)

California Earthquake (DR-4193); Incident period: August 24, 2014 to September 7, 2014; Major Disaster Declaration declared on September 11, 2014

California Rim Fire (DR-4158); Incident period: August 17, 2013 to October 24, 2013; Major Disaster Declaration declared on December 13, 2013

California Tsunami Waves (DR-1968); March 11, 2011; Major Disaster Declaration declared on April 18, 2011

California Winter Storms, Flooding, and Debris and Mud Flows (DR-1952); Incident period: December 17, 2010 to January 4, 2011; Major Disaster Declaration declared on January 26, 2011

California Earthquake (DR-1911); Incident period: April 4, 2010 to July 4, 2010; Major Disaster Declaration declared on May 7, 2010

California Severe Winter Storms, Flooding, and Debris and Mud Flows (DR-1884); Incident period: January 17, 2010 to February 6, 2010; Major Disaster Declaration declared on March 8, 2010

California Wildfires (DR-1810); Incident period: November 13, 2008 to November 28, 2008; Major Disaster Declaration declared on November 18, 2008

California Wildfires (DR-1731); Incident period: October 21, 2007 to March 31, 2008; Major Disaster Declaration declared on October 24, 2007

FLORIDA (8)

Florida Severe Storms, Tornadoes, Straight-line Winds, and Flooding (DR-4177); Incident period: April 28, 2014 to May 6, 2014; Major Disaster Declaration declared on May 6, 2014

Florida Severe Storms and Flooding (DR-4138); Incident period: July 2, 2013 to July 7, 2013; Major Disaster Declaration declared on August 2, 2013

Florida Hurricane Isaac (DR-4084); Incident period: August 27, 2012 to August 29, 2012; Major Disaster Declaration declared on October 18, 2012

Florida Tropical Storm Debby (DR-4068); Incident period: June 23, 2012 to July 26, 2012; Major Disaster Declaration declared on July 3, 2012

Florida Severe Storms, Flooding, Tornadoes, and Straight-line Winds (DR-1840); Incident period: May 17, 2009 to May 28, 2009; Major Disaster Declaration declared on May 27, 2009

Florida Severe Storms, Flooding, Tornadoes, and Straight-line Winds (DR-1831); Incident period: March 26, 2009 to May 5, 2009; Major Disaster Declaration declared on April 21, 2009

Florida Hurricane Gustav (DR-1806); Incident period: August 31, 2008 to September 7, 2008; Major Disaster Declaration declared on October 27, 2008

Florida Tropical Storm Fay (DR-1785); Incident period: August 18, 2008 to September 12, 2008; Major Disaster Declaration declared on August 24, 2008

IOWA (18)

Iowa Severe Storms, Tornadoes, Straight-line Winds, and Flooding (DR-4187); Incident period: June 26, 2014 to July 7, 2014; Major Disaster Declaration declared on August 5, 2014

Iowa Severe Storms, Tornadoes, Straight-line Winds, and Flooding (DR-4184); Incident period: June 14, 2014 to June 23, 2014; Major Disaster Declaration declared on July 24, 2014

Iowa Severe Storms, Tornadoes, Straight-line Winds, and Flooding (DR-4181); Incident period: June 3, 2014 to June 4, 2014; Major Disaster Declaration declared on July 14, 2014

Iowa Severe Storms, Tornadoes, and Flooding (DR-4135); Incident period: June 21, 2013 to June 28, 2013; Major Disaster Declaration declared on July 31, 2013

Iowa Severe Storms, Tornadoes, and Flooding (DR-4126); Incident period: May 19, 2013 to June 14, 2013; Major Disaster Declaration declared on July 2, 2013

Iowa Severe Storms, Straight-line Winds, and Flooding (DR-4119); Incident period: April 17, 2013 to April 30, 2013; Major Disaster Declaration declared on May 31, 2013

Iowa Severe Winter Storm (DR-4114); Incident period: April 9, 2013 to April 11, 2013; Major Disaster Declaration declared on May 6, 2013

Iowa Severe Storms and Flooding (DR-4018); Incident period: July 27, 2011 to July 29, 2011; Major Disaster Declaration declared on August 30, 2011

Iowa Severe Storms, Straight-Line Winds, And Flooding (DR-4016); Incident period: July 9, 2011 to July 14, 2011; Major Disaster Declaration declared on August 24, 2011

Iowa Flooding (DR-1998); Incident period: May 25, 2011 to August 1, 2011; Major Disaster Declaration declared on June 27, 2011

Iowa Severe Storms, Tornadoes, and Straight-line Winds (DR-1977); Incident period: April 9, 2011 to April 10, 2011; Major Disaster Declaration declared on May 5, 2011

Iowa Severe Storms, Flooding, and Tornadoes (DR-1930); Incident period: June 1, 2010 to August 31, 2010; Major Disaster Declaration declared on July 29, 2010

Iowa Severe Storms and Flooding (DR-1928); Incident period: May 12, 2010 to May 13, 2010; Major Disaster Declaration declared on July 27, 2010

Iowa Severe Winter Storms (DR-1880); Incident period: January 19, 2010 to January 26, 2010; Major Disaster Declaration declared on March 2, 2010

Iowa Severe Winter Storms and Snowstorm (DR-1877); Incident period: December 23, 2009 to December 27, 2009; Major Disaster Declaration declared on February 25, 2010

Iowa Severe Storm (DR-1854); July 10, 2009; Major Disaster Declaration declared on August 13, 2009

Iowa Severe Storms, Tornadoes, and Flooding (DR-1763); Incident period: May 25, 2008 to August 13, 2008; Major Disaster Declaration declared on May 27, 2008

Iowa Severe Winter Storm (DR-1737); Incident period: December 10, 2007 to December 11, 2007; Major Disaster Declaration declared on January 4, 2008

LOUISIANA (7)

Louisiana Severe Storms and Flooding (DR-4102); Incident period: January 8, 2013 to January 17, 2013; Major Disaster Declaration declared on February 22, 2013

Louisiana Hurricane Isaac (DR-4080); Incident period: August 26, 2012 to September 10, 2012; Major Disaster Declaration declared on August 29, 2012

Louisiana Tropical Storm Lee (DR-4041); Incident period: September 1, 2011 to September 5, 2011; Major Disaster Declaration declared on October 28, 2011

Louisiana Flooding (DR-4015); Incident period: April 25, 2011 to July 7, 2011; Major Disaster Declaration declared on August 18, 2011

Louisiana Severe Storms, Tornadoes, and Flooding (DR-1863); Incident period: October 29, 2009 to November 3, 2009; Major Disaster Declaration declared on December 10, 2009

Louisiana Hurricane Ike (DR-1792); Incident period: September 11, 2008 to November 7, 2008; Major Disaster Declaration declared on September 13, 2008

Louisiana Hurricane Gustav (DR-1786); Incident period: September 1, 2008 to September 11, 2008; Major Disaster Declaration declared on September 2, 2008

MISSOURI (15)

Missouri Severe Storms, Straight-line Winds, and Flooding (DR-4144); Incident period: August 2, 2013 to August 14, 2013; Major Disaster Declaration declared on September 6, 2013

Missouri Severe Storms, Straight-line Winds, Tornadoes, and Flooding (DR-4130); Incident period: May 29, 2013 to June 10, 2013; Major Disaster Declaration declared on July 18, 2013

Missouri Flooding (DR-4012); Incident period: June 1, 2011 to August 1, 2011; Major Disaster Declaration declared on August 12, 2011

Missouri Severe Storms, Tornadoes, And Flooding (DR-1980); Incident period: April 19, 2011 to June 6, 2011; Major Disaster Declaration declared on May 9, 2011

Missouri Severe Winter Storm and Snowstorm (DR-1961); Incident period: January 31, 2011 to February 5, 2011; Major Disaster Declaration declared on March 23, 2011

Missouri Severe Storms, Flooding, and Tornadoes (DR-1934); Incident period: June 12, 2010 to July 31, 2010; Major Disaster Declaration declared on August 17, 2010

Missouri Severe Storms, Tornadoes, and Flooding (DR-1847); Incident period: May 8, 2009 to May 16, 2009; Major Disaster Declaration declared on June 19, 2009

Missouri Severe Winter Storm (DR-1822); Incident period: January 26, 2009 to January 28, 2009; Major Disaster Declaration declared on February 17, 2009

Missouri Severe Storms, Flooding, and a Tornado (DR-1809); Incident period: September 11, 2008 to September 24, 2008; Major Disaster Declaration declared on November 13, 2008

Missouri Severe Storms and Flooding (DR-1773); Incident period: June 1, 2008 to August 13, 2008; Major Disaster Declaration declared on June 25, 2008

Missouri Severe Storms and Tornadoes (DR-1760); Incident period: May 10, 2008 to May 11, 2008; Major Disaster Declaration declared on May 23, 2008

Missouri Severe Storms and Flooding (DR-1749); Incident period: March 17, 2008 to May 9, 2008; Major Disaster Declaration declared on March 19, 2008

Missouri Severe Winter Storms and Flooding (DR-1748); Incident period: February 10, 2008 to February 14, 2008; Major Disaster Declaration declared on March 12, 2008

Missouri Severe Storms, Tornadoes, and Flooding (DR-1742); Incident period: January 7, 2008 to January 10, 2008; Major Disaster Declaration declared on February 5, 2008

Missouri Severe Winter Storms (DR-1736); Incident period: December 6, 2007 to December 15, 2007; Major Disaster Declaration declared on December 27, 2007

NEW YORK (13)

New York Severe Storms and Flooding (DR-4180); Incident period: May 13, 2014 to May 22, 2014; Major Disaster Declaration declared on July 8, 2014

New York Severe Storms and Flooding (DR-4129); Incident period: June 26, 2013 to July 10, 2013; Major Disaster Declaration declared on July 12, 2013

New York Severe Winter Storm and Snowstorm (DR-4111); Incident period: February 8, 2013 to February 9, 2013; Major Disaster Declaration declared on April 23, 2013

New York Hurricane Sandy (DR-4085); Incident period: October 27, 2012 to November 9, 2012; Major Disaster Declaration declared on October 30, 2012

New York Remnants of Tropical Storm Lee (DR-4031); Incident period: September 7, 2011 to September 11, 2011; Major Disaster Declaration declared on September 13, 2011

New York Hurricane Irene (DR-4020); Incident period: August 26, 2011 to September 5, 2011; Major Disaster Declaration declared on August 31, 2011

New York Severe Storms, Flooding, Tornadoes, and Straight-line Winds (DR-1993); Incident period: April 26, 2011 to May 8, 2011; Major Disaster Declaration declared on June 10, 2011

New York Severe Winter Storm and Snowstorm (DR-1957); Incident period: December 26, 2010 to December 27, 2010; Major Disaster Declaration declared on February 18, 2011

New York Severe Storms, Tornadoes, and Straight-line Winds (DR-1943); September 16, 2010; Major Disaster Declaration declared on October 14, 2010

New York Severe Storms and Flooding (DR-1899); Incident period: March 13, 2010 to March 31, 2010; Major Disaster Declaration declared on April 16, 2010

New York Severe Storms and Flooding Associated with Tropical Depression Ida and a Nor'easter (DR-1869); Incident period: November 12, 2009 to November 14, 2009; Major Disaster Declaration declared on December 31, 2009

New York Severe Storms and Flooding (DR-1857); Incident period: August 8, 2009 to August 10, 2009; Major Disaster Declaration declared on September 1, 2009

New York Severe Winter Storm (DR-1827); Incident period: December 11, 2008 to December 31, 2008; Major Disaster Declaration declared on March 4, 2009

TENNESSEE (15)

Tennessee Severe Storms, Tornadoes, Straight-line Winds, and Flooding (DR-4189); Incident period: June 5, 2014 to June 10, 2014; Major Disaster Declaration declared on August 13, 2014

Tennessee Severe Winter Storm (DR-4171); Incident period: March 2, 2014 to March 4, 2014; Major Disaster Declaration declared on April 11, 2014

Tennessee Severe Storms, Tornadoes, Straight-line Winds, and Flooding (DR-4060); Incident period: February 29, 2012 to March 2, 2012; Major Disaster Declaration declared on March 16, 2012

Tennessee Severe Storms, Straight-line Winds, Tornadoes, and Flooding (DR-4005); Incident period: June 18, 2011 to June 24, 2011; Major Disaster Declaration declared on July 20, 2011

Tennessee Severe Storms, Tornadoes, Straight-line Winds, and Flooding (DR-1979); Incident period: April 19, 2011 to June 7, 2011; Major Disaster Declaration declared on May 9, 2011

Tennessee Severe Storms, Flooding, Tornadoes, And Straight-Line Winds (DR-1978); April 4, 2011; Major Disaster Declaration declared on May 9, 2011

Tennessee Severe Storms, Tornadoes, Straight-line Winds, And Associated Flooding (DR-1974); Incident period: April 25, 2011 to April 28, 2011; Major Disaster Declaration declared on May 1, 2011

Tennessee Severe Storms, Tornadoes, and Flooding (DR-1965); Incident period: February 28, 2011 to March 1, 2011; Major Disaster Declaration declared on March 31, 2011

Tennessee Severe Storms and Flooding (DR-1937); Incident period: August 17, 2010 to August 21, 2010; Major Disaster Declaration declared on September 15, 2010

Tennessee Severe Storms, Flooding, Straight-Line Winds, and Tornadoes (DR-1909); Incident period: April 30, 2010 to May 18, 2010; Major Disaster Declaration declared on May 4, 2010

Tennessee Severe Storms and Flooding (DR-1856); Incident period: July 15, 2009 to July 17, 2009; Major Disaster Declaration declared on August 21, 2009

Tennessee Severe Storms, Tornadoes, Straight-Line Winds, and Flooding (DR-1851); Incident period: June 12, 2009 to June 14, 2009; Major Disaster Declaration declared on July 13, 2009

Tennessee Severe Storms, Tornadoes, and Flooding (DR-1839); April 10, 2009; Major Disaster Declaration declared on May 15, 2009

Tennessee Severe Winter Storms and Flooding (DR-1821); Incident period: January 27, 2009 to January 31, 2009; Major Disaster Declaration declared on February 17, 2009

Tennessee Severe Storms, Tornadoes, Straight-line Winds, and Flooding (DR-1745); Incident period: February 5, 2008 to February 6, 2008; Major Disaster Declaration declared on February 7, 2008

TEXAS (7)

Texas Severe Storms and Flooding (DR-4159); Incident period: October 30, 2013 to October 31, 2013; Major Disaster Declaration declared on December 20, 2013

Texas Explosion (DR-4136); Incident period: April 17, 2013 to April 20, 2013; Major Disaster Declaration declared on August 2, 2013

Texas Wildfires (DR-4029); Incident period: August 30, 2011 to December 31, 2011; Major Disaster Declaration declared on September 9, 2011

Texas Wildfires (DR-1999); Incident period: April 6, 2011 to August 29, 2011; Major Disaster Declaration declared on July 1, 2011

Texas Hurricane Alex (DR-1931); Incident period: June 30, 2010 to August 14, 2010; Major Disaster Declaration declared on August 3, 2010

Texas Hurricane Ike (DR-1791); Incident period: September 7, 2008 to October 2, 2008; Major Disaster Declaration declared on September 13, 2008

Texas Hurricane Dolly (DR-1780); Incident period: July 22, 2008 to August 1, 2008; Major Disaster Declaration declared on July 24, 2008

WISCONSIN (6)

Wisconsin Severe Storms, Flooding, and Mudslides (DR-4141); Incident period: June 20, 2013 to June 28, 2013; Major Disaster Declaration declared on August 8, 2013

Wisconsin Severe Storms and Flooding (DR-4076); Incident period: June 19, 2012 to June 20, 2012; Major Disaster Declaration declared on August 2, 2012

Wisconsin Severe Winter Storm and Snowstorm (DR-1966); Incident period: January 31, 2011 to February 3, 2011; Major Disaster Declaration declared on April 5, 2011

Wisconsin Severe Storms and Flooding (DR-1944); Incident period: September 22, 2010 to October 9, 2010; Major Disaster Declaration declared on October 21, 2010

Wisconsin Severe Storms, Tornadoes, and Flooding (DR-1933); Incident period: July 20, 2010 to July 24, 2010; Major Disaster Declaration declared on August 11, 2010

Wisconsin Severe Storms, Tornadoes, and Flooding (DR-1768); Incident period: June 5, 2008 to July 25, 2008; Major Disaster Declaration declared on June 14, 2008

VERMONT (14)

Vermont Severe Storms and Flooding (DR-4178); Incident period: April 15, 2014 to April 18, 2014; Major Disaster Declaration declared on June 11, 2014

Vermont Severe Winter Storms (DR-4163); Incident period: December 20, 2013 to December 26, 2013; Major Disaster Declaration declared on January 29, 2014

Vermont Severe Storms and Flooding (DR-4140); Incident period: June 25, 2013 to July 11, 2013; Major Disaster Declaration declared on August 2, 2013

Vermont Severe Storms and Flooding (DR-4120); Incident period: May 22, 2013 to May 26, 2013; Major Disaster Declaration declared on June 13, 2013

Vermont Severe Storm, Tornado, And Flooding (DR-4066); May 29, 2012; Major Disaster Declaration declared on June 22, 2012

Vermont Severe Storms And Flooding (DR-4043); May 20, 2011; Major Disaster Declaration declared on November 8, 2011

Vermont Tropical Storm Irene (DR-4022); Incident period: August 27, 2011 to September 2, 2011; Major Disaster Declaration declared on September 1, 2011

Vermont Severe Storms And Flooding (DR-4001); Incident period: May 26, 2011 to May 27, 2011; Major Disaster Declaration declared on July 8, 2011

Vermont Severe Storms And Flooding (DR-1995); Incident period: April 23, 2011 to May 9, 2011; Major Disaster Declaration declared on June 15, 2011

Vermont Severe Storm (DR-1951); Incident period: December 1, 2010 to December 5, 2010; Major Disaster Declaration declared on December 22, 2010

Vermont Severe Winter Storm (DR-1816); Incident period: December 11, 2008 to December 18, 2008; Major Disaster Declaration declared on January 14, 2009

Vermont Severe Storms and Flooding (DR-1790); Incident period: July 21, 2008 to August 12, 2008; Major Disaster Declaration declared on September 12, 2008

Vermont Severe Storms, a Tornado, and Flooding (DR-1784); July 18, 2008; Major Disaster Declaration declared on August 15, 2008

Vermont Severe Storms and Flooding (DR-1778); Incident period: June 14, 2008 to June 17, 2008; Major Disaster Declaration declared on July 15, 2008

Sample Presidential Disaster Declarations

(FEMA News Releases, Accessed 9/29/2014 via www.fema.gov)

California Earthquake (DR-4193); Incident period: August 24, 2014 to September 7, 2014; Major Disaster Declaration declared on September 11, 2014

President Declares Disaster for California

Release date:

SEPTEMBER 11, 2014

Release Number:

HQ-14-075

WASHINGTON, D.C. – The U.S. Department of Homeland Security's Federal Emergency Management Agency announced that federal disaster aid has been made available to the State of California to supplement state, tribal, and local recovery efforts in the area affected by an earthquake during the period of August 24 to September 7, 2014.

The President's action makes federal funding available to state and eligible tribal and local governments and certain private nonprofit organizations on a cost-sharing basis for emergency work and the repair or replacement of facilities damaged by the earthquake in Napa and Solano counties.

Federal funding is also available on a cost-sharing basis for hazard mitigation measures for all counties and tribes within the state.

Stephen M. De Blasio Sr. has been named as the Federal Coordinating Officer for federal recovery operations in the affected area. De Blasio said additional designations may be made at a later date if requested by the state and warranted by the results of further damage assessments.

Follow FEMA online at www.fema.gov/blog, www.twitter.com/fema, www.facebook.com/fema, and www.youtube.com/fema. Also, follow Administrator Craig Fugate's activities at www.twitter.com/craigatfema.

The social media links provided are for reference only. FEMA does not endorse any non-government websites, companies or applications.

FEMA's mission is to support our citizens and first responders to ensure that as a nation we work together to build, sustain, and improve our capability to prepare for, protect against, respond to, recover from, and mitigate all hazards.

Last Updated:

September 12, 2014 - 07:29

Iowa Severe Storms, Tornadoes, Straight-line Winds, and Flooding (DR-4187); Incident period: June 26, 2014 to July 7, 2014; Major Disaster Declaration declared on August 5, 2014

President Declares Disaster for Iowa**Release date:**

AUGUST 5, 2014

Release Number:

HQ-14-060

WASHINGTON, D.C. – The U.S. Department of Homeland Security's Federal Emergency Management Agency announced that federal disaster aid has been made available to the State of Iowa to supplement state and local recovery efforts in the area affected by severe storms, tornadoes, straight-line winds, and flooding during the period of June 26 to July 7, 2014.

The President's action makes federal funding available to state and eligible local governments and certain private nonprofit organizations on a cost-sharing basis for emergency work and the repair or replacement of facilities damaged by severe storms, tornadoes, straight-line winds, and flooding in Audubon, Black Hawk, Butler, Cedar, Des Moines, Grundy, Hamilton, Hardin, Ida, Iowa, Jackson, Jasper, Johnson, Jones, Keokuk, Lee, Linn, Mahaska, Muscatine, Poweshiek, Tama, and Washington counties.

Federal funding is also available on a cost-sharing basis for hazard mitigation measures statewide.

Michael L. Parker has been named as the Federal Coordinating Officer for federal recovery operations in the affected area. Parker said additional designations may be made at a later date if requested by the state and warranted by the results of further damage assessments.

Follow FEMA online at www.fema.gov/blog, www.twitter.com/fema, www.facebook.com/fema, and www.youtube.com/fema. Also, follow Administrator Craig Fugate's activities at www.twitter.com/craigatfema.

The social media links provided are for reference only. FEMA does not endorse any non-government websites, companies or applications.

FEMA's mission is to support our citizens and first responders to ensure that as a nation we work together to build, sustain, and improve our capability to prepare for, protect against, respond to, recover from, and mitigate all hazards.

Related Content:

[Federal Aid Programs for the State of Iowa Declaration](#)

Last Updated:

August 5, 2014 - 19:08

Texas Explosion (DR-4136); Incident period: April 17, 2013 to April 20, 2013; Major Disaster Declaration declared on August 2, 2013

President Declares Disaster for Texas

Release date:

AUGUST 2, 2013

Release Number:

HQ-13-085

WASHINGTON, D.C. – The U.S. Department of Homeland Security's Federal Emergency Management Agency announced that federal disaster aid has been made available to the State of Texas to supplement state and local recovery efforts in the area affected by an explosion during the period of April 17–20, 2013.

The President's action makes federal funding available to state and eligible local governments and certain private nonprofit organizations on a cost-sharing basis for emergency work and the repair or replacement of facilities damaged by the explosion in McLennan County.

Federal funding is also available on a cost-sharing basis for hazard mitigation measures statewide.

Kevin L. Hannes has been named as the Federal Coordinating Officer for federal recovery operations in the affected area.

Follow FEMA online at fema.gov/blog, www.twitter.com/fema, www.facebook.com/fema, and www.youtube.com/fema. Also, follow Administrator Craig Fugate's activities at www.twitter.com/craigatfema.

The social media links provided are for reference only. FEMA does not endorse any non-government websites, companies or applications.

FEMA's mission is to support our citizens and first responders to ensure that as a nation we work together to build, sustain, and improve our capability to prepare for, protect against, respond to, recover from, and mitigate all hazards.

Related Links:

[Federal Aid Programs for the State of Texas Declaration](#)

Last Updated:

August 2, 2013 - 12:51

APPENDIX C

Case Study Interview Guide

CASE STUDY INTERVIEW GUIDE

Interview Contact

Name, Title, Address, Phone, Email

Reimbursement Manager/Coordinator

Name, Title

Number of Employees

Number of District Offices

Event/Storm Name

Presidentially declared disaster?

Governor declared disaster?

Occurrence date

Total reimbursement request to FEMA: \$ _____

Total reimbursement received from FEMA: \$ _____ Date of receipt: _____

Of which emergency repair was \$ _____ Date of receipt: _____

Of which permanent repair was \$ _____ Date of receipt: _____

Source of matching funds:

Total number of emergency projects submitted to FEMA: _____

Number of emergency projects approved by FEMA: _____

Total number of permanent repair projects submitted to FEMA: _____

Number of permanent repair projects approved by FEMA: _____

Total reimbursement request to FHWA: \$ _____

Total reimbursement received from FHWA: \$ _____

Of which emergency repair was \$ _____ Date of receipt: _____

Of which permanent repair was \$ _____ Date of receipt: _____

Source of matching funds:

Total number of emergency projects submitted to FHWA: _____

Number of emergency projects approved by FHWA: _____

Total number of permanent repair projects submitted to FHWA: _____

Number of permanent repair projects approved by FHWA: _____

Supplemental information on impact (deaths, injuries, property damage)

Emergency work –in how many days of the disaster occurrence was emergency work completed?
 ____ days

Permanent work – did any permanent work take place during emergency work? If yes, please describe.
 How long did permanent work take? _____

DAMAGE ASSESSMENT/DOCUMENTATION

Preliminary Damage Assessment or PDA Performed on:

-How was it performed? How long did it take? Was the assessment for both FEMA and FHWA conducted at the same time in the same manner? Please describe any difficulties in accomplishing the PDA:

Detailed Site Inspections Performed on:

-How was it performed? How long did it take? Were site inspections for both FEMA and FHWA conducted at the same time in the same manner? Please describe any difficulties:

-Do you perform site inspections using any other method? If yes, please describe and the amount of time it typically takes:

Was there a need for immediate needs or quick release funding? If yes, was it provided? If not provided, why not?

Was there a need for expedited payments? If yes, was it provided? If not provided, why not?

APPLICATION DETAILS (FEMA)

Date when Applicant's Briefing was held:

Request for Public Assistance was submitted by your agency on:

Kickoff Meeting with FEMA Public Assistance Coordinator:

Number of large projects: Number of small projects:

Small project validation process:

Large project cost estimates: how is cost estimation performed? Are costs usually within acceptable %

What actions helped expedite the process?

Were projects grouped together into one package and submitted together? When was it submitted?

Were amendments required? If yes, please describe any additional information required for the amendments and how long each amendment took.

Were any projects denied? If yes, what were the reasons? Were they appealed? If so, please describe the outcome and the appeals process. How long did the appeals process take?

Was an audit performed? If yes, please describe the process.

Application details (FHWA)

State Request to ER was sent on _____

FHWA Division Administrator finding received on _____

Can you describe any projects that had a change in function/character? Were they eligible for reimbursement? If not, how were they funded?

Can you describe any projects that involved a replacement or betterment? Were they eligible for reimbursement? If not, how were they funded?

What actions helped expedite the application process?

What was the federal share of the permanent work?

What is your experience with traditional vs. quick release method?

What actions helped expedite the process?

Are there any other steps you took during other disasters that were helpful for reimbursement purposes?

Were projects grouped together into one package and submitted together? When was it submitted?

Were any projects denied? If yes, what were the reasons? Were they appealed? If so, please describe the outcome and the appeals process. How long did the appeals process take?

Did you take any steps to facilitate the payment process?

Was an audit performed? If yes, please describe the process.

BOTH PROGRAMS

Were there any post MAP-21 Presidentially-declared or Governor-only disasters? If so please describe the reimbursement process in detail.

Do you have a regional coordinator who performs an initial review for applications submitted by the district office?

Confusion w/documentation of damages, documentation of expenditures, document collection, document retention, document retrieval, invoicing? Could you describe the areas of confusion in more detail?

Do you have a project coding policy?

Could you share your reimbursement manual with us?

LPAs – what type of assistance with the reimbursement process do you provide to LPAs? Any form of training? Can you share any training materials with us?

Can you share your insights into the application processing times, required staff resources, and factors influencing them?

Eligibility issues

What specific eligibility issues had to be addressed?

What terminology or definitions were confusing, and why?

Documentation retention/retrieval

How do you store documentation and for how long?

Have you had any problems or issues in documentation retention and retrieval? If yes, please describe.

Cost estimation

Please describe your project cost estimation process for these projects. Were they within about 10% of actual costs? If not, what areas were over or under estimated?

Matching funds

What are your sources of matching funds?

Have you used any in-kind contributions from third parties or the private sector?

Have you used the tapering payment option (federal funds are received first and matching funds are provided towards the end of the project)?

Compliance with federal, state, local requirements

What requirements are especially time-consuming? Which ones cause confusion, and why?

If your agency has special emergency work procedures, were they used?

ADDITIONAL QUESTIONS

- Please describe any effective technologies and systems used for documentation purposes: please describe the specific technology or system used for documentation, and what factors led to the use of the technology or system.
 - What is the unit cost of the technology/system? Are there any O&M costs associated with the system?
 - What training (if any) is required? What is the length of the training?
 - Are there any issues related to the technology/system?
- Effective cost estimation methods and systems
 - What types of methods or systems is your Agency using or planning to use?
 - What issues have you had with them, and how were they resolved?
- Do you use an inventory or asset management system? If so, please describe how it is used for emergency resource tracking purposes.
 - What was the initial cost of the system? Are there any O&M costs associated with the system?
- Do you use other resource tracking systems (e.g., GPS, fleet management)? If so, please describe the system(s).
 - What was the initial cost of the system? Are there any O&M costs associated with the system?
- Is the reimbursement process ever outsourced? If so, in what cases is it outsourced and why?
- Please describe how your agency manages relationships with FEMA, FHWA, and the State for the purposes of the reimbursement programs
- Has your agency implemented specific practices helpful during audits and validations? If so, please describe them.

Follow-up questions also included questions in the following categories: the Declaration Process, Disaster Assessment Process, Composition of Teams, DDIRs, SRIA, ER and PA Cost Shares, Role of the State EMA and FEMA, FHWA Stewardship Agreement, Cost Tracking, FMIS, Electronic Signatures, Civil Air Patrol, Roles and Responsibilities of ER and PA program coordinators, Disaster Organization, and Indirect Costs.

APPENDIX D

Case Studies

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LIST OF CASE STUDY INTERVIEWEES

State Department of Transportation	Position and/or Division
California Department of Transportation	<ul style="list-style-type: none"> • Chief, Office of Emergency Management • FHWA Emergency Relief Program Coordinator, State Highway Damage Management • Statewide Major Damage Engineer, Division of Maintenance • Local Assistance Coordinator, Division of Local Assistance
Florida Department of Transportation	<ul style="list-style-type: none"> • Reimbursement Coordinator • Finance and Administration Chief
Iowa Department of Transportation	<ul style="list-style-type: none"> • Disaster Operations Manager • Director, Statewide Emergency Operations, Office of Traffic Operations • State Maintenance Engineer
Louisiana Department of Transportation and Development	<ul style="list-style-type: none"> • Assistant Secretary, Operations • Assistant District Administrator, Operations • Director, Emergency Operations • Manager, Cost Recovery/ Mitigation Funds
Missouri Department of Transportation	<ul style="list-style-type: none"> • Central Office Traffic and Highway Safety
New York Department of Transportation	<ul style="list-style-type: none"> • FHWA Emergency Relief Coordinator, Main Office Local Programs Bureau • FEMA Public Assistance Coordinator, Main Office Local Programs Bureau
Tennessee Department of Transportation	<ul style="list-style-type: none"> • Maintenance Division • Structures Division, Bridge Inspection and Appraisal • Hydraulics Section, Structures Division
Texas Department of Transportation	<ul style="list-style-type: none"> • Congressional Liaison • Emergency Management Coordinator, Administration • Maintenance Division
Wisconsin Department of Transportation	<ul style="list-style-type: none"> • FEMA Public Assistance Coordinator, Bureau of Highway Maintenance

	<ul style="list-style-type: none"> • FHWA Emergency Relief Coordinator • Regional Maintenance Engineer • DTSD Consultant
Vermont Agency of Transportation	<ul style="list-style-type: none"> • Director, Program Development • Director, Finance and Administration • Budget Office, Finance and Administration • Accounting, Finance and Administration • Maintenance Engineer, Operations

State Emergency Management Agency	Position and/or Division
Arizona Division of Emergency Management	<ul style="list-style-type: none"> • Assistant Director, Recovery
California Office of Emergency Services	<ul style="list-style-type: none"> • Statewide Safety Assessment Program Coordinator

Note: The authors would like note that changes are occurring to both the FHWA ER and FEMA PA programs due to SRIA, MAP-21, the 2013 National Review of the Emergency Relief Program, National Review of the FHWA ER Program, and other ongoing efforts to improve the programs. These changes may address some of the issues mentioned in the case studies.

California Department of Transportation (Caltrans)

Case Study

Caltrans manages more than 50,000 miles of California's highway and freeway lanes, provides inter-city rail services, permits more than 400 public-use airports and special-use hospital heliports, and works with local agencies. Caltrans has 12 district offices and 22,000 employees, and serves the third largest state in the U.S.

California has experienced eight Presidential Disaster Declarations along with many Governor's proclamations in the past seven years. Of these eight Presidential Disaster Declarations, three were fire-related and two were earthquakes. For most of these declarations, the FHWA ER program has been used for reimbursement purposes. With respect to Governor's proclamations, in FY 2012, there were three Governor's proclamations for which Caltrans sought FHWA ER reimbursement; all of them were storm-related. In FY 2013, Caltrans applied for FHWA ER reimbursement for four Governor's proclamations: a storm and three fires - a fuel tanker truck fire, and two wildfires.

FHWA ER PROCESS

FHWA ER policy allows for 100% reimbursement for emergency opening work completed within 180 days. Caltrans has a Stewardship agreement with FHWA that includes the administration of the FHWA ER program. Caltrans also has access to the FHWA FMIS system.

The FHWA ER process begins by completing a "windshield" damage survey, cost estimate of required work, and a request for a Governor's proclamation. These actions are typically accomplished within a few weeks. The reply from the Governor may require another few weeks. Therefore, the Governor's proclamation is usually received about a month after the event. More urgent decisions can be made in as little as a day. Immediately after the proclamation is made, Caltrans sends a Notice of Intent to seek emergency relief as required by the FHWA ER manual. FHWA usually responds within a week or two with a letter of acknowledgement that includes instructions on how to proceed. On occasion, FHWA advances a partial amount up front. For instance, for a \$10 million repair project, FHWA offered \$3 million to Caltrans up front. The remaining amount was reimbursed about one year later.

Emergency opening repairs begin immediately after the event as no prior approval is required per the FHWA ER manual. Therefore, Caltrans does not wait for the Governor's proclamation or FHWA response prior to starting emergency work. Caltrans pays for emergency repairs from a \$15 million reserve fund and is reimbursed by the FHWA ER program at a later date. On occasion, FHWA advances a partial amount up front. For instance, for a recent \$10 million emergency bridge repair project following a tanker truck fire, FHWA provided a Quick Release of \$3 million to Caltrans. Remaining funds are usually reimbursed the following fiscal year.

FEMA PA Process

In the past, Caltrans had not applied to FEMA because permanent repairs were the purview of FHWA. However, due to MAP-21, FEMA is now responsible for debris removal.

After a disaster event, the California Office of Emergency Services (CAL OES), the state EMA, does a PDA with FEMA. They collect information on FEMA-eligible damages from state agencies including Caltrans. All “non-reimbursed” state, local, and private damages are included in the PDA. The threshold is \$52 million for a presidential major disaster declaration.

The damages now include debris removal from Federal-aid highways. If FEMA agrees to the results and the President declares a major disaster, then Caltrans needs to submit a Request for Public Assistance, a simple one-page form that can be emailed or faxed to Cal OES. Caltrans would then send a representative or two to the well-advertised Applicant Briefings, where Cal OES gives a brief training on the recovery process.

Cal OES’ FEMA PA program works with FEMA counterparts to create grant applications or Project Worksheets. Documentation is very important for these; in lieu of documentation, reasonable estimates will be acceptable. The funding for approved Project Worksheets are processed through Cal OES and disbursed to the applicant, in this case, Caltrans. If more funding is needed due to underestimation or unforeseen problems, an adjustment can be made to the original Project Worksheet; the adjustment is called a version. The cost of the project can be adjusted with as many versions as required in order to carry out the work. Therefore, no contingencies are allowed in the cost estimation for large projects. Costs are reconciled at the time of Final Inspection.

Emergency debris removal to open major roads is subject to the regulations found in 44 Code of Federal Regulation Section 206 Subpart H, and more specifically Section 206.224. There are many debris removal policies in place to prevent contractor fraud, and these would also have to be followed in addition to both Federal and State environmental regulations. Failure to follow any of these regulations or policies is serious and could result in deobligation of FEMA funds.

ROLES AND RESPONSIBILITIES

The FHWA ER Major Damage Coordinator is responsible for State highways only. Caltrans Local Assistance Office works with and assists locals. Caltrans’ HQ Federal Resources division works directly with FHWA for FHWA ER reimbursements. Cal OES acts as the liaison between FEMA and Caltrans to process FEMA PA reimbursement requests.

COST SHARE

The Federal FHWA cost share for Interstates is 91.57% and 88.53% for non-Interstate Federal-aid highways for 2013. Cal OES cost-shares with local governments, but not with State agencies. Hence, FEMA typically provides 75% of the cost impacts in federal disasters.

DISASTER ASSESSMENT TEAMS

The composition and number of Disaster Assessment Teams depend on the nature of damage. Experts from multiple divisions (Design, Hydraulics, Geo-Tech, Structure Maintenance Investigations, METS, Environmental and Field Maintenance) respond to multiple damage sites. The same teams are used for both FHWA ER and FEMA PA programs.

With regards to bridges, after a disaster, pre-disaster conditions may be verified because all bridges are continually inspected; every bridge is inspected at least once every two (2) years.

SITE PRIORITIZATION

Critical or lifeline routes are given priority. Site Prioritization is also based on urgency and impact of the damage at each location.

DAMAGE ASSESSMENT FORMS (DAFs)

The new Damage Assessment Form (DAF) used by Caltrans was created by FHWA with input from Caltrans. The DAF was recreated in Adobe Acrobat Professional v.9. The major change was an allowance to 'write-in' realistic preliminary and construction engineering support costs instead of the standard 10% and 15%, respectively. The forms were recreated in Adobe Acrobat Professional v.9 to allow for computer-generated DAFs.

Caltrans' staff in the appropriate district office prepares DAFs for every site included in a FHWA reimbursement application. The Caltrans statewide major damage engineer reviews the draft DAFs together with the statewide FHWA coordinator to ensure they are complete; this increases efficiency during the field review by avoiding having to make revisions. Field reviews are scheduled with the FHWA engineer who makes an eligibility determination soon after or during the field review. Changes to the DAF can be made in the field if necessary.

DAFs are completed as soon as the necessary information is collected. FHWA usually assigns a due date a few months after the event. Finalizing the DAF is usually performed in the office, not at the disaster site. In case of multiple damages, Caltrans has the capacity to collect the field data, prepare the DAF, and upload them electronically from the damage site. (This procedure would also be used for FEMA PWs.)

FHWA provides 180 days for Caltrans to perform the emergency repair for 100% reimbursement. Critical or lifeline routes are given priority. Caltrans' FHWA ER Coordinator at Caltrans' HQ then reviews the DAFs submitted to him to ensure they are complete. Field reviews are then scheduled with the FHWA engineer who approves the DAFs. Initial assessments and cost estimates are included in the forms. If actual costs differ from the initial costs, changes are to the forms are easily made. The DAF automatically totals the amounts for Emergency Opening and Permanent Restoration. If the amount is less than \$5,000 for the site, it is not eligible; the form signed by the Caltrans engineer would be

submitted to Cal OES for 75% reimbursement. Details about the location of the road segment or bridge are requested along with description of the damage and existing Average Daily Traffic.

A revised DAF is needed if:

- The DAF amount is \$100,000 or less and the change is greater than \$10,000 and 25%
- The DAF amount is between \$100,000 - \$1,000,000 and the changes are greater than 15%
- The DAF amount is greater than \$1,000,000 and the change is greater than 10%

Damage is eligible if it is a Federal-aid route and meets the criteria in TABLE D - 1.

TABLE D- 1: Per-site and per mile criteria for eligibility of damage.

	State	County	City
Per site	\$5,000	\$5,000	\$5,000
Per mile	\$15,000	\$9,000	\$5,000

Easily accessible web-based maps of Federal-aid highways are available to Caltrans' district personnel and to LPAs so that they may confirm that a route is Federal-aid. Exceptions include the following:

- Directly related to the protection of the highway
- Not eligible for funds from another agency
- No other agency has responsibility
- Applicant agrees to accept all future maintenance

PERMANENT RESTORATION TIME LIMIT

The two-year time limit for permanent repairs is an issue. California has more stringent environmental rules than do other states and may need four years to complete permanent restorations. While FHWA has granted extensions to Caltrans on previous projects, this limit is disconcerting.

THRESHOLDS

For Caltrans, the threshold for applying to the reimbursement programs is actually higher than the amounts in the programs because Caltrans experiences many damages on an annual basis that exceed the threshold of \$700,000 per event. If damages amount to a few million dollars, Caltrans will likely ask for reimbursement; if it is only \$700,000, it may not. However, the thresholds for its counties are different – they would probably submit an application if the damages amount to \$700,000.

Caltrans acts as an administrator for the counties for FHWA. Therefore, the counties submit their DAFs to Caltrans which reviews them and then forwards them to FHWA.

LANDSLIDES

Since FEMA is now responsible for the debris removal, and permanent repairs are still an ER activity, separate contracts are now required.

TECHNOLOGIES

Integrated Maintenance Management System is an accounting system which keeps track of Caltrans' personnel hours, activity, and location (based on mileposts).

Caltrans uses electronic signatures to facilitate document processing.

PROJECT CODING

Costs are coded by project numbers.

COST RECOVERY POLICY

Caltrans' reimbursement billing accountants need to ensure full cost recovery including direct and indirect costs per the State Administrative Manual when providing services or goods for others. The Manual states that for damaged state property, direct costs include labor, materials, and equipment as well as contracting costs while indirect costs include payroll reserve and the overhead assessment rates.

FMAG

The FMAG program reimburses for emergency response costs only. Caltrans' emergency response efforts include traffic control during the fire or emergency repairs to reopen the roadway. In California, there were six wildfires in 2010 and two in 2011 that were reimbursed through the FMAG program. The FMAG is declared during the first few days of the fire; generally, the entire reimbursement process takes several months.

CALTRANS LOCAL ASSISTANCE TRAINING

Caltrans provides FHWA ER training to its district personnel and to LPAs. The Caltrans' Local Assistance Academy is a week-long intensive training offered to newer Local Assistance hires. A few spots may be offered to LPAs. While the FHWA ER portion is only 30 minutes, there are break-out sessions in which participants can attend to obtain more training and information. FHWA ER offers district offices a five-hour class that starts with basic information and ends with the participants breaking up into groups of four or five and filling out a DAF for a damaged site. Representatives from other state DOTs are able to attend the training if there are available spots. Most of the guidance provided to districts focuses on the FHWA ER program and how districts can determine whether a road is Federal-aid or not. A key issue faced by district offices is high turnover. A representative may attend the Academy and the FHWA ER class but if they leave, no one else may be able to navigate the process.

FHWA ER information and Caltrans-specific web-based FHWA ER training may be accessed at:

<http://www.dot.ca.gov/hq/LocalPrograms/programInformation.htm>

LPA TRAINING

Caltrans provides assistance and resources to LPAs for the FHWA ER program. The Caltrans Local Assistance Program, comprised of the Division of Local Assistance in Headquarters and 12 District Local Assistance Offices, assists LPAs (Local and Regional Agencies) by ensuring specific program requirements are met, project applications are processed, and projects are delivered in accordance with Federal and State requirements. Caltrans' Local Assistance Program oversees more than one billion dollars of annually available funds for over 600 cities, counties and regional agencies for the purpose of improving their transportation infrastructure or providing transportation services. This funding comes from various Federal and State programs specifically designed to assist the transportation needs of local agencies. Annually, over 1,200 new projects are authorized through the Local Assistance Program of which approximately 700 are construction projects. The following Caltrans' web page provides more information on the Local Assistance Program ("Local Assistance," n.d.):

http://www.dot.ca.gov/dist1/d1transplan/local_assistance.htm

Helpful resources including a training video and FHWA online training modules are provided by Caltrans at ("Emergency Relief Program," n.d.):

<http://www.dot.ca.gov/hq/LocalPrograms/erp/erp.html>

PARAMOUNT BOULEVARD BRIDGE

On December 14, 2011, a tanker truck traveling eastbound on State Route 60 (Pomona Freeway) exploded beneath the Paramount Boulevard bridge. The concrete girders, soffit and columns all sustained severe fire damage and the bridge had to be demolished. The disaster site was in the City of Montebello on LA-60 directly under Paramount Boulevard Bridge. All lanes of LA-60 in both directions were closed between the LA-710 and LA-605 interchanges for about three days. The first priority was to remove the fire-destroyed bridge and reopen LA-60. In 180 days, emergency repair work was performed – the bridge which had been built in 1967 was torn down and rebuilt to current standards. Total damages to the bridge amounted to \$15 million.

For this disaster, Governor Jerry Brown proclaimed a state of emergency, allowing Caltrans to seek reimbursement from the FHWA ER Program. The Quick Release method was used and \$2 million was received in January, 2012. Multiple Caltrans' crews from District-7 (LA) and Caltrans HQ (Field Maintenance, Hazmat crew, Structural Maintenance, Structural Maintenance Investigations, and Materials Engineering and Testing Services (METS) responded to the site. The assessment was conducted by the District major damage coordinator immediately after the initial hazmat cleanup was completed. Core samples were taken and tested at a Texas Structural Engineering firm specializing in structures investigation. Collecting all of the data from the crews took five days.

The FHWA Emergency Relief Program consisted of two parts: emergency repair/operations completed during the first 180 days of the incident with 100 percent reimbursement of eligible costs, and permanent repair with 88.53 percent reimbursement rate. Caltrans received 100 percent

reimbursement from FHWA. Because LA-60 is a major corridor, it had a significant impact to the public and, the FHWA response was excellent.

The emergency bid contract began on March 2, 2012, and the project was completed May, 2012. The environmental review was expedited and Caltrans worked with utilities to expedite permits and meet cooperative agreement requirements. There was just one site and one DAF along with one revised DAF for this disaster. Both DAFs refer to the following three projects:

1. Emergency Opening (E/O) – The initial Force Account Contract was for damage assessment, demolition of bridge, and site preparation for the follow-up rebuilding project.
2. Emergency Opening (E/O) – The follow-up Informal Bid PS&E was a bridge replacement project in order to restore traffic both on LA-60 and Paramount Blvd.
3. Permanent Restoration (P/R) – A formal PS&E project is currently under design in order to realign ramps and approaches to the new bridge.

Caltrans' policy regarding costs for repairing and replacing highway property damaged by the traveling public is to recover the costs in full. Caltrans is given legal authority to accomplish this via Section 730 of the Streets and Highways Code and 17300 of the California Vehicle Code.

REFERENCES

"Emergency Relief Program," Division of Local Assistance, California Department of Transportation (Caltrans), Sacramento, CA, Last Updated September 2, 2014, [Online]. Available: <http://www.dot.ca.gov/hq/LocalPrograms/erp/erp.html>

"Local Assistance," Division of Local Assistance, California Department of Transportation (Caltrans), Sacramento, CA, Last Updated January 31, 2014, [Online]. Available: http://www.dot.ca.gov/dist1/d1transplan/local_assistance.htm

Florida DOT (FDOT) Case Study

BACKGROUND

Florida is the fourth most populous and has the eighth highest population density. The state has a great deal of experience with storms and hurricanes. Florida had a Presidential Major Disaster Declaration in 2013 and in 2014: in the spring of 2014, Florida experienced severe storms, tornadoes, straight-line winds, and flooding and, in July, 2013, the state was hit with severe storms and flooding. In 2012, there were two Presidential Major Disaster Declarations: the most recent hurricane, Hurricane Isaac, struck the state in August, 2012 following a tropical storm that had hit earlier that summer.

The weather hazard that has required the most involvement by Florida DOT (FDOT) has been hurricanes. During the 2004-2005 hurricane seasons, Florida was impacted by multiple storms. As a result, the declaration dates and locations overlapped, creating difficulties in reimbursement applications for the storms. This created a challenge with regard to maintaining the accountability and integrity of documentation associated with a single storm. Difficulties also arose due to each district office and local agency using a different storage system or method.

ROLES AND RESPONSIBILITIES

FDOT has one central office (HQ), seven district offices and the Florida Turnpike office. To assist with properly identifying work and the supporting documentation, the FDOT Office of Work program Federal-aid coordinator for each district assigns project numbers to specific types of work required during disasters (e.g., personnel timesheets, equipment usage). The FDOT Central Office can do queries to determine the amount of work that has been performed and whether it meets the FHWA ER program threshold of \$700,000. The Central Office reviews DDIRs developed by the district offices, develops the Program of Projects list, and submits them to the FHWA Division Office for approval.

A key difference between FEMA and FHWA is how each agency assigns staff during a disaster and how that staff is involved in the reimbursement process. With FEMA, their Public Assistance Coordinators (PACs) are usually not assigned to work with the Applicants until later in the disaster activation. Also, depending on the circumstances, multiple PACs can be assigned or reassigned with little or no notice.

The FHWA assigns full-time engineering staff to each of FDOT's districts. Upon notice of a natural disaster, the FHWA deploys staff to the affected District. At the districts, FHWA engineers can approve or disapprove projects before construction starts and monies are expended. Also, throughout the year, the FHWA engineers and FDOT District Maintenance Engineers meet to discuss current issues and develop strategies to address situations that are likely to arise during natural or manmade disasters. These strategies include but are not limited to developing scopes of work, emergency contracts, and asset maintenance contracts.

TECHNOLOGY

Consultants are typically used to assist with FEMA applications. Familiarity and ability to work with the optical character recognition system and Adobe professional system are now required of consultants. Therefore, FDOT has included in its scope of work for Emergency Management Services the requirement for the use of optical character recognition software and Adobe professional system which allows PDF documents to be converted into other formats. In addition to the measures added to the scope of work for consultants performing reimbursement related functions, the FDOT Comptroller's Office developed the Emergency Relief Retention System (ERRS). ERRS is an electronic document storage system that can be used by Central Office to store reimbursement related documents. While its name suggests that it is "Emergency Relief" centric, their office is exploring the possibility of expanding the coverage to include the Public Assistance Program and others.

APPEALS

When appeals are initially made to FEMA, the appeals package must include a complete set of the files and documentation that had been submitted as part of the original Project Worksheet. In some cases, when the documentation is stored electronically on FDEM's site (www.FloridaPA.org) the appeals process is more efficient.

FEMA appeals, if denied, are due to the following reasons: work was done on a Federal-aid highway or the cost is not "reasonable." FDOT has appealed determinations in both instances and has won several cases. Generally speaking, the two biggest challenges for an applicant responding to a determination, is having the ability to deliver the entire package together in a useable format and the availability of personnel to support the work involved in retrieving the data. FDOT's strategy in responding to appeals is straightforward: 1) identify the determinations, 2) provide documentation that specifically addresses the determinations, and 3) reference key laws where possible.

FDOT has not had issues with the FHWA appeals process. During Tropical Storm Debbie, damages to a local road on Federal land were denied. FDOT held discussions with the FHWA headquarters regarding this matter, and it was resolved successfully (the initial decision denying the expenses was overturned). Having this type of open communication with the owner of the program was extremely valuable in getting the work done as well as reducing the likelihood that reimbursement would be denied.

PROJECT APPROVAL PROCESS

FHWA's project approval process is extremely quick – the eligibility determination typically occurs prior to the start of the project because the FHWA representative is on site.

REIMBURSEMENT TIME

The time between the application submission and reimbursement is as short as one week for the FHWA ER program while it can take longer for the FEMA PA Program.

CONTRACTING ISSUES

FDOT has not experienced significant contracting issues because its Maintenance Office already has scopes of work which have been approved by FHWA and are compliant with all necessary rules and regulations. The contracting procedures have been designed to accommodate FHWA’s requirements.

LPA TRAINING

FDOT provides FHWA ER training on an annual basis to their district offices and local public agency staff from municipalities and counties. The day-long training is held at each district office.

FEMA FORMS

Florida’s EMA is the Florida Division of Emergency Management (FDEM). FDEM offers guidance to its subgrantees including FDOT and counties through its website www.FloridaPA.org. Step-by-step guides with helpful information on how to complete the Reimbursement process, Advance Request process, Appeals process, Time Extension request and Quarterly Report development processes are provided through this site.

For large projects, scanned receipts and documents can be uploaded to the Florida FEMA PA web portal and attached to the Request for Reimbursement (RFR). Electronic forms are available at www.FloridaPA.org, of which an example is shown in TABLE D - 2. While Florida DOT does not normally need to complete the forms except for the RFR for large projects and the PW documentation, it is important to view and understand the content of the forms and information requested for each form.

TABLE D - 2: Form available through Florida Public Assistance (www.FloridaPA.org).

Sheet of Sheets		
Federal Emergency Management Agency Preliminary Damage Assessment Site Estimate		Date
		Phone
Part 1 - Applicant Information		
County	Name Of Applicant	Name Of Local Contact
Part 2 - Site Information		
Key For Damage Category (Use appropriate letters in the "category" blocks below)		
a. Debris Removal	d. Water Control Facilities	g. Other Recreation
b. Protective Measures	e. Public Buildings	
c. Roads And Bridges	f. Public Utilities	
Site No.	Category	Location (Use map location, address, etc.)
Description Of Damage		

Impact:		% Complete	Cost Estimate
Site No.	Category	Location (Use map location, address, etc.)	
Description Of Damage			
Impact:		% Complete	Cost Estimate
Site No.	Category	Location (Use map location, address, etc.)	
Description Of Damage			
Impact:		% Complete	Cost Estimate
Site No.	Category	Location (Use map location, address, etc.)	
Description Of Damage			
Impact:		% Complete	Cost Estimate
Name Of Inspector		Agency	Phone No. Office
Phone No. Home			
FEMA Form 90-81, Jan 84			

REIMBURSEMENT PROCESS

Project Worksheets (PWs) for both large and small projects must have all special considerations reviews completed by both the State DEM and FEMA before they are obligated for funding. The Funding Agreement between state DOT and the State of Florida must also be fully executed before payments can be made.

Small Projects

All obligated Small Projects are processed automatically when funds have been obligated.

Large Projects

Large Project funds are disbursed to the applicant as costs are incurred. The state DOT submits a Request for Reimbursement (RFR) through the Florida FEMA PA Website. The RFR needs to be accompanied with specific documentation such as copies of original invoices, cancelled checks (front and back), purchase orders, paid bills, bank statements, time and attendance records, reports from the applicant's payroll and accounting systems which shows that costs are allowable and reasonable. The state DOT may upload the required documentation in order to expedite the process.

Large Project Close-outs

Once the project has been completed, for the final reimbursement, a Request for Reimbursement and close-out version of the PW must be processed for any overrun.

Advanced Payments

The State of Florida Public Assistance Program allows applicants to request Advance Funding Payment (AFP) through the Florida FEMA PA website. According to Florida statute, applicants may receive only one AFP per funding agreement and the amount requested should not exceed the cash needed for the initial three (3) months of the work. The amount requested should be based on multiple PWs. (Florida Statute 216.181 (16) (b)).

APPEALS GUIDELINES FOR ADVERSE DECISIONS BY FEMA

The appeals process provides an opportunity for an applicant to request reconsideration of adverse decisions regarding the eligibility of FEMA Public Assistance Grants. The state DOT initiates an appeal through the Florida FEMA PA website and then mails an original signed letter and supporting documentation to Florida DEM.

First Appeal

Within 60 days of the receipt of a FEMA determination, the state DOT needs to send justification, disaster number, PW number, amount, and any applicable provisions in federal law, regulation or policy, along with any information requested by Florida DEM. The information should be received by the

Florida DEM so that they can meet the 60-day deadline to forward the information to the FEMA Regional Director.

Once the first appeal has been received, the Florida DEM assigns the appeal to a Planning Specialist who reviews and evaluates it, and may ask for additional information. The Florida DEM will forward it within 60 days to the FEMA Regional Director. The FEMA Regional Director reviews the first appeal within 90 days of receipt. The FEMA Regional Director will decide on the appeal and take appropriate action, or, request additional information from the state DOT. The state DOT will have 60 days to respond upon receiving the request. Once the information has been received, the FEMA Regional Director will render a decision within 90 days.

Second Appeal

The state DOT has the option of submitting a second appeal through the Florida DEM within 60 days of receiving the denial letter. The Florida DEM will forward the second appeal with a recommendation to the FEMA Regional Director within 60 days of receipt. The FEMA Regional Director will review the second appeal and will make a decision or request additional information. The second appeal with the FEMA Regional Director's recommendation will be forwarded to the FEMA Executive Associate Director within 30 days. The FEMA Executive Associate Director will review the second appeal and will make a decision within 90 days of the receipt of the second appeal, the receipt of additional information, or the expiration of the period for providing information.

GUIDELINES FOR TIME EXTENSION

The Florida DEM can grant extensions for the performance period of PWs for emergency and permanent work. Requests are processed through the FloridaPA web portal (www.floridapa.org) and should include identification of the project by PW number, the dates and provisions of any previous extensions, a detailed justification, and a projected completion date. The justification should be based on extenuating circumstances or unusual project requirements beyond the control of the state DOT and the projected/actual milestones for the project. If the state DOT's request is beyond the Florida DEM's authority, the Florida DEM will submit the request to the FEMA Regional Administrator.

GUIDELINES FOR QUARTERLY REPORTS FOR LARGE PROJECTS

Quarterly Reporting is required for state DOTs for all large projects to comply with the State Funding Agreement, regulatory guidance (CFR Title 44), and to allow the Florida DEM to provide progress reports to FEMA's Regional Administrator (Region IV).

The progress report should include the following:

- The status of the project, such as "in design" or "percentage of "construction completed."
- Time extensions granted, if any.
- A projected completion date.

- The amount of expenditures and amount of payment for each project.
- Any problems or circumstances that could delay the project or result in noncompliance with the conditions of the FEMA approval.

Quarterly reports must be submitted through the FloridaPA Web Portal which alerts the state DOT shortly before a quarterly report is due. Once a final payment is made, the project will be eliminated from the report. Since the Florida DEM uses the reports to keep track of its budget authority, the reports also ask for expected expenditures.

Iowa DOT Case Study

Iowa is mainly rural with a large agricultural industry. Two interstates cross the state of Iowa: Interstate 80 travels east-west and Interstate 35 travels north-south. The Iowa Emergency Response Plan identified the following as natural hazards faced by the state: hydrologic hazards such as river flooding and flash flooding; atmospheric hazards such as tornadoes and severe winter storms; extreme heat and drought; geologic hazards such as landslides; and agricultural and pandemic diseases. Technological hazards include hazmat releases, nuclear/radiological incidents, critical infrastructure failures, fires, attacks, transportation incidents, and civil hazards. Of Iowa's 19 Presidential Disaster Declarations between October 1, 2007 and September 1, 2014, 18 involved severe storms and one was solely flooding. Of the 18, 11 also involved flooding, eight involved tornadoes, and four were winter storms.

Iowa DOT has six (6) districts and, as of August 1, 2013, a total of 2,522 employees. Their major hazards related to transportation infrastructure are winter weather events and flooding. Iowa has experienced an increasing number of disasters, and Iowa DOT has participated in 14 FEMA Public Assistance eligible disasters and seven (7) FHWA ER eligible disasters. In the period April 9 through July 2, 2013 alone, Iowa has had four (4) Presidential Major Disaster Declarations:

[Iowa Severe Storms, Tornadoes, and Flooding](#)

June 21, 2013 to June 28, 2013

Major Disaster Declaration declared on July 31, 2013

[Iowa Severe Storms, Tornadoes, and Flooding](#)

May 19, 2013 to June 14, 2013

Major Disaster Declaration declared on July 2, 2013

[Iowa Severe Storms, Straight-line Winds, and Flooding](#)

April 17, 2013 to April 30, 2013

Major Disaster Declaration declared on May 31, 2013

[Iowa Severe Winter Storm](#)

April 9, 2013 to April 11, 2013

Major Disaster Declaration declared on May 6, 2013

Iowa DOT typically applies for reimbursement through FHWA's FHWA ER Program because all roadways maintained by Iowa DOT are Federal-aid routes. However, in certain cases, Iowa DOT also applies for reimbursement through the FEMA PA Program when seeking reimbursement for recovery assistance to counties and cities, such as debris removal.

All Iowa DOT's roadways are Federal-aid routes and are therefore eligible for FHWA ER funding. However this is not the case for Local Public Agencies (LPAs.) When working with the local county and city officials, Iowa DOT recommends that the roadway classification be consulted before deciding

whether to request reimbursement from FEMA or FHWA. All urban roadways classified as collector and all rural roadways classified as major collector or above are eligible for FHWA ER funding. These roadways may or may not be considered eligible for emergency work (primarily debris removal) reimbursement by FEMA. Iowa DOT contracts out most emergency work for its roadways and bridges.

ROLES AND RESPONSIBILITIES

Iowa DOT is the lead for Transportation (ESF-1). Its ESF-1 responsibilities are as follows:

- “1.2.1. Restoring and maintaining the primary road systems needed for the support of response activities during and immediately following an emergency or disaster.
- 1.2.2. Restoring and maintaining other public transportation systems needed for the support of response activities during and immediately following an emergency or disaster.
- 1.2.3. When necessary, assisting with the restoration and maintenance of non-public transportation systems, such as railroad and aviation, needed for the support of response activities during and immediately following an emergency or disaster.
- 1.2.4. Coordinating requests for transportation system repair and restoration assistance from local emergency response organizations, local governments, and state agencies.
- 1.2.5. Whenever practical, meeting the minimum transportation needs of the general public in emergency/disaster affected areas.
- 1.2.6. Gathering data for emergency response and for general public use about the effects of an emergency/disaster on transportation systems and associated infrastructure.
- 1.2.7. Tracking transportation system restoration activities on a statewide basis.
- 1.2.8. Restricting the use of transportation systems and associated infrastructure by the general public to facilitate emergency response activities and/or address public safety concerns.”

(Iowa Emergency Response Plan, 2010)

Iowa DOT is the co-lead for Public Works and Engineering (ESF-3). ESF-3 is organized into subfunctions as shown in TABLE D - 3. Iowa DOT is the subfunction lead for Debris Removal, and co-lead for Engineering and Technical Services. Iowa DOT and the Iowa Department of Public Safety are the co-leads for evacuation.

Iowa’s Emergency Response Plan requires Iowa DOT to be prepared to deploy resources and provide requested personnel to staff the Emergency Operations Center, and provide requested equipment such as loaders, boom trucks, heavy-duty trucks, chain saws, and changeable message signs if there is a Governor’s Proclamation of Disaster Emergency. In addition, Iowa considers public works agencies to be first responders and therefore have an important role in emergency management.

Iowa DOT has designated reimbursement coordinators for both the FHWA ER and FEMA PA programs within its Central Office as well as in its district offices. Iowa DOT has a Stewardship Agreement with the FHWA to administer the FHWA ER Program. Usually a DDIR is completed by the Iowa DOT district office

or an LPA and then reviewed by the Central Office. Iowa DOT's accounting office conducts internal audits prior to submission of the FHWA ER and FEMA PA documentation. Iowa DOT assists LPAs in completing the DDIRs. Iowa DOT's accounting office has a uniform invoice system for counties, and uses a statewide integrated financial, HR, and payroll system to track costs and provide documentation. The Contracts office lets LPA permanent FHWA ER projects and Iowa DOT's accounting office tracks project billings. Access to FHWA's FMIS helps Iowa DOT's accounting office and FHWA ER coordinator track the status of FHWA ER projects.

After Action Reports are used by Iowa DOT to improve its disaster preparedness, response and reimbursement processes.

TABLE D- 3: Sub-functions of ESF-3 in the Iowa Emergency Response Plan.

Sub-function	Category
Disaster Assessment	Iowa Homeland Security and Emergency Management
Debris Removal	Iowa Department of Transportation
Engineering and Technical Services	Iowa Department of Transportation Iowa Department of Commerce - Utilities Division Iowa Department of Natural Resources
Water and Waste Water Treatment	Iowa Department of Natural Resources
Air Quality and Solid Waste Disposal	Iowa Department of Natural Resources
Food Safety	Iowa Department of Inspection and Appeals

ELECTRONIC DDIR

Because of the increase in cost reimbursement opportunities the department began identifying better methods of tracking costs and processing necessary paper work for both the FHWA ER Program and FEMA PA program.

In 2008, extensive flooding affected 87 of 99 counties and a large portion of Iowa DOT's transportation infrastructure. For this flood event, hundreds of DDIRs were submitted by Iowa DOT to the FHWA on behalf of Iowa DOT, Counties, Cities, Department of Natural Resources and Rail Road systems for damage on Federal-aid routes. Three hundred twenty six (326) FHWA ER projects were approved. The project tracking and storage process was done manually. Each project required a DDIR with a map and attachments be submitted. At the time there was not a DDIR form available that allowed the user to electronically fill out and save information onto the form; therefore the user had to type, print and scan the document or complete the DDIR by hand, scan and email. Iowa DOT found that DDIRs were submitted with errors or incomplete information creating additional work on part of the central office. The Iowa DOT also realized that DDIR report numbers were not consistent statewide, and some were

being duplicated. Only about 15 DDIRs could be processed in one day. Email size restrictions also made it difficult to deliver a large number of DDIRs.

Other issues included the following:

- The form did not have enough lines to list all damage and multiple forms were needed for each site.
- Maps were not always included or were not usable,
- Changes to the original form could not easily be made,
- Needed attachments were sent on separate email due to email size restrictions,
- The form did not have a location to make additional notes.
- The form did not automatically sum costs.
- The communication process was not sufficient,
- DDIRs were sometimes misplaced in hundreds of emails, and
- Offices (such as design and environmental) did not receive the DDIR in a timely manner.

Based on the issues that were identified, an After Action Report recommended the created of an electronic form. Iowa DOT developed a concept for a more user-friendly electronic system to submit, track and store the DDIR. The form took about 1.5 years to complete at a cost of about \$85,000-\$100,000. The following steps were required for the creation of the form:

1. Internal Programmers created databases.
2. An internal records management system had to be created.
3. A vendor developed the form itself. (Firewall issues made internal development difficult.)

The new system included a website from which any authorized user is able to access the form, and a mapping system that automatically creates a map with Lat/Long or County/Route/Milepost. Revisions were done to add in PE and Construction Engineering costs.

Additional cost items can easily be added to the form by using the new “+” button, and subtotals are performed automatically. Note that, in the past, because the form was limited to several line items additional forms were needed on occasion to complete the DDIR. Additional forms required all of the information on the original form to be duplicated. If required items are left blank, an automated warning is provided to the user, and the user would need to complete the items before he or she may proceed with the form.

All signatures required for the DDIR form are electronic. FHWA signatures are protected from unauthorized changes through the use of a security code. The system sends automatic notifications to all relevant offices (i.e., Accounting, Central Office). The system processes the DDIR from the start throughout the approval process. It also includes a re-submittal process for any rejected DDIR and a revision process for all DDIR needing updates after approval. A central database linked with all other

systems and databases is used to store and track all information from the start to the close of a project. The DDIR is automatically stored in the records management system for long-term storage and is available to all authorized users.

The form was developed using the original format of the DDIR form provided by FHWA. Photos, plans, and sketches can easily be attached to the form. Photos are clearly marked with location information – some cameras have a GPS stamp so that this step is automatic. The form transforms all attachments into a PDF file automatically. It is expandable to include additional line items for emergency and permanent work as needed. The form was developed by an outside contractor and connected into a database developed by the highway division IT staff, the Highway Division GIS programmers developed the mapping system that was used in the form and the Electronic Records Management staff provided a storage location for long term storage.

The DDIR system was used for the first time for the 2011 flooding. The system greatly decreased the number of hours needed to develop, process and approve the DDIR, and increased the communication process with offices allowing for projects to be started sooner to insure 100% reimbursement of costs when possible. The DDIR forms may now be completed in the field using laptops; in the future, they may also be used on tablets and smart phones. The electronic DDIR has reduced the time expended to produce a DDIR by 90%. For example, completing 15 DDIRs would have taken several hours; it now takes only about 15 minutes.

A sample of the electronic DDIR is appended to the end of this case study (see FIGURE D - 2 to FIGURE D - 9).

While this product is not available on the market, Iowa DOT is willing to share additional details of the product with other state DOTs.

DDIR Report Numbers

In order to insure unique DDIR report numbers the program assigns the report numbers using the following system:

Primary route projects = Disaster number-County Number-Route-Beginning Milepost

Example IA-13-02-35-29-25.3

County projects = Disaster number-County Number (2 digit)-Project Sequence for event

Example IA-13-02-35-1

City projects = Disaster number-City (4 digit) Number-Project Sequence for event

DNR projects = Disaster number-DNR-County number -Project Sequence for event

Resource Management System (RMS)

During a disaster the maintenance garages track labor, equipment, materials and expenses using project numbers along with functions. They also track location of work on and off of the highway system using the RMS system. A module for FHWA ER program and FEMA PA program was created within the system. Each module uses the appropriate schedules and rates for the respective program. These modules enable Iowa DOT accounting staff to identify costs and associate them to specific PWs or DDIRs within the system. The information can be exported from RMS into an excel worksheet in the format needed for the FEMA PA or the FHWA ER program. It prevents billing duplications and has decreased audit issues, both at a state and federal level. The amount of administration staff needed to identify costs and create reports has decreased by more than half. Also small disasters with only small recoverable costs were previously not billed because the amount of the administration hours needed to the identify disaster costs outweighed the benefit of recovering the small damage costs. However, this system has allowed Iowa DOT the ability to identify and process billings for small disasters in just a few hours for the FEMA PA program. The system allows the Iowa DOT to recover more disaster costs in a more efficient and timely manner. Additional information about this system can be provided to other state DOTs if needed.

SITE ASSESSMENT

In order to facilitate site assessments, information packets are distributed to assessment teams. Also, a weather information system and bridge, highway, and pavement management systems as well as a bridge monitoring system are employed to facilitate the assessment process. Historical data are mapped to show repetitive losses – this has been useful in justifying betterments and the inclusion of mitigation measures. Geospatial data using LiDAR are also useful in identifying damages and the cause of damaged infrastructure.

RELATIONSHIP WITH FEMA AND FHWA

The Iowa DOT has had an excellent relationship with its FHWA Division Office and has developed a strong working relationship with the state EMA (Iowa Homeland Security Emergency Management Department HSEMD). This has allowed Iowa DOT to partner with both agencies during disaster response and recovery. The central office also provides information to HSEMD and FEMA regarding FHWA ER eligibility when needed, helping resolve questions and eligibility issues quickly.

TRAINING

Iowa DOT provides disaster assessment training and training on the FHWA ER and FEMA PA programs to its personnel and to LPAs. Scenarios from previous disasters are used to enhance this training.

Iowa DOT and FHWA provide training to Iowa state EMA (HSEMD) employees annually to discuss the FHWA ER program and FEMA programs. This training allows HSEMD employees the ability to direct counties and cities to submit eligible projects to the appropriate program. The Iowa DOT also has

employees trained to work on HSEMD's disaster assessment teams and as project officers or project coordinators; during disasters and emergencies, these employees can be deployed to HSEMD.

LPAs

Iowa DOT assists local counties and cities during disasters by recommending which agency (FEMA or FHWA) to submit to, attends kickoff meetings, and by helping them complete DDIRs in a timely fashion. Iowa DOT provides Just-in-Time Training in reimbursement procedures to LPAs once a disaster occurs.

An annual training on the FHWA ER Program is held by Iowa DOT and FHWA at district offices. Iowa DOT representatives also attend county engineers meetings and workshops to inform them about the programs.

CONTRACTING

Iowa DOT contracts out most of its emergency work. Emergency waivers are used to facilitate the work. Iowa DOT has no contracting issues because its contracting office follows all rules and regulations.

APPEALS

Most DDIR submissions are approved by the FHWA. However, when a submission is rejected, Iowa DOT addresses FHWA's concerns through discussions with the Division Office. Informal discussions often resolve the issues making a formal appeal unnecessary.

One of Iowa DOT's applications for reimbursement was rejected by FHWA because it did not meet their \$700,000 threshold. Once Iowa DOT reviewed its expenses and identified additional costs, Iowa DOT resubmitted the request; upon review by FHWA, the application was ultimately approved.

TECHNOLOGIES USEFUL TO IOWA DOT FOR FHWA AND FEMA PROCESSES

Iowa DOT's Weatherview Website

Iowa DOT's "Weatherview" website provides real-time road weather information to the public. The current site, developed in 2009, has been updated to accommodate road cameras, traffic flow information, and email and mobile-text alerts triggered by certain weather events. A screenshot of the system is shown in FIGURE D - 1.

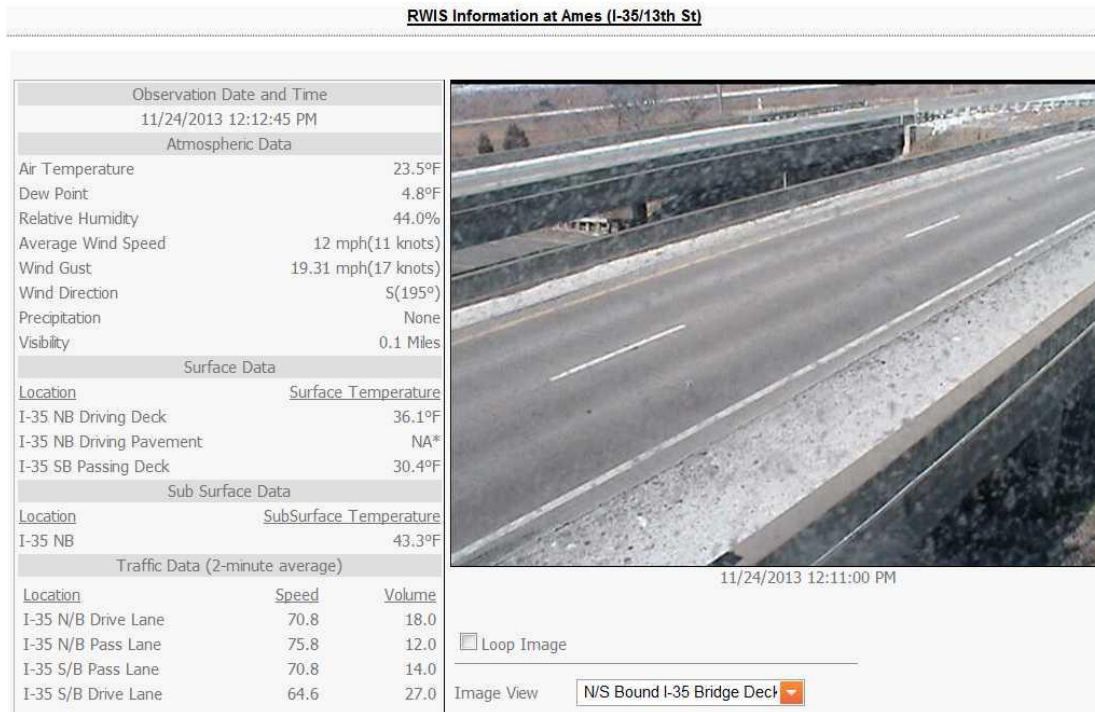


FIGURE D - 1: Figure Screenshot of the Iowa DOT Road Weather Information System.

Source: Iowa DOT WeatherView (<http://weatherview.iowadot.gov/>).

The Weatherview system integrates several elements including a map displaying weather information from Road Weather Information System (RWIS) stations and from Automated Weather Observation Systems (AWOS) – the map uses Google Maps software. The weather information includes air temperature, road and bridge temperatures, wind speed and direction, wind gusts, dew point, and visibility. The system assists disaster assessment teams in determining whether it is safe to perform an assessment at a particular site. Additional features of the system include the following:

- Site-specific forecasts and historical weather information
- Camera image gallery
- Rural traffic speed information
- Accessible to authorized personnel are:
 - Real-time plow truck locations and plow/spreader information from GPS and Automated Vehicle Location (AVL) data
 - Work status of winter maintenance crews
- The map accesses Iowa DOT GPS and crew status map layers from Iowa DOT's Geographic Information System (GIS) map services system.

This information allows Iowa DOT to determine the daily equipment and labor usage during storms. Also, the information provided by Weatherview keeps disaster assessment teams and repair crews notified of current and potential dangerous weather conditions. Google mapping and camera images

(new additions to the site) were found to have high bandwidth and required additional server capacity. Also, the added functions are requiring more IT support.

Asset Tracking

Plow truck locations are tracked using Global Positioning Satellites (GPS) and reported to Iowa DOT personnel. This information is useful in tracking equipment and labor usage during disasters. (*Best Practices for Road Weather Management, Version 3.0, 2012*)

Sample Electronic DDIR for Iowa DOT

The figures from FIGURE D - 2 to FIGURE D - 5 show screenshots from a sample Iowa DOT electronic DDIR.


 U.S. Department of Transportation Federal Highway Administration	DETAILED DAMAGE INSPECTION REPORT (Title 23, Federal-aid Highways)	Report Number IA-11-01-78-29-82.0
		Sheet of
Location (Name of Road and Milepost) Interstate 29/Segment 14/Mile Post 62 to Mile Post 66.4		FHWA Disaster Number IA-11-01
		Inspection Date 09/13/2011
Description of Damage Paint markings, HMA Shoulder erosion/delamination/Culvert joint separation/Fencing damaged, Seeding		Federal-aid Route Number I 29 N
		State County IA POTTAWATTAMI

FIGURE D - 2: Screenshot of the Iowa DOT Electronic DDIR. Courtesy: Iowa DOT.

Cost Estimate								
	Description of Work to Date (Equipment, Labor, and Materials)	Unit	Unit Price	Quantity	Cost		+	
					Completed	Remaining		
Emergency Repair	Painted Pavement Markings, Waterborn or Solvent-	Station	\$40.00	1,208	\$48,320.00	\$0.00	X	
	Painting changed to local forces work completed						X	
	Method	<input checked="" type="checkbox"/> Local Forces <input type="checkbox"/> State Forces <input type="checkbox"/> Contract			Subtotal	\$48,320.00	\$0.00	
					PE/CE			
					Emergency Repair Total	\$48,320.00		
Permanent Restoration	2" Mill and Overlay, HMA	Sq Yard	\$12.00	25,285		\$303,420.00	X	
	Milled Shoulder Rumble Strips, HMA Surface	Station	\$12.00	284		\$3,408.00	X	
	Excavation, Class 10, Waste	Cubic Yd	\$15.00	76		\$1,140.00	X	
	Subdrain Outlet, RF-19E	Each	\$170.00	29		\$4,930.00	X	
	Granular Shoulders, Fillet	Ton	\$16.00	1,167		\$18,672.00	X	
	6" Granular Subbase	Sq Yard	\$6.00	8		\$48.00	X	
	Paved Shoulder, Hot Mix Asphalt, 8"	Sq Yard	\$36.00	8		\$288.00	X	
	Embankment in Place	Cubic Yd	\$11.00	2,364		\$26,004.00	X	
	Flowable Mortar	Cubic Yd	\$110.00	5		\$550.00	X	
	Delineator, Rigid - Type 1A	Each	\$50.00	7		\$350.00	X	
	R&R Conc Pipe Apron Less Than or Equal to 36 In	Each	\$600.00	27		\$16,200.00	X	
	R&R Conc Pipe Apron Greater Than 36 In	Each	\$700.00	1		\$700.00	X	
	R&R Conc Pipe Culvert Less Than or Equal to 36 In	Linr Ft	\$55.00	216		\$11,880.00	X	
	R&R Conc Pipe Culvert Greater Than 36 In	Linr Ft	\$105.00	8		\$840.00	X	
	Reshaping Ditches	Station	\$400.00	690		\$276,000.00	X	
	Removal of Flood Debris	Ton	\$75.00	50		\$3,750.00	X	
	Fencing	Lump Sum	\$377,800.00	1		\$377,800.00	X	
	Seeding	Lump Sum	\$136,310.00	1		\$136,310.00	X	
	Method	<input type="checkbox"/> Local Forces <input type="checkbox"/> State Forces <input checked="" type="checkbox"/> Contract			Subtotal	\$1,182,290.00		
						PE/CE	\$177,343.50	
					Right-of-Way			

Form FHWA-1547 (Rev. 4-98)

FIGURE D - 3: (cont.) Screenshot of the Iowa DOT Electronic DDIR. *Courtesy: Iowa DOT.*

		Permanent Repair Total	\$1,359,633.50
Environmental Assessment Recommendation			\$1,407,953.50
<input checked="" type="checkbox"/> Categorical Exclusion <input type="checkbox"/> EA/EIS		Estimated Total	
Recommendation: <input checked="" type="checkbox"/> Eligible <input type="checkbox"/> Ineligible		FHWA Engineer <i>Thomas Parham</i>	Date 09/28/2011
Concurrence: <input type="checkbox"/> Yes <input type="checkbox"/> No		State Engineer	Date
Concurrence: <input type="checkbox"/> Yes <input type="checkbox"/> No		Local Agency Representative	Date
Reject Message			

FIGURE D - 4: (cont.) Screenshot of the Iowa DOT Electronic DDIR. Courtesy: Iowa DOT.

Internal Offices Distribution List			
<input type="checkbox"/> District 1	District Project Contact		
	Contact Phone		
<input type="checkbox"/> District 2	Contact Phone		
	District Project Contact		
<input type="checkbox"/> District 3	Contact Phone		
	District Project Contact		
<input checked="" type="checkbox"/> District 4	District Project Contact Don Stevens		
	Contact Phone		
<input type="checkbox"/> District 5	District Project Contact		
	Contact Phone		
<input type="checkbox"/> District 6	District Project Contact		
	Contact Phone		
<input type="checkbox"/> Bridge Project	Maintenance #		
	FHWA #		
<input type="checkbox"/> Soils Project			
<input type="checkbox"/> ROW needs			
<input checked="" type="checkbox"/> Environmental			
<input checked="" type="checkbox"/> Accounting			
<input checked="" type="checkbox"/> Contracts			
Primary Project Report			
County	Roadway ID	Route Type	
POTTAWATTAMIE	Ditch	INTERSTATE, US, STATE SIGNED	
Route	Beginning Milepost	Ending Milepost	FHWA Bridge Number
I 29 N	62	66	4
Location Description			
Interstate 29/Segment 14/Mile Post 62 to Mile Post 66.4			
Damage Description			
Paint markings, HMA Shoulder erosion/delamination/Culvert joint separation/Fencing damaged, Seeding			
Secondary Project Report			
DDIR Type	County	Roadway ID	Route Type
	POTTAWATTAMIE	Ditch	INTERSTATE, US, STATE SIGNED
Geographic Extent		Route	Latitude
		I 29 N	
Latitude in Degree	Min	Sec	Longitude in Degree
			Min
			Sec
Location Description			
Interstate 29/Segment 14/Mile Post 62 to Mile Post 66.4			
Damage Description			
Paint markings, HMA Shoulder erosion/delamination/Culvert joint separation/Fencing damaged, Seeding			

FIGURE D - 5: (cont.) Screenshot of the Iowa DOT Electronic DDIR. *Courtesy: Iowa DOT.*

FIGURE D - 6 shows some of the DDIR cost estimate details submitted to FHWA by Iowa DOT for the 2011 flooding. These detailed statements were attached to the submission as a PDF file.

Segment 14

Mile Post 62 to Mile Post 66.4

IDOT Flood Recovery

HGM Associates Inc.

9/22/2011

Segment/Site: 14
Date: 09/22/11

Completed By: ZMW
Checked By: _____

Roadway

Items	Lane	Start Station	End Station	Quantity	Unit	Average Price
Painted Pavement Markings, Waterborn or Solvent-Based	SB	364+00	593+26	516	STA	40
	NB	364+00	593+26	516	STA	40
<hr/>						
Paint	SB	364+00	593+26	4" Pavement Marking		51,584 LF
	NB	364+00	593+26	4" Pavement Marking		51,584 LF

Segment/Site: 14
Date: 09/22/11

Completed By: ZMW
Checked By: _____

Shoulder

Items	Lane	Start Station	End Station	Quantity	Unit	Average Price
2" Mill and Overlay, HMA	Left Shoulders					
	SB	375+00	480+00	9,350	SY	12
	Right Shoulders					
	NB	367+00	375+00	715	SY	12
Milled Shoulder Rumble Strips, HMA Surface	NB	387+00	555+00	14,950	SY	12
	NB	589+00	592+00	270	SY	12
	Left Shoulders				STA	12
	SB	375+00	480+00	105	STA	12
	Right Shoulders					
	NB	367+00	375+00	8	STA	12
Excavation, Class 10, Waste Subdrain Outlet, RF-19E (Lt. Shldr.)	NB	387+00	555+00	168	STA	12
	NB	589+00	592+00	3	STA	12
	NB/SB (All buried subdrains)			26	CY	15
	See Excel Spreadsheet			29	EACH	170

FIGURE D - 6: DDIR cost estimate details for the Iowa 2011 flooding. Courtesy: Iowa DOT.

The following photos (from FIGURE D - 7 to FIGURE D - 9) show both damage as well as the general condition of Iowa's roadways. They were attached to the DDIR form in a PDF as part of the submission to FHWA.



FIGURE D - 7: General Condition of Ditches. *Courtesy: Iowa DOT.*



FIGURE D - 8: Culvert with Joint Separation. *Courtesy: Iowa DOT.*



FIGURE D - 9: General Road Condition. Courtesy: Iowa DOT.

REFERENCES

Best Practices for Road Weather Management, Version 3.0, Report No. FHWA-HOP-12-046, Federal Highway Administration (FHWA), US Department of Transportation, Washington, DC, June 2012, [Online]. Available: http://www.ops.fhwa.dot.gov/weather/mitigating_impacts/best_practices.htm

Iowa Emergency Response Plan: Basic Plan PLUS 15 Emergency Support Functions (ESFs), Special Needs Support Annex, Iowa Homeland Security and Emergency Management Division (HSEMD), Johnston, IA, Oct. 2010.

Missouri DOT (MoDOT) Case Study

Missouri is the 18th most populous state and is 21st in terms of size at 69,704 sq. miles. Missouri experiences winter storms, tornadoes, and flooding. Missouri has a large system of minor roads in various counties. They are not Federal-aid roads so damages to these roads would be reimbursed through FEMA. Missouri DOT (MoDOT) has 5,100 employees across seven offices, two of which are urban and five are rural. Missouri has had 15 Presidential Disaster Declarations from October 1, 2007 to September 1, 2014. Of these, 14 involved severe storms and one was solely flooding. Ten of the 14 also involved flooding, seven involved tornadoes, and three were severe winter storms.

MoDOT's experiences with two disasters, the DR-4130 that occurred May 29-June 10, 2013 and the 2011 major flooding disaster, are included in this case study.

ROLES AND RESPONSIBILITIES

With respect to the FHWA ER Program, MoDOT and FHWA Missouri Division Office have a Partnering Agreement in which the MoDOT takes on the administrator role on behalf of FHWA. With regards to the FEMA PA Program, Missouri State Emergency Management Agency (SEMA) provides full oversight of FEMA PA reimbursements.

For a typical disaster the Governor of Missouri issues a state of emergency. SEMA will ask potential FEMA PA applicants including MoDOT for initial damage estimates. MoDOT central office then requests the districts provide initial damage estimates. This information is sent to SEMA which compiles all estimates received to determine which counties are eligible for FEMA assistance. SEMA then asks the governor to request a presidential disaster declaration for the affected counties.

MoDOT's FHWA ER and FEMA PA program coordinators act as liaisons with FHWA and FEMA regarding the FHWA ER and FEMA PA programs. They handle all issues relating to preparedness, response and recovery including development of response plans, situational awareness and resource needs during actual events, FHWA ER and FEMA PA program reimbursements, coordination during disaster exercises, and other matters. While PDAs are generally performed by Missouri SEMA, MoDOT develops all Project Worksheets and then submits them to the SEMA.

MoDOT Financial Services Division works with FEMA and FHWA on the transfer of funds. For repair projects that are bid through the MoDOT design bid letting process, MoDOT's Design and Construction and Materials Divisions will provide appropriate documentation on these projects. For example, following the 2011 Missouri River flooding, very large projects in excess of \$1 million each were bid and managed through this process.

In terms of their emergency organization, MoDOT follows the NIMS/ICS organization (the ICS 207 form) and integrates itself into the state NIMS/ICS organization as requested by SEMA. MoDOT has a process in place with Emergency Operations Centers (EOCs) at all seven Districts and at Central office that are

activated when needed. MoDOT also provides liaison staff to the SEMA State EOC when they are activated. MoDOT has a number of Contractor Databases that is used for emergency contracting. The databases range from heavy contractors to local material suppliers and help in expediting the contracting process.

Missouri Severe Storms, Straight-line Winds, Tornadoes, and Flooding (DR-4130)

Incident period: May 29, 2013 to June 10, 2013

Major Disaster Declaration declared on July 18, 2013

Missouri experienced severe storms, straight-line winds, tornadoes and flooding that lasted from May 29 to June 10, 2013. The Governor declared a state of emergency on May 31, 2013 and requested federal assistance. On July 18, 2013, the President approved a request from Missouri's Governor for a major disaster declaration for 27 counties.

Missouri Flooding (DR-4012)

Incident period: June 1, 2011 to August 1, 2011

Major Disaster Declaration declared on August 12, 2011

In 2011 from mid-June through Thanksgiving, Missouri experienced flooding in the northwestern part of the state. Snow pack in the Missouri river basin contributed to it, and the water level in the basin peaked in July, 2011 at record levels and remained high for four to five months. The disaster caused very large holes in the roadways; one of them was 60 feet deep and several hundred feet long. A broken levee worsened the damages to MoDOT's roadways which occurred in mostly rural areas of the state. A presidential declaration was issued on August 12, 2011.

The majority of the reimbursements were through the FHWA ER program. Ten (10) - fifteen (15) sites participated in the program, and MoDOT was reimbursed for a total of \$16 million for roadways and bridge repairs. FHWA ER: MoDOT asked for \$6-8 million up front for emergency repairs under the Quick Release process and received it within weeks of the request.

The 180-day period was too short for 100% reimbursement since the flooding lasted for a much longer period. An extension was requested and once it was approved, the remaining amount due to MoDOT was received from FHWA in January, 2013. Since MoDOT was not able to fund the initial amount needed for emergency repairs, it used STIP funds until it was reimbursed by FHWA. (Note that this period is now more flexible due to MAP-21 changes.)

FEMA PA: Only four (4) Project Worksheets requesting a total of \$25,000 were submitted to FEMA for this disaster.

FEMA-4130-DR, Missouri Disaster Declaration as of 08/05/2013

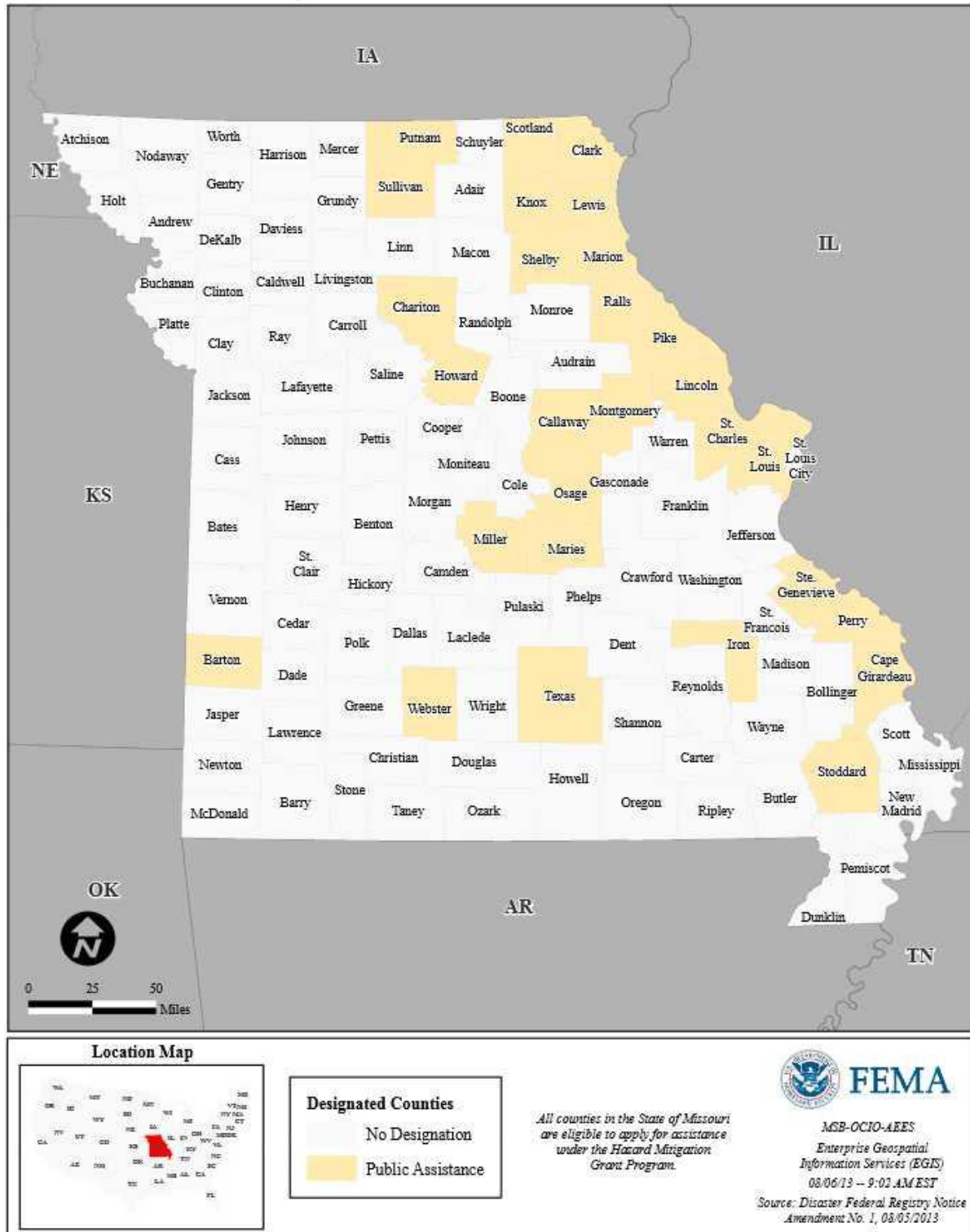


FIGURE D - 10: Map of Designated Missouri Counties for Declaration DR-4130.
 Source: "Missouri Severe Storms, Straight-line Winds, Tornadoes, and Flooding (DR-4130)," 2013.

FEMA-4012-DR, Missouri Disaster Declaration as of 09/23/2011

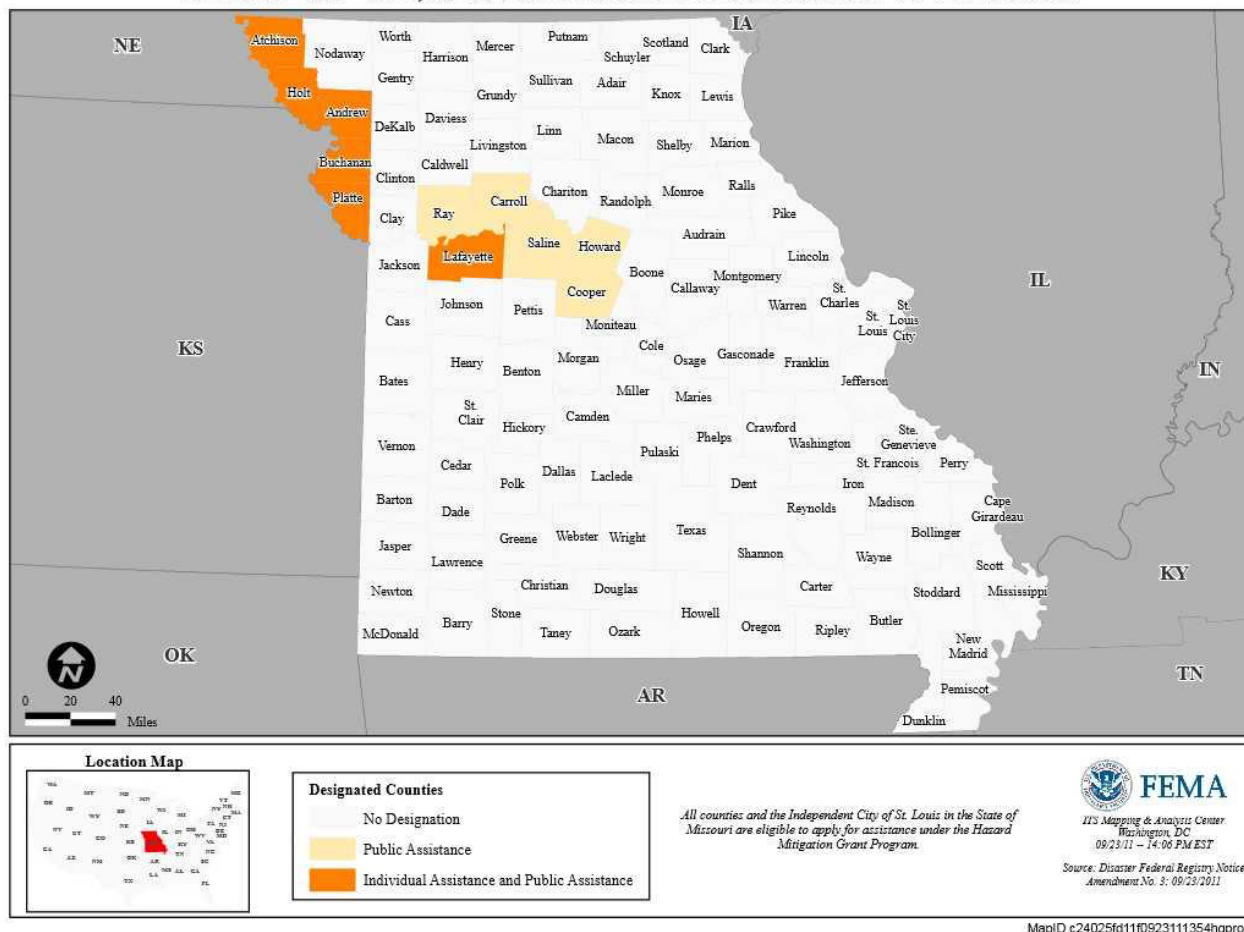


FIGURE D - 11: Map of Designated Missouri Counties for Declaration DR-4012.
 Source: "Missouri Flooding (DR-4012)," 2011.

FHWA EMERGENCY RELIEF PROGRAM

In general, MoDOT has an excellent working relationship with FHWA since they work together on various issues on a daily basis. When a disaster strikes, MoDOT and FHWA representatives perform site inspections together. Larger disasters have tended to receive priority attention from FHWA and have had fast turnaround times. Because FHWA needs to deduct the insurance payment from the reimbursement amount the reimbursement time may be lengthened. For instance when a major bridge was hit by a tanker truck, the reimbursement time was longer due to the wait for the receipt of the insurance payment.

Differentiating emergency from permanent repair was difficult for some sites.

For emergency repairs, FHWA’s share of eligible reimbursement amounts is 100%. For permanent repair, FHWA’s share of eligible reimbursement amounts is 90% for interstates, 80% for non-interstates.

FEMA PUBLIC ASSISTANCE PROGRAM

Overall, MoDOT has a good working relationship with FEMA's Region 7 office. FEMA's share of eligible reimbursement amounts is typically 75%. The relationship MoDOT experiences with its State EMA is also important because its FEMA application and paperwork are submitted to the Missouri EMA which then reviews and forwards the paperwork to FEMA.

An eligibility issue that arose for DR-4130 involved MoDOT's repair of US Army Corps of Engineers entrance road. Even though this is not MoDOT property, MoDOT built a temporary flood wall for the Army Corps. During the flood event it failed and caused damage to USACE's entrance road. FEMA approved the repair work that MoDOT performed on behalf of the Army Corps even though the facility was not MoDOT's.

MISSOURI STATE EMERGENCY MANAGEMENT AGENCY (SEMA)

Missouri SEMA provides full oversight of FEMA PA reimbursements. Missouri SEMA requires documentation in addition to documentation requirements of FEMA for the FEMA PA program. Typically, MoDOT does not appeal FEMA decisions.

COST TRACKING

MoDOT uses SAM II, Missouri's integrated financial, HR and payroll system which incorporates accounts payable, accounts receivable, fixed asset accounting, grants and project accounting, budget preparation and budget control, purchasing, human resources and payroll processing. The system also has a Data Warehouse application to facilitate data analysis and report generation. MoDOT staff can pull the desired information by date ranges or project or activity codes. Additional information on the system is available at the following web page ("SAM II," n.d.): <http://samii.mo.gov/>.

DISASTER ASSESSMENT

The disaster assessment team is usually comprised of an engineer from MoDOT central office maintenance division, district maintenance personnel and superintendents or supervisors familiar with the site, and FHWA division office personnel.

Key areas are self-sustaining for three (3) to seven (7) days. These are earthquake sites including almost all of the Southeastern part of the state, other key earthquake response sites, District EOCs and the Central Office EOC.

MoDOT does not have a fixed number of disaster assessment teams. The number of teams required varies based on the size of the disaster. For example, the damage to MoDOT facilities from DR-4130 was in one maintenance area; therefore, only one disaster assessment team was used. Three sites, all non Federal-aid highway sites, were identified for the FEMA PA program and no sites were identified for the FHWA ER program for this disaster.

MoDOT does not have a site prioritization policy. The district and local maintenance personnel prioritize the sites based on their situational assessment and weather conditions. Generally MoDOT submits all sites that are affected by any particular event. DDIRs are completed after the disaster assessment team returns from the site; while they are urged to complete the DDIRs in an efficient manner, there are no specific deadlines for their completion.

The Civil Air Patrol services is used for joint missions with other agencies for disaster assessment and exercise purposes but funding does not come from MoDOT.

REIMBURSEMENT PROCESS

As noted earlier, SEMA requires full documentation on all costs. The total amount requested from the FEMA PA program for this disaster is \$148,881.95. Note that MoDOT does request reimbursement for its indirect costs. MoDOT Financial Services Division has access to FHWA's FMIS which facilitates project tracking and the reimbursement process.

DOCUMENTATION

Documentation is retained for at least seven (7) years. Aerial images and video are helpful for areas that are made inaccessible due to disasters. MoDOT advises their personnel to use their cell phones to take photos of disaster sites when no digital cameras are available. MoDOT in some cases are able to use aerial images taken by other agencies. MoDOT photographers also ask highway patrol for a ride on their helicopters so that they may take aerial images themselves. MoDOT may pay Civil Air Patrol for this service as well.

The Automatic Road Analyzer (ARAN) Van

Several departments within Missouri DOT use the data collected via the Automatic Road Analyzer (ARAN) van for a variety of purposes. One user, the Missouri DOT Chief Counsel's office, uses the data collected by ARAN as evidence in legal cases ("ARAN: A Diamond in the Rough – Literally," 2013). However, the ARAN van data are useful to Missouri DOT as a means of documenting pre-disaster road conditions on an annual basis.

The ARAN van traverses the entire Missouri state system, a distance of approximately 35,500 miles. Two lane roads are run in one direction, although divided pavements are run in both lane directions. The ARAN van has the following data collection features (“ARAN: A Diamond in the Rough – Literally”, 2013):

- A forward-facing video camera that encompasses approximately 120-130 degree view (Courtesy: Rick Bennett and Michael Teel, Missouri DOT)
- Three digital cameras on the front of the van that take pictures every 21.12 feet
- Two digital cameras that take pictures of the pavement at 16 frames per second
- Thirty-one (31) ultrasonic sensors that detect ruts in the road
- Gyros, accelerometers, GPS, and a Distance Measurement instrument that derive the exact position of points on the road surface

The ARAN van measures:

- IRI (International Roughness Index)
- Rut depth of pavement
- Pavement conditions (manually assessed via video)
- Chainage (location from beginning of travelway)
- Grade of roadway

The data, video, and images collected by ARAN are then made available to authorized users on the Missouri DOT network.

FIGURE D - 12 shows the pre-disaster condition of the US 136 roadway at the future location of the scour. The ARAN van had taken this picture before the 2011 flooding during its annual run over the Missouri state system. This photo is accessible to authorized Missouri DOT personnel over an internal network via the ARAN Viewer application.

FIGURE D - 13 shows the condition of the roadway at the same location immediately after the occurrence of the scour. This photo was not taken via the ARAN van, but rather via a handheld digital camera deployed as part of a damage assessment effort.

After the completion of repair work, the ARAN van returned to the same location during its annual run. FIGURE D - 14 shows the condition of the scour location after the completion of repair work.

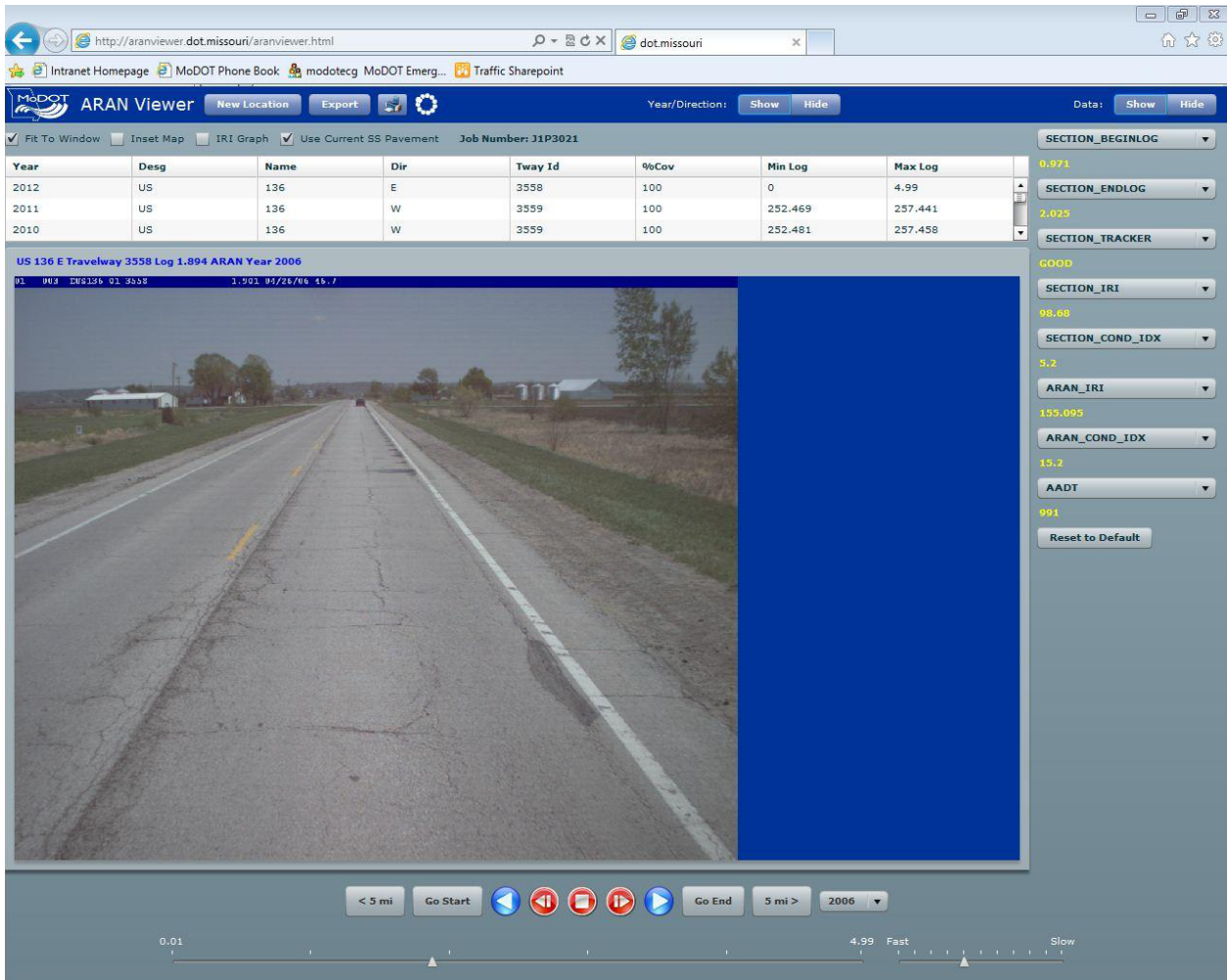


FIGURE D - 12: Scour location before occurrence of scour, screenshot of ARAN Viewer. Courtesy: Missouri DOT.



FIGURE D - 13: Scour location immediately after occurrence of scour. *Courtesy: Missouri DOT.*

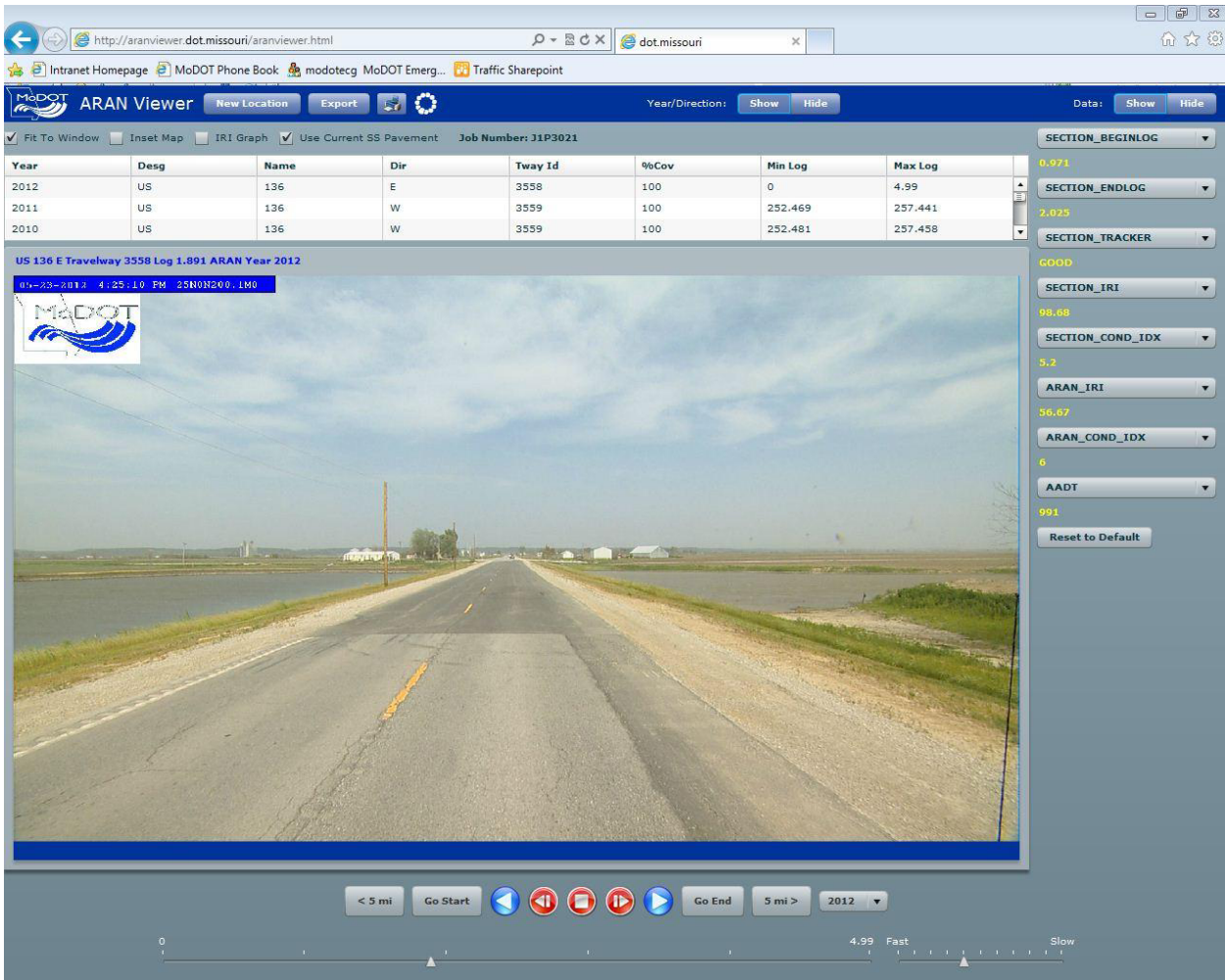


FIGURE D - 14: Scour location after completion of repair, screenshot of ARAN Viewer. Courtesy: Missouri DOT.

REFERENCES

“ARAN: A Diamond in the Rough – Literally,” Expresslane, Missouri Department of Transportation, Jefferson City, MO, no date, Copyright 2013 [Online]. Available:

<http://www.modot.org/ExpressLane/ARAN.htm>

“Missouri Flooding (DR-4012),” Federal Emergency Management Agency (FEMA), US Department of Homeland Security, Washington, DC, 2011, [Online]. Available: <http://www.fema.gov/disaster/4012>

“Missouri Severe Storms, Straight-line Winds, Tornadoes, and Flooding (DR-4130),” Federal Emergency Management Agency (FEMA), US Department of Homeland Security, Washington, DC, 2013, [Online]. Available: <http://www.fema.gov/disaster/4130>

“SAM II,” Statewide Advantage for Missouri, State of Missouri, Jefferson City, MO, no date, [Online]. Available: <http://samii.mo.gov/>

New York State DOT (NYSDOT) Case Study

The information contained in this case study has been obtained from interviews and email communications with the NYSDOT FHWA ER Coordinator and the FEMA PA Coordinator as well as from Chapter 18 (“Emergency Relief Procedures”) of the NYSDOT *Procedures for Locally Administered Federal-aid Projects Manual* (2012); the NYSDOT *Emergency Transportation Operations Strategic Plan* (2009); the NYS Disaster Preparedness Commission’s “Transportation Infrastructure Branch Annex” (2012); and the NYSDOT *Manual of Administrative Procedures*, Section 6.2-4 (2008).

New York State is the third most populous state in the U.S. with 19.5 million residents. The State contains New York City (NYC) which is the most populous city in the U.S. The primary natural hazards for New York State are flooding and heavy wet snow. Recent disasters have included Hurricane Sandy that devastated portions of New York City in October, 2012; restoration work for the hurricane is still ongoing. NYC has also been the target of terrorism: in 1993, the World Trade Center was bombed, and on September 11, 2001, the twin towers of the World Trade Center were destroyed by terrorists.

NYSDOT has 7,500 employees across 11 regions and its main office in Albany, NY. There are 16,500 centerline miles and 7,500 bridges under NYSDOT jurisdiction. The NYSDOT Emergency Transportation Operations (ETO) Program was established in 2006 to coordinate ETO activities throughout the NYSDOT. The NYSDOT *Emergency Transportation Operations Strategic Plan* (2009) notes “increasing expectations from public and partner agencies” which have been driving a demand for a “more coordinated approach” to all types of incidents.

NYSDOT recognizes that during emergencies, operations and maintenance personnel need to work together and perform routine tasks as well as supplemental tasks to address the expanded mission placed upon NYSDOT personnel due to the emergency. They include emergency repairs, setting up detours and road closures, debris removal, and transporting equipment. ICS has been used by NYSDOT since the 1990s to help coordinate response with other agencies and jurisdictions.

COST RECOVERY

The NYSDOT *Emergency Transportation Operations Strategic Plan* (2009) explicitly identifies cost recovery as one component of NYSDOT’s recovery strategy. NYSDOT adopts following four strategies during the recovery phase:

- Recover NYSDOT assets during demobilization
- Conduct AARs to evaluate performance and implement improved procedures
- *Maximize reimbursement of funds from FEMA and FHWA* (emphasis added)
- Identify and support implementation of changes to facilities and infrastructure to mitigate future adverse impacts

(Page 17, Table 5, *Emergency Transportation Operations Strategic Plan*, NYSDOT, 2009)

To support these strategies, the following performance measures are suggested:

- Number trained in reimbursement process
- Amount of outstanding reimbursements
- Percent cost vs. reimbursed/recovered

(Page 31, Table 13, *Emergency Transportation Operations Strategic Plan*, 2009)

Note: More guidance for the NYSDOT Cost Recovery Strategy is given on page 30 (of 124) of Appendix A (“ETO Strategies”) of the *Emergency Transportation Operations Strategic Plan* (2009).

FEMA PA reimbursements unit is in the NYSDOT Administrative Services division while the FHWA ER reimbursements unit along with emergency funding is in the NYSDOT Policy and Planning division. NYSDOT has a Stewardship agreement with the FHWA to administer the FHWA ER Program on its behalf. Under the Stewardship agreement, NYSDOT processes contracts/agreements for the Sponsors (municipalities/local jurisdictions) with approved projects/DDIRs, does final inspections, and reimburses the Sponsors for emergency and permanent work. Approximately 530 local jurisdictions or municipalities and the New York State Thruway Authority (NYSTA) have FHWA ER-eligible facilities.

Other relevant areas are embedded in other divisions. Asset tracking is within the Information Technology division, emergency contracts are within the Engineering Division, and mutual aid/shared services and legal support during emergencies are within the Legal Services division.

Roles and Responsibilities

The following are the key units and personnel who take part in the reimbursement activities:

Governor

Determines whether the statewide damages are sufficient to meet FEMA requirements for a Presidential disaster declaration. Activates the state EMA (New York State Office of Emergency Management, NYSOEM) when a disaster occurs. Requests a Presidential Major Disaster Declaration.

State Emergency Management Agency (EMA)

The NYSOEM is the state EMA and acts as the administrator for the FEMA PA program. The NYSOEM has a state EOC which is activated when needed during disasters and emergencies.

FHWA Division Office

Within the **FHWA Division Office**:

- Administrator – makes decisions on FHWA ER event eligibility questions; resolves disputes between FHWA engineers and the state DOT;
- Engineers – approve DDIRs; provide guidance on repairs, cost estimates and project grouping; and participate in site visits.

NYSDOT Main Office

The **NYSDOT Main Office** asks the Governor to request a Presidential Disaster Declaration. The following units and divisions are involved in the reimbursement process:

- Policy & Planning Bureau (FHWA ER Unit - FHWA ER Coordinator, Budget/Emergency Funding),
- Accounting Bureau,
- Local Programs Bureau,
- Office of Transportation Maintenance,
- Delivery (Resource Sharing),
- Project Management Bureau,
- Information Technology (Asset Tracking),
- Administrative Services (FEMA Reimbursements, Emergency Contracts, Emergency Travel),
- Engineering (Emergency Contracts, Engineering Technical Expertise),
- Office of External Relations,
- Office of Communications,
- Emergency Transportation Operations (ETO) and Security Program Coordination Bureau, and
- Legal Services (Legal Support during Emergencies, Mutual Aid/Shared Services)

FHWA ER Unit. Determines whether the \$700,000 federal share statewide threshold has been met. Reviews DDIRs for eligibility and completeness and sends them to the FHWA Division Office. Prepares and sends the Program of Projects (PoP) and transmittal letter to the FHWA NY Division Administrator.

NYSDOT Statewide Transportation Information and Coordination Center (STICC). The NYSDOT's STICC is located in NYSDOT's HQ in Albany and began 24/7 operations in 2007. STICC is responsible for coordinating disasters and emergencies with the Regions and with other state and local transportation and emergency responder agencies, and uses NIMS and ICS. The STICC is also responsible for the following: monitoring the transportation infrastructure within the state; gathering and disseminating state highway information received from transportation management centers; and the deployment, tracking and coordination of NYSDOT assets in support of emergency response and recovery mission of the TIB and the ATIG.

NYSDOT Regions

Key personnel at each region include a Regional Emergency Operations Center (REOC), Regional Director of Operations/Regional Maintenance Engineer, Regional Emergency Manager, Regional FHWA ER Coordinator, Resident Engineers. Note that each Region has its own EOC. Each region has a Regional Emergency Manager who facilitates FEMA PA and FHWA ER repairs and facilitates the collection of required documentation in conjunction with the region's construction and maintenance offices. The Emergency Manager does not report to the NYSDOT main office FEMA PA or FHWA ER coordinators.

Regional FHWA ER Coordinators (REOCs). REOCs keep in constant communication with the FHWA ER Unit Coordinator and updates the FHWA ER Coordinator of the status of DDIRs and open projects. REOCs also work closely with the Regional Emergency Manager and/or Regional Director of Operations/Regional Maintenance Engineer, and Local Highway Superintendent/Supervisor/Commissioner with FHWA ER Program-eligible facilities to facilitate damage

assessment site visits and assists in the completion of the DDIRs. As the REOC receives each DDIR, the REOC reviews them for eligibility and completeness, and submits the original to the FHWA ER Unit. For questionable sites, the REOC may request a site visit by the FHWA Division Office.

Other regional staff from various departments (Design, Construction, Maintenance, etc.) do damage assessments and complete the DDIRs. They also work with local jurisdictions and municipalities to assist them in preparing the DDIRs.

Local Public Agencies (LPAs)

Local jurisdictions/municipalities and the NYS Thruway Authority (NYSTA) have FHWA ER- eligible facilities. They report damages to NYSDOT and submit completed DDIRs. They may request assistance navigating the FHWA ER process from their NYSDOT region contacts. The Area Transportation Infrastructure Group (ATIG) consists of Transportation Infrastructure Group members for counties within a NYSDOT region. The ATIG may be activated upon the request of the county emergency management agency. The ATIG, comprised of regional state agencies and local agencies, coordinates transportation infrastructure clearance and provides emergency access for response and recovery efforts. Once local resources have been exhausted, the ATIG, through the STICC, will be able to request NYSDOT resources. The State Transportation Infrastructure Branch (TIB) is activated when it is evident that regional resources are not sufficient. The TIB will coordinate state agency resources, perform strategic planning, and will provide oversight the resource deployment. The TIB will also provide intelligence about the condition of the transportation infrastructure.

RELATIONSHIP WITH NYSOEM, FEMA, AND LOCAL PUBLIC AGENCIES

NYSOEM is the state EMA and acts as the administrator for the FEMA PA program. The NYSOEM works closely with FEMA and NYSDOT to develop eligible FEMA PA grant applications and needed documentation. NYSDOT is one of its larger applicants and, as the applicant, NYSDOT assists NYSOEM and FEMA in the site visits by providing the site locations and needed information. NYSOEM provides critical guidance to NYSDOT regarding the level of documentation necessary for the grant applications to be approved and subsequent funds to be obligated. Note that NYSOEM is currently in the process of changing its name to the New York State Division of Homeland Security and Emergency Services (NYSDHSES).

NYSOEM has an EOC which coordinates with NYSDOT through the STICC during emergencies. NYSDOT has made an effort to build an excellent working relationship with both NYSOEM and FEMA. NYSDOT schedules meetings with FEMA, OEM, and NYSDOT every three (3) to four (4) weeks near the disaster sites. A Federal NDRF coordinator also participated in the most recent meeting. In addition, NYSDOT and its regional offices take pride in building relationships with local municipal leaders as well as the public on a daily basis throughout the year.

Emergency Organization Structure

FIGURE D - 15 shows the organization chart which includes the STICC and TIB within the operations section of the State Emergency Coordination Center and the linkage with the ATIG which is also in the operations section of the County Emergency Operations Center.

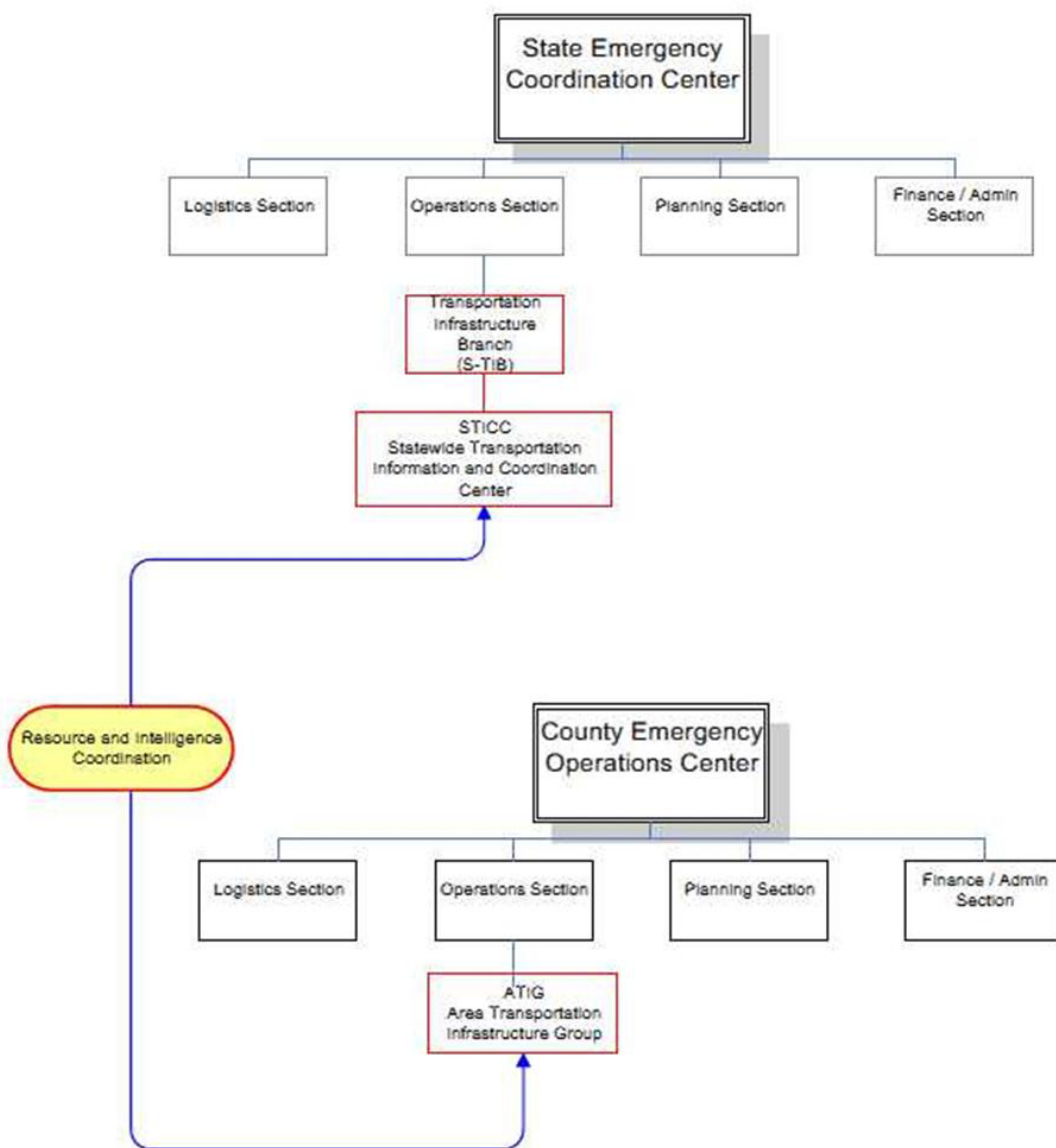


FIGURE D - 15: New York State Emergency Coordination Center Organization Chart.
 Source: NYS Disaster Preparedness Commission, 2012.

FEMA-4129-DR, New York Disaster Declaration as of 07/26/2013

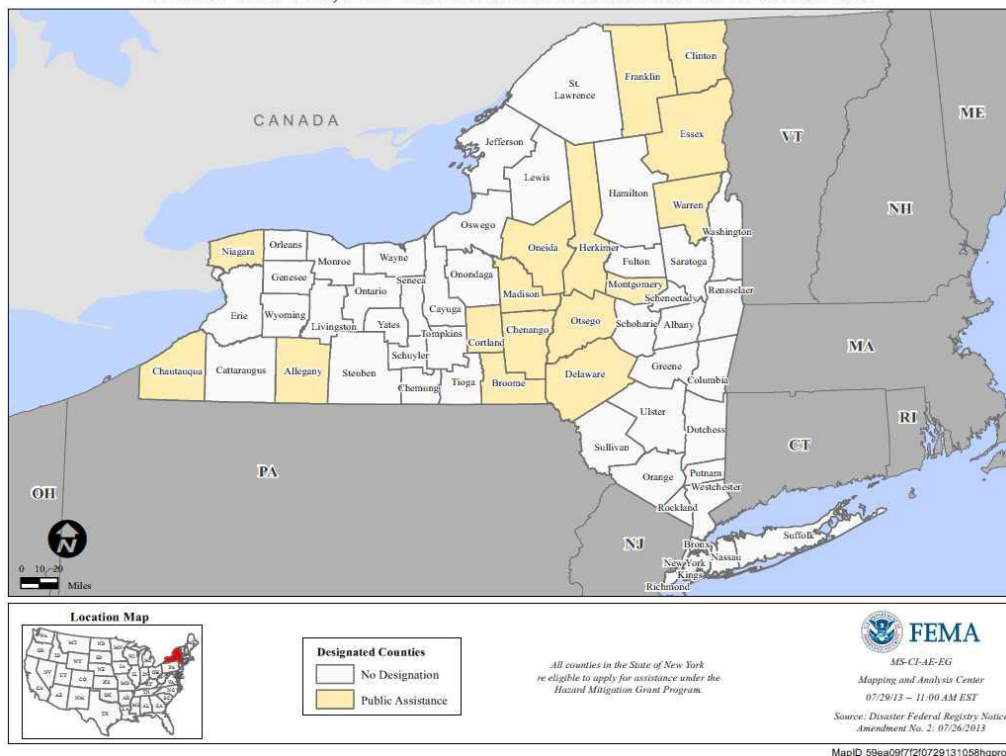


FIGURE D - 16: NY Disaster Declaration Map for Disaster DR-4129 (Severe Storms and Flooding).
Source: "New York Severe Storms and Flooding (DR-4129)," 2013.

MOHAWK VALLEY DISASTER NEW YORK SEVERE STORMS AND FLOODING (DR-4129)

Incident period: June 26, 2013 to July 10, 2013

Major Disaster Declaration declared on July 12, 2013

A detailed description of NYSDOT’s disaster declaration process, disaster assessment and reimbursement actions taken is provided in this section for the Mohawk Valley Disaster.

In the month of June, 2013, the Mohawk Valley region had been soaked by 8.68 inches of rain, close to the record of 8.74 inches set in 2006. A section of Route 10 in Schoharie County was closed due to a dam collapse. Around the July 4 holiday, heavy rains caused significant flooding in the region exacerbated by the already saturated condition in this region.

New York Governor Andrew Cuomo issued a disaster declaration for Broome, Chenango, Clinton, Delaware, Essex, Franklin, Herkimer, Madison, Montgomery, Oneida, Otsego, Tioga, Schoharie, St. Lawrence and Warren counties affected by severe storms and flooding (see FIGURE D - 16).

The Governor activated the Office of Emergency Management (OEM) to monitor the disaster and to assist counties. The Governor reached out to all state agencies including NYSDOT and requested a general estimate of damages ASAP to determine whether the 2013 NYS threshold of \$26.5 million has been reached. This threshold is determined on a per capita basis and changes from year to year.

Upon the Governor's request, a Presidential Major Disaster Declaration was issued on July 12, 2013 for the period June 26 to July 10, 2013. The Governor also issued an Executive Order directing NYSDOT to assist local counties and cities with road repairs and debris removal. This type of request is rare although a similar order had been issued for Hurricane Sandy. NYSDOT, upon consultation with FEMA's attorneys, received confirmation that NYSDOT will be reimbursed for the assistance provided to the local public agencies (LPAs).

After a natural or man-made event that causes extensive damage, FEMA coordinates with the New York State Office of Emergency Management (NYSOEM) to implement and administer the Public Assistance Grant Program.

During and immediately following an event, NYSOEM determines the level of coordination necessary to manage the event and will call various state agencies, including the New York State Department of Transportation (NYSDOT), to actively participate at the State Emergency Operations Center (EOC) in Albany. At the State EOC, multiple state agencies work closely together in one room to share information and manage the incident including planning, logistics, operations, public notification, etc. This effort can last from one day to several months depending on the magnitude of the event.

The State Transportation Infrastructure Branch (TIB) Annex of the NYS Disaster Preparedness Plan states that in emergencies or pre-planned events in which transportation infrastructure becomes unusable, "each level of government has the responsibility of maintaining the highway infrastructure under their authority. For instance the State Department of Transportation has the responsibility to maintain those highways on the state system. Additionally the state may have agreements with local agencies for the maintenance of limited portions of the infrastructure that run through their jurisdiction" (NYS Disaster Preparedness Commission, 2012). According to the TIB Annex, the primary goal during disasters is "to provide sufficient limited restoration of the transportation infrastructure to allow ingress and egress for emergency response personnel and short term recovery operations" (NYS Disaster Preparedness Commission, 2012). Additionally, it notes that state agencies may be asked "to assist with State Agency and local municipal transportation infrastructure response and short-term recovery" (NYS Disaster Preparedness Commission, 2012).

The order in which response and recovery activities will proceed is as follows:

1. Local and County Response, County EOCs
2. Area Transportation Infrastructure Group (ATIG)
3. Statewide Transportation Information and Coordination Center (STICC)
4. The TIB in coordination with the State EOC

NYSDOT emergency response follows the following hierarchy:

1. Transportation Maintenance forces, including crews, equipment, materials, and other resources.
2. Activate an appropriate existing Regional response contract, including Emergency/Where and When, or Job Order Contract.
3. For Regions 1 through 10, activate the Statewide Emergency Bridge Contract, which requires activation by the Chief Engineer at the request of the Regional Director.
4. Secure a Contractor using the NYSDOT draft contract "Procedure for Emergency Work", which requires activation by the Commissioner at the request of the Regional Director.
5. If damage occurs within the contract limits of an active NYSDOT construction contract, the Contractor will repair the damage in accordance with the relevant provisions.

THE SANDY RECOVERY IMPROVEMENT ACT (SRIA)

NYSDOT has been using the Expedited SRIA method but has not used the new fixed cost method for large projects. When the pilot program was initiated, NYSDOT had already removed a significant amount of debris and was able to receive 85% federal share for the reimbursement of its debris removal expenses due to the speed of its debris removal process.

DAMAGE ASSESSMENTS (FHWA ER AND FEMA PA)

NYSDOT disaster assessment teams perform assessments for both FHWA ER and FEMA PA sites.

Preliminary assessments are performed by staff in district offices. The staff visits damaged sites and determines whether they are eligible for FHWA ER and/or FEMA PA. For large disasters, FHWA engineers may join NYSDOT staff to complete the assessments. The FHWA ER coordinators assist LPAs with the assessment process since those with little experience with disasters and the application process have difficulty.

Initial disaster assessments are windshield type surveys and are done by FEMA personnel. They take photos and measurements of the damages. A list of disaster sites are compiled by NYSDOT and FEMA and brought to the Kickoff Meeting which is attended by NYSDOT, FEMA, and NYSOEM. Site visits are scheduled during this meeting. FEMA provides NYSDOT with guidance on eligibility and mitigation. Most of the projects are focused on repairing the facility to its original predisaster condition. Mitigation work is considered permanent work and needs FEMA approval prior to initiation of the work. An example of mitigation work approved for this disaster is the addition of rip-rap on sites that had been damaged by flooding. The rip-rap is expected to mitigate damages to the roadway from future flooding events.

For this disaster, there were a total of 225 sites many of which were for local sites and roadways. About half of the required work was performed by force account, the other half by contractors. In addition,

NYSDOT sent disaster assessment teams to 210 local sites to determine/identify the damage, needed repair work, and cost estimate. However, the work itself for the 210 sites was the responsibility of the LPA.

Disaster Assessment Teams

Disaster assessment teams are typically comprised of two to three civil engineers from construction, design, and maintenance who are experts at designing and building roads. One is from construction, one from design, and the third is from maintenance.

FHWA ER PROJECT FORMULATION

The NYSDOT *Manual of Administrative Procedures 6.2-4* site guidance states that a site is an individual location where damage has occurred and that road and bridge repair estimates should be separated by route or general area, vicinity, or drainage area (page 8, NYSDOT, 2008). On one of NYSDOT's FHWA ER projects, FHWA made an exception by allowing NYSDOT to combine sites because the contractor had not provided cost details by site. Debris clearance and damaged traffic signs/signals are placed on separate DDIRs and can be jurisdiction-wide up to the county level. (*Manual of Administrative Procedures 6.2-4*, 2008).

Whenever a betterment such as increasing the size of drainage structures is considered, FHWA Division Office guidance is sought. The NYSDOT M.A.P. states that FHWA pre-approval based on economic analysis is required (page 9, *Manual of Administrative Procedures 6.2-4*, 2008). An example of a betterment project approved by FHWA and funded through the FHWA ER program was the washout of a culvert. The results of a hydraulic analysis indicated that a bridge structure rather than a culvert was needed due to a large amount of water passing through the location. The amount of water was greater than that for which the culvert was designed. NYSDOT then made the case to FHWA that the bridge was a necessary betterment and shared the results of the analysis. Based on the information, FHWA approved the betterment project under the FHWA ER program. Because the construction of the bridge will take several years, this project is still ongoing – thus far, three extensions have been requested and granted.

FHWA ER Appeals

NYSDOT follows FHWA's FHWA ER appeals procedures. If a site or particular cost is determined to be ineligible, per the FHWA ER manual, an applicant may appeal an ineligibility finding in writing to the FHWA Division Administrator within 30 days after the initial finding. Any FHWA ER eligibility or participation disagreements are decided by the FHWA Division Administrator, or, when necessary, the FHWA Administrator. A small percentage of projects, five (5) – ten (10)%, have been denied, but upon appeal and provision of requested information they have been approved.

FHWA ER Disaster Damage Inspection Reports (DDIRS)

DDIRs are in electronic format and completed by regional staff. NYSDOT reviews all DDIRs submitted from its district offices and counties and cities to ensure that they contain the required information and that the cost estimates are reasonable. DDIRs are submitted as soon as practical whether or not the actual costs of the work are known, and whether or not the work has been started and completed. Needed revisions to the cost estimate can be made at a later time and usually approved by the FHWA Division Office as long as the location and damage description have not changed. DDIRs are forwarded to the Regional FHWA ER Coordinator who performs an initial quality review, makes a copy of it, and forward it to the Main Office FHWA ER Unit.

Each DDIR requires a site visit by NYSDOT regional staff and can take between a few minutes to a few hours to complete. Instructions to complete the DDIR are provided in the NYSDOT MAP; the instructions have been included in Appendix E to this Synthesis.

DDIRs include a signature from the NYSDOT preparer and a local agency representative (if prepared by locals) and include the following information:

- Location – the location includes the roadway reference marker and the town; also including the cross-street or street address is advised. If the DDIR is for a specific area, then specific routes and limits need to be included in the DDIR.
- Description of Damage – The description of damage should provide details about the damage, not the repair work to be performed. The following example is given – instead of “flood damage” note “floodwaters from (event) washed out 300’ of shoulder to a depth of 12”.
- Estimate to Repair Damages – the estimate or materials, equipment, and labor needs to be a breakdown of costs by item; lump sums are not allowed.
- Photographs – photographs should present the damage and completed work (if possible). Including the closest reference marker is also advised.
- Map – a map of the project/site location must be included.
- Copy of the contract – a hard copy or electronic copy through email or CD should be attached.

DETAILED DAMAGE INSPECTION REPORT					Report Number	
(Title 23, Federal-Aid Highways)					Sheet _____ of _____	
Location (Name of Road and Milepost)					FHWA Disaster No:	
					Inspection Date:	
Description of Damage					Applicant	
					State	County
NY						
COST ESTIMATE						
EMERGENCY REPAIR	Description of Work to Date (Equipment, Labor, and Materials)	Unit	Unit Price	Quantity	Cost	
					Completed	Remaining
	Method <input type="checkbox"/> Local Forces <input type="checkbox"/> State Forces <input type="checkbox"/> Contract				Subtotal	\$ -
				PE/CE		
				Emergency Repair Total	\$ -	-
PERMANENT RESTORATION						
	Method <input type="checkbox"/> Local Forces <input type="checkbox"/> State Forces <input type="checkbox"/> Contract				Subtotal	\$ -
				PE/CE		
				Right-of-Way		
				Perm. Repair Total	\$ -	-
Environmental Assessment Recommendation <input type="checkbox"/> Categorical Exclusion <input type="checkbox"/> EA/EIS				Estimated Total	\$ -	-
Recommendation <input type="checkbox"/> Eligible <input type="checkbox"/> Ineligible		FHWA Engineer			Date	
Concurrence <input type="checkbox"/> Yes <input type="checkbox"/> No		State Engineer			Date	
Concurrence <input type="checkbox"/> Yes <input type="checkbox"/> No		Local Agency Representative			Date	

Form FHWA-1547 (Rev. 4-98)

FIGURE D - 17: NYSDOT Detailed Damage Inspection Report (DDIR). Courtesy: NYSDOT.

Backup Documentation

The following backup documentation is required:

- For completed work by state forces, a print out from the MAMIS system of the report FHWA Damage Report for Project by Work Order ID and the supporting Daily Work Reports (DWRs) associated with the DDIR work order number. If there are many DWRs for a DDIR, the FHWA Damage Report for Project by Work Order ID may be acceptable. MAMIS is the NYSDOT Maintenance Asset Management Information System which contains personnel records (hours, time, activity) of force employees.
- For contracted work, actual or estimated costs must be printed out using the Engineering Share Report; if the report does not have detailed costs, backup forms need to be provided.
- For work completed by local forces or contractors – the following information should be provided:
 - Contract
 - Invoices (listing labor – labor class, hours worked; equipment type and hours; materials type and unit cost)
 - Date of completion
 - Work location
- For work not yet completed by local forces or contractors – the following information should be provided:
 - Contract
 - Invoices should include the following:
 - Labor – labor class, rate, estimated hours;
 - Equipment type and estimated hours;
 - Materials type, estimated quantity, and unit cost

Amendments to DDIRs

For DDIRs that are amended, the FHWA ER Unit sends a copy to the REOC or the NYSTA Manager. They then send the DDIR to Regional Emergency Manager and/or Regional Director of Operations/Regional Maintenance Engineer, and Local Highway Superintendent/Supervisor/Commissioner.

For both the traditional and quick release methods, emergency repair work is started as soon as possible after the event. NYSDOT advises its personnel and contractors to document work performed and be prepared to answer the question, “who worked where when?” Unless it is part of Emergency repair work, Permanent repair work cannot start until approval is received.

Program of Projects (PoP)

The Main Office FHWA ER Unit compiles all of the DDIRs into a “Program of Projects (PoP).” If additional DDIRs are received after the PoP has been submitted they are submitted individually to FHWA. The complete PoP must be submitted to the FHWA within two fiscal years of the date of the event. Directions for completing the PoP are provided by the NYSDOT M.A.P. and have been included in Appendix E to this Synthesis. All correspondence, DDIRs and attachments, and the PoP related to the event are stored in a central location for the event - the electronic event file.

FEMA PA PROGRAM

The federal share of assistance received by NYS is not less than 75% of the eligible cost for emergency measures and permanent restoration. The state determines how the non-federal share (up to 25%) is split with sub-grantees that are typical local governmental subdivisions of the state and state agencies.

FEMA PA Project Worksheets (PWs)

PWs are developed by either FEMA (for projects involving contractors) or NYSOEM (for projects done by force accounts). At each disaster site, NYSDOT supplies a folder with information and documentation to FEMA and NYSOEM. NYSOEM answers questions about the FEMA PA process and addresses various technical issues.

As the PWs are completed, they are forwarded to NYSDOT electronically in PDF format for review. This is an indication that FEMA has approved the project. The NYSDOT FEMA PA coordinator reviews the scope of work, cost estimates and other details with appropriate NYSDOT personnel and returns them with changes if necessary to FEMA or NYSOEM. The first draft PW for this event was received at the end of October, 2013; the initial months since the disaster were focused on site visits. After a finalized PW has been approved, the funds for each PW are obligated by FEMA and are delivered to the NYS Division of Budget. The NYS Division of Budget then directs funds to the state DOT by wire transfer. NYSDOT is required to meet OMB A-133 circular audit requirements.

FEMA PA Project Formulation

Currently about 60-70% of the projects are small projects and 30-40% are large ones. However, FEMA is consolidating the small projects into larger projects to expedite the reimbursement process by minimizing the number of PWs that need to be completed. Therefore, the percentage of larger projects is expected to rise and the total number of projects is expected to decrease to 45-50 projects. Projects are combined using various methods – one of the common methods is to combine emergency work projects in the same vicinity. Projects that require mitigation or have other special consideration issues will not be included in these project groupings.

Work completion deadlines are January 12, 2014 (six (6) months) for emergency work and January 12, 2015 (18 months) for permanent restoration. Extensions may be granted by FEMA if requested by NYSDOT. These deadlines are expected to be met for all emergency and permanent work projects.

FEMA PA Appeals

If a PW or particular expenses are denied, the applicant must file for an appeal with NYSDHSES within 60 days of receiving the Project Certification (Blue Book) from FEMA. The applicant must provide documentation to support the appeal. NYSDHSES reviews the appeal documentation and may request additional information, if necessary. NYSDHSES then prepares a written recommendation to FEMA within 60 days of the appeal letter or receipt of additional information that they requested. NYSDHSES

need not endorse the appeal position, but must forward all appeals it receives. FEMA reviews the appeal and within 90 days takes one of two actions: (1) render a decision on the appeal and inform NYSDHSES of the decision, or (2) requests additional information.

If an appeal is denied by FEMA, the applicant may submit a second appeal, which again must be submitted to NYSDHSES within 60 days of receiving the denial from FEMA. NYSDHSES has 60 days to send the second appeal to FEMA. This time, FEMA headquarters reviews the appeal and may request additional information. FEMA then renders a final decision within 90 days.

PROJECT CLOSE-OUT

FHWA ER Project Close-out

For all emergency repair and permanent repair work, once the project has been completed, the sponsor must complete the Final DDIR, the Final Inspection Form, NYSDOT Modification form, and the Final Acceptance of Locally Administered Federal-aid Project form (if a project is locally administered) and submit them to the Regional FHWA ER Coordinator. Final DDIRs provide the final actual costs of projects and include backup documentation. The Final Inspection of Federal-Aid Project NYSDOT FHWA ER Project form (FHWA-1448C-NYSDOT Modification) is shown in FIGURE C - 17. If there is a significant cost over-run or under-run, an explanation is included. MAMIS reports on event-related work activities and labor costs can be pulled from the MAMIS or the SiteManager system to assist in compiling the final cost information.

The Coordinator then submits these forms to the Main Office FHWA ER Unit. Minor changes can be performed within the Financial Management Information System (FMIS.) If the scope changes or final costs are more than 10% more than the approved estimate, the revised DDIR and documentation must be submitted to the FHWA for review and approval. This review takes place with the assistance of the Financial Management Information System (FMIS). NYSDOT submits authorization requests through the FMIS. The FHWA Engineering Coordinator will review each request to confirm that the event number is correct, the DDIRs with the FMIS entry are listed in the state remarks field, and that the FMIS request matches the approved DDIR costs. The FHWA ER Unit will notify Accounting that all final costs have been submitted for an event and that the federal PIN can be closed in FMIS.

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION		
FINAL INSPECTION OF FEDERAL-AID PROJECT NYSDOT EMERGENCY RELIEF PROJECT		
INSTRUCTIONS: <i>State is to complete items 1 - 7 and submit original and three (3) copies to the Federal Highway Administration Division Office.</i>		
1. PROJECT NO.	2. COUNTY	3. STATE, EVENT, AND DDIR NO. NY-
4. DESCRIPTION OF IMPROVEMENT AS PROGRAMMED		
5. CONTRACTOR'S NAME		6. CONTRACT AMOUNT \$
7. NOTICE OF COMPLETION: <i>The above listed project has been completed and is ready for final inspection.</i>		
Completion Date: _____ 100% = \$ _____ 80%/20% (or 90%/10%) = \$ _____ Reason(s) for cost over-run/under-run: <div style="text-align: center;"> SIGNATURE (SHA OFFICIAL) _____ TITLE _____ </div>		
8. FINAL HIGHWAY ADMINISTRATION INSPECTION MADE BY		9. DATE OF INSPECTION
10. IN COMPANY WITH		
11. REMARKS		
12. SIGNATURE	13. TITLE	14. DATE

Form FHWA-1448C (NYSDOT MODIFICATION)
(Rev. 2-78)

FIGURE D - 18: NYSDOT Final Inspection of Federal-Aid Project Form. *Courtesy: NYSDOT.*

FEMA PA Closeout

NYSDOT needs to sign and return NYSOEM project completion form as projects are completed. Other than that form, the NYSOEM does not require information in addition to the information required by FEMA.

PROJECT TRACKING

Once an event occurs, the Office of Transportation Maintenance creates a Project Tracking Code (PTC) in MAMIS and creates at least two work orders – one for FHWA ER and one for FEMA PA. The force account in MAMIS records the costs on the Daily Work Report (DWR) forms using the appropriate Work Order number. For force accounts each DDIR should be assigned to only one work order number – the DDIR# should be the first characters in the work order description. For work performed by force account not in MAMIS, the STICC assigns a PIN for the event and notifies the main office emergency organization or the FHWA ER Unit of the FHWA ER-eligible damages and any rough cost estimates. Also, it is important that FHWA ER or FEMA PA eligible costs that are not normally tracked within MAMIS are identified and submitted for reimbursement. These costs include tolls, meals, and lodging.

NYSDOT has a central drive for the storage of documentation which is kept by NYSDOT for at least three years from the date of the last billing. This drive also stores all disaster-related photos electronically. NYSDOT is transitioning to electronic storage for all FHWA ER and FEMA PA documentation. Hence, any paper forms and documentation are scanned. Because many of the counties try to make their DDIRs audit-proof they often provide NYSDOT with more documentation than is necessary. Since most of their documentation is still in paper format, scanning it into electronic format can be time consuming for NYSDOT staff.

All DDIRs require the assignment of a DDIR Report Number. It is a unique site number assigned by the applicant or the region. The NYSDOT MAP recommends that the number begin with a reference to the County or Sponsor. For example, the first site in Broome County may be “BR-01.”

The Fiscal Share (FS) number is used to track costs incurred under open contracts for a specific FHWA ER-eligible event. Each FS that is created should have an appropriate event description attached to it. The FS number for FHWA ER events is different from the FS number for FEMA PA events. In addition, for each site under the FS, an Engineering Share (ES) number is added so that costs pertaining to any site that is declared ineligible can easily be identified. After the contractor submits required documentation for the emergency repair, the FS number is added to the contract. For force accounts, sites are assigned separate pay item numbers which correspond to the ES. For example, for a new Fiscal Share 04, repairs under Force Account at location 03 would use the coding Item 950.0403. The appropriate FS and ES numbers are recorded on the DWR. A similar coding system is employed if the SiteManager system is used.

COST TRACKING

The following forms are used in conjunction with the DDIR to document costs:

- DDIR Completion Status Report – These status reports as prepared by event and region. The report form records the DDIR#, applicant, federal PINs, anticipated or actual completion date, FHWA approved amounts, final costs, revision or time extension required/approved, anticipated federal dollars needed in the next three months, date final cost documentation was submitted to the FHWA ER Unit, and the data the accounting bureau was notified by the FHWA ER Unit to close the federal PIN in FMIS.
- Materials record form indicating DDIR#, vendor, description, quantity, unit price, total price, date bought, check number, date used, and source of information
- Labor record form indicating DDIR#, employee name, title, daily hours worked, total hours, rate, total pay, and paycheck number
- Force account equipment record indicating DDIR#, type of equipment, equipment number, date and hours used, total hours, rate, and total cost
- Rented Equipment form indicating DDIR#, type of equipment, date and hours used, rate per hour, total cost, vendor, invoice number, date and amount paid, and check number
- Contract costs form indicating DDIR#, contractor/vendor, activity description, contract number, contract period, contract cost, and check number
- Force account travel cost form indicating DDIR#, employee names, lodging, meals, and other expenses

Examples of these forms can be seen from FIGURE D - 22 to FIGURE D - 28, appended to the end of this case study.

REIMBURSEMENT

FHWA ER Reimbursement

The Regional FHWA ER Coordinator monitors status of ongoing projects and DDIRs, and any needs for time extensions. Any time extension or project withdrawal requests need to be approved by the FHWA NY Division Administrator. Once the work has been completed, force account prepares MAMIS cost documentation. Appropriate documentation for these expenses need to be included in the documentation package.

The reimbursement process occurs as DDIRs are approved by the FHWA Division Office. Once they have been approved, the Regional FHWA ER Coordinator coordinates with Project Management to create six-digit Project PINs to obligate the approved monies. One Project PIN is assigned to each sponsor in a county. The Final DDIRs are submitted to the NYSDOT Accounting Bureau's Revenue Unit for review to ensure that the backup documentation matches the amount being billed, and for processing. Accounting transfers the charges from the event PIN to the Project PIN completing the NYSDOT reimbursement process.

The Bureau uses Federal-aid Request Form 307 to enter the request for Federal-aid authorization into the FMIS as an electronic form; the request is automatically received by FHWA Division Office. The FHWA approves funding, prepares a project agreement, and sends it to the Main Office Accounting Bureau – Federal-aid Unit. The Project Management Bureau completes the electronic project authorization form FIN 207 which establishes a nine-digit federal PIN.

Every three months, the FHWA ER Unit reminds the Regional FHWA ER Coordinators to submit a DDIR Completion Status Report.

Local agencies will submit Final DDIRs and form FIN 421/422 for Sponsor work to the Accounting Bureau, Expenditure Unit. Accounting will then reimburse the local agency sponsor.

FEMA PA Reimbursement

The reimbursements are provided by the state EMA and transmitted by wire transfer to NYSDOT. Once the small projects have been validated, they are authorized and obligated. Small FEMA PA projects do not require closeouts because they have already been validated. Large projects are authorized based on initial cost estimates but are not obligated until work has been initiated. As a large project progresses, invoices are sent to the NYSOEM and are processed as they are received. Once a large project has been completed, the state EMA (NYSOEM) will inspect the completed project and the actual cost of the project will be determined. If the actual cost is greater than the estimated cost, then the NYSDOT will be reimbursed for the difference. If not, NYSDOT will reimburse FEMA for the difference.

NYSDOT FINANCIAL MANAGEMENT SYSTEMS

NYSDOT uses multiple systems for financial management and maintenance management and related purposes. They are useful for the FHWA ER and FEMA PA programs because they help track labor and resource usage during disasters; provide centralized storage of facility conditions and can provide pre-disaster and post-disaster conditions; and assists with the billing and invoicing processes. The two key systems are MAMIS which is a maintenance management system for NYSDOT's force accounts and AASHTO's SiteManager system which is similar to MAMIS but for contractor work. There is also a bridge management database, a highway inventory database with pavement conditions, and various other systems that have been developed by NYSDOT's units. All of these systems feed into each other so that any data input into the systems are incorporated and accessible from each of the systems.

These systems are essential for NYSDOT to manage the FHWA ER reimbursement process because project documentation for each site or group of sites must be readily available in case any issue arises and need to be addressed; if an appeal is necessary; or if FHWA decides to conduct an audit.

Maintenance Asset Management Information System (MAMIS)

The NYSDOT Maintenance Asset Management Information System (MAMIS) tracks conditions of pavements and bridges. MAMIS has a standardized list of site codes which helps expedite the documentation process. This system also provides the predisaster conditions of NYSDOT's facilities.

The system also maintains NYSDOT personnel information including work hours and labor rates. Three MAMIS reports that were developed by the NYSDOT Office of Transportation Maintenance and are used to compile final cost information are: FHWA Damage Report for Project, FHWA Damage Report for Project by Activity, and the FHWA Damage Report for Project by Work Order ID.

Construction Management Software

AASHTO SiteManager is a “comprehensive construction management software product, effectively managing the overwhelming volume of information involved in a transportation construction project. SiteManager covers the complete construction and materials management process after award through contract finalization.” (“SiteManager,” n.d.) The system integrates field based data collection, administration of contract records, contractor payments and materials management.

Benefits include the following: provides an integrated "cradle to grave" solution from design through construction life-cycle, data are available via the NYSDOT Network (Project, Change Order and Estimate Tracking; Approved Lists, Sampling and Testing etc.), faster estimate processing, DOT user group is available, and promotes statewide standardization and accountability.

Additional information is available at NYSDOT’s SiteManager page (“SiteManager,” n.d.):

<https://www.dot.ny.gov/main/business-center/trns-port/modules/site-manager>

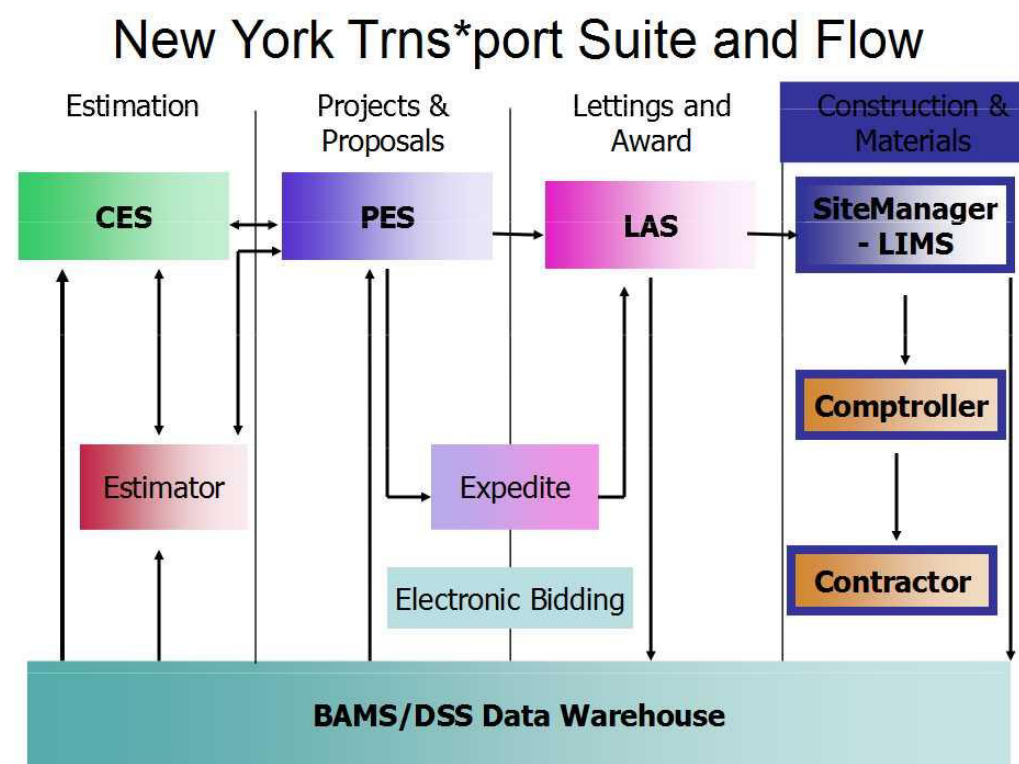


FIGURE D - 19: SiteManager System Architecture.
 Source: “SiteManager Overview,” n.d.



FIGURE D - 20: Site Manager Screenshot, Main Panel.

Source: "SiteManager Overview," n.d.

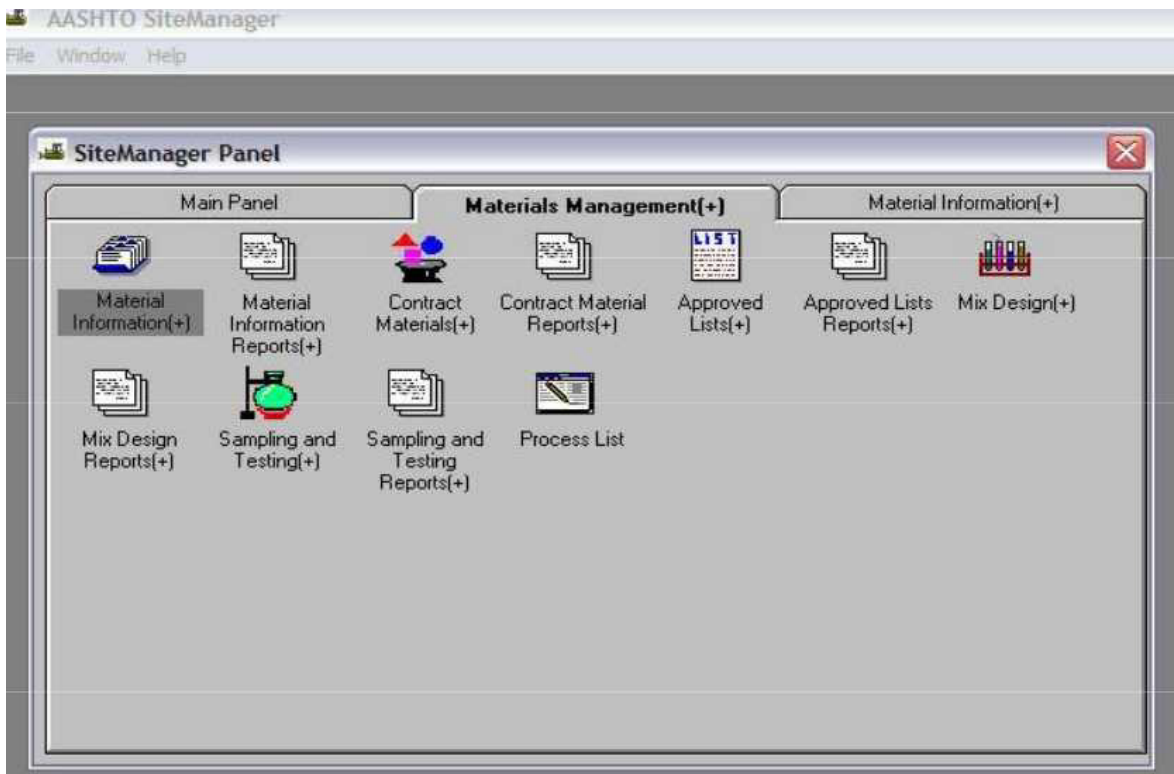


FIGURE D - 21: Site Manager Screenshot, Materials Management.

Source: "SiteManager Overview," n.d.

NYSOEM RESOURCES

NYSOEM provides important information for applicants via their Recovery webpage (“Recovery,” n.d.): <http://www.dhSES.ny.gov/oem/recovery/>

For this disaster, the following information items were available on this site:

- [DR-4129 Greenbook \(Environmental and Historic Preservation Guidance\)](#)
- [Key Environmental Issues Relevant To This Disaster - Fact Sheet](#)
- [Applicant's Brief](#)
- [Disaster Fact Sheet](#)
- [Applicant Handbook](#)
- [PNP Checklist/Forms](#)
- [Municipality Checklist/Forms](#)
- [Project Manager Worksheet](#)

A detailed Greenbook Guide to Environmental & Historic Preservation Compliance Disaster Recovery Operations was issued for this disaster and includes sections on permits, special considerations, best management practices and debris management.

Permits: With regards to permits, this Guide provides the following specific recommendations to applicants:

1. Obtain all necessary permits prior to construction. Applicants are responsible for obtaining all applicable local, state and federal permits or other authorizations. However, FEMA may be able to help expedite the process.
2. Adhere to permit conditions for implementing work
3. Provide clear and complete scope of work information
4. Provide background information about environmental or cultural resources
5. Use Best Management Practices during construction
6. Identify urgent issues.

Special Considerations Questions pertaining to Environmental and Historic Compliance provided by the Greenbook Guide are as follows:

- “Is the damaged facility located within a floodplain or coastal high hazard area and/or does it have an impact on a floodplain or wetland?”
- Is the damaged facility or item of work located within or adjacent to a Coastal Barrier Resource System Unit or an Otherwise Protected Area or Coastal Zone?
- Will the proposed facility repairs/reconstruction change the pre-disaster condition (e.g. footprint, material, location, capacity, use, function)?

- Does the applicant have a hazard mitigation proposal or would the applicant like technical assistance for hazard mitigation?
- Is the damaged facility on the National Register of Historic Places or the state historic listing? Is it older than fifty years? Are there more, similar buildings near the site?
- Are there any pristine or undisturbed areas on, or near, the project site? Are there large tracts of forestland?
- Are there any hazardous materials at or adjacent to the damaged facility or item of work?
- Are there any other environmental or controversial issues associated with the damaged facility or item of work?"

LPA TRAINING AND RESOURCES

NYSDOT's regional FHWA ER coordinators coordinate with cities and counties in their regions. Because many LPAs are not familiar with the Federal-aid process and regulations, NYSDOT staff has been delivering "Federal-aid 101" training to LPAs to teach about Federal rules and regulations, many of which apply to FHWA ER program. NYSDOT would like to deliver more FHWA ER-specific training to LPAs but has not been able to due to recent financial cutbacks.

During or prior to the event, the NYSDOT FEMA PA and/or FHWA ER coordinators visited each affected NYSDOT region to inform them about needed FEMA PA and FHWA ER documentation and other elements off both programs. The coordinators have attended NYSOEM training on the FEMA PA program held in various counties in the state and have provided FHWA ER overviews to LPAs attending the training. These training opportunities promote quicker response times during and immediately after events, and provide necessary guidance during the recovery effort.

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Tennessee DOT (TDOT) Case Study

BACKGROUND

Tennessee DOT (TDOT) is headquartered in Nashville, Tennessee and has 3,900 employees, four regions, 12 super-districts and 22 standard districts. It maintains 13,896 centerline miles and 750 ramp miles, owns 19,650 bridges, and serves a population of 6.5 million. Major threats to TDOT's transportation and bridge infrastructure include flooding, rock slides, tornadoes, ice storms, and earthquakes.

TDOT is well respected by the Tennessee emergency management community, is known for developing the original Emergency Support Function (ESF) - 1 concept, the excellent preparation and training it provides to its emergency personnel, and is considered a first responder in the state. Additionally, TDOT personnel are usually the designated last Incident Commander for disasters and emergencies. TDOT uses ICS forms on a regular basis, and is currently typing all resources as per NIMS, although TDOT has not yet made a request utilizing NIMS resource typing.

The Tennessee Emergency Management Plan (TEMP) was developed by TEMA with input from TDOT and other agencies. TDOT is the lead for ESF-1 – Transportation Networking and serves as a support agency for other ESFs. The ESC and alternates are required to be on call 24/7 to assist in emergency response within the scope of their office, coordinate with other agencies, and provide situational awareness. Note that there are an ESC and alternates assigned specifically for railroad transportation with similar requirements and responsibilities.

ROLES AND RESPONSIBILITIES

For the FHWA ER Program, the HQ FHWA ER Coordinator in TDOT's Central Office provides oversight for the program and compiles the Damage Survey Summary Report for the state based on the DAFs submitted by each of the regions. The Regional FHWA ER Coordinator, assigned to each of the four regions, manages the execution of the necessary processes within their region to ensure successful disaster recovery, repairs, and proper documentation for reimbursement. The Coordinator reviews the Detailed Assessment Forms (DAFs) before submitting them to the HQ FHWA ER Coordinator, and retains the DAFs and associated materials and documentation. The FHWA ER responsibilities of the following divisions and offices are provided below:

- HQ Maintenance Division – responsible for the assembly of the required documentation for each qualifying event, support the regional teams by administrating databases and online resources which assist with proper documentation of costs.

- Program Operations Office – responsible for the allocation and obligation of the federal funds received through the FHWA ER Program.
- Local Programs Office – assists municipalities with execution of contract documents to ensure proper transfer of federal funds - from FHWA through TDOT - to the municipality.
- Construction Division – In the event that an emergency repair contract is required to complete the disaster repairs, the Construction Division assists with the compilation of contract documents and management of the letting and award of an emergency contract.
- Environmental Division – responsible for preparation of all environmental documentation, including the NEPA document, ensuring that Categorical Exclusions are valid, and acquiring any necessary permits to complete the repairs.
- Geotechnical Engineering Section – provides geotechnical analysis for disasters such as slope failures.
- Finance Division – processes financial transactions to ensure that all of the eligible expenditures are charged to the correct federal project.

For the FEMA PA Program the TDOT HQ Maintenance Division serves as the coordinator of the FEMA PA program, is responsible for the development of FEMA PWs in coordination with TEMA and FEMA personnel and assists the assessments teams in obtaining the required documentation. The division also supports the regional teams by administrating databases and online resources which assist with proper documentation of costs. The Program Operations Office is responsible for the allocation and obligation of the federal funds received through the FHWA ER Program, and the Local Programs Office assists municipalities with execution of contract documents to ensure proper transfer of federal funds - from FEMA through TDOT - to the municipality.

TDOT's Office of Emergency Operations is responsible for TDOT's emergency preparedness program including planning, training, and exercises and for coordinating TDOT's statewide emergency response activities. The TDOT primary Emergency Services Coordinator (ESC) and alternate ESCs as well as the departmental ESCs are located in this office and lead emergency response efforts. The ESCs also support the Tennessee Emergency Management Association (TEMA) should they request assistance from TDOT within the combined emergency response plan. In such cases TDOT's primary ESC is embedded in TEMA and will coordinate field personnel during emergencies. The alternate ESC will be responsible for performing equivalent duties within the TDOT Office of Emergency Operations. TDOT's State Aid Offices serve as assessment teams in coordination with the representatives from the cities and counties.

The responsibilities of LPAs include locating damage sites, the identification of Federal-aid highways, completing repairs through force accounts or contracts, and assembling the required documentation. TDOT's Local Programs Development Office provides FHWA ER technical assistance and training to its personnel and to LPAs.

FEMA PA PROGRAM

For a flood event, TDOT initially works with FHWA for all damage on Federal-aid routes in Tennessee. If the severity of the event is significant enough and there is high likelihood that the event will qualify, the Expedited method would be utilized. Debris removal work projects will be submitted directly to FEMA. Additionally, if there are sites that end up not qualifying for FHWA ER assistance, TDOT would then submit a PW to FEMA for that site. In order to ensure funding for sites that may not qualify for the FHWA ER program, PWs must be submitted. If FHWA ER funding is subsequently confirmed then the PW is withdrawn.

PWs are not completed until a FEMA PA coordinator is assigned through TEMA/FEMA. They are completed in the office once Daily Work Reports are submitted and input into the TDOT's Maintenance Management System.

FHWA ER PROGRAM

TDOT has a Stewardship agreement with FHWA that includes the administration of the FHWA ER program. It should be noted that the TDOT FHWA ER Program is currently under development and may undergo various changes. While FHWA is responsible for review and approval of all FHWA ER projects, TDOT must report natural disasters and catastrophic failures to FHWA through its FHWA Division Office. TDOT is the administrative lead on damage assessment, emergency repair and permanent restoration projects, and the preparation and submission of FHWA ER application and documentation. TDOT needs to identify Federal-aid highways, locations of damage sites, coordinate locally administered projects, complete repairs through force accounts or contracts, and assemble required documentation.

The TDOT FHWA ER Coordinator in the TDOT headquarters is the key FHWA Division contact. The TDOT Region FHWA ER Coordinators report to the FHWA ER Coordinator. Technical support personnel knowledgeable about the FHWA ER program are located in the Maintenance Division. Counties and cities coordinate with the TDOT Local Program Development Office within the Program Development Division. The organization charts for the FHWA ER program are shown in FIGURE D - 29 and FIGURE D - 30.

Assessment teams and various offices and divisions report to each TDOT Region FHWA ER Coordinator during FHWA ER events. Recent major FHWA ER events have included landslides and rockslides, and floods and storms.

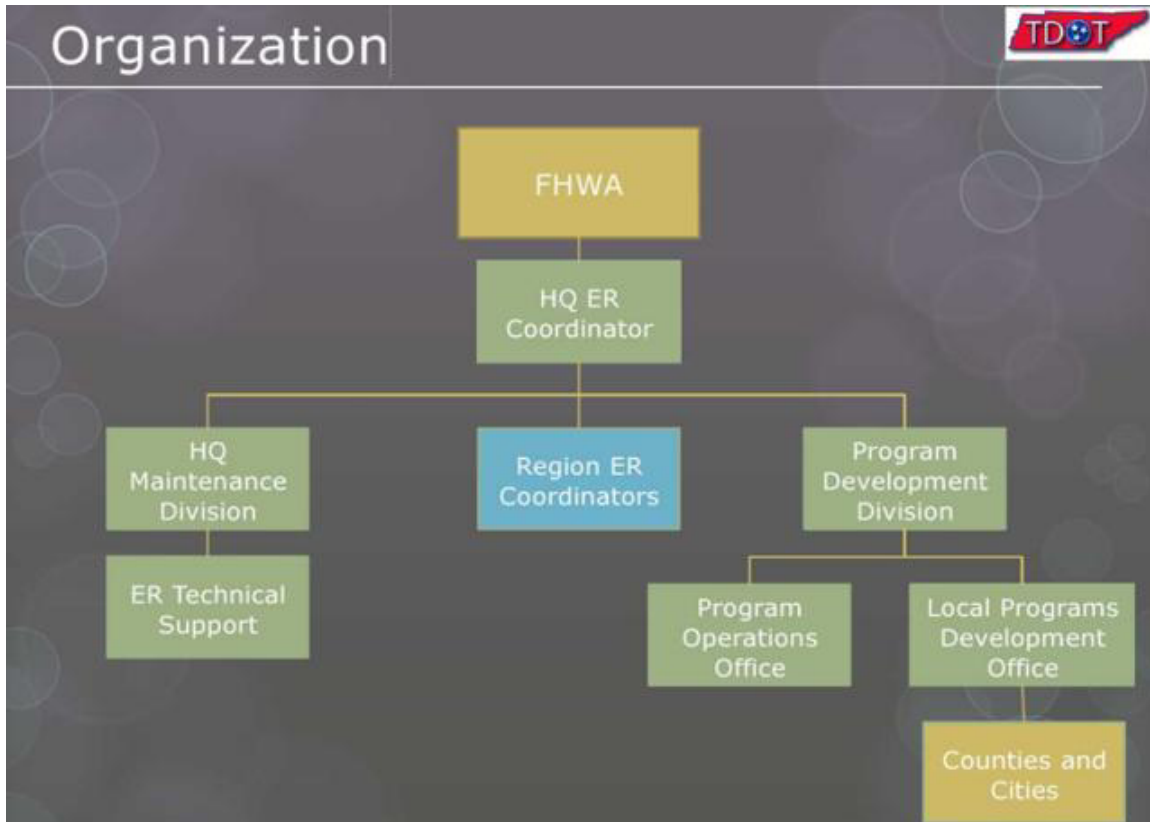


FIGURE D - 29: TDOT FHWA ER Program Organization Chart.

Source: "Emergency Relief Program: TDOT ER Program Overview," n.d.

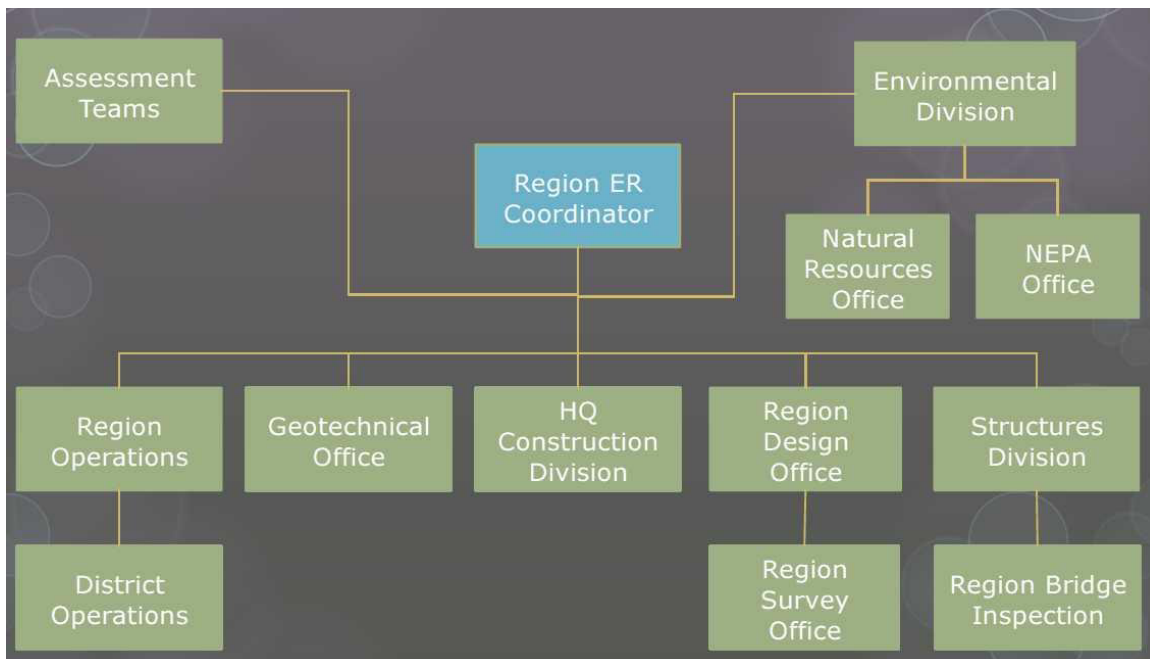


FIGURE D - 30: (cont.) TDOT FHWA ER Program Organization Chart.

Source: "Emergency Relief Program: TDOT ER Program Overview," n.d.

Land/Rockslides

2012

- Blount US-129
- Campbell I-75
- Cocke I-40

2011

- Sevier SR-71
- Grundy SR-108

2010

- Blount US-129
- Sevier SR-71
- Polk #2 US-64
- Polk #1 US-64

Floods/Storms

2011

- East TN Tornadoes
- West TN Storms and Flooding

2010

- Middle TN May Flood

2009

- Northwest TN Ice Storm

In terms of cost, the total FHWA ER cost for 2012 was \$14.8 million. TDOT received 90% reimbursement from the FHWA. For 2011, the cost was \$7.3 million of which \$6.2 million or 85% was reimbursed. In 2010, the total amount was \$52.9 million of which \$47.1 million or 89% was reimbursed. In 2009, the amount was \$0.9 million of which 100% was reimbursed.

The initial steps in TDOT's FHWA ER process follow the FHWA ER guidance. First, a PDA is performed using windshield and/or aerial surveys and photos of the damage are taken and a Detailed Assessment Form (DAF) is completed. Damage assessment information, maps, photos, and cost estimate are included in the DAF. Revised DAFs require prior FHWA approval. Next, a Presidential Declaration or a Governor's Proclamation is sought and the included counties are identified. TDOT then submits a Letter of Intent to the FHWA Division Office which sends TDOT an Acknowledgement Letter. Detailed site assessments are then conducted by the damage assessment teams. Large complex sites may require a second detailed assessment and the involvement of technical specialists who would make any needed

revisions to the original assessments. If the severity of the event is significant enough and TDOT has confidence that the event will qualify, the Quick Release method would be utilized.

The DDIRs contain location of the site, whether or not the repairs are emergency repair or permanent restoration, description of the damage and needed repairs, whether force account or contract is used, cost estimate, and photos. There is currently no deadline for the completion of DDIRs by assessment teams. The process is managed on a situation by situation basis. DDIRs are completed on site and then entered electronically into a DDIR form in the office.

The Damage Survey Summary Report contains a formal request for FHWA ER funds, list of estimated repair costs by county/route, and supporting documentation.

The FHWA ER timeline begins when the disaster event occurs. On day one (1), the preliminary assessment is started and the Regional FHWA ER coordinator determines whether the damages are severe enough to require more detailed assessments. On day two (2), detailed assessments begin. On day 14, a Letter of Intent is developed and sent to the FHWA Division Office. Six weeks from the disaster event, a Damage Survey Summary Report is developed. Within three months of the event, a Program of Projects is developed and submitted to FHWA. Emergency repairs are completed within 180 days of the event. A list of all sites and repair costs need to be submitted within two (2) years of the event.

The TDOT FHWA ER coordinator reviews and submits the final records received from the HQ Maintenance Division to FHWA. FHWA may request additional documentation or clarifications. Reimbursements including those for counties and cities will then be made to TDOT. Upon receipt of the funds, the TDOT Local Programs Development Office will distribute them to the appropriate LPAs and will close out the FHWA ER project. Note that TDOT does not ask for reimbursement for indirect costs. Also, TDOT does not use electronic signatures.

DAMAGE ASSESSMENT TEAMS

Each TDOT region has five (5) or six (6) pre-determined damage assessment teams. Each team has a pre-determined team leader selected by the Regional FHWA ER Coordinator. The Team Core will include at least one construction and one maintenance employee. Personnel in each region is trained and ready to deploy to other regions of the state (or to another state) to respond to a disaster, if necessary. Regular exercises are held to ensure that each region has the capability to deploy to the disaster site and to be completely self-sustainable for up to a week at a time. Because EMAC mutual aid legislation and statewide mutual aid legislation was adopted by the Tennessee state legislature in 2004, FEMA now reimburses TDOT for assistance provided on behalf of TDOT by other states and for intrastate assistance, assistance received and provided by TDOT to Tennessee regions and municipalities and other intrastate entities for a FEMA PA-eligible event. Information about this legislation is presented at the end of this case study. Aerial surveys, when necessary, are coordinated with the Department of Defense.

Once a disaster or emergency arises, preliminary damage assessments are performed by the teams. Deployment and assignment areas will be determined by the Regional FHWA ER Coordinator. Additional personnel will be added by the Coordinator as needed. Members are required to be trained, understand their time and travel commitments, have relevant skills, and work well in a team setting.

For a flood or seismic event, a quick inspection of the severity of the flood and a list of sites would be created and distributed to key personnel. The length of the initial assessment would depend upon how widespread the damage is from the flooding or seismic event. In general though, it should only take a day or two at most. A follow-up inspection, which would be more detailed, would be conducted based upon priority. The detailed inspections in Phase 2 could take as little as two (2) weeks or upwards of two (2) to (3) months based on TDOT's experience in the May, 2010 flood depending upon the extent of the damage.

TDOT HQ advises the teams to carry the following supplies:

- Personal Protection Equipment
- Blank Detailed Damage
- Assessment Forms (DAF)
- Assessment Aids
- Site List
- Pencil
- Dry Erase Board w/ Marker
- File Folder
- Clip Board
- 100' Measuring Tape
- Range Finder
- Measuring Wheel
- Camera
- GPS unit
- Map
- Water
- Cell Phone
- Flash Light
- Laptop w/ VPN Account
- Vehicle with Flashing Lights
- First Aid Kit
- Extra Batteries for Camera

SITE/ROUTE PRIORITIZATION

For a flood event, interstate routes and major arterials on the state highway system would typically receive the highest priority. Secondary state routes would be next in line followed by non-state Federal-aid highways. Routes which serve critical infrastructure, such as hospitals and other emergency management facilities, or emergency evacuation routes would also receive special consideration.

For an earthquake, TDOT has prepared an Earthquake Response Plan which designates certain strategic routes as priority routes following a seismic event. TEMA and TDOT planners have designated several routes as Regional Emergency Supply Routes. These routes are designated to expedite the movement of essential life-saving and support resources to the high-risk counties along the Mississippi River. They begin at or pass very near to pre-designated staging areas and end at pre-designated staging areas in the high-risk counties. These routes were selected based on the following assumptions:

- Transportation infrastructure will suffer significant and extensive damage.
- Damage will be more severe in counties along the Mississippi River.
- Aftershocks of magnitudes approaching or even exceeding those of the first event will occur over the first few weeks following the event.
- Transportation maintenance workforce will be decimated.
- A large number of bridges will suffer loss of span and/or approaches.
- Most of the bridges over the Tennessee River are likely to survive.
- Most obstacles to movement can be overcome during first 72 hours following an event

TDOT's bridge monitoring tool helps TDOT prioritize and schedule disaster assessments for TDOT's bridges. In order to prioritize assessments, the tool uses information about drainage areas, foundations, and other information to analyze the impact of specific events on each bridge.

The Regional FHWA ER Coordinators inform the HQ FHWA ER Coordinator regarding the deployment of assessment teams. Project numbers will be assigned and contracts will be set up by the HQ FHWA ER coordinator. The HQ FHWA ER coordinator will also contact LPAs to determine whether they have damage sites. The LPAs will then contact the Regional FHWA ER Coordinator to set up a field review and to verify that the site is a part of the Federal-aid route system. The Regional FHWA ER Coordinator will then assemble the assessment teams and brief them. The Team Leader will complete the identification information of the DAF summary portion. The DAF number is comprised of the county number, 5-digit route number, site number, and revision number. The FHWA Disaster number consists of "FHWA ER-TN," the fiscal year, and the number of the disaster for that year. The Team Leader will determine how to access the sites and will ensure that the team has the needed supplies.

DETAILED ASSESSMENT FORM (DAF)

A DAF is comprised of several components. They include photographs of the site, a map, and cost calculations.

At the site, the team will take a photo with the site information. A sample photo is provided in FIGURE D - 31.



FIGURE D - 31: Detailed Assessment Form Photo with Site Location. Courtesy: TDOT.

The identification portion of the DAF summary and the notes component will be completed at the site. TDOT provides the following documentation recommendations to its personnel:

- Provide sketches of the damage.
- Be as detailed as possible.
- Include a North arrow.
- Include sign messages.
- Include measurements.
- Write legibly.
- Describe repair recommendations
- Detour notes should include the materials used; if it has not been established, the team should note the recommended route and materials.

DAF Photos

TDOT, in its training for assessment team personnel, recommends that many photos of the site including detour routes be taken. TDOT recommends that photos be clear and bright, and clearly depict the damage and needed repairs and not to use excessive zoom. The following photos should be included:

- A photo depicting the route section in the direction you approach
- A photo depicting the route section in the direction opposite your approach
- A photo looking right of the centerline
- A photo looking left of the centerline

Additional recommendations include providing points of reference, showing the extent of the damage, the bridge number, evidence of danger of future damage, and each line item in the cost calculation.

Examples of good and bad photos are provided in the training (see photos from FIGURE D - 32 to FIGURE D - 37).



FIGURE D - 32: Example of a Good Photo. Courtesy: TDOT.



FIGURE D - 33: Example of a Bad Photo. Courtesy: TDOT.



FIGURE D - 34: Example of a Good Photo. Courtesy: TDOT.



FIGURE D - 35: Example of a Bad Photo. *Courtesy: TDOT.*



FIGURE D - 36: Example of a Good Photo. *Courtesy: TDOT.*



FIGURE D - 37: Example of a Bad Photo. Courtesy: TDOT.

DAF Maps

In the Maps Component of the DAF, the functional classification map and Google aerial imagery should be included. TDOT functional classification maps show routes that are color-coded by type. The maps are accessible via the TDOT website (“Long Range Planning Division – Functional Classification Maps,” n.d.): <http://www.tdot.state.tn.us/longrange/functionalClass.htm>

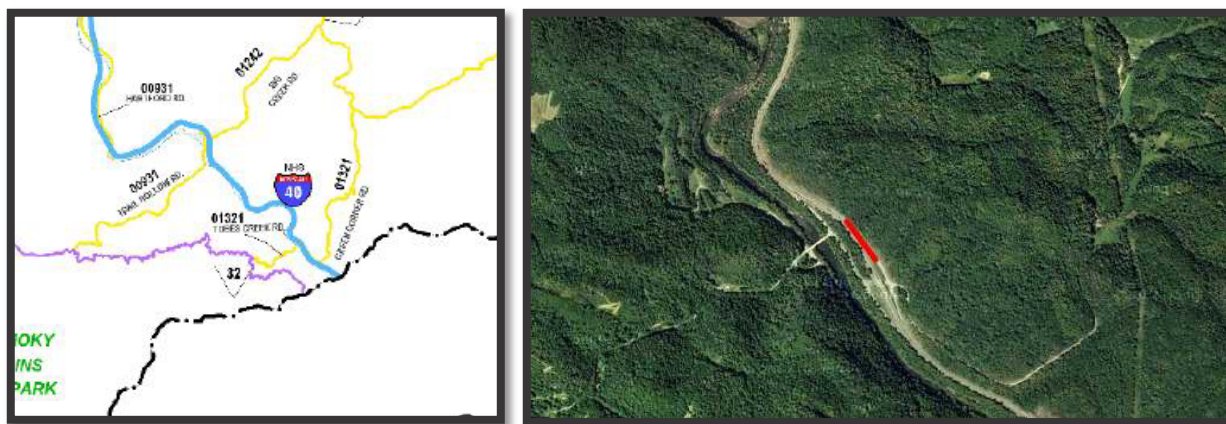


FIGURE D - 38: Example of Images from a DAF Map Component. Courtesy: TDOT.

TDOT does have access to LiDAR scanners for post-disaster condition assessment, but the availability of pre-disaster condition LiDAR scans are limited. LiDAR scanning was utilized on the \$13 million slide repair on I-75 in Campbell County in 2012 to assist in the design of the slope stabilization project.

DAF Cost Calculations

Cost calculations are an important aspect of the DAFs. Typical items are listed on the DAF along with their quantities, units used, unit prices, and total costs. Other items require the approval of the Regional FHWA ER Coordinator. The unit prices are updated yearly by the Regional FHWA ER Coordinator. A separate form is used to document debris removal work.

For contracts that have been let, actual contract terms are used. For force account work, Daily Work Reports with labor, material, and equipment costs are submitted by the assessment teams. When traffic control is necessary, traffic control is provided by maintenance forces and related costs are included in the DAF.

In the summary section of the DAF, summed costs from the cost calculation sheets and descriptions of the repairs are included. PE/CE costs are also included based on the judgment of the Regional FHWA ER Coordinator. If the electronic DAF is used, the total costs are automatically calculated.

Items that should be included in the DWRs are:

- Date, County, Route, the specific Log mile
- Special Event (if applicable)
- Project number (If a special project # has been set up, it is important to use it on the disaster, but not other routine work.)
- Materials
- Details on specific work done and relevant comments are also helpful.

Daily Work Reports that have been completed (a sample of which is shown in FIGURE D - 39) are collected and the costs are include in the cost calculations sheets.

TENNESSEE DEPARTMENT OF TRANSPORTATION
MAINTENANCE MANAGEMENT SYSTEM
Daily Work Report

Organization Unit		District	Date	Report No.				
4071 - FLOATING-REGION 4		40	Thursday, May 7, 2010	1504416				
Activity	Work Description	County	Asset Group					
489 - DISASTER CLEANUP		HARDIN						
Asset	Special Event	PROJ_NO						
	MAY 1 2010 FLOOD	36000420004						
Route	SC	CS	Begin LM	End LM	Length	Direction	Position	Off System Description
SR# 1	0	1	14.35	14.35	0.10	BOTH	ROADWAY	
Units of Accomplishment:	40.000		UOM: PERSON HOURS		Accident: N			
Daily Cost:	Labor	Equipment	Material	Total				
	1,061	851	0	1,912				
Number	Description	Org/UOM	Quantity	Hours	Unit Cost	DWR Cost		
Labor								
Regular Hours								
7120	ALLEN, GREGORY	4071		7.5	19.07	143.03		
1771	GOODWIN, STEPHEN	4071		7.5	23.60	177.00		
5549	TAYLOR, EDWARD	4071		7.5	27.66	207.45		
9454	WELLS, JAMES	4071		7.5	35.72	267.90		
Regular Overtime Hours								
7120	ALLEN, GREGORY	4071		2.5	19.07	47.68		
1771	GOODWIN, STEPHEN	4071		2.5	23.60	59.00		
5549	TAYLOR, EDWARD	4071		2.5	27.66	69.15		
9454	WELLS, JAMES	4071		2.5	35.72	89.30		
Equipment								
EQY982	EXCAVATOR, TRACK	4071		10.0	38.95	389.50		
S4A777	TRUCK, PK, FULL SIZE 4X2	4071		10.0	5.40	54.00		
S4WU14	TRUCK, PK, FULL SIZE 4X2	4071		10.0	5.40	54.00		
S7KG26	TRUCK, TRACTOR, TRI-AXLE	4071		10.0	28.78	287.80		
S8FF87	TRLR, LOWBOY	4071		10.0	6.57	65.70		

DWR Comment :

FIGURE D - 39: May, 2010 Flood Daily Work Report Sample. Courtesy: TDOT.

Quantities of needed items such as ditches, construction signs, and rip-rap are recorded on the DAF in the notes and sketches component. The form contains fields for Quantity, Unit, Item Description, Unit Price, and Total Cost. For the DAF cost summary portion, a short scope of work is provided, as shown in FIGURE D - 40, along with the total costs from the Cost Calculations component.

Emergency Repair		Dollars	
Force Account Scope of Work	Remove loose soil from slope face and ditch line. Stabilize the slope material with Class A Rip Rap.	Site Work	\$11,603.56
		Preliminary/ Construction Engineering	
Contract Scope of Work		Site Work	
		Preliminary/ Construction Engineering	
Total Emergency Repair Estimate			\$11,603.56
Permanent Restoration		Dollars	
Force Account Scope of Work		Site Work	
		Preliminary/ Construction Engineering	
Contract Scope of Work		Site Work	
		Preliminary/ Construction Engineering	
Total Permanent Restoration Estimate			\$0.00
Site Total			\$11,603.56

FIGURE D - 40: Scope of work in DAF cost summary. Courtesy: TDOT.

The personnel participating in the DAF training produced DAF cost calculations sheets and a summary sheet as shown in FIGURE D - 41.

COST ESTIMATE			
Emergency Repair			Dollars
Force Account Scope of Work	Provide traffic control for road closure and detour route for 12 days.	Site Work	\$7,000.00
		Preliminary/ Construction Engineering	
Contract Scope of Work	Remove unstable material from slope. Remove fallen material from road. Repair concrete wall (200'). Repair guardrail (100'). Repave roadway section (200').	Site Work	\$111,800.00
		Preliminary/ Construction Engineering	
Total Emergency Repair Estimate			\$118,800.00
Permanent Restoration			Dollars
Force Account Scope of Work	Provide traffic control for road closure and detour route for 8 days.	Site Work	\$4,700.00
		Preliminary/ Construction Engineering	
Contract Scope of Work	Cut rock slope back to a minimum of 45° from center line at a 2:1 slope.	Site Work	\$409,000.00
		Preliminary/ Construction Engineering	\$40,900.00
Total Permanent Restoration Estimate			\$454,600.00
Site Total			\$573,400.00

FIGURE D - 41: DAF Cost Estimate Example – May, 2013 Rockslide. *Courtesy: TDOT.*

DAF Development Example

FIGURE D - 42 shows an example of a DAF in development from the May, 2010 flood event, provided by TDOT in its FHWA ER training session. The scenario is that a team is deployed to the Hardin County SR 69 LM 14.75 site and observes slope erosion on the west slope face, with soil washed onto the roadway and ditch. The assessment team leader completes the identification information portion of the DAF.


 Detailed Assessment Form <small>(For Federal-Aid Highways)</small>				DAF Number							
FHWA Disaster #			County		Route #		Page	1	of	6	
ER-TN10-5			Hardin		SR069		Inspection Date		5/11/2010		
Road Name							Bridge #				
Applicant (check one)			Begin LM		14.75		ROW Width (ft)		40		
<input checked="" type="checkbox"/> TDOT			End LM		14.75		Travel Way Width (ft)		22		
<input type="checkbox"/> Other:			Functional Class Map #		36		Paved Shoulder Width (ft)		4		
GPS Coordinates			Federal-Aid Route?		<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO						
Lat (N)			36.1074								
Long (W)			88.1501								
Description of Damage			Erosion on west slope face. Soil across roadway and in ditch. Large rock protruding from slope face. Erosion is about 25' high and 60' in length. Ditch is filled for about 10 feet.								

FIGURE D - 42: Example of DAF Development. *Courtesy: TDOT.*

DAF Notes and Sketches

The notes and sketches component with details of the damages and recommended repairs are completed next, as shown in FIGURE D - 43.

Detailed Assessment Form <small>(For Federal-Aid Highways)</small>		DAF Number	
		16-SR05-1A	
Notes and/or Sketches		Page	2 of 6
<p><u>Recommendations</u></p> <ul style="list-style-type: none"> - clear loose debris + excavate back slope -18" - stabilize slope + ditch w/ class A rip rap (key into road bed) - leave existing exposed rock - daylight rock in ditch to original ditch line 			
<p>Team Members</p>	<p>John Doe Tom Jackson (FHWA)</p> <p>Mary Jones</p> <p>Susie Smith</p>		

FIGURE D - 43: May, 2010 Flood DAF Example, Note and Sketches Component. Courtesy: TDOT.

The maps sheet and photos sheet are then completed and include as many pages as needed. Examples are shown in FIGURE D - 44 and FIGURE D - 45, respectively.

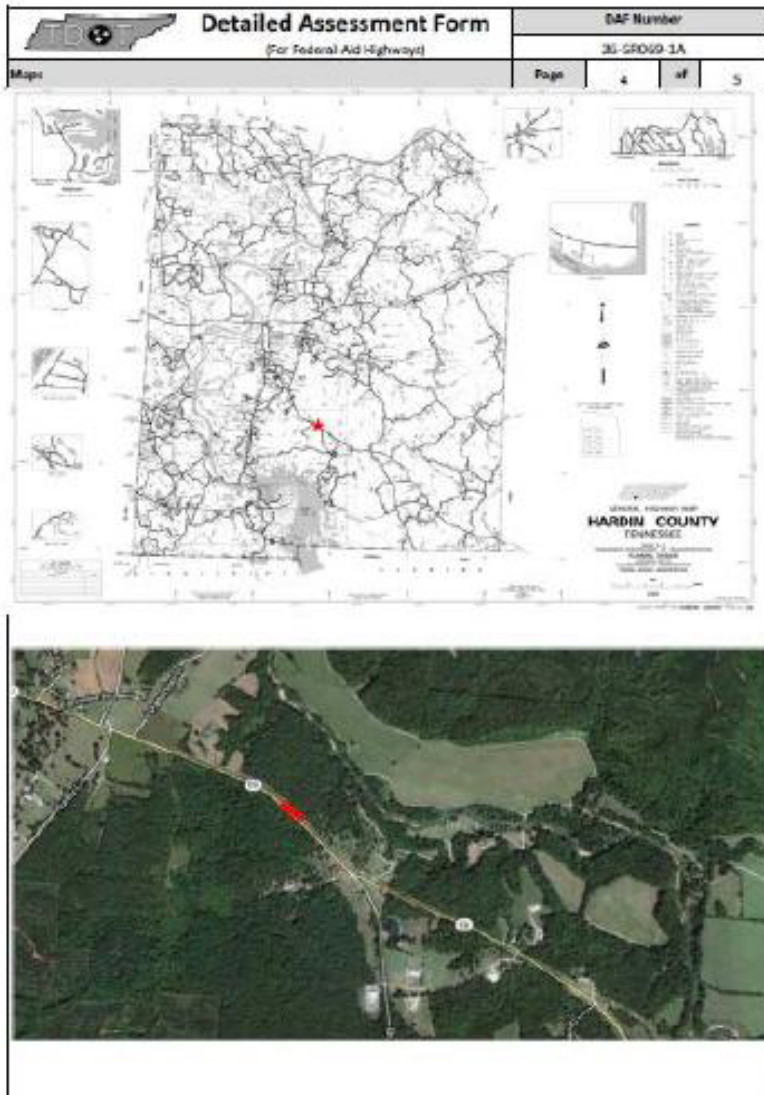


FIGURE D - 44: Maps within a DAF (sample). *Courtesy: TDOT.*



FIGURE D - 45: Photos within a DAF. *Courtesy: TDOT.*

DAF Training – Table Top Exercises

TDOT creates Table Top Exercises based on actual incidents. For instance, on May 9, 2013, large rocks fell onto State Route 25 in Smith County and an emergency contract was let. A geotechnical assessment team performed the assessment and completed the DAF. The area has a shoulder width of 8 feet, roadway width of 24 feet, and 120 feet of ROW. An emergency contract was let for emergency repairs. The Table Top Exercise directed personnel to perform the assessment using this information.

FHWA ER PROJECT MANAGEMENT

The TDOT HQ FHWA ER Coordinator manages the FHWA ER projects through the use of Excel tables which are consistently updated. FHWA ER project key process milestones for all active FHWA ER events are tracked using the Excel table shown in FIGURE D - 46.

ER Event #	Date	Counties	ER Event Description	Process Milestone												
				Gov Proclamation or Presidential Declaration	Letter of Intent	Acknowledgement	Site Assessment	DSR	Allocated	Obligated	Final Cost Submittal	Final Cost Approval	Close-out			
ER-TN09-1	January 28, 2009	Lake, Obion	Ice storm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ER-NC10-1	October 25, 2009	North Carolina	I-40 rockslide detour and traffic operations	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ER-TN10-1	November 10, 2009	Polk	US-64 rockslide #1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ER-TN10-2	January 19, 2010	Polk	US-64 rockslide #2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ER-TN10-3	January 25, 2010	Sevier	US-441/321 rockslide	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ER-TN10-4	March 14, 2010	Blount	US-129 rockslide	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ER-TN10-5	April 30 - May 2, 2010	West and Middle TN	Flooding	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ER-TN11-1	February 20, 2011	Grundy	SR-108 rockslide	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ER-TN11-2	April 5, 2011	Sevier	US-441/321 slide	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ER-TN11-3	April 19, 2011	West TN	Storms and flooding	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ER-TN11-4	April 25-28, 2011	East TN	Storms and tornado	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ER-TN12-1	January 31, 2012	Cocke	I-40 rockslide	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ER-TN12-2	March 8, 2012	Campbell	I-75 landslide	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ER-TN12-3	March 16, 2012	Blount	US-129 rockslide	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ER-TN13-1	January 15, 2013	East TN	Storms and flooding	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ER-TN13-2	May 9, 2013	Smith	SR-25 slide	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

FIGURE D - 46: Using Excel to track key process milestones for active FHWA ER events. Courtesy: TDOT.

A more detailed table tracking Federal Appropriations and Federal Obligations, FMIS status; Final Voucher Federal Share, State Share, and Total; Documented Federal Share, State Share, and Total Share is utilized based on information from FMIS and TDOT. Documented Total includes all expenditures for which TDOT has supporting documentation showing how expenses are related to the event. Documented Federal Share includes all FHWA ER Program eligible expenditures for which TDOT has supporting documentation, has submitted to FHWA, and been approved by FHWA for reimbursement.

In certain instances, the Federal Obligation was greater than the Federal Appropriation which caused a delay in full reimbursement to TDOT.

Note that the project numbers are assigned by the TDOT HQ FHWA ER Coordinator. Each FHWA ER event in each year receive a specific number. For instance, the first disaster in 2013 would receive the

code FHWA ER-TN13-1. The first project for that disaster would be indicated by the last digit in the sequence: FHWA ER-TN13-1-1.

For a particular year, another table containing all FHWA ER events and project numbers is created. The project numbers include TDOT’s FHWA ER codes, the Federal Project Number, and State Project Number. In addition, for each project, the table indicates whether or not it is emergency repair or permanent restoration work along with the estimated project cost, estimated PE/ROW/CE cost, estimated FHWA participation percentage and share, state/local share, allocations and obligation amounts, contract number, letting date, and project status (See TABLE D - 4).

TABLE D - 4: 2012 FHWA ER Program Details. Courtesy: TDOT.

ER Project Number	County(ies)	Description	Emergency Repair	Permanent Restoration	Estimated Project Cost	Estimated PE/ROW/CEI	Total Estimated Cost	Estimated FHWA Participation (%)	Estimated FHWA Share
ER-TN12-1-1	Cocke	I-40 Slide Repair Contract #1	√		\$60,000	\$0	\$60,000	100%	\$60,000
ER-TN12-1-3		State Forces - Emergency Repair			\$60,000	\$6,000	\$66,000		\$66,000
ER-TN12-1-2	Cocke	I-40 Slide Repair Contract #2		√	\$1,000,000	\$0	\$1,000,000	90%	\$900,000
ER-TN12-1-4	Cocke	State Forces - Permanent Restoration	\$50,000		\$0	\$50,000	\$45,000		
ER-TN12-1-5	Cocke	Consultant - Records Clearance		√	\$40,000	\$0	\$40,000	90%	\$36,000

ER Project Number	Allocation Amount	Obligated Amount	Estimated State/Local Share	Contract(s)	Letting Date	Project Status (as of 7/24/12)
ER-TN12-1-1		\$62,318	\$0	CNL132		Complete
ER-TN12-1-3			\$0			Complete
ER-TN12-1-2		\$1,338,000	\$100,000	CNL138		Complete
ER-TN12-1-4		\$0	\$5,000			Complete
ER-TN12-1-5		\$0	\$4,000			Pending

FHWA ER PROJECT FORMULATION ISSUES

Site definition including defining the dimensions of a site and whether or not to include adjacent sites has been an issue in previous disasters (e.g., the May 2010 Flood in Middle and West Tennessee).

Most DDIRs will require minor changes in terms of quantities of equipment, material, etc. following initial approval by the Area Engineer. However, at times it might involve taking a different repair approach. For instance, in 2010 there was a site in Maury County on SR-7 where a severe slope failure

occurred and caused the entire roadway to collapse. Initial estimates to repair the embankment were approximately \$10M to \$12M. It was later determined that installing a bridge at this site would be the more cost effective option, and the DDIR was revised to reflect this change. The final cost for the bridge was approximately \$7M instead of the original \$12M.

BRIDGE MONITORING TOOL

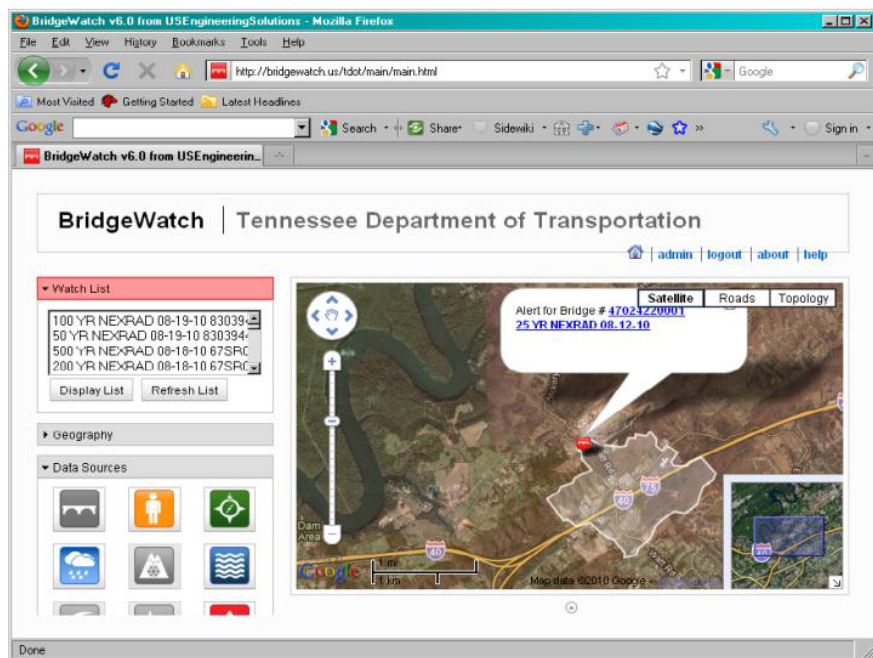


FIGURE D - 47: Screenshot of TDOT's BridgeWatch™ Tool. Courtesy: TDOT.

There are approximately 19,650 bridges in Tennessee, of which 17,010 are over water and 820 are scour critical. There are also about 1,000 unknown foundation bridges - 85% of these are locally owned. TDOT has about 17 bridge disaster assessment teams across its four regions; the teams are led by a bridge engineer. Within 24 hours of a flood, personnel must be dispatched to inspect the bridge according to TDOT's emergency plan. TDOT's Region Bridge Inspection must upload the status of the bridges after flood events so notes can be entered into the system and the event alert terminated. Prior to re-opening, bridges closed due to flood events must have TDOT region bridge inspection approval.

All of TDOT's bridges and their conditions are included in the TDOT bridge monitoring tool which was implemented in 2004. It was originally designed specifically for the monitoring of scour critical and unknown foundation bridges but was expanded to include all bridge types. The internet-based tool is customizable with TDOT TRIMS data, monitors bridges on a 24/7 basis using NOAA and USGS information for dangerous conditions within the state. Note that the TRIMS database contains FHWA-required bridge data along with additional data (foundation types, substructures, paint system) which

can help to determine pre-disaster conditions. The tool can predict the consequences of particular event levels based on a pre-determined threshold input by TDOT. The current default thresholds are 25-year rainfall events for scour critical and unknown foundations. Some are also set to NEXRAD radar and USGS stream gages.

Once the trigger level is reached (e.g. rainfall of x inches), the tool will send out alerts via email, fax, and/or cell phone text for specific bridges that are in danger of incurring damages. LPAs can enroll in this system. Information and photos from disaster assessments can be uploaded in PDF format to the tool. Laptops are provided to the disaster assessment teams so that they are able to upload the information from the field.

The May, 2010 flood caused significant damages to TDOT's bridges. While 89% of the highway bridges had no significant damages, at least 1,167 structures were damaged and needed repairs. 44 of the 52 Counties had bridges that suffered maintenance issues because of the flood.




FIGURE D - 48: Example of Structural Damage during the May, 2010 Flood Event. Courtesy: TDOT.

Most (773) bridges had a single type of damage. 504 had debris accumulation, 415 had roadway approach damages, 362 had channel embankment erosion, 225 had scour damage, 115 had structural damage, and 54 required closure. 415 Bridges had damage to the roadway approaches. BridgeWatch™ application alerted TDOT personnel regarding damaged bridges and helped in disseminating bridge condition information to relevant personnel. The bridge database tracked five (5) categories of damages. The usefulness of this tool and bridge database was fully demonstrated during this May, 2010 flood event.

The bridge inspection team works with the TDOT district maintenance or local highway maintenance officials to establish detours. Bridge reports include findings, channel measurements, and photos. The Plan of Action Report for bridge inspections is presented in Figure D-49.

Rev. 05-31-09

**HIGHWAY BRIDGE SCOUR
PLAN OF ACTION REPORT**



TDOT
TENN DEPT OF TRANSPORTATION

BRIDGE ID NUMBER: 02008590001
 BRIDGE OWNER: WEAKLEY COUNTY
 ROAD NAME: OLD SR22
 CROSSING: SPRING CREEK BRANCH
 LATITUDE: N 36.1604 DEGREES
 LONGITUDE: W 88.54757 DEGREES

COUNTY: WEAKLEY
 ROUTE: 00850
 SPECIAL CASE: 0
 COUNTY SEQUENCE: 1
 LOG MILE: 1.78
 YEAR BUILT: 1950

TYPE OF SUPERSTRUCTURE

MAIN SPAN: CONCRETE - STRINGER/MULTI-BEAM OR GIRDER APPR. SPAN: NOT APPLICABLE

TYPE OF SUBSTRUCTURE

ABUTMENTS: CONCRETE FULL HEIGHT ABUTMENT ON CONCRETE PILE FOUNDATION
 BENTS: NOT APPLICABLE
 PIERS: NOT APPLICABLE

SCOUR EVALUATION

Bridge is scour critical; bridge foundations determined to be unstable for calculated scour conditions. Monitor bridge in lieu of installing scour countermeasures.

INSPECTION PROCEDURES

What Initiated the Call-out Inspection? BridgeWatch Alert
 TDOT District or Local Maintenance Personnel
 THP or Local Law Enforcement Personnel
 Other: _____

Things to check on a bridge during floods:

- Span movement - horizontally as well as vertically
 1. Check displacement / deflection along curb line, both bridge rails and outer edge of bridge deck.
 2. Check for plumb of piers or bents.
- Check for embankment erosion
- Check for drift build-up on piers or bents
- Check pier exposure, if possible, and compare to previous inspection
- Review the latest bridge inspection report versus current field conditions

If Closure is recommended:

- Stay at bridge with vehicle pulled across road until bridge is secured and properly closed by District, County or City Maintenance Personnel. Use Barricade Tape, traffic cones and/or traffic flares as temporary measures to warn motorists to stay off of the bridge until such time as the bridge may be properly closed and barricaded.
- Contact: (1) District Maintenance Supervisor (If bridge is State maintained)
 (2) City or County Highway Maintenance Official (If bridge is not State maintained)
 (3) Tennessee Highway Patrol and/or local law enforcement Officers as appropriate
 (4) TDOT Regional Bridge Engineer
- The Bridge should remain closed until the water recedes and a daylight visual inspection is made by a TDOT bridge inspection team.

PUBLICATION DATE
30-May-10

BRIDGE ID
 02008590001

Page 1 of 2

FIGURE D - 49: Plan of Action Report for bridge inspections. *Courtesy: TDOT.*

Rev. 05-31-09

HIGHWAY BRIDGE SCOUR
PLAN OF ACTION REPORT



- [] - The bridge inspection team will work with State District maintenance or local highway maintenance officials in establishing a detour route. Any bridge on the selected detour route shall be checked prior to signing the detour route.
- [] - The bridge can be re-opened only after a TDOT bridge inspection team checks the substructure units and they are determined to be structurally stable.

CONTACT PERSONNEL:

TELEPHONE NUMBER:

COUNTY SHERIFF'S OFFICE

(731) 364-5454

HWY. CHIEF ADMINISTRATOR'S OFFICE

(731) 364-2284

COUNTY MAYOR'S OFFICE

(731) 364-5413

- [] - Summarize and submit findings from the inspection to BridgeWatch scour monitoring system. The report shall include the date and time of the inspection, a brief summary of findings and, as appropriate, photographs of the bridge and stream channel measurements. If significant scouring has occurred, the report shall also be copied to Bridge Inspection Headquarters.

COMMENTS:

Suggested List of Equipment to conduct the inspection:

- Latest Bridge Inspection Report
- Scour POA Report with the above Checklist
- Bridge Design Plans, if available
- Tape measure with weight
- Plumb bob
- Range Pole
- A 1000 Foot Roll of yellow Polyethylene Barricade Tape printed with the following message:
SAFETY HAZARD KEEP AWAY
- A Barricade Tape Dispenser with serrated cutter
- A roll of Duct Tape
- Traffic Cones - Minimum of four (4)
- Traffic Safety Flares - Minimum of four (4) or set of electronic warning flashers
- TDOT two-way radio (State Personnel only) and/or cellular telephone
- TDOT radio directory (State Personnel only)

PUBLICATION DATE
30-May-10

BRIDGE ID
02000500001

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FIGURE D - 50: (cont.) Plan of Action Report for bridge inspections. *Courtesy: TDOT.*

TENNESSEE MUTUAL AID LEGISLATION

The 2004 mutual aid act passed by the Tennessee legislature on May 6, 2004 allows the TDOT, counties, cities, nonprofit fire departments, and utilities to work together and provide mutual aid, and be compensated for it without the need to develop individual mutual aid agreements. The universal agreement is contained within the statute itself. Prior to its enactment, FEMA did not reimburse TDOT for mutual aid assistance received from other entities. Reimbursement details are provided in the legislation (State of Tennessee, 2004):

“(c) During the period of assistance, the responding party shall continue to pay its employees according to then-prevailing wages, including benefits and overtime. The requesting party shall reimburse the responding party for all direct and indirect payroll costs, including travel expenses, incurred during the period of assistance, including but not limited to, employee retirement benefits as determined by generally accepted accounting principles. The requesting party is not responsible for reimbursing any amounts paid or due as benefits to responding party's personnel under the terms of the Tennessee Workers' Compensation Act, compiled in Title 50, Chapter 6.

“(d) The requesting party shall reimburse the responding party for the use of its equipment during the period of assistance according to the Federal Emergency Management Agency fee schedules for hourly rates. For instances in which the costs are reimbursed by the Federal Emergency Management Agency, eligible direct costs shall be determined in accordance with 44 C.F.R. 206.228.

“(e) The requesting party shall reimburse the responding party for all material and supplies furnished by it and used or damaged during the period of assistance, except for the cost of equipment, fuel, and maintenance materials, labor, and supplies, which shall be included in the equipment rate unless it is damaged and the damage is caused by the gross negligence, willful and wanton misconduct, intentional misuse, or recklessness of the responding party's personnel. The measure of reimbursement shall be determined in accordance with 44 C.F.R. Part 13 and applicable Office of Management and Budget (OMB) circulars.

“(f) The responding party shall maintain records and submit invoices for reimbursement by the requesting party. For instances in which costs are reimbursed by the Federal Emergency Management Agency, the requesting party must submit requests for reimbursement to the Tennessee Emergency Management Agency on forms required by Federal Emergency Management publications, including 44 C.F.R. Part 13 and applicable OMB circulars. The reimbursement request shall include the certification or level of training of the personnel who responded and the type of equipment that was sent. (g) The responding party shall forward the reimbursable costs with an itemized invoice to the requesting party as soon as possible, but no later than sixty (60) days after the provision of assistance has ended.”

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Texas DOT (TxDOT) Case Study

BACKGROUND

Texas, the second largest state in the nation, has experienced hurricanes, tropical storms, and wildfires. Many tropical disturbances develop in the Atlantic Ocean, Caribbean Sea, and Gulf of Mexico, and have the potential to turn into tropical storms and hurricanes (Roth, 2010). Additional natural hazards are droughts and snowstorms. In addition, homeland security is another key focus area.

Texas DOT (TxDOT) is responsible for 79,000 miles of roads, the largest network in the U.S. TxDOT has more than 5,000 employees and 246 maintenance sections; the average section has 10-30 personnel. About 55% of the field personnel are contractors who perform crack sealing, seal coats, overlays, guardrail repair, bridge repair, mowing, tree trimming, striping, pavement marking and similar work. Four regional support centers provide operational and project delivery support for the agency's 25 geographical districts.

A drought began in October, 2010 and, as a result, 2011 became the driest year for the state. Records for low rainfall were set in March-May, 2011 and June-August, 2011. These droughts along with extreme heat increases the likelihood of fires; in fact, 30,000 disastrous wildfires were sparked – most of them burned everything in their paths and endangered the lives of firefighters and TxDOT field personnel who worked to clear debris, dead and dying trees, and repair damaged roadways and bridges. TxDOT was also asked by the state EMA (Department of Public Safety) to supply fuel and water and by Texas DEM to construct fireguards along highways including for highways that were not owned by TxDOT. Heavy equipment was also supplied by TxDOT. The total amount expended by TxDOT for the drought was approximately \$5 million.

DOCUMENTATION

TxDOT has attempted to document all of their facilities during normal conditions using a combination of onsite photographs and Google imagery in order to provide evidence of pre-disaster conditions. Once a disaster strikes, TxDOT survey teams will document damages to their facilities using digital cameras. The photos are geocoded using lat/long information.

FEMA PA PROGRAM

Most of TxDOT's FEMA PA projects are considered large projects regardless of the disaster type. For small projects if there is a cost overrun (estimated costs are lower than actual costs), TxDOT usually needs to cover these costs. Therefore, TxDOT is careful when estimating costs for small projects to avoid overrun situations.

TxDOT notes that the average time required for TxDOT personnel to complete a FEMA application is 120 person-hours. Good documentation practices are especially important so that needed information can be readily identified and information requests can be addressed, especially if FEMA personnel rotation occurs.

There have been issues obtaining approval for rental rates. FEMA asked TxDOT to use the Blue Book rates for rental of equipment rather than TxDOT's rates but decided that TxDOT's lower rates should be used at a later time.

FHWA ER PROGRAM

The relationship between the TxDOT and FHWA Division Office and its engineer has been excellent. FHWA appreciates the efforts of TxDOT in its response to disasters and the work performed by TxDOT in debris removal and repair of roadways. In a typical disaster, TxDOT and the FHWA engineer perform windshield assessments together. The area engineer provides his or her engineer's estimate and reports to the district office. The district office then reports the estimate to TxDOT Central Office. Because the FHWA engineer is at the disaster site, he or she is able to quickly approve or disapprove the work. The average time required for TxDOT personnel to complete an FHWA application is 40 person-hours. TxDOT desires additional clarity on the definition of a first pass of debris pick-up.

NON-FEDERAL SHARE

Texas Division of Emergency Management typically provides the non-federal share for TxDOT for both the FEMA PA and FHWA ER programs up front. It is intended to be a temporary contribution that needs to be replaced by other funds at a later time. If local counties and cities have difficulty contributing their required share, TxDOT assists them. For instance, when floods in West Texas consumed a municipality's maintenance funds, TxDOT assisted by providing the LPA's required amount.

TECHNOLOGIES

Sharepoint has now been used by TxDOT districts for several years. TxDOT districts use Sharepoint to input resources expended during disasters on a daily basis. The salary/labor amounts in the site are averages. One problem was recently encountered when documents that had been stored on the site could not be found—this is likely an internal issue and not an issue with the Sharepoint site.

A Maintenance Management System calculates the daily burn rate. The actual labor costs are available through this system which contains every employee's salary or labor rate. In the past it was not possible to match equipment hours with labor hours which is required by FEMA. The system was reconfigured so that it can now automatically match the equipment usage with personnel hours.

REIMBURSEMENT TIME

FHWA usually has excellent turnaround times once DDIR packages have been submitted. The maximum

amount of time for an FHWA ER reimbursement (after submission of the packages) was about one year, which was an unusual occurrence. FHWA had approved \$2.5 million for FHWA ER-eligible costs expended for the 2011 wildfires; however, because the total amount was not available, TxDOT received \$800,000 almost immediately but received an “IOU” for the remainder.

APPEALS

FEMA Appeals

Hurricane Ike struck Galveston, Texas early morning of September 13, 2008. It was a very large Category 2 hurricane and turned out to be one of the costliest hurricanes in Texas history causing almost \$20 billion in damages to the upper Texas Gulf Coast and killing 84 persons. Also, the hurricane surge caused massive damage to infrastructure and businesses, and more than two (2) million lost power. The federal government increased its normal payout percentage to 100% from 75% due to the devastating nature of the disaster. (*Hurricane Ike Impact Report, 2008*)

Texas roadways and bridges were damaged and filled with debris and water (flooding) caused by the hurricane. Approximately \$53.7 million was spent by TxDOT to repair its transportation system. A total of \$36.5 million in debris removal work was performed by TxDOT or its contractors. The debris consisted of typical debris – trees and downed power lines – to atypical debris such as barges.

TxDOT had to do an emergency purchase contract to supplement the debris clean-up effort. FEMA denied the claim stating the cost per lane-mile was excessive. TxDOT appealed this decision, stating the debris was atypical and provided additional documentation. FEMA overturned the decision upon review of the case.

Another situation involved fuel reimbursement. Fuel reimbursement for fuel provided to fire trucks from a volunteer fire department was denied for the following reasons: 1) did not have receipt or other evidence the fuel was provided to the trucks, 2) fuel was used for equipment that did not belong to TxDOT, and 3) the rate was higher than the FEMA’s approved rates. While TxDOT was not reimbursed in this instance, TxDOT subsequently met with the state EMA and created mutually acceptable forms for this scenario for future disasters. The form contains the following information categories: type of fuel, vehicle information (license plate number, vehicle ID number), cost, day and time, and person receiving the fuel.

FHWA Appeals

Wildfires in East Central Texas were especially destructive in 2011; a particularly rough drought spell contributed to the numerous and destructive wildfires. The 2011 fire season included around 27,976 fires which burned a record 3,959,040 acres. Thousands of homes and structures along with vegetation and trees were destroyed. President Barack Obama issued a federal disaster declaration for the wildfires that occurred August 30, 2011 through December 31, 2011.

Of particular note were the Bastrop County fires which started on Sept. 4, 2011 near Bastrop State Park (see FIGURE D - 51). High winds fueled the fires and numerous homes and trees became quickly

engulfed by the fires. The Texas State Highway runs through this area. Numerous dead trees had to be cleared from the highway. In addition, there were dead and dying trees which were still standing near the highway. TxDOT sought to cut them down and clear the area near the highway as a protective measure. FHWA initially denied the work but TxDOT appealed the decision stating that the trees posed an imminent threat to life and property. Because FHWA had not approved such an expense before, it took a few months for the decision to be made. The appeals decision overturned the initial rejection and the work was approved. This decision may have set a precedent for future decisions of this nature.

In another case, TxDOT performed a comprehensive research of the results of FHWA decisions for other states experiencing a similar issue. The research helped TxDOT receive a positive decision for the appeal. In order to bolster appeals requests, seeking out precedents has been a useful practice for TxDOT.

FEMA Audits

FEMA audits may require a full-time state DOT staff member – TxDOT has been undergoing an audit for its Hurricane Ike activities; the audit began in 2010 and was ongoing in December, 2013.



FIGURE D - 51: Bastrop County fires. Source: Green, 2011.

MAP-21

Because of MAP-21 changes, debris removal is now covered at 75% federal share instead of 100%. TxDOT believes that local Texas agencies with severely limited budgets may suffer because they may not have the 25% match. In the past when local agencies have not been able to meet their requirements, TxDOT had to assist and provide the matching funds. Therefore this change may require TxDOT to not

only provide additional monies for its own repairs but may cause the agency to expend resources on behalf of local counties and cities.

LOCAL PUBLIC AGENCIES

TxDOT submits reimbursement applications on behalf of LPAs and interacts with them a few times a year. TxDOT assists LPAs in completing applications and provides Just-in-Time Training to LPAs upon request. The classroom training is 8 hours long. Some LPAs require more assistance than others. For example, some of the agencies did not know whether the roads in their communities were Federal-aid roads or not. Also, the FEMA PA reimbursement process may not proceed smoothly when small counties and cities issue IOUs to vendors (e.g., payment is not actually made), and credit cards are used as paper receipts are not always available. Some did not understand the reimbursement programs and needed assistance on which program to submit to.

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Vermont Agency of Transportation (VTrans) Case Study

VTrans' mission is "to provide for the safe movement of people and goods in a reliable, cost effective and environmentally responsible manner." (VTrans Factbook, 2012) Vermont has had a total of 36 major disaster declarations and three emergency declarations. In the past several years from October 1, 2007 through September 1, 2014, there were 14 Major Disaster Declarations including Tropical Storm Irene which hit Vermont at the end of the summer in 2011. Ten of the 14 also included flooding, and two of the 14 were severe winter storms. VTrans has applied to the FEMA Public Assistance (FEMA PA) FHWA Emergency Relief (FHWA ER) programs for these disasters. VTrans considers the major hazards to its transportation infrastructure to be flash flooding, ice storms, and earthquakes.

ROLE AND RESPONSIBILITIES

VTrans' organizational chart in FIGURE D - 52 shows that it is comprised of five (5) divisions – Program Development; Finance and Administration; Policy, Planning, and Intermodal Development; Operations; and Motor Vehicles Department. The divisions that have the most involvement during disasters and emergencies and in the FEMA PA and FHWA ER reimbursement processes are the Program Development Division, Finance and Administration Division, and the Operations Division.

District offices have the responsibility of repairing facilities within their region and for submitting required documentation for the FEMA PA and FHWA ER programs. Each district office program coordinator reviews DDIR/PW forms before submitting them to headquarters (HQ). This decreases the amount of time required for HQ staff to review the forms.

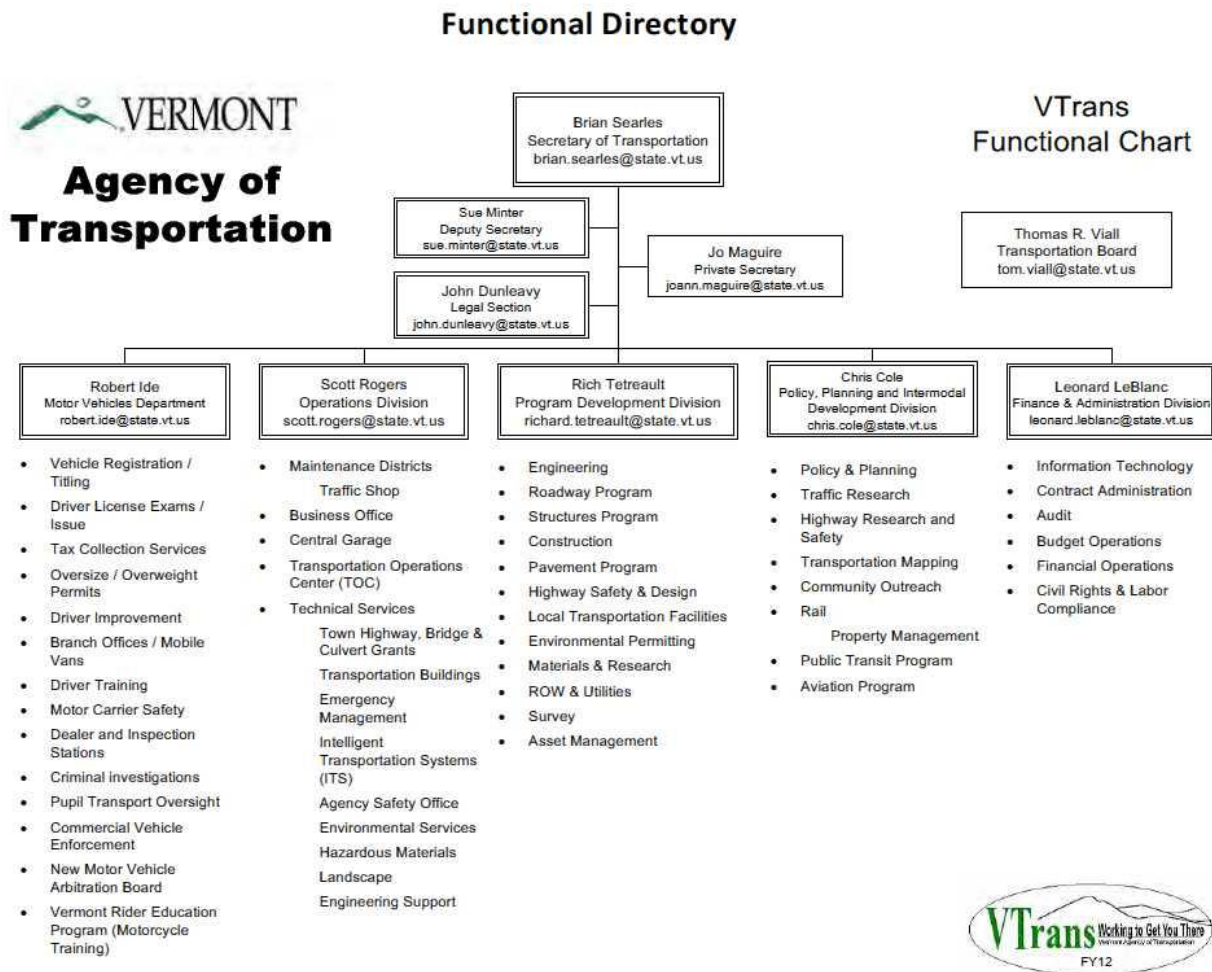


FIGURE D - 52: VTrans Functional Directory. Source: VTrans Factbook, 2012.

ESF ROLES

VTrans is the lead for the transportation State Support Function (SSF-1) and is responsible for the development and maintenance of the State of Vermont EOP SSF-1 Annex. The mission of the SSF-1 is “To provide assistance to State and local governmental entities and voluntary organizations requiring transportation capacity to perform response missions following a catastrophic or major disaster or emergency. Support includes, but is not limited to: coordinating assessment of the transportation system to support emergency operations; making the necessary emergency repairs to the state transportation system; assist local jurisdictions with emergency repairs to their transportation system when resources are available; identifying and obtaining (from state agencies, the federal government, or by donation, lease or purchase) appropriate transportation assets and/or transportation support capabilities to meet response and recovery operational requirements; coordinating establishment of emergency refueling and maintenance facilities. Identify evacuation routes along the state and federal

highway systems and with the assistance of SSF13 (Law Enforcement), coordinate evacuations along those routes should the emergency require.” (SSF-1 Annex, 2013)

VTrans is the co-lead for SSF-3 Public Works and Engineering. The other co-lead agencies are Vermont Division of Fire Safety (VDFS) and the Agency of Natural Resources, Department of Environmental Conservation. VTrans’ SSF-3 mission is “to provide technical advice and evaluation, engineering services, contracting for or providing construction management and inspection, contracting for the emergency repair of water and wastewater treatment facilities when resources are available, potable water and ice, emergency power and real estate support to assist the State in meeting goals related to lifesaving and life-sustaining actions, damage mitigation, and recovery activities following a major disaster or emergency.” (SSF-3 Annex, 2013) VTrans is also the lead agency for the Infrastructure and Environmental Restoration Task Force.

STATE EMA

The Vermont Division of Emergency Management and Homeland Security (DEMHS) is responsible for the FEMA PA program at the State level. VTrans is unique in that it had been responsible for the administration of the FEMA Public Assistance program at the State level for the past decade and had undertaken reimbursement-related and administrative responsibilities of the FEMA PA program on behalf of FEMA and DEMHS. However, after its Tropical Storm Irene experience and the need for VTrans to focus on the Federal Highway Administrations Emergency Relief Program, the State decided to move the administrative responsibility for the FEMA Public Assistance program to the state EMA.

For all disasters which occurred prior to Tropical Storm Irene, VTrans managed the FEMA Public Assistance program in its entirety. For disasters beginning with Tropical Storm Irene and ending with the FEMA PA declarations of May-July 2013, VTrans supported DEMHS with technical assistance, damage assessments, grants management, and financial transactions (i.e., VTrans holds the appropriations associated with the FEMA PA program and made all the payments to LPA applicants including VTrans itself). The Vermont DEMHS is involved in the large project closeouts for FEMA-4022-DR-VT, with VTrans actually making the reimbursement payments. For FEMA PA declarations beginning with the ice storm of December 2013, DEMHS manages the FEMA PA program in its entirety. VTrans continues to perform the role of providing technical assistance in regards to road and bridge projects and works very closely with municipalities that become applicants under that program. DEMHS does not provide training on FEMA PA reimbursement procedures to VTrans. DEMHS has coordinated workshops associated with documentation and pre-audit preparations for the LPAs. This training is provided on an as needed basis and is free of charge. During disasters, DEMHS assist LPAs with their resource requests.

VTRANS ACCOUNTING PERSONNEL

VTrans' accounting staff is assigned to a particular billing unit (FHWA ER or FEMA PA) in the Accounts Receivable Unit, but most are able to perform both when needed. Duties of the reimbursement staff are as follows:

- Responsible for billing and receiving all money for the Agency including other state agencies/departments; and Federal, LPA and private entities. Specifically the billings that are covered each month are FHWA, FEMA, FTA, FAA, FRA, NHTSA, MCSAP, third party billing, and miscellaneous sales and billing (leases, signs, guardrail repairs reimbursement) and other agencies.
- Record deposits for the agency.
- Research projects through program/project managers that have been over spent and perform appropriate action to get this accrued unbilled portion billed out.
- Billing corrections and research on projects expenditures/revenues as necessary.
- Development of a table for projects to be billed in the STARS system (State Transportation Accounting and Reporting System); information gathered includes billing agreements, contracts, participate funding, appropriations, etc.
- Determine Aged Receivable reporting and make recommendations for write-offs as necessary.
- Answer billing questions and work with customers on putting in place payment plans when appropriate.

TROPICAL STORM IRENE

While hurricanes and tropical storms are not common in Vermont, Tropical Storm Irene hit Vermont on August 27 and 28, 2011. The storm which included heavy rain and severe flooding resulted in severe damage to 531 miles of VTrans' highway infrastructure and 200 bridges. Many of the highways and bridges were closed due to washouts and debris, and 60 state roads and 33 state-owned bridges needed to be rebuilt. Of VTrans' 305 miles of railroad infrastructure, 200 miles were damaged as well. Three Incident Command Centers (ICCs) in three different regions of the state were activated by VTrans within two days of the event, and 1,000+ VTrans personnel were mobilized at each ICC. The ICCs used the NIMS Incident Command System (ICS) structure and a Unified Command led by the Chief of Operations and Chief of Program Development was established in Montpelier. VTrans' key goals were to establish access to towns and communities cutoff due to the event and establish access for utility companies for power restoration work.

VTrans successfully completed repairs and reopened 531 miles of closed roadways within four months of the disaster. In fact, within a month, most of the highway segments and 28 of 34 closed bridges were reopened (*Irene Innovation Task Force Report, 2012*). Emergency mutual aid was received from various states, the National Guard and other state agencies. For instance, the Vermont Agency of Natural Resources expedited the issuance of necessary permits, and its staff assisted VTrans' engineers develop

river restoration plans and perform river restoration work. The VTrans Deputy Secretary for Transportation was the Irene Recovery Officer and established the Irene Recovery Office which provided information on federal and state programs focused on mitigation. VTrans evaluated emergency repair options based on available detours, disruption to traffic, and emergency response needs. VTrans personnel performed damage assessments and site inspections using digital cameras. All photos were georeferenced with location information.

VTrans participated in both FHWA ER and FEMA PA programs. VTrans District Technicians perform all site inspections for FHWA ER and FEMA PA damage sites. VTrans provides a web-based map to help personnel and LPAs determine whether a road is Federal-aid. VTrans submitted 800 DDIRs to the FHWA ER Program and has received between \$175 and \$185 million. FHWA provided reimbursements weekly based on incurred costs. Permanent repairs and emergency repairs completed after 180 days of the disaster were eligible for 81.08% federal funding. VTrans was reimbursed for \$150 million from the FEMA PA program. FEMA provided reimbursements on a monthly basis as costs were incurred. As the Public Assistance officer for counties and cities on behalf of FEMA, VTrans was overwhelmed with the amount of work it faced during Hurricane Irene. All 3,500 project worksheets (PWs) created and submitted to FEMA were on behalf of local entities (counties, cities, and other public entities). They were a mixture of projects of various sizes, both large and small. Also, approximately 500 grant agreements with LPAs needed to be developed.

Due to the sheer scope of the disaster, VTrans realized that it would not be able to perform its administrator duties with its existing workforce. VTrans also discovered that LPAs required a great deal of technical and procedural assistance as many LPAs were struggling with federal contracting requirements and reimbursement procedures including documentation and disaster assessment. In order to fulfill its responsibilities, VTrans needed to add 20 FTEs for a two-year period which has been extended.

Scan Tour

The “Scan Tour” was a multi-disciplinary group including engineers and regulatory partners which toured the state to review every major damage site while response and recovery work was ongoing. The group was tasked with making recommendations on changes or additional work pertaining to the emergency repairs in order to increase the resiliency of the facilities. The group did their second “tour” after the spring to determine the conditions of the sites, to determine what repairs could be considered permanent versus temporary, and to determine who would be responsible for completing the permanent repairs.

Appeals and Audits

VTrans appealed FHWA TE-045 FHWA ER guidelines which precluded reimbursements for the cost of work performed by the National Guard. Note that VTrans paid the National Guard \$4-5 million for work performed during Hurricane Irene. After meetings and discussions with FHWA on the issue, FHWA decided to change FHWA ER guidelines and now allows these costs.

VTrans does not have extensive experience with audits though it has been audited by both FEMA and FHWA after Hurricane Irene. The audits went smoothly and resulted in no findings (no changes in reimbursement amounts).

After Action Report/Corrective Actions

To capture lessons learned information, VTrans created an Irene Innovation Task Force (IITF) which included a cross section of VTrans expertise from key units. The IITF was charged with examining processes used during response and recovery activities as well as interviewing individuals and groups regarding what worked, what didn't and what gaps existed. They compiled a comprehensive report, complete with recommendations, and ongoing work has been focused on implementation of the key recommendations. Damage Assessments and Site Inspections: The IITF recommended road closures as a way to accomplish repairs faster, more safely, and at less cost; the continuation of fast-tracking high-priority projects and increased use of the Accelerated Bridge Project; and, the creation of a common utility map for all utilities.

FEMA PA PROGRAM

VTrans has been the administrator on behalf of FEMA for the FEMA PA program for about a decade. However, after Tropical Storm Irene, the State of Vermont has transitioned this management role from VTrans to DEMHS.

VTrans' experience with FEMA included coordination with different personnel due to FEMA team rotations. VTrans has been working on identifying FEMA funds for mitigation projects to enhance the resilience of its infrastructure for future disasters especially after experiencing the devastating consequences of Irene.

Positive experiences with FEMA's FEMA PA program are that Presidential disaster declarations are made rapidly and funding generally becomes available within around three months of the disaster (much quicker than for the FHWA ER program). Also, FEMA handles the NEPA process for applicants, while FHWA does not. FEMA's small project funding process based on estimates have allowed many applicants to keep excess funds provided through the program.

FHWA ER PROGRAM

VTrans is the administrator of the FHWA ER Program as per its Oversight and Stewardship Agreement with the FHWA. VTrans works closely with its FHWA division office on a daily basis on various matters. Currently, VTrans is working with FHWA to create an administrative manual with updated procedures for the FHWA ER program for future disasters and emergencies. In managing the FHWA ER program, VTrans performs all work from initial damage assessments, to the development and approval of most

DDIRs (interstate sites being the exception), programming projects, completing work (State system), overseeing grants to municipalities with qualifying road/bridge damage, paying and ultimately closing out all the projects and the declarations. For Irene FHWA ER projects, VTrans worked with the Vermont Congressional representatives to have the federal share increased to 90% - this resulted in an additional \$10 million in reimbursements for VTrans.

Positive experiences with the FHWA ER Program have included flexibility in the area of structures, allowing VTrans to meet Vermont Agency of Natural Resources permit requirements. FHWA has been open-minded to doing work in streams such as placement of very large rocks to reestablish an incised channel's original profile in order to minimize roadway side slope impacts and mitigate against future flooding.

During disasters and emergencies, the goal is to accomplish any eligible “emergency” repair within the first 180 days to ensure that most of the “emergency” repair will be eligible for 100% FHWA funding. In the past, municipalities had failed to grasp the importance of the 180-day deadline, causing some of their “emergency” repair to be paid at the 81.08%/18.92% split.

COMBINED DOCUMENTATION FORM

VTrans has created a modified DDIR by incorporating some of the FEMA Project Worksheet information in an effort to better align the two disaster programs. This effort was more difficult than had been anticipated because the PW requests much more information than does the DDIR. A single PW can be as long as 12-18 pages plus attachments (e.g., permits and Scopes of Work). VTrans selected the most important items from the PW form and incorporated them into the DDIR. VTrans now uses this modified DDIR and will share it with other states. In addition, the form can be used by all levels of government within Vermont. Note that this project was motivated by a series of discussions VTrans and the Governor of Vermont, the Transportation Lead for the Coalition of Northeastern Governors (CONEG), had with other states and a collective desire by Northeastern states for a common form. A FHWA and FEMA Toolkit for state DOTs and development of standard EMAC costs were also noted as desired items.

PROJECT FORMULATION

FEMA PA Project Formulation

The development of Project Worksheets (PWs) are a joint effort between FEMA, DEMHS, VTrans, and the applicants, with the FEMA project specialists doing the actual writing and data entry. FEMA tends to group damage sites as best they can and as appropriate to cut down on the volume of PWs. However, they cannot combine sites solely to circumvent the per site damage threshold.

FHWA ER Project Formulation

For the FHWA ER program, VTrans tries to group damage sites that are within a reasonable distance of each other for the same reasons (to reduce the number of DDIRs and to ideally have just one DDIR translate into one programmable project). This has been VTrans' practice prior to Irene and it has been its practice for events that occurred after Irene. VTrans is also developing an application which will allow VTrans district staff to enter damage site information, have VTrans Operations HQ staff review the data, and group the sites as appropriate. The application will then automatically generate the DDIR.

PROJECT CLOSEOUT AND REIMBURSEMENT PROCESS

FEMA PA Closeout and Reimbursement

For FEMA PA projects, VTrans uses the same procedure as for other state funded projects. For large projects, final request for payment and closeout with all necessary documentation is submitted by the applicant to their respective VTrans district office. District staff reviews documentation for completeness and then forwards the packet to VTrans' Operations HQ. VTrans Operations HQ performs a final review and then forwards the packet to DEMHS. DEMHS submits the packet to FEMA. FEMA performs a closeout review, amends PW and obligates additional money if necessary, and then notifies VTrans' Operations HQ. Once final PW amendment is approved and money obligated, VTrans Operations HQs staff makes final payment to the applicant.

FHWA ER Closeout and Reimbursement

For FHWA ER projects, VTrans uses the same billing and closeout procedures used for other FHWA-funded projects. For all municipal projects, municipalities submit all necessary documentation to VTrans district offices. VTrans district staff review request and documentation for completeness, then forward to VTrans Operations HQ. VTrans Operations HQ staff performs a second check of documentation to ensure all federal requirements have been met and that the work is in the correct category (emergency or permanent). If requirements are satisfied, payment is made. For State projects, VTrans' district and HQ staff work together to ensure all allowable charges are included in the appropriate expenditure account. Once that has occurred, the project is closed.

IRENE INNOVATION TASK FORCE (IITF) RECOMMENDATIONS

Incident Command Structure and Integration

The IITF reported that integration of various functions including IT and HR within each ICC and integration of external agencies including FHWA and FEMA were important during emergencies. The IITF noted that in emergencies, VTrans should continue to promote the use of cross-functional teams and better integrate rail and state airport staff into the emergency operations. As soon as possible after an emergency or disaster, VTrans, state agencies, and LPAs should agree upon roles

and responsibilities and make use of stewardship agreements and MOUs as needed. Also, the same geographic boundaries for districts should be used by all agencies.

In addition, developing a Standard Operating Procedure (SOP) for VTrans' ICS is important and should include standardizing financial processes, clarifying the role of planning, formalizing the role of IT, formalizing communication processes, ensuring that the Unified Command fully utilizes the ICS, and developing a three-tiered system. FEMA and FHWA along with VTrans' environmental liaison, ANR and Regional Planning Commissions should be involved in ICC planning.

Information Technology (IT)

A range of technologies contributed to the success of VTrans' Irene response including tablets and smart phones. Data integration, support, and development of protocol for naming and storing data may be needed for these technologies. The IITF noted that implementation of new technologies would require end user champions, and development of new processes, and policies and governance structures for the processes. IITF's IT recommendations were:

- Cloud technology – Cloud technology may be useful in making maps, Environmental Permits, contractor agreements, and various Human Resources documents available for emergency responders to view and use in the field and to facilitate real-time collaboration and information sharing among stakeholders.
- R Drive – Initially, Irene response data was stored in many different places, leading to confusion. Once the R drive was put into use, data storage issues were greatly mitigated. The R drive should be used from day one in emergencies (ongoing). In addition, consider storing HR documents, maps, and other ICC contact information in a central place.
- Incorporation of Technologies into Operations – Incorporate the use of technologies such as GPS data cameras, iPads, smart phones, smart tablets, in all operations; and, provide training and support as needed.
- Electronic signatures – Continuation and expansion.
- Electronic databases – Use of electronic databases instead of paper to monitor and store data and information
- Bridge database development would enable information-sharing about bridges and their conditions.
- Bridge and culvert maps should be developed/updated to assist disaster assessment teams in locating disaster sites.
- Google Maps was a good temporary solution during Irene since VTrans' 511/ATIS could not handle the web demand for the site immediately after the arrival of Tropical Storm Irene. Google Maps served its purpose well, but VTrans' traveler information site is now able to accommodate a large volume of users; a full replacement of the 511/ATIS system is expected to be released within the next 2 years.

Asset Management Systems, Geospatial data

VTrans continues to further develop an Asset Management system which will contain significant amounts of data including pre-disaster conditions which will help with eligibility determinations for both the FHWA ER and FEMA PA programs. For post-disaster assessments all necessary geospatial data will be entered into an application which can plot sites, show disaster impacts with corresponding cost data, and allow VTrans to map historic data to show repetitive losses.

Training

ICS-related recommendations of the IITF had stated that key personnel need to be identified and trained for future ICC responsibilities and provided with technologies that they can use during emergencies and on a daily basis as well. Accordingly, VTrans has now identified and trained key personnel and delivered ICS training to all of its employees.

The IITF recommended incorporation of river management principles into VTrans Operation's training institute as one method of institutionalizing river engineering into infrastructure engineering. In addition, VTrans has worked with the Vermont Agency of Natural Resources (ANR) to develop and deliver "Roads and Rivers" training at different levels to staff. The 'Tier 1' is an awareness level and can be viewed online. The 'Tier 2' training is hands on (classroom and in the field) and focuses on building more in depth understanding and competency for staff who design, build and maintain projects. The objective of this training is to help staff learn how to enhance the interaction between road and river systems during daily operations, and how to rebuild the systems and make them more resilient when damage occurs. The creation of an Emergency Design Manual describing how to restore river banks was also recommended.

IITF also recommended training on checklists and emergency standard operating procedures (SOPs), especially with regards to how finances are handled, and training on technologies that have not been incorporated into ongoing operations. The IITF also suggested the use of a rotation program for interagency cross-training and to add capacity to critical positions in emergencies.

To facilitate the training the development of a manual including DDIR completion procedures was recommended, possibly with the assistance of other states. Pocket manuals would be provided to each ICS section head and would provide information on staff roles. The team recommended the use of ongoing mini-disasters as a chance to practice and evaluate the skills of potential leaders

Additional recommendations included the clarification of VTrans' role in training key stakeholders, including contractors, towns, and subcontractors. Additionally, there was a question of whether the Unified Command or the ICCs should be responsible for the DDIR process.

Workflow

The key IITF workflow recommendations were to streamline the permitting process, evaluate the Right of Way and contracting processes, and simplify the design process. Also, how to track materials and other items was an issue that needed to be addressed. A single VTrans staff member was responsible for the maintenance of record drawings and plans. This was very helpful to VTrans personnel and contractors who required the items for design projects.

CONTRACT ADMINISTRATION AND DOCUMENTATION

Emergency Documentation

During emergencies Contract Administration is inseparable from financial operations, the business offices and IT. When an emergency occurs, emergency documentation should be ready for distribution and implementation and should be similar to daily documentation procedures except that it will skip certain steps such as required signatures. Waivers and blanket approval procedures and an “Emergency Waiver” process for emergency response providers were also recommended.

Key decisions involved in documentation procedures include whether MATS and STARS are an agency-wide or solely operations applications. MATS is the VTrans Maintenance Activity Tracking System (MATS) which started as an activity tracking system but is now used to track personnel and equipment usage by project. STARS is VTrans’ transportation accounting and reporting system. Agency-wide applications would require broad training of agency staff. Also, whether payments should be centralized or localized needs to be determined.

Contractor Registration Database and Payment Process

Additional recommendations were the creation of a contractor registration database to facilitate contractor and contract documentation processing and tracking program (dashboard, electronic timeline, user-friendly and electronic contract components, online submission, etc.) and the standardization of the contractor payment process to ensure prompt payments.

Emergency Administrative Packets

Emergency Administrative Packets, which are available electronically for use by Incident Command Center/Unified Command (ICC/UC) Administrative Teams, will provide information on the invoicing process, the contracting process, the DDIR requirements, the levels of emergency, safety protocols, and the different funding sources for emergency repair work. A similar emergency packet for use by contractors is advised by IITF. VTrans in coordination with its FHWA Division Office has created a draft content outline which includes the following:

- ICC Organization Charts
- Meals – Competitive Quote Template
- Meals – Employee/Meal Tracking Template

- Meals – Food/Vendor Tracking Template & Sample
- Hotel Tracking Template
- Resource Tracking Template
- Call Log Template (not yet included)
- Notice to Proceed Template
- Contractor Assignment Tracking Template
- Materials Tracking Template
- Equipment Inventory Template
- Worker Sign In/Out Template
- Delegations of Authority
 - Appointment of Authorized Agency
 - Payment Delegations

Also included are recommendations on contractor and vendor payment, purchasing card procedures, change log, and an emergency contractor packet. The packet includes the following:

- Contractor Summary
- Contact Information
- Daily Work Slip
- Invoice
- Insurance Requirements
- W-9 Form
- Civil Rights & Labor Compliance

Information about the following emergency waivers are included:

WorkZone Access and Travel Agency of Administration

- Mid-Tour Meals
- Single Purchase Threshold
- Blanket Notice to Proceed and Progress Payments
- Contract Approval Cap
- Railroad Steel
- STARS – Project Accounting Financial System

Department of Human Resources

- Increase to Comp Time Cap
- Restoring Leave Lost During Deployment

- Delaying Performance Evaluations During Deployment

FHWA

- National Guard – FHWA ER Manual vs. 2 CFR 225
- Meal Reimbursement Cap During Deployment
- Retainer Contract Amendments

LOCAL PUBLIC AGENCIES

VTrans' FHWA ER/FEMA PA representatives coordinate with LPAs and provide extensive assistance for the FEMA PA and FHWA ER programs. VTrans assists LPAs in the preparation of documentation. LPAs now submit their FEMA PA applications to DEMHS and their FHWA ER applications to VTrans' Technical Services Section of the Operations Division. VTrans reviews their FHWA ER submissions and documentation, rejects ineligible submittals, approves eligible items, and then processes payments. VTrans helps LPAs through the NEPA process and assists them with appeals to both FEMA and FHWA. VTrans advises LPAs on file/documentation management in case of audits. Also, VTrans performs closeout inspections with LPAs for all FEMA PA projects and all FHWA ER projects. VTrans has organized and held numerous workshops and sessions associated with the FEMA PA (in conjunction with the Vermont Division of Emergency Management and Homeland Security) and FHWA ER programs.

Documentation Issues: Some LPAs have difficulty properly identifying and documenting costs by site. For instance, many hire contractors to haul gravel to several FEMA PA- or FHWA-FHWA ER-eligible sites and then pay a single invoice for the total amount of the work while FEMA and FHWA require a breakdown of costs by site. Therefore, VTrans continually reminds LPAs to properly document costs by site.

VTrans has also observed differences between what FEMA will fund based on an LPA's adopted codes and standards and what Vermont's Agency of Natural Resources requires as part of a Stream Alteration Permit. With the adoption of the new Statewide General Permit for stream alterations, this issue may have been resolved; however, the new permit has not yet been tested in a FEMA PA declaration.

VTrans provides a document highlighting contracting procedures and the key requirements needed for LPAs to undertake construction projects. The document includes information about the "Plans, Specifications and Estimate" package required before federal construction funds can be authorized for permanent repairs, environmental permitting, and a National Environmental Policy Act (NEPA) document for permanent repairs. VTrans advises LPAs to use consultants familiar with Federal-aid requirements for developing transportation projects and that consultants understand VTrans' Standard Specifications for Construction. VTrans also recommends that LPAs require consultants to certify that plans, calculations and notes do not contain errors and omissions and conform to standards and specifications. One LPA inadvertently inserted the Buy America and Davis-Bacon clauses into a contract for a FEMA PA project; because these clauses apply to FHWA but not FEMA, FEMA did not reimburse the LPA for the additional costs due to the inclusion of the clauses.

(Emergency repairs undertaken within the first 180 days of the disaster are covered for review under NEPA on a statewide basis. All permanent repairs and emergency repairs completed after 180 days of the disaster require an individual assessment under NEPA, but will most likely result in a Categorical Exclusion.)

VTrans informs LPAs that all regular federal contracting requirements must be adhered to, even during emergency situations. VTrans informs the LPAs about the documents that must be incorporated into a construction contract. They include:

- Contractors EEO Certification Form CA-109
- Debarment & Non-Collusion Affidavit CA-91
- Required Contract Provisions for Federal-Aid Construction, FHWA Form 1273
- Standard Federal EEO Specifications (Executive Order 11246) CA-26
- Certification of Federal-aid Contracts CA-163
- Vermont Minimum Labor & Truck Rates CA-101
- Disadvantaged Business Enterprise (DBE) Policy Contract Requirements CA-110
- FHWA Form 1273 including the requirement for a poster package which advises workers of their rights.

VTrans provides helpful letters, forms and checklists to LPAs including an FHWA ER submittal checklist and construction checklist (see Appendix H).

NARRATIVE OF COST ALLOCATION PLAN (NCAP) FOR FHWA ER ADMINISTRATIVE COST RECOVERY

During the Irene recovery process, VTrans proposed to its FHWA Division Office the use of NCAP to recover administrative and indirect/shared costs as a more efficient and transparent way (compared to the use of the indirect cost rate) to capture FHWA ER-eligible costs. Administrative costs for the FHWA ER program for Irene incurred by VTrans amounted to \$8.9 million (\$8.7 million were recovered by using FHWA funds and \$0.2 million were covered by state funds). This amount was recovered using the NCAP method.

NCAP may be useful for small states such as Vermont which wish to recover administrative and indirect costs. These are costs in the VTrans accounting system but cannot be attributed to a single project.

One general expenditure account was used for the NCAP procedure for Irene. The cost items included lodging and travel, office supplies and other materials, and work efforts that pertain to FHWA ER administration. Allocation to FHWA ER projects took place by proportional allocation of the costs on a quarterly basis. For projects that were determined to be ineligible, the allocated costs were removed. NCAP allows the state DOT to provide written evidence that costs have been properly allocated.

Effort was initially required to remove ineligible costs and also separate out indirect costs from direct costs. Costs of some shared services (e.g., IT services, utilities, facility costs) were not included as eligible costs due to the additional time it would have taken to separate out the FHWA ER event costs. These steps sped up the process and state certification.

VTrans' Internal Auditors created a testing protocol which reviews a sampling of each cost area (cost pool) so that all individual transactions do not have to be reviewed. Certification of all reviewed cost pools were then provided to FHWA.

VTrans used quarterly allocations versus monthly allocations for FHWA ER reimbursements to LPA sponsors. A key benefit of quarterly allocations was that it provided VTrans with time to complete cost verifications and identify source documents. FHWA Division Office also supports quarterly allocations.

FHWA Division Office found the information in the cost pool easy to understand and could examine detailed files for the event in one location and obtain object class and transaction detail as well as vendor information. Also, the Division Office noted that it was able to identify trends in eligibility and ineligibility through queries and data sorts.

VTrans decided to close out the special account five quarters after the disaster because practically all costs had been captured and included in reimbursement requests (DDIRs, PWs) by that time.

One issue that arose was the shared food expenses. VTrans wished to be reimbursed for eligible food expenses which were purchased for multiple personnel. The FHWA Division Office asked for justification as to why food needed to be provided. VTrans' justification focused on the geography of the state which made it difficult for individuals to access food establishments especially during a disaster. Another issue was the Division Office's concern that some employees may have claimed meal expenses individually as well with the expenses being charged to the event. VTrans' finance unit determined and verified that personnel provided meals did not also submit individual expense reports.

VTrans is considering using the NCAP method for future FHWA ER events. The FHWA Division Office recommends that this method be considered by other small states as well.

The example of the cost allocation procedure in FIGURE D - 53 shows how \$1 million of indirect costs were allocated among four different cost categories.

Audit and Review Procedures – Payroll and Employee Expenses

The audit of payroll and employee expenses was performed to ascertain that payroll expenses as they appeared on timesheets and reimbursement forms applied to Irene recovery efforts, reflected the signature of the employee claimant, and the signature of the approval authority; and that hours and expenses are reasonable and in compliance with VTrans policy and procedures. For the audit, the VTrans Financial Operations and Audit Section Supervisor meet to discuss the methodology used to document the charges and that the charges pertained to Irene recovery efforts. The auditor confirms that appropriate steps were taken to implement the methodology. The auditor reviews official payroll and

reimbursement policy and procedures, and reports reflecting documentation details such as employee ID#, grade, and work station, and the payroll expenses.

Audit and Review Procedures – Indirect Costs

VTrans internal auditors used the procedures for the review of Indirect Costs contained in CFR Title 2 Part 225 (“Cost Principles for State, Local, and Indian Tribal governments (OMB Circular A-87)”), and the accompanying Appendices A through E. The objective of the review was to determine whether non-payroll recovery costs were appropriate for inclusion as per federal regulations and adequately documented. A valid statistical sample was selected. Reviewed items included vendor/provider name, date, and products or services provided.

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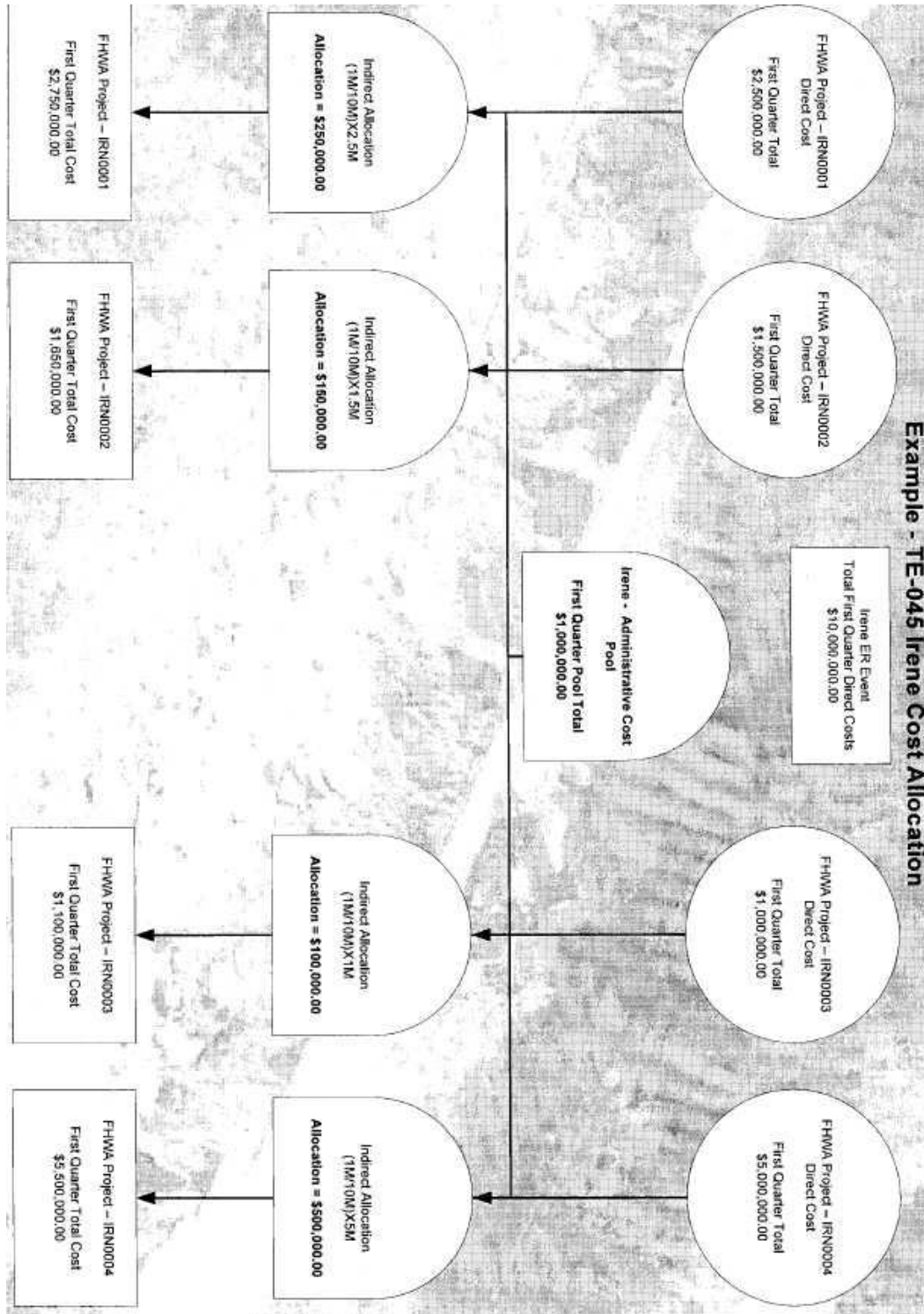


FIGURE D - 53: Allocation of \$1 million of indirect costs among four different cost categories. Courtesy: VTrans.

Wisconsin DOT (WisDOT) Case Study

BACKGROUND

Wisconsin's primary hazards are 1) flooding and heavy rains and 2) blizzards. The latest disaster in which WisDOT participated was DR-4141: Severe Storms, Flooding, and Mudslides. The incident period was from June 20 through June 28, 2013. Details about this disaster are provided in this case study.

WisDOT employs 1,450 workers in five (5) regions and has eight (8) regional offices. WisDOT maintains 11,773 miles of highways and 4,900 bridges (structure spanning 20 feet or more.) WisDOT has a FEMA PA coordinator and an FHWA ER coordinator within the Main Office. They manage the necessary coordination process for the two programs in conjunction with the regional maintenance staff and are responsible for the organization, review, and documentation of disaster-related costs on a site-by-site basis.

WisDOT administers the FHWA ER program on behalf of FHWA according to its stewardship agreement with FHWA. WisDOT reviews and approves DDIRs on behalf of FHWA, and has access to the FHWA FMIS. Because WisDOT contracts out all of its non-let emergency highway and bridge work to its 72 counties (as well as regular maintenance work), the effort it needs to spend on documentation and other aspects of project worksheets for the FEMA PA program is lessened for straightforward projects. At the same time, because Wisconsin Emergency Management (WEM) does not have highway engineers, WisDOT assists them in formulating complex projects. At times, WisDOT acts as an advocate for both the counties and WEM in order to address eligibility, cost estimation and other issues. For some emergency highway and bridge work, the work will be let and selected contractors other than counties will be used. Three sections of Wisconsin statutes contain the framework on state highway maintenance. Each year there is a Routine Management Agreement which gives each county a state highway maintenance budget.

Wisconsin has had a total of 45 Presidential declarations including 37 major disaster declarations, seven emergency declarations, and one fire declaration. WisDOT is responsible for 11,773 miles of highway. Wisconsin's local public agencies are responsible for 103,000 miles. There are a total of 13,700 local and state bridges in the state.

ROLES AND RESPONSIBILITIES

WisDOT has an FHWA ER coordinator and a FEMA PA coordinator; both are located in WisDOT's main office.

- Regional maintenance staff work closely with the counties and act as the FHWA ER and FEMA PA coordinators. They collect costs and supporting documentation.

- Bureau of Highway Maintenance (BHM) (a.k.a. Central Office) programming/budgeting staff establish special project IDs to collect and separate costs – either as emergency repairs or permanent restoration
- BHM engineers review costs/documentation and make determinations on eligibility as needed. They develop spreadsheets to keep track of costs according to the special project IDs that were established for the disaster
- For FHWA ER, Programming staff establish Federal project IDs for each county and for permanent/emergency repair to encumber Federal FHWA ER funds.
- For FHWA ER, Finance/Accounting staff perform journal vouchers to transfer costs out of established BHM special project IDs and into the Federal project IDs.
- For Public Assistance (FEMA PA), project worksheets (PWs) are developed by FEMA and submitted to the State EMA. Each PW has a corresponding Bureau of Highway Maintenance project ID associated with it.
- For FEMA PA, the State EMA does an electronic transfer to WisDOT for the entire amount of all PWs. Finance/Accounting staff then perform journal vouchers to transfer eligible costs out of established BHM special project IDs in the amount of the electronic transfer. The spreadsheet mentioned in (c) is used for this purpose.

The latest disaster in which WisDOT participated was DR-4141 severe storms, flooding, and mudslides from June 20 through June 28, 2013. Preliminary Damage Assessments (PDAs) were conducted from July 15 through July 26, 2013. On August 1, 2013, the Governor requested a Presidential declaration for 11 counties, one tribe and hazard mitigation assistance. Presidential declaration DR-4141 was issued for eight of the counties on August 8, 2013 (see FIGURE D - 54). The FHWA ER program was not used for this disaster.

The total Public Assistance (FEMA PA) cost estimate for repairs to roads and bridges and debris removal was \$9,290,021. The statewide per capita impact indicator of \$1.37 needs to be met for the state to receive FEMA PA funds and assistance. The actual per capita impact was \$1.63. Also, the per capita impact indicator of \$3.45 for each county needs to be met, and it was by the following counties: Countywide per capita impact: Ashland County (\$7.63), Bayfield County (\$78.49), Crawford County (\$85.39), Dane County (\$0.29), Grant County (\$69.85), Iowa County (\$28.77), Richland County (\$13.43), Rock County (\$0.75), Sauk County (\$0.35), St. Croix County (\$9.55), and Vernon County (\$17.73) (Source: FEMA Website).

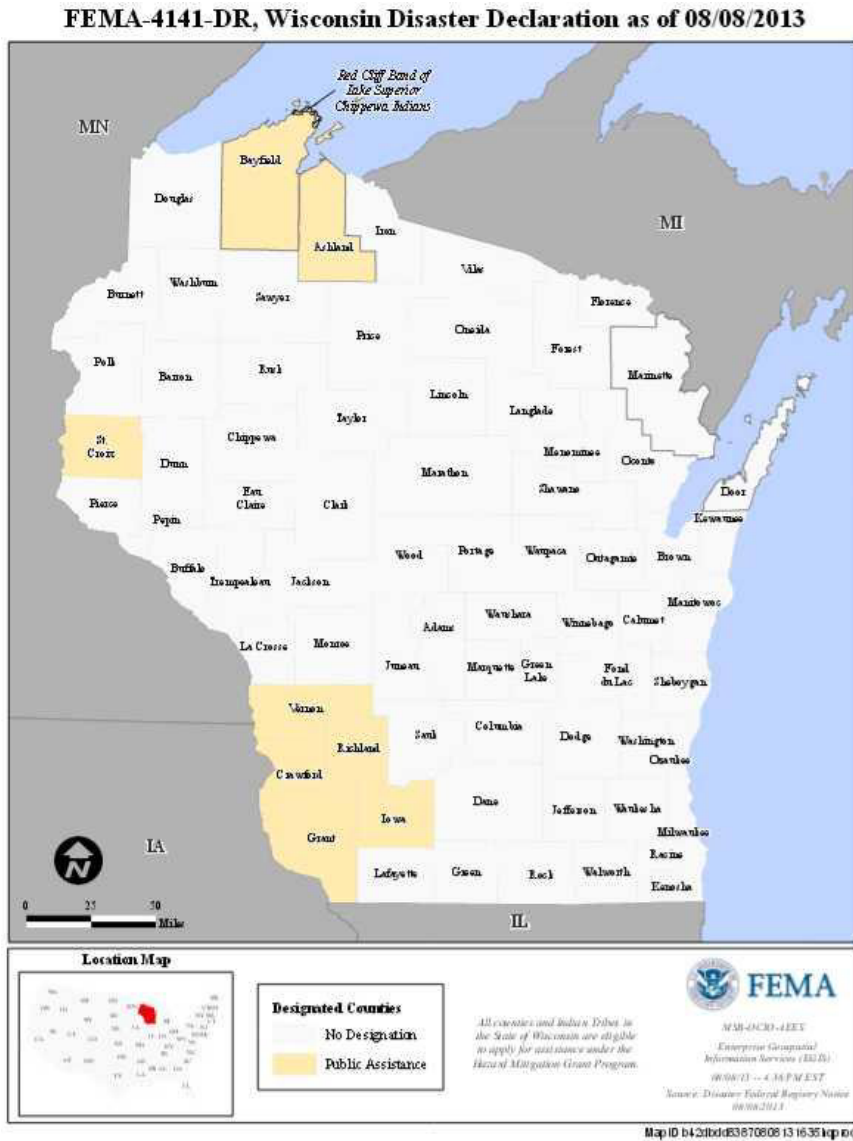


FIGURE D - 54: Map of Wisconsin Disaster Declaration DR-4141. Courtesy: WisDOT.

FEMA PA PROGRAM

WisDOT serves as an informal advocate for local governments in Wisconsin. Because WEM does not have highway engineers, WisDOT is used in an advisory capacity with regards to establishing and/or verifying reasonable costs for roadway repairs. WisDOT and county highway departments also provide assistance to cities. After an event, WEM completes the PWs together with a FEMA representative. A WisDOT representative may or may not be present depending on the complexity and/or number of PWs. For example, straightforward work such as debris removal documentation or emergency protective measures typically require only record retrieval and review. In these cases, WisDOT is not

likely to be needed. For major road repairs, however, WisDOT is likely to review and sign-off on the PW documentation prepared by FEMA unless WEM feels confident that the eligible portion of the repair costs is appropriately reported.

PROJECT CODING

When a disaster such as DR-4141 occurs, WisDOT assigns a unique project ID number for each county so all costs, labor, materials, and equipment may be tracked. The regional offices inform the county highway departments of this number and, after every disaster or potential disaster, remind them to use it for all costs related to the particular disaster. The format for the code is 00XX-YP-ZZ, where:

- XX is the county number (01-72)
- Y is the last digit of the calendar year when the work takes place
- P is the discretionary project code
- ZZ is the number code for the type of work (temporary or permanent repairs)

DAMAGE ASSESSMENT

After a disaster occurs, an initial damage assessment is performed at the earliest possible opportunity. If it is a tornado, the initial assessment will likely be performed the next day. However, if it is a flooding situation as it was for DR-4141, the disaster assessment team may not be able to perform the initial assessment for some sites until the flooding ends. The initial damage assessments are performed by local governments working in conjunction with their county emergency management directors and the WEM. The directors report their cost estimates to their regional emergency management directors who, in turn, report the overall region costs to WEM. WisDOT may also assess its damages by contacting its regional offices and reporting estimated costs directly to the state EMA. For DR-4141, the Governor toured the hardest hit areas by National Guard helicopter.

FEMA does not visit every damage site but only the sites with major damages that are likely to verify that the per capita dollar threshold has been met or exceeded. After the initial assessment, the State EMA determines if there are enough costs to request that FEMA send inspectors to perform a preliminary damage assessment (PDA). PDAs are typically performed jointly by WisDOT, WEM, and FEMA. WisDOT may not always accompany FEMA inspectors on the PDAs depending on the type and amount of damage. PDAs typically take a few days; however, they can take longer depending on the number of counties involved and the nature of the disaster. For instance, assessing tornado damages can typically occur the following day. However, for snowstorms or flooding situations, WisDOT must wait until the event has ended before performing the assessment. Also, availability of FEMA personnel can be a constraint. If only a few FEMA personnel are available but many counties are affected, the

PDA's will take longer to accomplish. If WisDOT itself faces personnel challenges during a disaster, it will ask county highway department staff to work with FEMA and WEM and do the PDA's on its behalf.

Information from the PDA's is used to request a Presidential declaration. Once the declaration has been issued, the FEMA PA program can be initiated. FEMA and the State EMA then conduct an applicants' briefing, which involves a number of stakeholders including WisDOT, counties, townships and cities. Subsequently, a kickoff meeting is scheduled with each subgrantee. At these meetings which are very informative, WisDOT, FEMA, and WEM participate, and any questions the subgrantees may have about the process are answered. Typically WisDOT requests that they be last in the processing of the FEMA PA applications in order to allow faster processing and reimbursements for the other subgrantees. In addition, WisDOT is also focused upon assisting LPAs with their documentation and assessment activities during the initial stages after the disaster so it does not have enough staff and/or time to assemble its own cost documentation.

DISASTER ASSESSMENT TEAMS

Once a county is eligible based on its inclusion in the Presidential Declaration, FEMA along with the State EMA and the counties will visit subgrantee sites in order to determine the specific damages and prepare cost estimates for the needed work or debris removal. When necessary, WisDOT will also participate in the site inspections.

Disaster assessment teams are comprised of two individuals - a region maintenance staff from WisDOT or county highway department staff and a FEMA inspector. The same teams are used for both FEMA and FHWA sites. For FHWA sites, a Bureau of Highway Maintenance (central office) staff engineer also joins the team. For this particular disaster, WisDOT did not accompany FEMA to complete the PWs. The subgrantees and state EMA could have used WisDOT's services if needed (e.g., if there were issues with FEMA's eligibility decisions). However, no situation arose requiring WisDOT's intervention.

FEMA DOCUMENTATION

For WisDOT, most FEMA PA reimbursements are for small projects that address debris clearance, emergency protective measures (pumping, sandbagging, traffic control, etc.), snowplowing and salt use.

PWs are required for each disaster site. In some cases multiple sites that are close in proximity or similar in some way may be grouped together; for these cases when projects are combined, only one PW is required for them, increasing the efficiency of the process. Also, for debris removal from a roadway only one PW is typically required as per the example provided below. The PW will cover the entire subgrantee's jurisdiction, e.g., all town roads, all county roads, etc. FEMA typically asks its inspectors to complete the PWs as soon as possible; PWs may be completed on site using laptops, in the field office, the subgrantee's office, or the inspector's hotel room.

PW Example for DR-4141

Wisconsin DOT provided a sample PW subgrantee application for Debris Removal work performed from June 25 through July 30, 2013 (see FIGURE D - 55 to FIGURE D - 57). This PW claim amount was for a total of \$35,124.86 (see TABLE D - 5). This emergency work was contracted out to one of its counties, Iowa County Highway Department.

The PW subgrantee application for DR-4141 was completed by FEMA and approved by WisDOT's roadway maintenance engineer and contains the damage description, scope of work, and project cost and supporting information. The description section notes that "high winds toppled trees and scattered woody debris on state roadways throughout the county that caused an immediate threat to public safety and prevented emergency vehicles from responding to the emergency." The location is identified by latitude and longitude and maps of the sites are included in the documentation. The supporting cost information shows Iowa County Highway Department's daily cost totals and cost breakdown by activity. The debris removal load counts by dump site were also included. In addition, detailed statements of expenditures for each day of the work period are included in the PW documentation. The statements list each employee, the hourly rate, totals, and activity breakdown; and each piece of equipment and equipment class, the hourly rate, totals, and activity breakdown. Indirect costs are also included in the statements as a percentage of labor.

FEDERAL EMERGENCY MANAGEMENT AGENCY PROJECT WORKSHEET						
DISASTER			PROJECT NO.	PA ID NO.	DATE	CATEGORY
FEMA	4141	- DR -WI	U8L2E03	000-U8L2E-08	11-15-2013	A
APPLICANT: WISCONSIN DOT - DIV. OF TRANSPORTATION DIST. / SOUTHWEST REGION - MADISON					WORK COMPLETE AS OF: 11-22-2013 : 100 %	
Site 1 of 1						
DAMAGED FACILITY:				COUNTY: Iowa		
Debris Removal						
LOCATION:					LATITUDE:	LONGITUDE:
Current Version:					43.12767	-89.32876
County Wide						
DAMAGE DESCRIPTION AND DIMENSIONS:						
Current Version:						
<p>During the incident period from June 20th, to June 28th, 2013 severe storms, flooding and mudslides caused significant damage throughout Iowa County. Subsequently, the President declared a disaster on August 8th. High-winds toppled trees and scattered woody debris on state roadways throughout the county that caused an immediate threat to public safety and prevented emergency vehicles from responding to the emergency.</p> <p>GPS 43.13021, -89.33150 recorded at the applicants office at 2101 Wright Street Madison, WI 53704</p>						
SCOPE OF WORK:						
Current Version:						
Work Completed						
<p>DUNS #123456789</p> <p>The Applicant responded by requesting the Iowa County Highway Department to deploy its personnel, pursuant to an in place agreement, to perform emergency work to protect or preserve any state highway which is being jeopardized by flood. The county highway department then responded by collecting 1968 CY of vegetative and woody debris and disposing of debris from state roads at Highland Dump Site 4709 Lagoon Road Highland, WI 53543 (1476 CY) and Dodgeville Dump Site 3307 CTH Z Dodgeville, WI 53533 (4592 CY) where it was then burned. Burn permits were not required, only notification to the sherriff's department, which was given.</p> <p>The subgrantee was informed of the PA Alternative Procedures (Pilot Program) for Debris Removal. The subgrantee is opting to use FEMA's standard PA procedures for this project.</p> <p>Complete records and cost documents for all approved work must be maintained for at least three years from the date the last project was completed or from the date final payment was received, whichever is later.</p> <p>The subgrantee chose not to claim any direct administrative costs for this project.</p> <p>Applicant must comply with all applicable environmental and historic preservation laws, and obtain all necessary permits prior to</p>						

FIGURE D - 55: Sample Project Worksheet Subgrantee Application. Courtesy: WisDOT.

commencement of work. Failure to follow these guidelines could jeopardize federal funding.

No Mitigation opportunities identified because PW is for Emergency Work; Mitigation not eligible.

The applicant may appeal this determination through the State office of the Governor's Authorized Representative (GAR) within 60 days of notification of this determination as stated in Title 44 CFR 206.206. The appeal must include supporting documentation and reference appropriate regulations.

The applicant is required to adhere to State Government Procurement rules and regulations and maintain adequate records to support the basis for all purchasing of goods, materials, and contracting services for projects approved under the Public Assistance program, as stated in 44 CFR 13.36. Units of work listed in the bid solicitation should match the units identified in the approved scope of work. If less than three bids are obtained, State and FEMA approval is recommended prior to proceeding.

FEMA and State staff have reviewed the documentation and costs provided by the applicant in support of this project and based on that review, the costs appear to meet the minimum eligibility standards.

Costs used to formulate this project were based on: Contract costs.

Does the Scope of Work change the pre-disaster conditions at the site? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Special Considerations included? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Hazard Mitigation proposal included? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is there insurance coverage on this facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

PROJECT COST

ITEM	CODE	NARRATIVE	QUANTITY/UNIT	UNIT PRICE	COST
		*** Version 0 ***			
		Work Completed			
1	0000	Work Completed	0/LS	\$ 0.00	\$ 0.00
2	9001	Contract	1/LS	\$ 35,124.87	\$ 35,124.87
				TOTAL COST	\$ 35,124.87


PREPARED BY ROBERT KATEN	TITLE	SIGNATURE
APPLICANT REP. Christopher Ohm 	TITLE Roadway Operations Engineer	SIGNATURE

FIGURE D - 56: (cont.) Sample Project Worksheet Subgrantee Application. Courtesy: WisDOT.

FEDERAL EMERGENCY MANAGEMENT AGENCY			
FIRMETTE			
APPLICANT:	Wisconsin DOT-Div of Transportation Dist/Southwest Region-Madison	CATEGORY:	A
FIPS NO.		PW REF NO.	U8L2E02

APPROXIMATE SCALE
2000 0 2000 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

**IOWA COUNTY,
WISCONSIN**
(UNINCORPORATED AREAS)

PANEL 125 OF 225
(SEE MAP NUMBER OF PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
550522 0125 A

EFFECTIVE DATE:
JANUARY 17, 1979

U.S. DEPARTMENT OF HOUSING
AND URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION

This is an official copy of a portion of the above referenced flood map. It was generated using FIRM On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps, visit the FEMA Flood Map Store at www.nrcs.fema.gov

National PW Template V2.6 June 2012 Excel 2007/2010

FIGURE D - 57: (cont.) Sample Project Worksheet Subgrantee Application. Courtesy: WisDOT.

TABLE D- 5: Total Cost for Sample Project Worksheet Subgrantee Application. *Courtesy: WisDOT.*

Iowa County Flood Information					
Date	Activity Code Distribution				Daily Totals
	Traffic Control	Sweeping Pavement	Clean / Repair Drainage	Maintain Roadside Drainage	
	6/25/2013		87.41	5476.55	
6/26/2013	732.72		4747.38		5,480.10
6/27/2013			205.17		205.17
7/1/2013				2,224.73	2,224.73
7/2/2013	76.80		694.37	687.29	1,458.46
7/3/2013			69.78		69.78
7/8/2013			350.30		350.30
7/15/2013				3,668.86	3,668.86
7/16/2013				3,490.39	3,490.39
7/17/2013				3,455.59	3,455.59
7/18/2013				2,410.46	2,410.46
7/22/2013				2,838.20	2,838.20
7/30/2013			781.12	3,127.74	3,908.86
Total					35,124.86

THE FEMA PA REIMBURSEMENT PROCESS

The state EMA performs project closeouts when necessary. The FEMA PA program reimbursement process involves billing the state EMA and receiving reimbursements via interagency wire transfer.

WisDOT receives invoices from its counties, which act as contractors for both emergency and permanent repair work. In the past, FEMA did not accept these invoices, and WisDOT needed to input the data into a different spreadsheets. However, FEMA now accepts them in their current electronic (PDF) format. The invoices contain labor, equipment and materials cost information. Due to the close working relationship WisDOT has with FEMA and WEM no PW has been denied by FEMA. If there are issues, WisDOT will be alerted to them and will work towards addressing them. Most of the issues have been with documentation. In general, cost estimates provided in the PWs have been within an acceptable range and changes have not had to be made. Also, there have been no issues with the project validation process. FEMA reviews the paperwork and then validates the project. Only the FEMA PA program was used for the June, 2013 disaster. WisDOT noted that they have not been audited by FEMA.

DOCUMENTATION RETENTION

Documentation is retained for a minimum of five (5) years. In the past, documentation was in paper format but WisDOT has transitioned to electronic storage methods. All documentation is now being stored electronically in PDF format enabling WisDOT to store the documentation indefinitely.

REIMBURSEMENTS

FEMA reimburses WisDOT for 75% of its expenses while WEM reimburses WisDOT for another 12.5%. WisDOT will use their own funds to pay for the remaining 12.5% of the expenses. Therefore, in essence, 87.5% of WisDOT's expenses are covered by external sources. WisDOT does not have a minimum reimbursement per site threshold that is different from the program thresholds. In addition, WisDOT does not ask for reimbursement of indirect costs.

POSITIVE EXPERIENCES WITH FEMA

Reimbursements are typically processed by FEMA within a few months of submission of all documentation. As long as proper documentation has been provided, problems have not arisen.

WisDOT has seen positive changes over the past few disasters as many challenges experienced in the past have been resolved. Positive improvements include the following:

- FEMA has been more cordial in working with WisDOT in terms of documentation requests.
- There has been increased consistency in applying the rules. For example, after continued communications with FEMA on the equipment rates established between WisDOT and county highway departments for contractual maintenance activities, the rates have now been accepted by FEMA and no further issues have occurred.
- FEMA generally covers the town and county claims when roads are damaged by flooding so WisDOT's Disaster Damage Aids program does not need to be utilized.
- FEMA is moving towards increased use of electronic documentation – this is welcomed by WisDOT. Also, WEM is piloting an electronic documentation system.

FHWA ER Program

WisDOT administers the FHWA ER program on behalf of FHWA according to its stewardship agreement with FHWA. WisDOT reviews and approves DDIRs in conjunction with FHWA, and has access to the FHWA FMIS. When the FHWA ER program has been used, the federal FHWA portion is 90% for Interstates and 80% for non-Interstates on permanent restoration projects, and 100% for emergency repair projects on eligible Federal-aid highways.

WisDOT has developed a Checklist which helps determine whether a project is FHWA ER eligible. Damages are categorized into Minor, Moderate and Severe and informative examples are provided, along with whether or not the damages would be eligible under the FHWA ER program.

- Minor damages – minor shoulder washouts/debris removal, some re-ditching needed (Heavy Maintenance – not FHWA ER eligible)
- Moderate damages – significant shoulder washouts/debris removal, some pavement undermining (Road may or may not be passable – likely FHWA ER eligible)
- Severe damages – major loss of shoulders, pavement, and/or road core (Road impassable – FHWA ER Eligible)
- Debris removal – The Checklist notes that debris removal is eligible under the FEMA PA program.

The checklist also differentiates emergency from permanent repairs by using the following definitions:

- Emergency repairs are defined in the Checklist as repairs necessary to get the road open to traffic.
- Permanent repairs are defined as repairs needed after the road is open to traffic.

WISDOT DISASTER DAMAGE AIDS

WisDOT administers a Disaster Damage Aids (DDAs) program that serves local jurisdictions and not WisDOT itself. The program was originally intended for damages caused by flooding but on July 1, 2013, the Wisconsin Legislature approved the FY14-15 state budget that included a change to the statute to cover damages from other natural disasters as well. As stated in the Wisconsin State Statute 86.34, “when any highway is damaged by a disaster, the county highway committee, or the governing body of the municipality having jurisdiction over the maintenance of the highway, may adopt a petition for aid under this section and file a certified copy of the petition with the department.” The Statute also states that the county or municipality may apply for both state and Federal-aid, and if eligibility for Federal-aid is granted then the state aid would not be granted. \$1,000,000 per calendar year is appropriated although the program has required additional monies in the past few years. For repairs of \$15,000 or less, cost reimbursement is 75% for replacement and improvement combined. For repairs over \$15,000, the program covers 75% for replacement costs and 50% for improvement costs. Typically, if a site is not eligible for the FEMA PA program, the DDA Program would be utilized. Additional information on this program is provided in the Overview of Emergency Highway Aid Programs in Wisconsin table.

LOCAL PUBLIC AGENCIES (LPAs)

As noted earlier, WisDOT serves as an informal advocate for its local governments in Wisconsin. WisDOT communicates with County highway departments on a daily basis. WisDOT also communicates with municipalities and townships though the interaction occurs once a disaster strikes. Counties also assist its municipalities in assessing damage and providing documentation. The State EMA also provides assistance to counties and municipalities in navigating the FEMA PA process. WisDOT is present when LPAs document their costs. WisDOT expertise is relied upon by both the LPAs and State EMA to ensure that the agreed upon costs are reasonable.

WisDOT conducts training for its staff on an as-needed basis on each of the three programs – FEMA PA, FHWA ER and FDA. No training is provided to LPAs.

TECHNOLOGIES

Advances in technologies have made available a greater number of tools in which may facilitate cost-tracking costs. For instance, snowplows are equipped with GPS and their locations are tracked using a computer program. The software also tracks salt usage along with usage of the snowplow equipment (speed, engine hours, plow down or up, etc.). This is especially useful for blizzards because state DOTs need to select the 48-hour period having incurred the most cost for the FEMA PA program under a Presidential disaster declaration. This technology enables WisDOT to readily identify this period.

WisDOT uses electronic signatures to facilitate the processing of needed documents for the reimbursement program and project contracts.

Maintenance Management System for Counties - County Highway Expenditure Microcomputer System (CHEMS)

Wisconsin DOT's Highway Maintenance Office and county users developed CHEMS with the assistance of consultant Jon Gray. CHEMS informs users, Wisconsin's counties, the cost to plow the roads, overtime hours that have been expended, the amount of salt that has been used, and the amount remaining in inventory. CHEMS also alerts users about plows that need routine maintenance.

The CHEMS database tracks revenues and costs of county roads, employee information and activity, and provides inventory information. Detailed financial information including vouchers, receipts, and journal entries are also tracked. Data needs to be input only once into CHEMS – for instance, if data is input into Daily records, Work Orders, Equipment Cost Analysis, and Project Summary records are updated.

CHEMS adheres to the Uniform Cost Accounting manual requirements and helps counties invoice WisDOT accurately and quickly. With all counties having uniform record keeping and costing system, WisDOT saves administrative costs and time which would have been required to address county invoicing and accounting issues.

No aspect of the reimbursement process has ever been outsourced.

REFERENCES AND LINKS

“CHEMS Support – CHEMS,” County Highway Expenditure Microcomputer System, Last Modified July 31, 2014, [Online]. Available: <http://graytech.info/cs/content/Support.aspx>

“Disaster Damage Aids,” Wisconsin Department of Transportation, Madison, WI, Last Modified October 10, 2013, [Online]. Available: <http://www.dot.wisconsin.gov/localgov/highways/flood.htm>

State of Wisconsin, Wisconsin Statutes & Annotations, Chapter 86 “Miscellaneous Highway Provisions”, Statute 86.34 “Disaster Damage Aids”.

Arizona Division Of Emergency Management (ADEM) Case Study

Arizona Division of Emergency Management (ADEM) is the Arizona EMA. The agency supports Arizona DOT and Arizona's counties, cities, and tribes in the FEMA PA application process. ADEM administers the FEMA PA program on behalf of FEMA; ADEM also administers the Governor's emergency fund of \$4 million. The emergency fund may be used for cost share purposes for the FEMA PA program. ADEM completes the FEMA PA application including PWs on behalf of ADOT and LPAs based on information provided by the applicants and subgrantees. ADEM plays a significant role in approving and denying reimbursements. Recommendations issued by ADEM to FEMA are usually followed. If the subgrantee disagrees with the decision, the subgrantee may submit an appeal of the decision to FEMA. There is typically only one issue causing delays in reimbursement - lack of responsiveness to a request for documentation by an applicant / subgrantee. Reimbursements are received by ADEM from FEMA and are disbursed to ADOT by wire transfer.

DOCUMENTATION

ADEM requests the following information from ADOT for all projects:

- Damage description – What was damaged, location, etc.
- Scope of Work – To restore or repair, what has been done already, what still remains
- Cost Estimate – LEMO: Labor, Equipment, Materials, Other, where "Other" may include rental equipment or contracted work.
- Photographs and Videographs – Visual documentation, especially if ADEM is not able to visit the site before the repair begins.

The information may be delivered to ADEM by mail or via electronic submittals.

There have been few issues with receiving the documentation requested from ADOT in a timely manner. However, other applicants including LPAs have had issues, particularly on the development of an appropriate Scope of Work. Some LPAs are not accustomed to the FEMA PA process, or simply have a staff shortage.

While cost estimation issues do not occur often, when they do occur, ADEM works with the applicants and subgrantees including ADOT to address the issues.

Document Retention Period

The documentation retention requirement is three (3) years from the closeout of the claim; the applicant is notified by of the closeout by mail, and the three (3)-year clock starts from receipt of that letter.

PRELIMINARY DAMAGE ASSESSMENT (PDA)

Prior to a PDA, the ADOT or LPA does a windshield survey. If ADEM, after reviewing the windshield survey results, determines that they may qualify for FEMA PA assistance, then ADEM does a PDA with the LPA or ADOT. If the damage is potentially severe enough to qualify for the Federal FEMA PA program, FEMA will also participate in the PDA.

DECLARATION PROCESS

A Presidential declaration is required for the FEMA PA process to be initiated. All presidential declaration requests are processed through ADEM. In about 1 out of 10 disasters, the Governor can declare a disaster without conducting a PDA because the damage is very extensive. However, even in these cases a PDA and damage assessments for PWs need to be conducted at a later time. In nine out of ten disasters, a Damage Assessment (an initial damage assessment and a PDA) is conducted before the Governor and President issues a declaration.

REIMBURSEMENTS

Reimbursements with proper paperwork can be turned around in one two (2)-week disbursement cycle.

SITE INSPECTIONS

Typically, ADEM does site inspections (final inspections) only when the project has been completed. Complex projects will be inspected at different stages of the construction (mostly for larger projects).

AMENDMENTS

Amendments to a PW are completed by ADEM when necessary; they are required in the following cases:

- "Improved" projects – Improved projects are those that are not simply replacement of the facility but contain upgraded elements, or projects in which half of the facility is damaged and the other half is not. For these projects, FEMA will pay for the repair costs of the half that is damaged.
- Changes in Scope of Work
- Changes in Cost
- Environmental/historic preservation issues
- Appeals

AUDITS

Arizona State Statutes require audits on all projects, large and small. Documentation required includes timesheets, invoices, and contracts. ADOT provides this requested information in a timely manner. Once ADEM has received the information, it can complete an audit in approximately one month. ADEM notes the importance of document organization and keeping it in one location, whether or not it is stored manually or electronically. If the information and documents are not organized, audits take longer to accomplish.

USEFUL TECHNOLOGIES OR PRACTICES

ADOT's technologies and practices are sufficient for the purposes of the FEMA PA program. ADEM is working towards the use of tablets including iPads for field use. However, the interviewee believes that even a low-tech solution (e.g. binders) is effective, if all the required information is kept in one place.

LEMO Workbook

The LEMO Workbook was designed to be input directly into the PW. It documents only the needed information for the PW. It also allows for much greater ease in working with the Project Specialist in making corrections and modifications. Other systems usually cannot be directly added into the PW. It also facilitates an easier Final Inspection Report and Audit. Helpful advice on documenting Rental Equipment; documenting donated Labor, Equipment, or Materials one person using multiple pieces of equipment or two persons using one piece of equipment; are also contained in the Workbook. The Workbook contains individual worksheets so that data on each site may be input into each worksheet. There is a summary worksheet which automatically generates the totals for multiple sites. An example for one site (Site 1) is shown from TABLE D - 6 to TABLE D - 9.

WebEOC

ADEM uses WebEOC for incident management purposes and offers ADOT and other agencies in Arizona access to the WebEOC. While it has potential to be useful for the FEMA PA process and for documentation and cost tracking purposes, it is not being used to its fullest potential by many agencies. Furthermore, agencies may prefer to continue using their current systems which may not be compatible with the WebEOC system.

TABLE D- 6: LEMO Example, Site 1. Courtesy: ADEM.

Date	Employee Name	REG HOURS	REG RATE (with ERE)	REG COST (With ERE)	OT HOURS	OT RATE (with ERE)	OT COST (with ERE)	TOTAL LABOR (With ERE)
08/23/09	Smith, Don (Sample)	5.5	\$ 20.00	\$ 110.00	4.0	\$ -	\$ -	\$ 110.00
08/19/09	Marrion Morrison	8.00	\$ 31.75	\$ 254.00	4.00	\$ 44.78	\$ 179.12	\$ 433.12
08/19/09	Leonard Slye	8.00	\$ 26.74	\$ 213.92	4.00	\$ 36.12	\$ 144.48	\$ 358.40
08/19/09	Francis Sinatra	8.00	\$ 26.02	\$ 208.16		\$ 36.04	\$ -	\$ 208.16
08/19/09	Dino Crocetti	8.00	\$ 17.81	\$ 142.48	4.00	\$ 23.86	\$ 95.44	\$ 237.92
	THURSDAY	EXAMPLE		\$ -	EXAMPLE		\$ -	\$ -
08/20/09	Marrion Morrison	8.00	\$ 31.75	\$ 254.00	4.00	\$ 44.78	\$ 179.12	\$ 433.12
08/20/09	Leonard Slye	8.00	\$ 26.74	\$ 213.92	5.00	\$ 36.12	\$ 180.60	\$ 394.52
08/20/09	Francis Sinatra	8.00	\$ 26.02	\$ 208.16	6.00	\$ 36.04	\$ 216.24	\$ 424.40
08/20/09	Dino Crocetti	8.00	\$ 17.81	\$ 142.48	4.00	\$ 23.86	\$ 95.44	\$ 237.92
	FRIDAY	EXAMPLE		\$ -	EXAMPLE		\$ -	\$ -
08/21/09	Marrion Morrison	8.00	\$ 31.75	\$ 254.00	1.00	\$ 44.78	\$ 44.78	\$ 298.78
08/21/09	Leonard Slye	8.00	\$ 26.74	\$ 213.92	3.00	\$ 36.12	\$ 108.36	\$ 322.28
08/21/09	Francis Sinatra	8.00	\$ 26.02	\$ 208.16	2.00	\$ 36.04	\$ 72.08	\$ 280.24
08/21/09	William Gable	8.00	\$ 22.24	\$ 177.92		\$ 30.64	\$ -	\$ 177.92
08/21/09	Dino Crocetti	8.00	\$ 17.81	\$ 142.48	2.00	\$ 23.86	\$ 47.72	\$ 190.20
	MONDAY	EXAMPLE		\$ -	EXAMPLE		\$ -	\$ -
08/24/09	Marrion Morrison	8.00	\$ 31.75	\$ 254.00	4.00	\$ 44.78	\$ 179.12	\$ 433.12
08/24/09	Leonard Slye	8.00	\$ 26.74	\$ 213.92	6.00	\$ 36.12	\$ 216.72	\$ 430.64
08/24/09	William Gable	8.00	\$ 22.24	\$ 177.92	4.00	\$ 30.64	\$ 122.56	\$ 300.48
08/24/09	Dino Crocetti	8.00	\$ 17.81	\$ 142.48	4.00	\$ 23.86	\$ 95.44	\$ 237.92
08/24/09	Floy Scherer	8.00	\$ 31.74	\$ 253.92		\$ 44.74	\$ -	\$ 253.92
08/24/09	Leslie Townes Hope - SHIFT TW/O	8.00	\$ 28.81	\$ 230.48	4.00	\$ 37.85	\$ 151.40	\$ 381.88
08/24/09	Harry Crosby - SHIFT TW/O	8.00	\$ 18.65	\$ 149.20	2.00	\$ 26.19	\$ 52.38	\$ 201.58
08/24/09	Joseph Levitch - SHIFT TW/O	2.00	\$ 18.65	\$ 37.30		\$ 26.19	\$ -	\$ 37.30
08/24/09	Joseph Levitch - SHIFT TW/O	6.00	\$ 21.24	\$ 127.44	4.00	\$ 19.34	\$ 77.36	\$ 204.80
08/24/09	Jesse Knotts - SHIFT TW/O	8.00	\$ 30.73	\$ 245.84	1.00	\$ 43.78	\$ 43.78	\$ 289.62
				\$ -			\$ -	\$ -
				\$ -			\$ -	\$ -
TOTALS		176.00		\$ 4,466.10	68.00		\$ 2,302.14	\$ 6,768.24

TABLE D - 7: (cont.) LEMO Example, Site 1. Courtesy: ADEM.

EQUIP TYPE	FEMA CODE	HRS	RATE		TOTAL
<i>Truck, Flat Bed (Sample)</i>	<i>8722</i>	<i>6</i>	<i>\$</i>	<i>31.00</i>	<i>\$ 186.00</i>
3/4 ton pickup truck #S45	8806	111111.00	\$	17.00	\$ 1,888,887.00
Dozer, crawler 90 hp #D22	8251	12.00	\$	40.00	\$ 480.00
Grader -10 ft # S89	8330	8.00	\$	34.50	\$ 276.00
Dump truck 8cy # D106	8720	11.50	\$	35.00	\$ 402.50
EXAMPLE					\$ -
1 ton pick up truck #S51	8801	12.00	\$	20.00	\$ 240.00
Grader -10 ft # S89	8330	12.50	\$	34.50	\$ 431.25
Dump truck 8cy # D106	8720	15.00	\$	35.00	\$ 525.00
Snow plow pick up #P345	*2	12.00	\$	27.75	\$ 333.00
EXAMPLE					\$ -
Grader -10 ft # S89	8330	8.50	\$	34.50	\$ 293.25
Snow Plow Pick Up #P222	*1	11.00	\$	30.75	\$ 338.25
EXAMPLE					\$ -
Dump truck 8cy # D106	8720	8.00	\$	35.00	\$ 280.00
EXAMPLE					\$ -
Grader -10 ft # S89	8330	12.00	\$	34.50	\$ 414.00
Grader -10 ft # S206	8330	14.00	\$	34.50	\$ 483.00
Dump truck 8cy # D106	8720	12.00	\$	35.00	\$ 420.00
Snow Plow Pick Up #P222	*1	12.00	\$	30.75	\$ 369.00
wheeled Loader - RENTAL - T&K Rentals	*3	8.00	\$		\$ -
Grader -10 ft # S89	8330	12.00	\$	34.50	\$ 414.00
Dump truck 8cy # D106	8720	10.00	\$	35.00	\$ 350.00
Tractor/Trailer Semi	*4	2.00	\$	42.25	\$ 84.50
Crane 15MT # S406	8501	8.00	\$	65.00	\$ 520.00
EXAMPLE					\$ -
EXAMPLE					\$ -
EXAMPLE					\$ -
EXAMPLE					\$ -
		111311.50	\$		1,895,540.75

TABLE D- 9: (cont.) LEMO Example, Site 1. Courtesy: ADEM.

DAMAGE DESCRIPTION - Please include specifics: Measurements (LxWxH, Tons, cubic yards, etc) Dates, accurate damage descriptions, etc. The more the better!!
<p>This is an example of how the LEMO sheet can be filled out. Please observe the following:</p> <p>Under Labor - on 8/24, four people have the added description of SHIFT TWO to explain that some of the used the same vehicle as the first shift creating an unusual amount of hours for those vehicles</p> <p>Under Labor - on 8/24, Joseph Levitch is listed twice as he operated two different pieces of equipment. His labor hours are divided to coincide with the equipment hours.</p> <p>Under Equipment - Each piece of equipment has its assigned ID number listed (ex. # S89, S206) to distinguish it from similar equipment</p> <p>Under Equipment - on 8/20, the snow plow needs two different FEMA codes, so it has been assigned *2 to coincide with the *2 under "Notes/Comments" to explain the total cost of both pieces</p> <p>Under Equipment - on 8/24, The tractor/trailer was used to transport the crane to the site and back. Billing is for only the hours the equipment was in operation, not "stand by/sitting" time.</p> <p>Under Equipment - on 8/24, The loader was rented under a daily rate. The hours in use validate the operator's hours as the rental did NOT include an operator, but the billing for the cost is under "Other Costs"</p> <p>Under Materials - The unit measure of each item is listed in parenthesis</p> <p>Under Materials - The description either includes an invoice number for purchased materials or states that it was taken from maintained stocks.</p> <p>If the crews had worked past 8/24, their work would then be documented on Site 2's Tab</p> <p>Under TEST for Labor Hours (pink section) - on 8/20, for Francis Sinatra the test reads FALSE because his equip hours (15hrs) exceed his labor hours (14hrs). This would have to be fixed prior to submission.</p> <p style="text-align: center;"><i>This section can also be used to write a brief damage description for this site. The area below (Scope of Work) can be used to describe the work needed to return the site to its original condition.</i></p>
SCOPE OF WORK - What did you do to fix it? Again, be specific. List what was fixed with dimensions (LxWxH), what materials were used and how much.
Empty box for Scope of Work

TRAINING (FOR STATE DOTs AND LOCAL AND TRIBAL AGENCIES)

A range of courses are available from ADEM on the FEMA PA process. Some courses cover the entire process while others cover specific elements. Training is free of charge. They can be provided upon request given proper lead time. Some of the training is based on FEMA courses adapted by ADEM for its Arizona applicants and subgrantees. FEMA also offers online Independent Study courses as well as G series courses and E series courses held in Maryland at the Emergency Management Institute.

Louisiana Department Of Transportation And Development (DOTD) Case Study

Louisiana (LA) is located in the South and is a part of the Gulf Coastal Plain. The state spans about 51,000 square miles and has terrain that ranges from flat to hilly. Fourteen percent of the land area is covered with water in some form. The winters are mild and wet but the summers are extremely hot and humid. The average annual rainfall is higher in the southern and southeastern areas at over 64 inches.

The eleven most likely hazards in Louisiana are flooding, hailstorm, hurricane, tornado, ice storm, subsidence, wildfire, storm surge, dam failure, levee failure, and hazmat incident. Hurricanes are characterized by high winds and storm surges as well as inland flooding. In many parts of the state, flooding is a common emergency and a key concern of DOTD. Coastal areas of the state are more affected by storm surges while the northern areas can experience ice storms and flooding caused by melting snow and ice. (*State of Louisiana EOP, 2009, and DOTD EOP, 2013*)

In August, 2005, Hurricane Katrina devastated the coastal areas of Louisiana, causing destruction to numerous communities and the transportation infrastructure. Many lessons were learned at the federal, state, and local levels during the disaster and positive changes were made to streamline emergency planning, response, and recovery.

Louisiana Department of Transportation and Development (DOTD) has, under its purview, 16,000 miles of highways that are in the Federal and State Highway System, approximately 8,000 bridge structures, and 120 movable bridges within the state system. DOTD has about 4,000 personnel and is comprised of nine districts. DOTD has three FTEs dedicated to reimbursements. During emergencies, DOTD works with other emergency response agencies and with neighboring states.

DOTD has a Stewardship agreement with FHWA to administer the FHWA ER program. The state emergency management agency (EMA) is LA Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) and is the FEMA grantee. GOHSEP receives and processes the damage assessment reports, and delivers the reimbursement funds to DOTD.

DOTD has been reimbursed for \$1.5 billion since 2005, primarily for Hurricane Katrina. DOTD has 14 active disasters and emergencies in various stages of the reimbursement process, and has developed effective and efficient reimbursement practices due its experience with disasters and emergencies.

DOTD ROLE IN THE STATE EMERGENCY OPERATIONS PLAN

Under the 2009 State Emergency Operations Plan, DOTD is assigned as the lead agency for Emergency Support Function (ESF)-1 Transportation and Emergency Support Function (ESF)-3 Public Works and

Engineering. ESF-1 involves the coordination of all modes of emergency transportation. Transportation in emergencies consists of the movement of people, household pets, and critical supplies. ESF-3 involves the pre-staging of assets in preparation for contra-flow, damage assessment of state owned roads and facilities, and debris clearance and removal off of roadways and bridges. ESF-3 responsibilities also include the coordination of the maintenance and repair of state flood control works, emergency ice and snow removal, and the coordination of the evaluation and repair of coastal and watershed erosion.

In addition, DOTD also provides support to other ESF's depending on the nature of the emergency and the type of support required. Specifically, DOTD supports the following ESF's: ESF-2 Communications, ESF-4 Firefighting, ESF-5 Emergency Management, ESF-6 Mass Care, Housing and Human Services, ESF-7 Resource Support, ESF-8 Public Health and Medical Services, ESF-9 Search and Rescue, ESF-10 Oil Spill, Hazardous Materials and Radiological, ESF-11 Agriculture, ESF-13 Public Safety and Security, ESF-14 Community Recovery, Mitigation and Economic Stability, and ESF-15 Emergency Public Information.

CONCEPT OF OPERATIONS

The Louisiana Emergency Operations Plan (EOP) is based on the premise that “the Emergency Support Functions (ESF) performed by the various agencies and organizations during emergency operations generally parallels their normal day-to-day functions” (page Basic-3, *State of Louisiana Emergency Operations Plan*, 2009). However, tasks and operations that do not contribute directly to the emergency may be suspended or redirected during emergencies and disasters.

The role of the reimbursement and recovery unit in the various stages of the disaster is to identify and keep track of the total amount expended and on the categories of items that have been used. The reimbursement and recovery unit obtains all disaster-related documentation to support the development of FEMA PW's and FHWA DDIR's and to validate requests for reimbursements. The reimbursement and recovery unit coordinates all FEMA PW development and prepares and submits all reimbursement requests to FEMA and other agencies. All financial and program records are maintained for a minimum of 3 years after the close of each disaster and are made available for Federal and State audits.

General

1. Emergency Operations is coordinated from the DOTD Emergency Operations Center (EOC). Three branches (ESF-1, ESF-3, and Cost Recovery) are located in DOTD EOC at 1212 East Highway Dr., Baton Rouge, LA.

The Operations Center has two main branches, each with its own operations and responsibilities. Together these branches serve as components of the DOTD EOC. The main functions of the DOTD EOC are to support ESF-1 and ESF-3 operations and DOTD district offices in the execution of missions. The two branches have implementing procedures that are supplements to the DOTD Operations Plan.

2. Call-up of department personnel is in accordance with prescribed departmental policy. All personnel report to their pre-designated locations unless otherwise directed by their supervisor at the time they are notified of the emergency. Pre-designation of duties and responsibilities facilitates a reduction in response time. DOTD uses an “Emergency Staffing Guide” that depicts all emergency response positions in the Headquarters as well as the District. Personnel are assigned to these positions as an additional duty and the emergency response requirements are added to their normal job description.

3. The DOTD Emergency Operations Plan provides an overview of the responsibilities of DOTD, the Emergency Operations Center, and the Emergency Operations Section. The details of emergency operations for DOTD are covered as supplements, annexes, and attachments. The general response framework is built upon the construct of “centralized planning and decentralized execution.” In simple terms it means that most planning and contracting efforts are initiated and coordinated by the Headquarters, with the majority of response efforts performed by the Districts.

4. Emergency Action Levels are adopted from the State Emergency Operations Plan in order to maintain consistency.

a. Level IV – Normal departmental operations are ongoing. DOTD staffing is in accordance with authorized agency manning levels.

b. Level III – Events involve a potential or actual threat to the safety and welfare of the people in a threatened areas(s). DOTD’s Emergency Operations personnel monitor the situation and place appropriate personnel on standby or alert.

c. Level II – Events are in progress or have occurred which involve an imminent or actual major impact on the safety of the people in a stricken area(s). Depending on the nature of the event, DOTD may activate its EOC along with the appropriate personnel and provide representatives to the State EOC, if requested.

d. Level I – Events are in progress which require response activities. DOTD EOC will be at the appropriate staffing level.

Five Phases of DOTD Emergency Operations

DOTD Emergency Operations are conducted in five phases. The five phases overlap and at times are simultaneous. The steps below describe the general sequence of events.

1. Pre-mobilization Phase. The Pre-mobilization Phase is initiated when emergency response resources are alerted to a possible activation. It is continuous until all resources have started to mobilize.

a. The Implementing Procedures for the affected branch in the DOTD EOC will go into effect when DOTD is activated in response to an emergency or disaster.

b. Plans and procedures will be reviewed and emergency contact information is verified.

c. When an impending emergency or disaster situation is recognized, the need for DOTD support will be analyzed.

d. Coordination will be made with public and private partners to ensure operational readiness.

e. DOTD personnel may be placed on standby or instructed to report.

2. Mobilization Phase. The Mobilization Phase is initiated when the first resource is moved or staged in preparation for operations and concludes when all resources are staged for or engaged in operations.

a. Upon decision by the Unified Command, or upon direction by the DOTD Secretary, contracts and MOUs, and agreements are activated and resources are procured.

b. Resources are moved or staged in preparation for operations. Resources include equipment, supplies, or personnel.

3. Operations Phase. The Operations Phase is initiated when the first resource is engaged in meeting mission requirements and concludes when all resources have been disengaged from operations.

a. DOTD activates the DOTD EOC where execution of mission assignments will take place, when the State EOC is activated, or the DOTD Secretary instructs the EOC to activate. Support agency representatives report to the DOTD EOC as required.

b. Communication is established between the DOTD EOC and field personnel.

c. Operations in support of DOTD ESF missions commence.

4. Reconstitution Phase. The Reconstitution Phase is initiated when the first resource is disengaged from operations with the intent of terminating operations. It concludes when all resources have been returned to its origin, deactivated, and prepared for future mobilization.

a. Upon completion of assigned missions, the DOTD Emergency Operations Director will direct deactivation of the DOTD EOC following the cessation of all operations and the compilation of all records.

5. Recovery Phase. The Recovery Phase is initiated when procedures are implemented to consolidate and collect information for reimbursement and concludes when reimbursement operations have been completed.

ORGANIZATION AND RESPONSIBILITIES

During activation DOTD is organized to support the state and local response and coordinate with other state agencies and volunteer groups as needed.

DOTD Executive Staff

- General Staff provides guidance and make policy decisions for DOTD’s response to a disaster or emergency and coordinates the release of Emergency Public Information with the Public Information Officer in the State Emergency Operations Center (EOC).
- Command Staff makes policy decisions and oversees operations and coordinates actions with other state agencies and adjoining state DOTs as required.

DOTD Emergency Operations Center (EOC)

The DOTD EOC manages ESF-1 and ESF-3 branches. ESF-1 provides for and coordinates available transportation resources and expertise in an emergency or disaster for assisted transportation, coordinates with the Emergency Operations Director and DOTD ESF-1 Lead at the State EOC, coordinates the use of resources with the Districts, and documents the expenditure of resources.

ESF-3 provides for and coordinates public works activities such as contra-flow, debris management, and damage assessment, coordinates with the Emergency Operations Director and DOTD ESF-3 Lead at the State EOC, coordinate the use of resources with the Districts, and documents the expenditure of resources.

Call Center provides timely information to the public and to the Executive Staff and the DOTD EOC.

Emergency Operations Section

The DOTD Emergency Operations Section

1. Maintains Emergency Operations Center for 24-hour response capability
2. Activates and coordinates staffing of the DOTD EOC
3. Coordinates with the bordering states of Mississippi and Texas on contra-flow
4. Maintains a communications capability with the state EOC and with the Districts
5. Develops and executes emergency operations plans
6. Collects and maintains records for cost recovery, and documents the expenditures of resources

DOTD Headquarters Staff

DOTD Headquarters Staff provides liaison officers to the State EOC, staffs the Louisiana State Police Traffic (LSP) Control Center, staffs the DOTD Emergency Operations Center, and provides personnel to staff Emergency Information Center and Call Center. In addition, a team of senior personnel as a Future Planning Team is provided to the EOC. This team provides the EOC an important capability when large and/or complex operations are either tasked by GOHSEP, the Secretary, or are deemed necessary for mission success. This concept allows the EOC to concentrate on “current operations” while the future

planning team undertakes the analysis of a future mission or requirement, and then conducts a deliberate planning process to ensure new plans are fully coordinated and developed.

DOTD District Offices

DOTD maintains 9 district offices to facilitate transportation operations throughout the state. Each district maintains personnel and equipment for routine maintenance and construction on state roadways and is responsible for district, regional, and in some instances statewide disaster operations. DOTD districts coordinate its response and resource management activities closely with DOTD Headquarters and other districts. Recovery crews and additional resources are deployed from unaffected districts to assist with initial disaster response. Districts also coordinate closely with area emergency responders including the regional Louisiana State Police Troop, Parish Emergency Preparedness Offices, Parish Sheriff Offices, City and Township Police and Fire Departments, ambulance companies, utility companies, and local news media including radio stations, television stations, and print media.

District Leadership implements guidance and policy decisions from Executive Staff for DOTD's response to a disaster or emergency, makes policy decisions and supervise operations in the District, coordinates actions with other state agencies and adjoining Departments of Transportation and Development Districts as required, provides staff and personnel for the implementation of DOTD's ESF-1 and ESF-3 responsibilities, and debris collection/disposal management. In each District the Assistant District Administrator (ADA) for Engineering is the ESF-1 Lead, and the ADA for Operations is the ESF-3 Lead, and documents the expenditures of resources.

District Staff is responsible for maintaining and operating 24-hour response capability, implementing emergency protective measures, road and bridge assessments and closures, and emergency debris removal and repairs, developing and maintaining the EOP, providing personnel to VSAs and resources for the implementation of contra-flows.

DIRECTION AND CONTROL

The Secretary of the Department of Transportation and Development is responsible for overall direction and control of emergency response efforts. The Assistant Secretary of Operations is the Deputy for emergency operations, is the Secretary's "alter ego," and represents the Secretary in the Secretary's absence.

The Emergency Operations Director oversees the overall operations of the DOTD EOC and the emergency response effort. Each branch has a supervisor or Lead that manages the branch.

The DOTD emergency operations organizational structure is shown in FIGURE D - 58 and FIGURE D - 59.

The Louisiana EOP designates DOTD as the primary ESF-1 agency. DOTD's role and responsibilities are contained in the state's state EOP ESF-1 and ESF-3 annexes. As the primary ESF-1, DOTD coordinates all ESF-1 activities. These activities are conducted and categorized in the following phases:

1. Pre-mobilization or pre-event
2. Mobilization
3. Operations
4. Reconstitution
5. Recovery

Major categories of operations that are conducted by DOTD, as the Lead for ESF-1:

1. Evacuation Operations
2. Search and Rescue Operations (in a supporting role)
3. Shelter support operations
4. Re-entry operations
5. Parish/Agency Transportation Support Operations

The ESF-1 pre-event procedures involve the following pre-mobilization steps:

1. Prepare for increased activation level.
2. Analyze the potential need for resources.
3. Review plans and procedures.
4. Discuss the potential courses of action.
5. Determine what resources are available.
6. Provide situational awareness.
7. Verify contact information of personnel and resource providers.
8. Coordination with relevant agencies
9. Mobilize ESF-1 response personnel as needed
10. Records the actions during the pre-mobilization for cost accountability, resource utilization, and future corrective actions. More specifically, Incident Command Structure (ICS)

series forms and an operational log at the EOC are utilized. State and agency forms and records are completed to capture the details of what actions were taken and what resources were used.

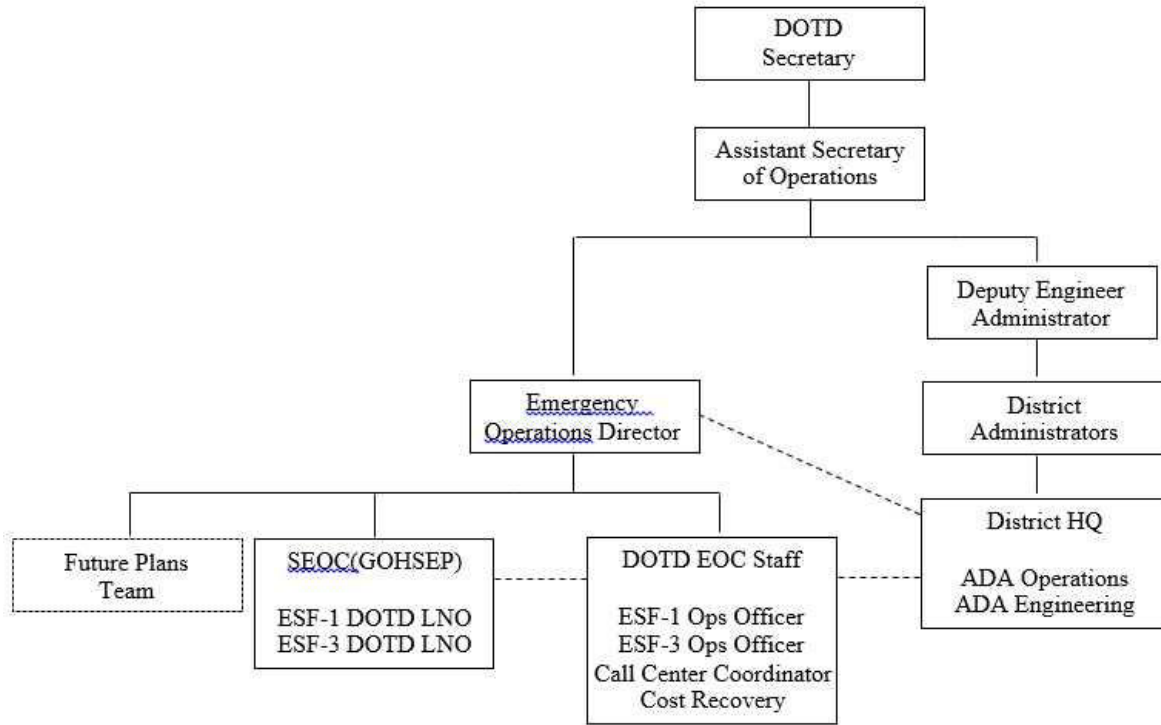


FIGURE D - 58: Louisiana DOTD Emergency Organization Chart. Courtesy: DOTD.

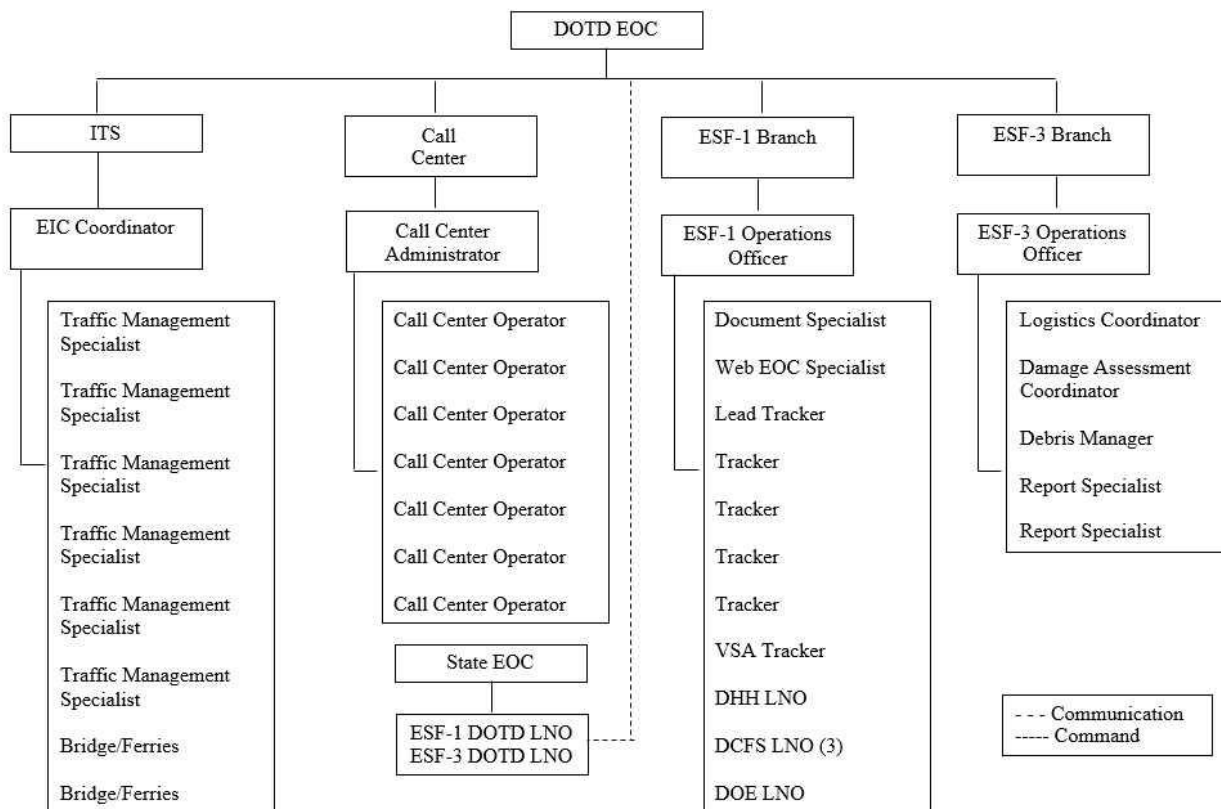


FIGURE D - 59: Louisiana DOTD Emergency Operations Center Organization. Courtesy: DOTD.

Even during this pre-event stage, DOTD prepares itself to manage resources and monitor them. A pre-event inspection of damages and/or deficiencies to vehicles and equipment is conducted particularly for reimbursement purposes. Mobilization occurs when the Unified Command orders a statewide activation and instructs DOTD to activate contracts and MOUs. They include a Coach Bus contract, an Interagency Support Agreement (ISA) with the Department of Education, vehicle staging area MOUs. During the mobilization phase, transportation personnel, resources and equipment are moved to selected locations. Districts are responsible for staffing the locations and providing logistical and administrative support and support staff to coordinate resource procurement. Resource tracking is important during the mobilization process to ensure that adequate transportation resources are provided at each location. The districts establishes ESF-1 Operations and are responsible for documenting the movement of services, personnel, equipment, and other resources including the resources departing from and arriving to staging areas.

Demobilization reduces or terminates the resources in use. Documentation of the demobilization of services, personnel, equipment and other resources is required during this stage as well.

In the recovery phase, all resources are demobilized. Inventories are conducted to identify resource ownership and to account for returned resources. Vendors are also required to document resources that have been used.

As with ESF-1, DOTD is the primary agency and coordinates all ESF-3 activities. The ESF-3 Lead coordinator manages all ESF-3 activities (damage assessment, debris removal and disposal; developing and coordinating response, recovery, and mitigation plans; inventory of public works and engineering assets; and preparedness of the ESF-3 branch.

The ESF-3 activities follow the same five phases as for ESF-1. Contracts and MOUs for public works and engineering is activated as necessary once the Unified Command gives the activation order to DOTD. Vehicles and other resources are mobilized and prepared for deployment. The operations phase consists of damage assessment, debris removal, and support for contraflow implementation. It is important to note that DOTD conducts repairs, or make plans to repair, all assets damaged by the event. Contracts with debris removal companies and monitoring companies are activated if storms produce debris on the highways in quantities that exceed a District's removal capability. Each District has an assigned Debris Manager who monitors the debris removal and disposal process and ensures contract compliance.

DOTD developed *Debris Management Standard Operating Procedures (2013)*. The SOP notes that debris such as vehicles and vessels need to be tracked more carefully than regular debris such as trees. Removal of abandoned vehicles are tracked using a form that lists location of the vehicle, description of the vehicle, license plate number and VIN, DOTD removal priority, the entity responsible for its removal, owner and insurance company information, removal date and location, and the name of the person who removed it. A similar form is used for boats and vessels. (Sample forms are provided in the Appendix.)

All resource tasks are the responsibility of the DOTD ESF-3 Operations Officer. In the reconstitution phase, the focus is on the return of public works and engineering assets to their pre-event condition and begin preparations for future activations. In this phase, the ESF-3 Operations Officer consolidates records of the operation including cost documentation. These records are provided by every ESF-3 support agency. Participants also document information for the development of After Action Reports. DOTD's Emergency Operations Director will initiate deactivation once operations has ceased. During the recovery phase, the documentation collection process for reimbursement programs continues.

DAMAGE ASSESSMENT

Damage assessment is a function under the DOTD Emergency Support Function 3 (ESF-3). Due to limited resources the DOTD plan identifies high priority routes that will be the first to be maintained and kept open when impacted by a natural disaster.

1. Priority Routes – The high priority routes were chosen due to their importance of carrying the greatest number of vehicles in the major North to South and East to West corridors through each District. The high priority routes consist of the state evacuation routes and other identified strategic routes. During snow and ice disasters, the elevated bridges along some of the priority routes are monitored by District personnel and closed when conditions warrant.

2. Other Federal-aid Routes – Once the highest priority routes have been inspected and maintained, the next routes to inspect and maintain in order of priority are the other Federal-aid routes because these are more heavily traveled than the non-Federal-aid routes. These other Federal-aid routes include all roads in the State system except those designated minor collector or local road on the map entitled “2002 Highway Functional Classification.”
3. Remaining Non Federal-aid Routes – Once all the above higher priority routes have been inspected and maintained, the remaining non-Federal-aid routes in the state highway system designated minor collector or local road on the map entitled “2002 Highway Functional Classification,” will be worked in a similar manner.

Damage Assessment Teams

Damage assessment teams are deployed to document damages and report them on the appropriate form for either the FEMA PA or FHWA ER program. During the assessments, numerous photos of the damages are taken. When the team members return, they enter the information into the DDIR and PW forms, and then enter the items into the Document Management System. The Document Management System is also a reporting system. The data on the system complies with both the FHWA ER and FEMA PA programs. CDs can be produced with needed information for FHWA and FEMA. This system is more efficient than the prior system using paper forms. The forms had to be scanned into computers and the information had to be input into the Document Management System.

Because the damage assessment reports drive reimbursements, damage assessment teams comprised of DOTD personnel are trained a minimum once a year. They are provided with special gear and a packet of forms when they are assigned to perform an assessment. The original form may need to be amended at a later time due to hidden damages which are not initially visible. The Team Leader for each team reports their accomplishments to the DOTD Roadway and Minor Bridge Leader or to the Damage Assessment Coordinator on a daily basis. The Team Leader will also include estimated completion dates for the repair. The DIR form is to be completed within a reasonable period after the site assessment. The District Forward Point of Contact Coordinator along with district personnel will ensure that the DIR or PW scope of work matches the actual repair work being performed for each project. Needed changes will be provided by the District Forward Point of Contact Coordinator to the DOTD Roadway or Bridge Team Leader. If necessary, the DOTD Damage Assessment Coordinator works with FHWA and/or FEMA to arrange subsequent site visits by the Damage Assessment Team and coordinate revisions to the original DIR or PW.

According to DOTD’s Standard Operating Procedure (SOP) for Damage Assessment Teams, they are assigned to the following categories. The number of personnel on each team are indicated in the parentheses.

DOTD Roadway Teams R (4-7)

- a) Minor bridges
- b) Roadways

DOTD Facilities Team F (1)

DOTD Bridge Teams B (4)

- a) Major bridges
- b) Movable bridges

DOTD Intelligent Transportation System Team ITS (1)

There are specialized teams for fixed bridges and moveable bridges. Moveable bridges can be complex due to their use of electrical and hydraulic systems. For moveable bridges, teams require an electrical engineer and a structural engineer; the completion of one DDIR can take 2-3 days. For Federal-aid roads, they typically do the assessments with FHWA engineers. For other roads, LPAs and FEMA personnel may accompany them if they are available. The state EMA is typically not involved in the assessments. After an emergency, it may not be possible to create an optimal team but it is necessary to move ahead with the assessments because the timeliness of the report is as or more important than the makeup of the site team.

DOTD has a substitution procedure to ensure continuity of operations in case the primary is not available or incapacitated. Each alternate is identified prior to the start of each hurricane season and placed on the same response level. The responsibilities of the District Forward Point of Contact, Team Leaders, and Team Members are described below:

- DOTD District Forward Point of Contact – The District Forward Point of Contact shall assess and evaluate the security risk for each site, and contact local authorities to develop an access plan for damage site assessments.
- DOTD Team Leaders – The Team Leaders will report each team’s accomplishments to the Roadway Team Leader and the Bridge Team Leader who will be responsible for DIR’s, and will be responsible for providing the necessary maps.
- DOTD Team Members – Responsible for documenting damage to property within highway right of way. Team members will be responsible for their own safety and the safety of fellow team members, and will participate in after action reviews.

The district offices will deploy debris clearing crews and safety inspection teams. The teams include bridge inspectors and parish maintenance specialists. Information gathered by the teams is reported to and summarized by the District Forward Point of Contact Coordinator who then forwards this information to the DOTD Roadway and Bridge Team Leaders for dissemination. The organization chart for the damage assessment teams is presented in FIGURE D- 60.

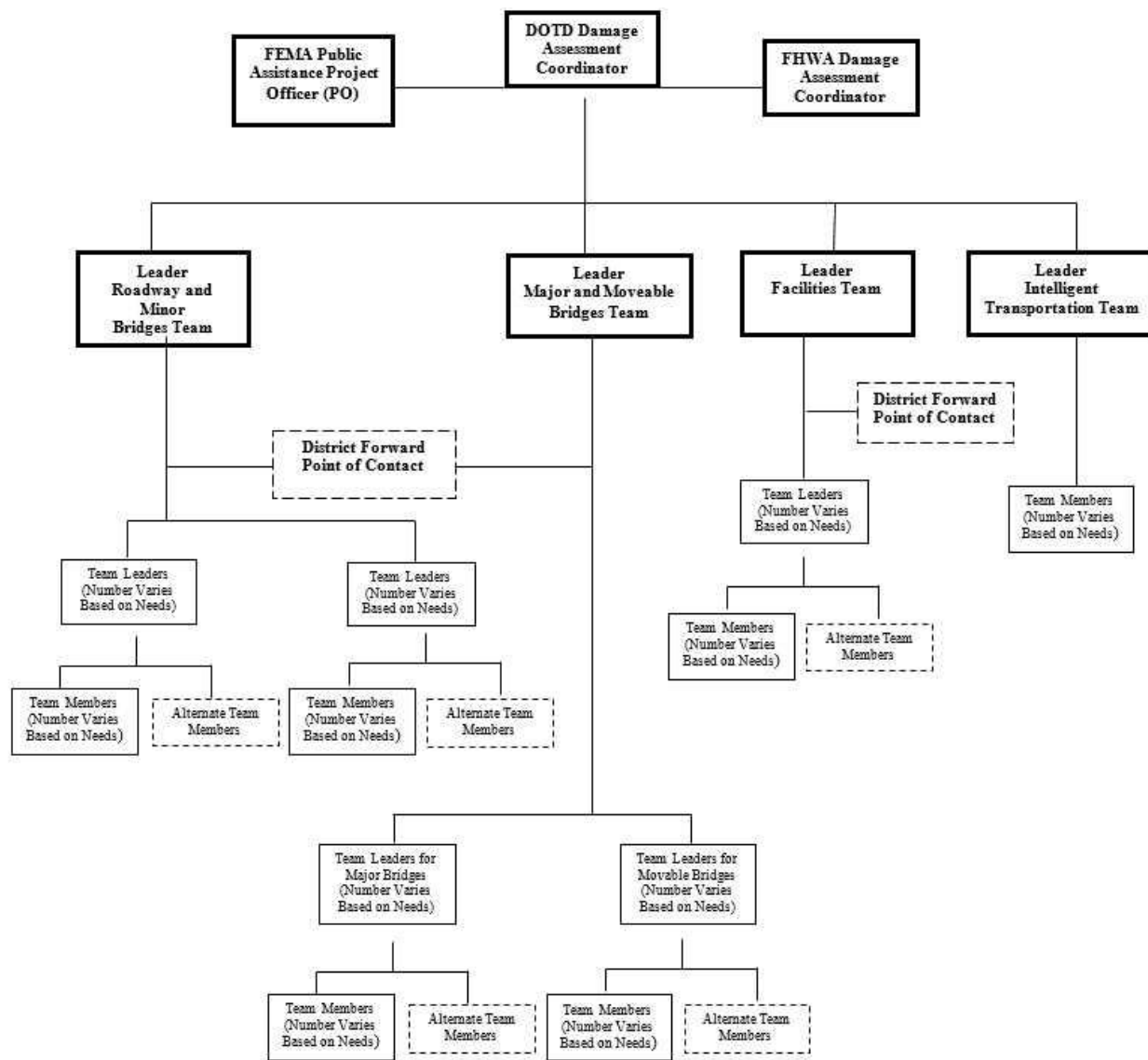


FIGURE D - 60: Damage Assessment Team organizational chart.
 Source: DOTD SOP for Damage Assessment Procedures, 2013, page 5.

Damage Assessment Coordinator

The DOTD Damage Assessment Coordinator role is important and has the following key responsibilities which need to be fulfilled prior to the Hurricane Season:

- The Coordinator shall ensure that all team members have completed the training on Damage Cost and Quantity Estimation and DOTD Documentation.
- The Coordinator sets up a pre-hurricane meeting prior to hurricane season for all damage assessment team members and alternates. Similar meetings may be needed before winter to address snow and ice storms.
- The Coordinator shall make available to all team members the Hepatitis A/B and Tetanus immunizations.
- The Coordinator will confirm the email and phone contact information for all team members and distribute this information to the teams.

The Coordinator will distribute to all team leaders the following:

- Guidelines for Reporting Summary of Daily Activities with Standardized Format for Status Reports
- Standardized and Example DIR Templates
- Standardized and Example PW Templates
- Standardized Cost Estimating Information and Unit Prices (agreed upon by FHWA / DOTD annually)

The Coordinator will coordinate with the Roadway and Bridge Team Leaders to review and revise SOPs for Damage Assessment Teams at a minimum on an annual basis. The Coordinator will ensure availability of necessary equipment and supplies, and confirm that the equipment is operating properly. The list of equipment and supplies is contained in the Equipment/Supply Checklist updated on a yearly basis. The Coordinator, Roadway Team Leader, Bridge Team Leader and the District Forward Point of Contact will identify, evaluate, and address security risks for each site assessment.

Identification and Access Plans

Each team member is required to wear a current DOTD badge at all times and have a Damage/Orange Team Vest. Each vehicle is required to have a magnetic "DOTD/FHWA Disaster Assessment Team" Placard on each side of the vehicle. The District Forward Point of Contact is responsible for coordinating an access plan with local authorities. The Coordinator, Roadway Team Leader, and Bridge Team Leader will inform the District Forward Point of Contact at least 12 hours before site assessments.

DOCUMENTING DAMAGE FOR REIMBURSEMENT

FHWA costs are obligated or authorized by project; DOTD then receives reimbursement through a Direct Billing to FHWA. On average, DOTD receives reimbursement within one (1) - three (3) months from the FHWA ER program. FEMA requires that all documentation is compiled into a reimbursement request package and submitted with a request for reimbursement. GOHSEP has implemented an Express Pay System so that once a request is submitted and a brief review is done by GOHSEP 75% of the eligible amount is reimbursement in 10 – 14 days. GOHSEP later conducts a full review to release the remaining amount of eligible funds.

FHWA DIR (Damage Inspection Report) Form

The DIR is used to determine eligibility for FHWA funding. Specific information is recorded identifying the location, description of damages, whether work is emergency or permanent and an estimated cost. For a roadway that is under the control of different entities or within different jurisdictions, separate forms need to be completed. TABLE D - 10 provides a general breakdown of the responsibility of each entity. The affected Parish has a breakdown of their own that depicts the different routes that are under their purview/control.

Damage Assessment Teams are comprised of DOTD and FHWA personnel who provide information for the development of the DIR’s. The DIR’s are written and approved by DOTD and FHWA. The time required to complete a DDIR varies from site to site and disaster to disaster.

TABLE D - 10: DIR Form Scope.

Source: “SOP for Damage Assessment Teams Presentation,” provided by Yvonne Murphy, Louisiana DOTD, via personal communication, May 21, 2013.

Item	Scope			
	by Parish	itemized list of Routes	by Route	Separate DIR
ROADWAYS				
Debris removal, reduction, and disposal	Yes	Yes		Yes
Debris monitoring	Yes	Yes		Yes
Any event damaged structure			Yes	Yes
Any event damages (of like kind)			Yes	Yes
Pole Light Standards			Yes	Yes
Small signs at intersections			Yes	No
Landscaping			Yes	No
TRAFFIC SIGNALS				
Damage to Traffic Signals (assess, inspect, and contract administration)	Yes	Yes		Yes
BRIDGES				
Any event damaged structure			Yes	Yes

FEMA PW (Project Worksheet)

The PW is a scoping and funding document used to develop projects and document location, description and dimensions of the damage, scope of work and estimated project costs. The PW is written by FEMA in coordination with DOTD Emergency Operations-Cost Recovery and District personnel. GOHSEP and FEMA approvals are required.

It is very important that personnel understand the content of the scope of work and obligated costs documented in the PW. Any additional work or cost will not be eligible for reimbursement unless a version to the PW is requested and approved by FEMA; also, any betterments need to be included in the scope. Otherwise, DOTD must be prepared to cover the additional costs. DOTD works with FEMA to develop Project Worksheets (PW) to document eligible damages under the FEMA PA program and costs for reimbursement. Compared to the DDIR, a PW requires greater detail identifying the damages and scope of work. The time required to develop a PW varies from site to site and disaster to disaster.

DEBRIS OPERATIONS

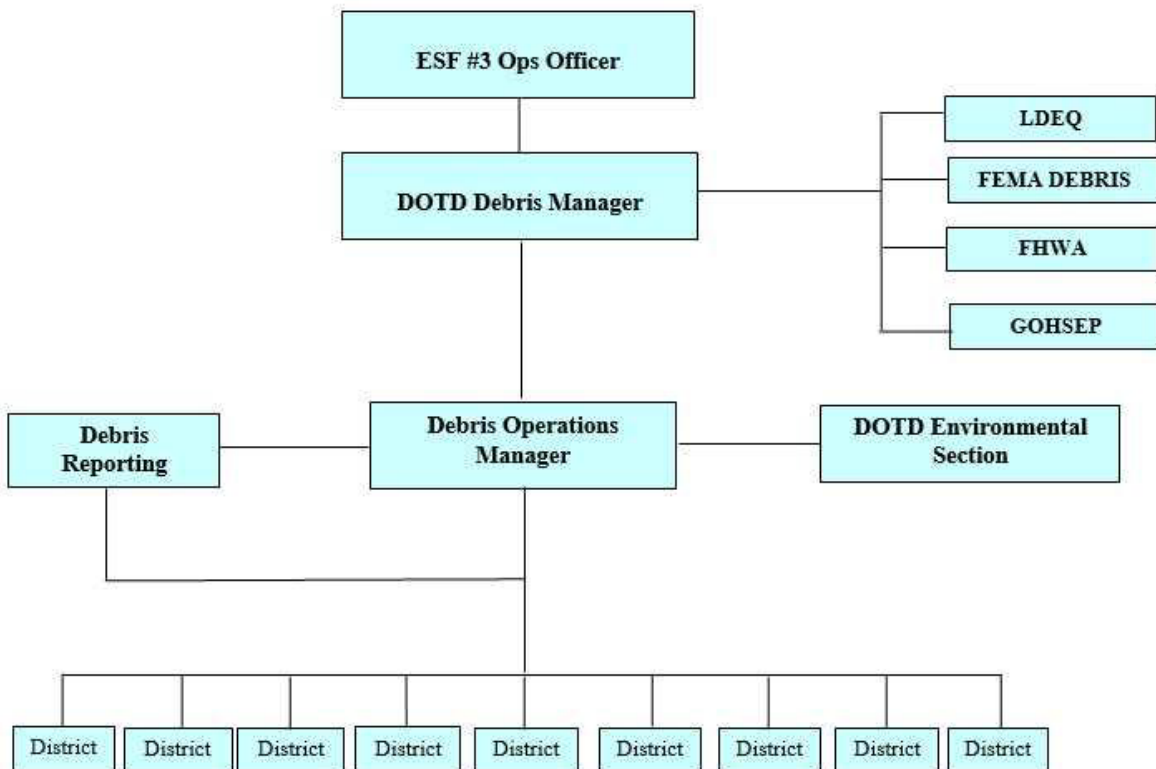


FIGURE D - 61: Debris Operations Task Organization Chart.
Source: Richard Swan, DOTD, personal communication.

A. Louisiana Department of Transportation and Development

1. Emergency Operations – Headquarters

- a. Activation of emergency operation centers, plans and procedures, arrangements and agreements;
- b. Contracts for removal, collection, reduction and disposal of debris will be initiated, identify type of contracts, estimate type and amounts of contractor equipment required to execute the mission;
- c. The DOTD Emergency Coordinator will report to the State EOC as required by the State EOP.
- d. Responsible for the overall debris operations on State ROW

2. ESF 3 Operations Officer

- a. Formulation and coordination of plans, procedures and guidance to ensure efficient execution and implementation of debris operations;
- b. Training personnel on emergency response and recovery operations and procedures;
- c. Coordination and agreements with public works and engineering organizations;
- d. Maintain 24 hour contact information for DOTD and agency coordinators;
- e. Maintain directory of public works and engineering resources.
- f. Forecasting debris quantities.
- g. Pre-hurricane season workshop/exercise.
- h. Procure and maintain in ready state:
 - 1) Equipment
 - 2) Logistical Supplies
 - 3) Signage and other necessary resources
- i. Identification and preliminary approval of Debris Management Sites (Temporary Debris Storage and Reduction Sites)
- j. Maintain communications with potentially impacted districts and DOTD Debris Manager

- k. Coordinate with the Debris Manager to initiate emergency clearing of roadways
- l. Oversee financial closeout of the debris mission.
- m. Responsible for compiling debris quantity and status reports of DOTD debris operations, fiscal management and record keeping
- n. Facilitating coordination and issue resolution with Federal agencies

3. Debris Manager

As shown in the Debris Operations Task Organization Chart, the DOTD Debris Manager is embedded in the ESF-3 organization and reports directly to the ESF-3 Operations Officer.

- a. Direct the assessment of the overall potential for a debris mission including debris modeling, use of site selection checklists, and identification of special considerations;
- b. Direct the mobilization of necessary equipment, assets, and personnel in response to the level of the debris mission anticipated;
- c. Post-event debris estimates will be initiated as soon as conditions permit of amount and type of debris and damage assessments;
- d. Initiate emergency clearing of roadways;
- e. Define the types and number of personnel required;
- f. Responsible for tracking missions and assigned personnel and reporting status to the DOTD Emergency Coordinator.
- g. Responsible for coordinating the identification and preliminary approval of additional Debris Management Sites.
- h. Responsible for coordination disposal site preparations.
- i. Damage assessments, debris removal, reduction and disposal, contracting efforts, and overall DOTD debris mission management will continue through recovery, as needed.
- j. Closely monitor the closeout of debris management sites to ensure contractual and regulatory requirements are met.
- k. Release public works and engineering assets to their responsible owners and compile an After Action Report on the operation.

4. Districts Debris Coordinator
 - a. Maintains personnel and equipment for routine maintenance and construction on state roadways
 - b. Responsible for DOTD regional disaster operations
 - c. Execute emergency debris clearing, removal, reduction and disposal from state right-of-ways within their respective district
 - d. Responsible for maintaining expenditure records, debris operation status, contracted operations status, and regularly reporting to Debris manager and ESF 3 Coordinator.

Debris Site Approval Process

The flowchart in FIGURE D - 62 and FIGURE D - 63 depicts the Debris Site Approval Process.

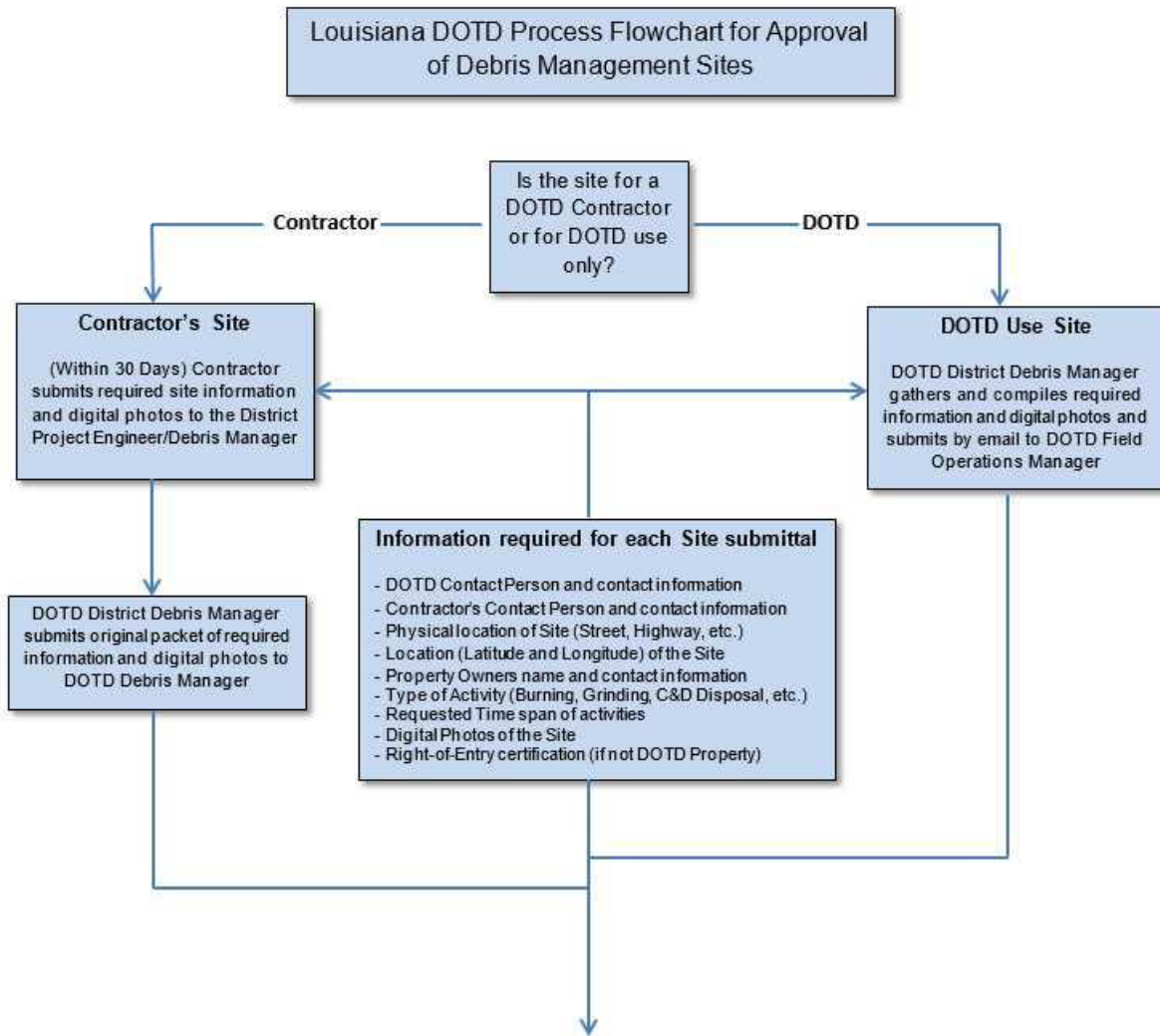


FIGURE D - 62: Debris Site Approval Process. *Courtesy: DOTD.*

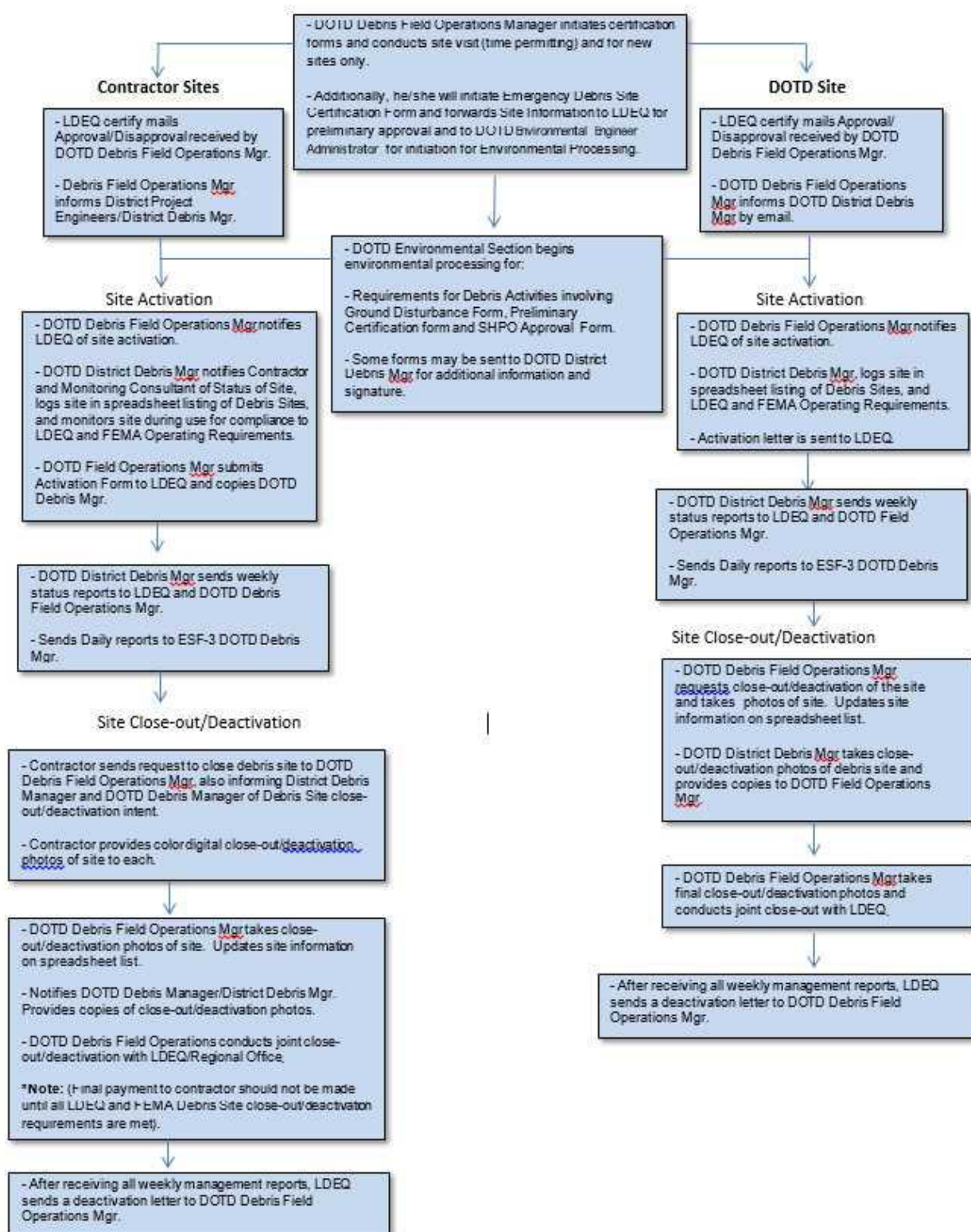


FIGURE D - 63: (cont.) Debris Site Approval Process. Courtesy: DOTD.

Debris Management Procedures

a. Temporary Disposal sites (TDS)

- 1) Selection sites (Applicant)
- 2) Approval of sites (Local government authority {LGA}, property owner, LA
- 3) Department of Environmental Quality {LADEQ}, with the State Historic Preservation Office {SHPO} and Federal Emergency Management {FEMA} input)
- 4) Monitoring of sites (LDEQ, LGA and Applicant)
- 5) Regulation of sites (LDEQ)
- 6) Designation and approval of various landfills (LDEQ and FEMA)

b. Vegetative Debris

- 1) Picking up and hauling debris reduction of vegetative debris (Properly registered solid waste transporter, if FEMA reimbursement is sought there are additional FEMA requirements and inspections)
- 2) Final Disposal of vegetative debris (Applicant)

c. Household Waste

- 1) Haul debris (Properly registered solid waste transporter)
- 2) Inspect for hazardous waste (LDEQ-Environmental Protection Agency {EPA})
- 3) Disposal at a Type II (Municipal Solid Waste) Landfill (Applicant)
- 4) Proper disposal or recycling of household hazardous waste at a permitted facility (Applicant)

d. White Goods

- 1) Pick up and haul debris to a parish transfer facility (Applicant)
- 2) Operate Processing site (Applicant with LADEQ permits approval)
- 3) Refrigerant removed by EPA licensed AC technicians (Applicant)
- 4) White Goods recycled (Applicant)

e. **Construction and Demolition (C & D)**

- 1) Pick up and haul debris (Properly registered solid waste transporter)
- 2) Inspect for asbestos or other hazardous waste (Licensed asbestos contractor with LDEQ accreditation, EPA oversight) see:
<http://www.deq.louisiana.gov/portal/tabid/2251/Default.aspx>
- 3) Follow proper Louisiana Emissions Standards for Hazardous Air Pollutants (LESHAP) asbestos handling and transport protocols. (Licensed by LA State Licensing Board for Contractors) Asbestos Contract with LDEQ asbestos accreditations, LDEQ, EPA oversight)-see link above.
- 4) Disposal of asbestos containing waste materials following LESHAP and state Solid Waste disposal requirements (Applicant, licensed asbestos contractor with ELDEZ asbestos accreditation, with LDEQ & EPA oversight)
- 5) Regulated Asbestos Containing Material (RACM) disposal is at designated Solid Waste permitted and air permits recognized landfill. Burning and grinding are prohibited by LESHAP regulations. Non-RACM C&D may be disposed at a permitted or TDS landfill.
- 6) Reduce C & D for final disposal at a TDS or permitted landfill. (Applicant)

f. **Vehicles**

- 1) Tag vehicles and record vehicle identification numbers (VIN) (Louisiana State Police {LSP} and law enforcement agencies)
- 2) Identify and catalogue vehicle id number (LSP)
- 3) Identify owner or insurance company (Department of Public Safety {DPS}, Office of Motor Vehicles)
- 4) Notify owner or insurance company (LSP and Department of Insurance)
- 5) Inspect for hazardous substances and petroleum products, tow vehicle to TDS storage site (Tow company)
- 6) Disposal of all hazardous substances and petroleum products (Dismantling and crushing company, w/LDEQ oversight)
- 7) Recycling of tires rubber (Dismantling and crushing company, w/ LDEQ oversight)
- 8) Final disposal through scrap metal recovery method as determined by state and local laws (Dismantling and crushing company, LSP, Louisiana Recreational & Used Motor Vehicle commission, LDEQ)

g. **Vessels**

- 1) Vessels (less than 30')—(State registered vessels)
- 2) Tag/Inventory vessels (LA Department of Wildlife and Fisheries {LDWF} and law enforcement agencies)
- 3) Tow to a TDS, if movable (Tow company)
- 4) Identify vessel. (LDWF)
- 5) Notify owner or insurance company. (LDWF and Department Of Insurance)
- 6) Inspect for hazardous substances and petroleum products (Tow company)
- 7) Disposal of hazardous substances and petroleum products (Dismantling and crushing company, w/LDEQ oversight)
- 8) Take to storage harbors (Applicant)

Vessels (greater than 30') (USCG registered)

- 1) Inventory vessel (United States Coast Guard {USCG}, law enforcement agency, LGA)
- 2) Identify owner or insurance company (USCG)
- 3) Notify owner or insurance company (USCG)
- 4) Inspect for hazardous substances and petroleum products (LGA, contractor w/EPA, LDEQ oversight)
- 5) Disposal of hazardous substances and petroleum products (contractor w/EPA, LDEQ oversight)
- 6) Inspect of seaworthiness (USCG, contractor)
- 7) Dismantle or tow to storage harbor (contractor)
- 8) Monitor public drop off sites (LGA, EPA & LDEQ)
- 9) Acquire contract for vessels and vehicles (DOTD)

OTHER FUNDING SOURCES

A Community Development Block Grant (CDBG) from HUD was used a few times to repair disaster-related damages. The funds were administered through the Governor's Division of Administration, Disaster Recovery Unit I.

FEMA Hazard Mitigation Funds (HMGP) have been made available to DOTD following Hurricanes Katrina at 100% Federal share and Gustav at 90% federal and 10% state cost share. The HMGP funds are administered by GOHSEP as the grantee. DOTD has used these funds on infrastructure, hardening of facilities to mitigate future damages and to purchase generators for districts to ensure operational capabilities in the event of power failures.

PROJECT CODING

Proper coding is essential to track disaster-related activities, projects and costs. Work Breakdown Structure (WBS) numbers are used for daily operations to identify what phase a particular project is in. WBS numbers are also used for disaster-related activities. For project coding, DOTD uses unique numbers for the event, as well as unique numbers for FEMA and FHWA, and for major operations activities. Coding was in place for Hurricane Katrina, but has undergone significant improvements through administrative changes and computer system changes.

Costs are assigned, recorded, and tracked using WBS numbers along with statistical internal order (SIO) numbers and activity codes.

Disaster or Emergency Operations

Examples of WBS numbers created for Emergency Work for Tropical Storm Karen in October 2013 are provided in TABLE D - 11. The creation of WBS numbers differs slightly depending upon the classification of the project as Emergency or Permanent work.

- Emergency Work – When a disaster has occurred or is imminent, WBS numbers are created so that in-house labor, material and equipment costs can be assigned to an event. WBS numbers can identify, for each project, the district office, whether it is a FEMA or FHWA project, and type of work.
- Permanent Work – WBS numbers are requested by DOTD district offices for specific disaster-related projects. All worked related to the project must be assigned the WBS number. For disaster-related work WBS numbers must be obtained for all new work and for work needed on existing projects.

TABLE D- 11: Emergency Work WBS numbers for Tropical Storm Karen in October 2013.
Courtesy: Louisiana DOTD.

District	WBS#	FHWA/FEMA	TYPE/PHASE
2	H.980042.1	FHWA	DEBRIS
	H.980042.2	FHWA	OTHER
	H.990042.1	FEMA	DEBRIS
	H.990042.2	FEMA	OTHER
	H.990042.3	FEMA	ESF 1
3	H.980043.1	FHWA	DEBRIS
	H.980043.2	FHWA	OTHER
	H.990043.1	FEMA	DEBRIS
	H.990043.2	FEMA	OTHER
	H.990043.3	FEMA	ESF 1

Statistical internal order numbers are assigned to specific types of work recorded on a timesheet that is being performed under a disaster-related WBS number (see TABLE D - 12). DOTD employees are required to use these codes when completing timesheets for disasters. Since the statistical internal order numbers identify beforehand specific work activities for disasters, it makes the cost tracking process more efficient. The location, equipment, activity, and materials are entered on DOTD Work Orders in the Maintenance Management System.

TABLE D- 12: Example Statistical Internal Order Numbers.
Courtesy: Louisiana DOTD.

Order #	Name	Description
30000000	CALL & EMERGENCY OPS CENTERS	DOTD EOC at the Annex Bldg, GOHSEP EOC, Parish EOC or the HQ Call Center
30000001	IT/GIS MAP PRODUCTIONS	IT support at the HQ, HQ Annex Bldg, Development of GIS maps
30000002	PRE STORM PREP	Preparing sites for storm
30000003	SETUP FOR CREWS	General logistics for people (food prep, material acquisition, etc)
30000004	GEN & PUMPS, REPAIRS, CLEAR ROADS	To make general repairs and push debris white line to white line.
30000005	CONTRAFLOW & ETC..	Contraflow
30000006	SAFETY INSPECTIONS, DAMAGE RPTS and ETC...	Initial roadway safety inspections, dir's and pw's
30000007	DEBRIS MONITOR, PERMITS & LANDFILL	Debris operations
30000008	ESF-1 FIELD OPS	VSA, PPP, Shelter, ESF 1 District Coordinator (ADA of Engineering)
30000040	ADMIN	Administrative staff, recordkeeping, ADA of operations (other than debris)
39000920	SNK1	Bayou Corne Sink Hole activities
30001360	DSNAP SUPPORT	Any activities associated with D-SNAP Operations
30001600	EMERGENCY OPERATIONS NONDISASTER SUPPORT	Non-Disaster Emergency Operations training, meetings and planning activities throughout the year.

Activity codes are assigned to specific types of work identified on a work order that is being performed under a disaster-related to a WBS number. Contraflow, for example, is assigned a specific activity code 630-16 and defined as "acquisition and maintenance of traffic control devices" necessary to support the implementation of the traffic management plan for emergency operations, including contraflow operations. Other examples of activity types include pre-event preparation and logistical support. It is important to note that DOTD uses normal activity codes in the Maintenance Management System.

ASSET TRACKING

DOTD needs to track vehicle usage, whether organic or provided by a supporting agency/entity or vendor, for operational visibility as well for documentation for cost recovery. In the ESF-1 arena these assets could be a combination of organic assets, school buses from the Department of Education, rental vehicles, or commercial buses from pre-arranged contracts.

DOTD has recently refined its asset tracking procedures to its ESF-1 and ESF-3 Operations Plan for emergencies by incorporating lessons learned from Isaac. Assets that require tracking include vehicles that are organic to DOTD and vehicles owned by other agencies and organizations used by DOTD for evacuation purposes. Commercial coach buses and commercial vans provided through an existing contract, and school buses from the Department of Education are the most often used transportation assets.

Asset Tracking is important in maintaining situational awareness during disasters and for documentation of resources utilized for reimbursement purposes. DOTD's Asset Tracking activities include:

- Maintaining real time information on the operational status of any asset being used during an event.
- Identifying transportation assets used or controlled by DOTD.
- Directing the use of transportation assets used or controlled by DOTD.
- Recording the use of transportation assets used or controlled by DOTD.
- Reporting the use of transportation assets used or controlled by DOTD.

Asset Tracking assists DOTD in being financially responsible by controlling asset costs and facilitating the reimbursement process. It also helps provide the basis for key decisions and priority of asset use.

Technologies Enabling Asset Tracking

For the ESF-1 requirements DOTD uses a GPS tracking system (web-based) provided by the vendor to locate assets in real-time as well as recording and reporting on the use of the assets. DOTD also provides navigational devices to provide the operators of transportation assets the most direct route to and from locations. ESF-3 uses navigational devices as well for the damage assessment teams. The GPS systems are used by other DOTD staff elements at various locations to report on the use of DOTD controlled assets.

A GIS and linear referencing system is used for day-to-day operations but is not yet used for emergencies. The goal is to assist teams in pinpointing the location of damages and provide this system on handheld devices.

Recording Procedures and Forms

DOTD District personnel record information regarding resources on the appropriate forms (per the ESF implementing procedures) and report it as soon as possible to the ESF-1 or ESF-3 branch within the EOC. The information is then entered into the WebEOC upon which makes it accessible from any location in

the field. The information includes assignment rosters, asset tracking information, and task orders along with activation time. Copies of activated service contracts are forwarded to the Reimbursement and Recovery team.

The DOTD personnel who track transportation assets are the coordinating staff within the EOC, and in the district headquarters; field liaison officers (LNOs) from the Districts are assigned to various locations to coordinate, record, and report the use of the assets. The Districts provide the VSA staff who are assigned to process assets into service or out of service, stage, and deploy assets.

Transportation assets are accounted for by DOTD personnel at any location a transportation asset arrives to, departs from, or stages. The Vehicle Staging Area (VSA) reports the amount of resources used every four hours or if there is a 20% or greater change in available resources.

The ESF-1 branch consolidates the data and inputs it into the WebEOC Bus Tracking Board. The data is backed up using an Access database. Current operations are also manually entered on a display board within the ESF-1 EOC to facilitate situational awareness. The ESF-1 EOC also monitors the GPS tracking system provided by an external vendor. The system displays real-time locations and movement of commercial transportation vehicles.

The documentation process and responsibility is distributed among several units and many personnel. Ultimately all information is forwarded to the ESF-1 and ESF-3 branches within the DOTD EOCs.

Documentation is backed up twice – one in digital format on DOTD servers and another in hard copy format.

TABLE D- 13: ESF-3 Task Matrix.

Source: “ESF-3 Implementing Procedures: Supplement 6 to State EOP,” DOTD, 2013, pages 1-10 to 1-12

ESF-3 TASK MATRIX			
AGENCIES	PREPAREDNESS		RESPONSE
DOTD Infrastructure	Make sure all evacuation routes are cleared and all lanes fully open. Contact all contractors on these routes and stop construction in order to open up the maximum number of lanes.	Protect essential equipment from storm's path. Districts will contact EOC when the movable bridges are closed down due to the 39 mph winds at the bridge locations.	Dispatch safety inspection crews out in order to inspect bridges. After initial report from safety inspection teams, dispatch and manage Damage Assessment Teams (state and federal); facilitate repairs of state-controlled infrastructure. Establish contracts if needed in order to repair infrastructure.
DOTD Debris	Districts should make sure all fuel tanks are filled and debris clearing equipment is ready.	Protect essential equipment from storm's path.	Districts will immediately start clearing roadways on a priority basis as soon as the winds drop below 39 mph. HQ will coordinate removal of debris and wreckage accumulated on public waterways, roadways, and bridges. Develop and initiate emergency collection, sorting, and disposal routes and sites for the debris cleared from all state owned property.
DOTD			Coordinate with support agency for evaluation of the degree of coastal and watershed erosion and impairment and take action to repair and restore affected area.
DOTD			Provide GIS and mapping assistance and products.

ESF-3 TASK MATRIX			
AGENCIES	PREPAREDNESS		RESPONSE
Division of Administration, Facility Planning and Control	Identify state buildings in storm's path. Preposition resources. Employees identified as essential.	Protect essential DOA equipment from storm's path. Establish communications with internal DOTD EOC and GOHSEP.	Inspect damaged state buildings before re-entry. Coordinate the repair of all state buildings.
Dept. of Health and Hospitals	Preposition resources. Employees identified as essential.	Protect essential equipment from storm's path. Establish communications with internal DOTD EOC and GOHSEP.	Coordinate with DOTD ESF-3 coordinator in regards to debris removal assistance.
Office of Coastal Protection and Restoration	Preposition resources. Employees identified as essential.	Protect essential equipment from storm's path. Establish communications with internal DOTD EOC and GOHSEP.	Coordinate with DOTD ESF-3 coordinator in regards to the evaluation of the degree of coastal and watershed erosion and impairment and take action to repair and restore affected area.
Louisiana National Guard	Preposition resources. Employees identified as essential.	Protect essential equipment from storm's path. Establish communications with internal DOTD EOC and GOHSEP.	Coordinate with DOTD ESF-3 coordinator in regards to people and equipment assets needed in order to accomplish all ESF-3 functions.
Louisiana State Police	Preposition resources. Employees identified as essential.	Protect essential equipment from storm's path. Establish communications with internal DOTD EOC and GOHSEP.	Coordinate with DOTD ESF-3 coordinator in regards to people and equipment assets needed in order to accomplish all ESF-3 functions.

ESF-3 TASK MATRIX			
AGENCIES	PREPAREDNESS		RESPONSE
	PREPARATION PHASE	EVACUATION PHASE	DURING EVENT AND POST EVENT
DOTD ITS/Contra-Flow	Evaluate NOAA/NWS/NHS predictions. Collaborate with LSP, GOHSEP to recommend when/if Contra-Flow should be implemented. Review plans, check telephone contact lists, update maps, and secure personal property. Preposition resources.	Barricade plans including location and staffing for Contra-Flow. Communicate established evacuation routes. Establish communications with internal EOC and GOHSEP.	Plan for return of evacuees. Coordinate with appropriate state and local agencies to map the regional routes available from re-entry into evacuated areas, identify traffic control resource needs, and prepare a re-entry traffic management plan. Hold an after action review of the emergency recovery effort.
DOTD EOC	Establish internal EOC. Monitor progress of hazard.	Monitor traffic along exit routes. Monitor evacuation. Provide real-time traffic counter data for roads within the region or on all roads leading into the region.	Track assigned personnel, missions, internal resources committed, external resources requested, resources available, needed support for resources committed, needed contracts and contractors.
DOTD ESF-3 Coordinator	Contact all districts, OCPR, and support agencies in order to coordinate their plans. Call Districts in order to make sure assets are prepositioned and secure.	Continue monitoring storm in order to assess potential damage to infrastructure.	Monitor the status of all infrastructure and effect emergency repairs where needed and feasible. Monitor the status of debris on critical evacuation routes and will initiate emergency debris clearance and repairs on state controlled routes. Prioritize and initiate emergency, initial response, and short term recovery work to restore, repair, and mitigate the impact of the public works and engineering needs.

EMERGENCY FORMS

ESF-1 Forms

The forms used for resource management include but are not limited to the following forms:

The DOTD Transportation Asset Tracking Form is used to record the movement of transportation assets at the EOC ESF-1 branch, VSA, other VSAs, by all Field Sites and Transfer Points, Field LNOs. VSA EOC Tracker Transportation Asset Tracking Form is used by the EOC VSA Tracker in the ESF-1 branch at the EOC to track quantities and type of VSA resources.

Emergency/Disaster Transportation Forms include a Labor and Equipment Worksheet to track bus usage and reimbursement amounts. Also, a pre-event and post-event form is used to identify any damages to the buses. Under the requirements of the ISA DOTD is responsible for submitting payment to the Department of Education for resources used through the agreement. DOTD then prepares and submits a request for reimbursement through the FEMA PA program. *Sample forms along with a flowchart of the Asset Tracking workflow are provided for reference in Appendix I in the Synthesis.*

The following levels of activation are used:

1. Notification: School bus drivers will be notified that they need to be on Standby by a specific time.
2. Standby: Buses are fueled and roadworthy; bus drivers are available by phone and ready to be deployed
3. Deploy: Drivers and buses are instructed to report to a staging area or pick-up location
4. Mission Assignment: Drivers confirm their assigned pick up location and drop off destination
5. Stand Down: Bus and driver is released from activation

The ESF-1 Transportation Resource Tracking Form (Individual Check-In) documents transportation assets arriving at a VSA or out of the service of DOTD for reimbursement and the demonstration of contract compliance.

The VSA Bus Log is a consolidated list of the buses processed into and out of DOTD service or being staged in a VSA. The VSA Bus Log contains the capability and type of each transportation asset in a VSA.

Daily Vehicle Operational Log tracks the movement of transportation assets assigned to a VSA. Every transportation asset is assigned to a VSA unless it has been assigned a specific mission.

ESF-3 Forms

ESF-3 maintains a digital and hard copy of all DOTD assets assigned being used in the emergency response. Further, all assets in “current operations” are tracked on a manual mission board as well as in each mission reflected in WebEOC, or missions assigned from the DOTD Executive levels. Repairs to

organic assets, “systems” and infrastructure are managed through the Maintenance Management System.

Situation Report (SITREP) Templates

During Hurricane Isaac, DOTD ESF-1 (Transportation) and ESF-3 (Public Works & Engineering) EOC were both fully activated and responded to statewide resource requests and assistance. A new DOTD Situation Report (SITREP) template and process to identify support needs and monitor resource deployments were developed. The SITREPs are provided on a daily basis and are effective in monitoring the wide range of work being performed in the state and in each of the parishes during emergencies. Major or critical issues are recorded as well.

This SITREP form summarizes all statewide roadway miles by roadway type, miles closed and miles re-opening. The percentages of roadway miles open are also reported on this form. This information is obtained from each district and reported on this form as well. Additional SITREP forms collect similar information for traffic signals, trees and limbs cut and debris cleared, bridges, personnel, vehicles, heavy equipment, and other transportation assets.

APPEALS

Most of DOTD’s appeals requests submitted to the FHWA ER program have been approved. DOTD has had a 50% success rate with the FEMA PA appeals process.

PROJECT GROUPING

DOTD has grouped projects in various ways for both reimbursement programs. DOTD follows the guidance of the sponsoring agency (FHWA or FEMA) when grouping projects.

INTERAGENCY SUPPORT AGREEMENT (ISA), CONTRACTS, AND MEMORANDUM OF AGREEMENT

There are a multitude of agreements and contracts used in support of emergency operations. Most arrangements and written documents used for coordination between DOTD and other agencies are in some form of agreement (Cooperative Endeavor, Interagency, Intergovernmental) but there are also numerous service contracts (motor coaches, generators, light sets, and multiple basic life support items), and Memorandums of Understanding that are developed to provide or coordinate assistance.

An ISA or Interagency Support Agreement between DOTD and DOE for the payment of and use of school buses and drivers facilitates the transportation of citizens during disasters and emergencies. Under the

ISA, DOE is responsible for coordinating with and acquiring resources from local school transportation districts.

The DOE Representative in ESF-1 branch tracks the school buses that are initially in a Vehicle Staging area until they are processed into service after which they will be tracked by the ESF-1 branch.

The After Action Report on Hurricane Isaac revealed a capability gap between the time when the commercial bus contract is activated and the actual time commercial buses arrive in the state. To bridge this gap DOTD entered into an agreement with the Louisiana National Guard to provide drivers for 100 school buses. These drivers will be activated early to give DOTD a transportation capability while awaiting the arrival of the commercial bus fleet. In addition, this Task Force provides a more functional transportation asset during search and rescue events should high wind or high water be prevalent in the rescue area.

Training and Resources

DOTD provides numerous references and resources through their internal website and emergency operations webpage which is accessible to all DOTD personnel.

DOTD conducts damage assessment and Vehicle Staging Area operations training. This training includes asset tracking, documentation, debris management, and emergency operations center operations training.

LOCAL PUBLIC AGENCIES (LPAs)

In general, LPAs need a great deal of support, especially for the FHWA ER program. DOTD works with local governments to assist them with FHWA ER programs. DOTD is responsible for submitting local governments' requests for FHWA ER reimbursements to FHWA.

GOHSEP provides various emergency training for LPAs and assists them with the FEMA PA reimbursement process. DOTD supports the GOSHEP training teams by sending a staff member to give an hour-long presentation on the FHWA ER program.

REFERENCES

Department of Transportation and Development (DOTD) Debris Management Standard Operating Procedures (SOP), Emergency Operations, Louisiana Department of Transportation and Development, Baton Rouge, LA, April 2013.

Department of Transportation and Development (DOTD) Emergency Operations Plan (EOP), Emergency Operations, Louisiana Department of Transportation and Development, Baton Rouge, LA, May 2013.

Department of Transportation and Development (DOTD) Standard Operating Procedures (SOP) for Damage Assessment Procedures (DOTD/FHWA/FEMA), Emergency Operations, Louisiana Department of Transportation and Development, Baton Rouge, LA, May 2013.

“ESF-3 Implementing Procedures: Supplement 6 to State EOP,” Louisiana Department of Transportation and Development, Baton Rouge, LA, January 2013.

“Annex D: School Bus Operations,” Louisiana Department of Transportation and Development, Baton Rouge, LA, 2013.

“Standard Operating Procedures (SOP) for Damage Assessment Teams Presentation,” Provided to Yuko Nakanishi by Yvonne Murphy, Louisiana DOTD, Baton Rouge, LA, May 21, 2013.

State of Louisiana Emergency Operations Plan (State of Louisiana EOP), Governor’s Office of Homeland Security and Emergency Preparedness, Baton Rouge, LA, July 2009 [Online]. Available:

<http://www.gohsep.la.gov/plans/EOP200961509.pdf>



FIGURE D - 64: Hurricane Isaac, 2012 – Damage to LA 1 – South of Fourchon Road to Grand Isle, Louisiana. *Courtesy: Louisiana DOTD.*



FIGURE D - 65: Hurricane Isaac, 2012 – Debris on LA 39, Braithwaite. *Courtesy: Louisiana DOTD.*



FIGURE D - 66: Hurricane Katrina, 2005 – Damage to I-10 Causeway. *Courtesy: Louisiana DOTD.*

APPENDIX E

NYSDOT DDIR Form Instructions

NYSDOT DDIR and PoP INSTRUCTIONS

(MAP 6.2-4: FHWA EMERGENCY RELIEF PROGRAM PROCEDURES)

DIRECTIONS FOR COMPLETING THE DETAILED DAMAGE INSPECTION REPORT (DDIR) FORM

Report No.

Unique site number assigned by the Applicant or the Region. ALL DDIRs MUST HAVE A NUMBER. Suggested that number begin with reference to the County or Sponsor, but not necessary; this is an easy way to reference/track sites/projects. Example: first site in Broome County could be Report # BR-01.

Sheet No. _____ of _____

Especially important when a DDIR involves more than one (1) page. Does not mean number of DDIRs by an Applicant.

Disaster No.

Number provided by FHWA when the Emergency Relief Program is authorized.

Inspection Date

Date when site was visited to gather information needed to prepare/complete the DDIR form.

Applicant

Applicant/agency/organization responsible for the ER Program-eligible facility on the form. Examples: NYSDOT, Delaware County Department of Public Works, Town of Pendleton Highway Department, NYS Thruway Authority.

300

County

Where the ER Program-eligible facility is located. Only one (1) county can be included on the form.

Location (Name of Road and Milepost)

Specific location, including milepost/reference markers where available, Bridge Identification Number (BIN), Culvert Identification Number (CIN), intersection, etc. See *Site Guidance* Section III. Procedural Guidelines for additional information.

Description of Damage

Describe the nature and extent of the problem/damage, not the work to be done to repair the damage. “Repair flood damage” does not describe the damage. What is the nature, extent, etc. of the damage? If you need to reline a culvert, describe the nature of the damage to the culvert, etc. Be as descriptive as possible: 200 yards of shoulder is washed out 2 feet wide and 6 inches deep. Include photographs that show the damage. For some sites/DDIRs, a sketch of the site may be useful.

Cost Estimate

The estimated cost to effect the repair/restoration, allocated to three (3) categories: Emergency Repair Completed (as of date of site inspection), Emergency Repair Remaining (as of date of site inspection), and Permanent Restoration (permanent work yet to be done). *The amounts are estimates only, not final costs.* Indicate method(s) of work to be used to accomplish repair/restoration: Local Forces, State Forces, Emergency Contract and/or Permanent Repair Contract. Include additional pages with sketches and computations as necessary.

METHOD

How is the described work to be accomplished? More than one method can be checked.

Local Forces – refers to Sponsor’s (municipality’s/local jurisdiction’s) own employees, equipment, supplies, etc.

State Forces – refers to NYSDOT’s and NYS Thruway Authority’s own employees, equipment, supplies, etc.; for NYSDOT, indicate the MAMIS Work Order number

Contract – refers to a properly executed contract; when known, indicate Contract number and appropriate PIN number of the Contract

PE/CE

The estimated cost of required preliminary engineering/construction engineering directly attributable to repair eligible damage.

Right-of-Way

If Right-of-Way costs will be involved, provide an estimate of those costs.

Estimated Total

Sum of all cost *estimates* for the site/project.

Environmental Assessment Recommendation

Are potential environmental/historical impacts an issue for the site/project? Repair projects under the ER Program must comply with the requirements of the National Environmental Policy Act (NEPA) of 1969.

Categorical Exclusion

Emergency repairs to restore essential travel, minimize the extent of damage, or protect remaining facilities are normally classified as categorical exclusions under 23 CFR 771.117(c)(9), as are ER Program projects to restore permanently the existing facility in-kind at the existing location, ref. 23 CFR Part 771.117(d). However, if impacts to protected or otherwise sensitive or high-value resources are possible, advance coordination with the appropriate local, State, and Federal resource agencies should be closely considered to avoid or minimize project delays or shutdowns.

EA/EIS (Environmental Assessment/Environmental Impact Statement)

Does the proposed repair/restoration work require either an environmental assessment and/or an environmental impact statement? On occasion, an ER Program project that includes a betterment, whether or not eligible for ER Program reimbursement, may require further NEPA review. Although on the surface a project may appear to qualify for a categorical exclusion, certain betterments may need either an environmental assessment (EA) to determine whether or not the project will cause significant environmental impacts, or an environmental impact statement (EIS) if significant impacts are predicted.

Recommendation

Does the FHWA Area Engineer consider the site eligible and the proposed repair/restoration appropriate? This may be completed by the FHWA Area Engineer at the FHWA New York Division Office.

FHWA Engineer

Name of the FHWA Area Engineer who reviewed the DDIR and/or visited the site/project, if appropriate.

Concurrence

Does the NYSDOT representative agree/concur with the FHWA Area Engineer, if the FHWA Area Engineer visited the site? If no, attach a statement to the form noting item(s) in disagreement.

State Engineer

Name of the NYSDOT representative who prepared the DDIR and/or visited the site/project.

Concurrence

Does the Sponsor (Municipality/Jurisdiction) Agency Representative (when Sponsor [municipal/local jurisdiction] ER Program-eligible facility involved) agree/concur with the FHWA Area Engineer and/or State Engineer? If no, attach a statement to the form noting item(s) in disagreement.

Local Agency Representative

Name of the Sponsor (Municipal/Jurisdiction) Agency Representative who prepared the DDIR, provided information to the NYSDOT representative who prepared the DDIR, and/or visited the site/project with the FHWA and/or NYSDOT representative(s).

NOTE:

-DDIRs need to be periodically reviewed and necessary revisions made in Location and Description of Damage. Significant Cost Estimate changes also should be revised. Revised DDIRs should be submitted according to the appropriate Procedures.

DIRECTIONS FOR COMPLETING THE PROGRAM OF PROJECTS LISTING

NOTE: Nearly all the information for the Program of Projects Listing is taken from the DDIR forms.

EVENT NAME

Name NYSDOT and/or FHWA has given the event, such as April 2007 Flooding.

EVENT NUMBER

Number provided by FHWA when the Emergency Relief Program is authorized. The two (2) digits after NY indicate the year; the last two (2) digits indicate the sequential number of the event in the year. Example: NY07-01.

REVISION

Revision 0 = the initial submission; number Revisions sequentially.

COUNTY

Also include Report Number in parenthesis and Revision number (Rev1, Rev3) in parenthesis. Example: ALBANY (ALBC-01) (Rev2)

APPLICANT

Agency/department/organization/jurisdiction responsible for the ER Program-eligible facility on the DDIR form. Examples: NYSDOT, Delaware County Department of Public Works, Town of Pendleton Highway Department, NYS Thruway Authority

AGR

Place an X in the cell when the required agreement has been executed with the Applicant. For NYSDOT projects, place NA in the cell. For Thruway Projects, place X, since using their Master Agreement for Construction/Federal Aid Highway Projects (D140943).

MAMIS PTC & WO # OR CONTRACT # & PIN # OR OTHER (IDENTIFY)

Indicate the appropriate MAMIS PTC (Project Tracking Code) number and associated Work Order number(s); Contract Number(s) and the associated PIN number(s) for the contract(s); or any other appropriate number(s) and identify. Do not list the assigned Federal PIN(s) in this space.

E/P

Place an E in the cell when the work described on the DDIR is all Emergency Work; a P when the work described on the DDIR is all Permanent Work; or E&P when the work described on the DDIR is both Emergency Work and Permanent Work.

APPENDIX F

Caltrans Damage Assessment Form Instructions

Damage Assessment Form Instructions

The New DAF format- the Emergency Relief Damage Assessment Form (DAF) has been recreated in Adobe Acrobat Professional v.9 to streamline processing data. Also, users must have Acrobat Reader in order to fill in the form on their computer. Users will be able to save the data in the application form with Reader 8.0 or later and send the file as an attachment to an email. Download free software: <http://get.adobe.com/reader/>

You can tab from field to field; but if you are not sure exactly what type of data is needed in a particular field you can manually move your cursor over a field, and “hover”, and a tool tip will appear, that will explain what information is needed.

The scope of work eligible for ER funds is established on the DAF. After the DAF is completed and signed, the Caltrans District representative is responsible for assuring that copies of the DAF are distributed as indicated at the bottom of the DAF and that the DAF data is entered into the FADS 2.0 database.

A **revised DAF** must be prepared if significant deviations from the prior approved DAF scope are proposed or if a significant quantity change is made. Generally, a significant quantity change is considered for:

- DAF amount is \$100,000 or less and the change is greater than \$10,000 and 25%.
- DAF amount is between \$100,000 and \$1,000,000 and the change is greater than 15%.
- DAF amount is greater than \$1,000,000 and the change is greater than 10%.

Revised DAF requests will be reviewed 2 months. The revised DAF paperwork should be submitted to the ER coordinator 2 weeks prior to the review meeting.

[1] DAF Number: The Damage Assessment Form (DAF) number uses the format:

AAA-BBBBBB-123-0.

FHWA and the Department have agreed to standardize the Damage Assessment Form Numbering format as follows:

For State ER Projects:

- **[1A]** The first 3 spaces (“AAA”) are for the FHWA Engineer’s first, middle and last initials (or something similar). All 3 spaces must be filled in using alpha characters only. The letter “O” should be replaced with an “X”. No empty spaces!
- **[1B]** The next 6 spaces (“BBBBBB”) are used to indicate the agency (abbreviated) which is administering the ER project at the damaged site. Not all spaces are required to be filled in. However, no internal spaces are permitted between characters. For State Highway sites, enter CT followed by the district number as CT01, CT02, (not CT 01) and so on.
- **[1C]** The next 3 spaces (“123”) are used to designate the site or location number. All 3 spaces must be filled in with numeric characters only. The entry for the first site for an agency will be “001”. The next DAF for a different site will be “002”, and so on.
- **[1D]** The last single space entry is to show the DAF revision number. The initial DAF must show a “0” (zero) in this space. If major changes are made to the existing DAF, fill out a revised DAF with the new information, get the DAF signed by FHWA, and change this entry from “0” to “1”.
- The following is an example of the first revision to the eighteenth DAF for a State Highway site in District 2: **ABC-CT02__-018-1** (State Hwy. DAF).

Damage Assessment Form Instructions

Local Agency Projects:

- **[1A]** The first 3 spaces (“AAA”) are for the FHWA Engineer’s first, middle and last initials. If the FHWA Engineer does not attend the site visit for a local agency site, enter the initials of the Caltrans District Local Assistance Engineer who attended, or the Caltrans staff who will be signing the DAF. All 3 spaces must be filled in using alpha characters only. The letter “O” should be replaced with an “X”. No empty spaces!
- **[1B]** The next 6 spaces (“BBBBBB”) are used to indicate the agency (abbreviated) which is administering the ER project at the damaged site. Not all spaces are required to be filled in. Start on the left and work to the right, no empty spaces between characters. If an agency doesn’t know their abbreviation, district staff can look it up in LP2000, on the first page in the Route box. Counties use their standard abbreviation followed by CO. i.e. YUBCO (not YUB CO) is Yuba County and CND is Concord.
- **[1C]** The next 3 spaces (“123”) are used to designate the site number for a given agency. All 3 spaces must be filled in with numeric characters only. The entry for the site for an agency will be “001”. The next DAF for a different site will be “002”, and so on.
- **[1D]** The last single space entry is to show the DAF revision number. The initial DAF submitted to FHWA must show a “0” (zero) in this space. If major changes are made to the existing DAF, fill out a revised DAF with the new information and change this entry from “0” to “1”.
- The following is an example of the third DAF for a local site in the County of Yuba: **CBA-YUBCO_-003-0** (Local Agency DAF).

[2] Sheet number: Fill in total number of sheets.

[3] Project #s: Enter the seven digit Federal Project number (if known). The following is an example entry: 4321(004) for Emergency Opening (EO) and/or Permanent Restoration (PR) 4321(005). You may not have the project numbers by the time the DAF needs to be submitted to FHWA, these can be filled in later.

[4] Disaster No.: Enter the 3-digit Federal Disaster Number (required). The disaster number is CA for California, then the Federal Fiscal Year (which starts on October 1) followed by the event number, starting with 1. The following is an example entry: CA09-1, for the first event in California during FFY 2009.

[5] Applicant: Caltrans if State administered, or the name of the City, County or other local agency if locally administered.

[6] County: The name of the county where the damage is located.

[7] Incident Date: Usually the Governor’s Proclamation date; but it may be the date the damage occurred, or was first discovered. If the site is damaged in more than 1 proclaimed event, write additional incident dates in the Justification box at the bottom of the cost calculation sheet

[8] Inspection Date: The date that FHWA or Caltrans (local agency sites) visited the damage site. If there was more than one group inspection, it is best to document the additional dates in the justification area at the bottom of the cost calculation sheet.

[9] Location of Damage: Check “Per Site” or “Per Mile”

Damage Assessment Form Instructions

For damage to be eligible for FHWA funding, the repair estimate must be greater than one of the following criteria:

	State	County	City
Per site	\$5,000	\$5,000	\$5,000
Per mile	\$15,000	\$9,000	\$5,000

[10] **Federal-aid Highway, map number, and Classification:** Enter Y for yes in the box next to “Y for yes...” if the damaged route is eligible.

- Go to the CSR maps at http://www.dot.ca.gov/hq/tsip/hseb/crs_maps/ to determine if the route is a Fed-aid route. Local Roads and Rural Minor Collectors (grey or yellow) are not eligible for FHWA ER funds.

Fill in the Map number from the lower right hand corner of the CRS map, and enter the functional classification type (i.e. Major collector).

[11] Name of road/bridge: Enter the name of the road/bridge or route number.

[12] PM Begin and PM end: If the route has post mile markers enter that information; if not use a short description such as “.1 mile SO River Intersection.”

[13] PM length: Enter the length of the site, in feet.

[14] Road/Bridge Data: Fill in bridge # if applicable

[15] Type: Enter bridge type. (T-beam, PSPT)

[16] Identify State/Local Route Number: Enter route number if applicable.

[17] Traveled Way: Enter width of traveled way (two 12’ lanes= 24’), and check traveled way type- Portland cement concrete (PCC), asphalt concrete (AC) or Gravel.

[18] Shoulder: Enter width of the shoulder (two 8’ shoulders=8’), and check shoulder type- PCC, asphalt concrete AC or Gravel.

[19] Forest Highway? Enter “Y” for Yes or “N” for No. If yes the project may be eligible for ERFO- Emergency Relief Federally Owned, for more information see publication number FLH-04-007 or go online at <http://www.efl.fhwa.dot.gov/programserfo.aspx> .

[19] continued

Interstate? Enter “Y” for Yes or “N” for No, if the damage is on the Federal Interstate route system.

[20] Existing ADT: Enter the Average daily traffic (ADT). This number is useful in determining EO versus PR, in some instances.

[21] Description of Damage: Use general terms describing dimensions, and cause of damage, i.e. mudslide covering 75 feet of road, due to winter storms.

Damage Assessment Form Instructions

Emergency Opening (EO) versus Permanent Restoration (PR)- EO funding is for work that is needed for either 1) restoring essential travel, 2) minimizing the extent of damage, or 3) protecting the remaining facilities, ONLY.

[22] EO Agency Forces Description of Work: Write a general description of EO repairs made by agency forces, only. No contract work of any type. Ct Work Order # are for State applicant work, and probably will not be known at the field review. EA # may not be known at FHWA submittal time

[23], [27], and [33] PE (preliminary Engineering) Costs: Round up to even dollars. Expenses must be justified in the Description of Work. If the PE estimate exceeds 10% of the construction cost, it needs a justification. The justification can be written in the Description of Work area, or on the Narrative page, or in the Justification area at the bottom of the Calculation page.

[24], [28], and [34] CE (construction engineering) Costs: Round up to even dollars. Expenses must be justified in the Description of Work. If the CE estimate exceeds 15% of the construction cost it needs a justification. The justification can be written in the Description of Work area, or on the Narrative page, or in the Justification area at the bottom of the Calculation page.

[25], [29], and [35] Construction Costs: Round up to even dollars. Write the estimated of the cost for repair work.

[26] EO- Contract Description of Work: Write a general description of EO repairs made by any type of contractor.

- For local agencies- local assistance accounting wants an award package for any work done by a contractor. For shortlist or force account contracts- On a piece of paper state that the work is ER force account contact work. Show the date of the agreement, the type/quantity of work that has been agreed upon, and the agreed price. Show the name of the company and the persons who have entered into the agreement. Have both parties sign and date it.

[30] and [36] R/W (right-of-way): Fill any the estimated Right-of-way acquisition expenses and support costs. ER will only fund work outside of the R/W if the following 4 conditions are met:

- Directly related to the protection of the highway
- Not eligible for funds from another agency
- No other agency has responsibility
- Applicant agrees to accept all future maintenance

[31] Subtotal Emergency Opening: If you are filling in the DAF by computer, this will automatically be filled in. The sum of all EO estimated work. Round up to even dollars.

PR Type of Repair: PR work must follow federal contract requirements.

[32] Description of PR work and Summary Cost: Mark contract and/or FA (Force Account). For FA a PIF (Public Interest Finding) must be completed. For local agencies see “*Local Programs Procedures Manual (LAPM)*” Chapter 12 PS&E and Exhibit 12-F
Write a general description of the Restoration work needed to repair the damaged facility. The EA# may not be known at FHWA submittal.

Damage Assessment Form Instructions

[37] Subtotal Permanent Restoration: If you are filling in the DAF by computer, this will automatically be filled in. The sum of all PR estimated work. Round up to even dollars.

[38] PE total: If you are filling in the DF by computer, this will automatically be filled in. Add up the 3 PE totals from above.

[39] Eligibility and Local Agency signature and Date: If the applicant is a local agency, the agency will mark eligible and sign and date.

- For local sites that are less than \$5,000- mark the DAF as Ineligible, get a State Engineer signature, and submit the DAFs to CAL EMA for 75% reimbursement, for debris removal.

[40] CE total: If you are filling in the DF by computer, this will automatically be filled in. Add up the 3 CE totals from above.

[41] Eligibility and State Engineer and Date: The State engineer marks Eligible or Ineligible, signs and dates the DAF.

[42] R/W total: If you are filling in the DAF by computer, this will automatically be filled in. Add up the 2 Right-of-way totals from above.

[43] Eligibility and FHWA Engineer and Date: The FHWA engineer marks Eligible or Ineligible, signs and dates the DAF. For Local applicants- FHWA signature is only required if there are *any Betterments*, more than 2 ROW takes, or when paving is more than 50% of the total cost.

[44] Construction Total: If you are filling in the DAF by computer, this will automatically be filled in. Add up the 3 Construction totals from above.

[45] Total Estimate: If you are filling in the DAF by computer, this will automatically be filled in. Add up all totals from above.

[46], [47] and [48] Local, State Engineer & FHWA Engineer: Print the name of the signatures above.

[49] DAF Prepared by: Print the name of the person who prepared the DAF.

Cost Calculation Page: Local agencies may provide their own spread sheet of calculations, in lieu of this page. Put the DAF # and page # in the upper right hand corner. Check if the calc is for EO local forces, EO contract, or PR. Lump sum will generally only be accepted for non-biddable items such as Mobilization. If you are filling in by computer- it will automatically multiply quantity by unit price, and add up all the items.

Justifications/Comments: Use this area to explain high PE and/or CE costs, additional site visit dates, and any other topics.

If you do not use this page, save a tree and do not send it as part of the DAF.

Photos, Sketches and/or Narrative page: Photos are required with any DAF. Locals may submit photos without this page. Put the DAF# and page # in the upper right hand corner.

If you do not use this page, save a tree and do not send it as part of the DAF.

Local agencies- Do not include plans, time sheets, Proclamations, Resolutions, or bid packages as part of the DAF.

U.S. Department of Transportation Federal Highway Administration- California Division- Title 23 Damage Assessment Form (DAF)		DAF No. [1A] - [1B] - [1C] - D
Sheet # 1 of [2] Federal Project # EO ER - [3] ()		Disaster No. CA [4] - [] PR ER - [3] ()
Applicant [5]	County [6]	Incident (mm/dd/yyyy) [7] Inspection [8]
Location of Damage: [9] Per Site <input type="checkbox"/> or <input type="checkbox"/> Per Mile	Federal-aid Highway? [10] <input type="checkbox"/> Y for yes, if no, ineligible for ER funds	
Name of Road/Bridge: [11]	Map No []	
PM Begin: [12] PM Length: [13] (in feet)	Functional Classification Type: []	
Road/Bridge Data: Bridge No [14] Type: [15]	Route # [16]	
Traveled Way: Width [17] Type: PCC <input type="checkbox"/> AC <input type="checkbox"/> Gravel <input type="checkbox"/>	Forest Hwy? Y/N <input type="checkbox"/> [19] Interstate? Y/N <input type="checkbox"/>	
Shoulder: Width [18] Type: PCC <input type="checkbox"/> AC <input type="checkbox"/> Gravel <input type="checkbox"/>	Existing ADT: [20]	
Description of Damage:	[21]	

COST ESTIMATE			
Emergency Opening (EO)	Type of Repair	Description of Work	Cost Summary
	EO- AGENCY FORCES CT Work Order #(s): _____	[22]	PE [23]
	EA(s): _____		CE [24]
			Construction [25]
	EO- CONTRACT EO EA(s): _____	[26]	PE [27]
			CE [28]
			Construction [29]
NOTE: Environmental documentation for EO is required. It is generally started after work has begun.			R/W [30]
		Subtotal Emergency Opening	[31]
Permanent Restoration (PR)	PR- CONSTRUCTION FA requires an approved PIF	[32]	PE [33]
	Contract _____ FA _____		CE [34]
	PR EAs _____		Construction [35]
NOTE: PRIOR AUTHORIZATION (APPROVED E-76) IS REQUIRED TO PROCEED WITH PERMANENT RESTORATION R/W & CONSTRUCTION			R/W [36]
NOTE: Environmental clearance for permanent restoration is conducted through normal Federal-aid procedures		Subtotal Permanent Restoration	[37]
Eligible	Signature	Date	PE Total [38]
<input type="checkbox"/> Yes <input type="checkbox"/> No	Local Agency (if applicable): [39]		CE Total [40]
<input type="checkbox"/> Yes <input type="checkbox"/> No	Caltrans: [41]		R/W Total [42]
<input type="checkbox"/> Yes <input type="checkbox"/> No	FHWA*: [43]		Construction Total [44]
TOTAL ESTIMATE			[45]

Agency sig. Name (print): [46] FHWA Sig. Name (print): [47]
 CT signature Name (print): [48] DAF Prepared by (print): [49]

Original: Caltrans District **Copies:** FHWA, Division of Local Assistance(local roads), Federal Resources (state hwy), HQ Major Damage Engineer (state hwy)
 *Write "N/A" in FHWA signature block if the project has no Federal ER funding or Federal ER funding delegated to the State.
FHWA Signature: REQUIRED for all Federal Funded State projects. REQUIRED for any Local Agency projects with 1) any BETTERMENT, 2) more than 2 ROW takes or 3) when paving is more than 50% of the Total Estimated Cost. **Reminder: This DAF must be accompanied by photos of the damage.**

APPENDIX G

Caltrans Paramount Bridge Damage Assessment Form

Rec'd 6/12/2012 ps

U.S. Department of Transportation Federal Highway Administration- California Division- Title 23 Damage Assessment Form (DAF)		DAF No. <u>RBS</u> - <u>LACO</u> - <u>001</u> - <u>0</u>
Sheet # 1 of _____		Federal Project # EO ER - _____ ()
Disaster No. CA <u>12</u> - <u>1</u>		PR ER - _____ ()
Applicant <u>Los Angeles County DPW</u>	County <u>Los Angeles</u>	Incident Date (mm/dd/yyyy) <u>12/14/2011</u>
Location of Damage: Per Site <input checked="" type="checkbox"/> or <input type="checkbox"/> Per Mile		Inspection <u>6/12/2012</u>
Name of Road/Bridge: <u>Paramount Boulevard over State Route 60</u>		Federal-aid Highway? Y for yes, if no, ineligible for ER funds <input type="checkbox"/> Y
PM Begin: <u>R007.77</u>	PM Length: _____	Map No <u>13 V 25</u>
PM End: <u>R007.77</u>	(in feet)	Functional Classification Type: <u>Other Principal Arterial</u>
Road/Bridge Data: Bridge No <u>53 1910</u>	Type: _____	Route # _____
Traveled Way: Width _____	Type: PCC <input type="checkbox"/> AC <input type="checkbox"/> Gravel <input type="checkbox"/>	Forest Hwy? Y/N <input type="checkbox"/> Interstate? Y/N <input type="checkbox"/>
Shoulder: Width _____	Type: PCC <input type="checkbox"/> AC <input type="checkbox"/> Gravel <input type="checkbox"/>	Existing ADT: _____
Description of Damage:	The Paramount Boulevard bridge over SR-60 failed due to a tanker fire that occurred on the Freeway below. The resulting failure required that the County implement a detour to direct people around the closure.	

COST ESTIMATE			
Emergency Opening (EO)	Type of Repair	Description of Work	Cost Summary
	Emergency Opening	EO- AGENCY FORCES CT Work Order #(s): _____	Design and implement detour for the Paramount Boulevard closure. (X210000441) Evaluation of roadway to determine pavement degradation due to the increased traffic (X210000449).
EA(s): _____		CE 9,000	
Construction 18,000			
EO- CONTRACT EO EA(s): _____		Contract with Sheriff's for detour enforcement (X210000440) and Newspapers for advertising the detour.	PE
		CE	Construction 22,000
NOTE: Environmental documentation for EO is required. It is generally started after work has begun.			R/W 0
Subtotal Emergency Opening			\$67,000
Permanent Restoration (PR)	PR- CONSTRUCTION FA requires an approved PIF		PE
	<input type="checkbox"/> Contract <input type="checkbox"/> FA		CE
	PR EAs _____		Construction
NOTE: PRIOR AUTHORIZATION (APPROVED E-76) IS REQUIRED TO PROCEED WITH PERMANENT RESTORATION R/W & CONSTRUCTION			R/W
NOTE: Environmental clearance for permanent restoration is conducted through normal Federal-aid procedures			Subtotal Permanent Restoration \$0
Eligible	Signature	Date	PE Total \$18,000
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Local Agency (if applicable) <i>Allen Abramson</i>	<u>6/11/12</u>	CE Total \$9,000
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Caltrans: <i>Reynaldo P. Sarmiento</i>	<u>6/15/12</u>	R/W Total \$0
<input type="checkbox"/> Yes <input type="checkbox"/> No	FHWA*: NOT APPLICABLE		Construction Total \$40,000
TOTAL ESTIMATE			\$67,000

Agency sig. Name (print): Allen Abramson FHWA Sig. Name (print): _____
 CT signature Name (print): REYNALDO SARMIENTO DAF Prepared by (print): _____

Original: Caltrans District Copies: FHWA, Division of Local Assistance(local roads), Federal Resources (state hwy), HQ Major Damage Engineer (state hwy)
 *Write "N/A" in FHWA signature block if the project has no Federal ER funding or Federal ER funding delegated to the State.
 FHWA Signature: REQUIRED for all Federal Funded State projects. REQUIRED for any Local Agency projects with 1) any BETTERMENT, 2) more than 2 Road takes or 3) when paving is more than 50% of the Total Estimated Cost. Reminder: This DAF must be accompanied by photos of the damage.

U.S. Department of Transportation
Federal Highway Administration-
California Division- Title 23
Damage Assessment Form (DAF)

DAF # RBS - LACO - 001 - 0

Sheet # _____
Applicant _____

of
RECEIVED
JUN 12 2012

Photos, Sketches and/or Narrative

BY: _____

Photo description: Paramount Blvd at Bradbury Drive Looking South



U.S. Department of Transportation Federal Highway Administration- California Division- Title 23 Damage Assessment Form (DAF)	DAF # <u>RBS</u> - <u>LACO</u> - <u>001</u> - <u>0</u> Sheet # _____ of _____ Applicant _____
---	---

Photos, Sketches and/or Narrative

Photo description: Paramount Blvd at Bradbury Drive Looking South



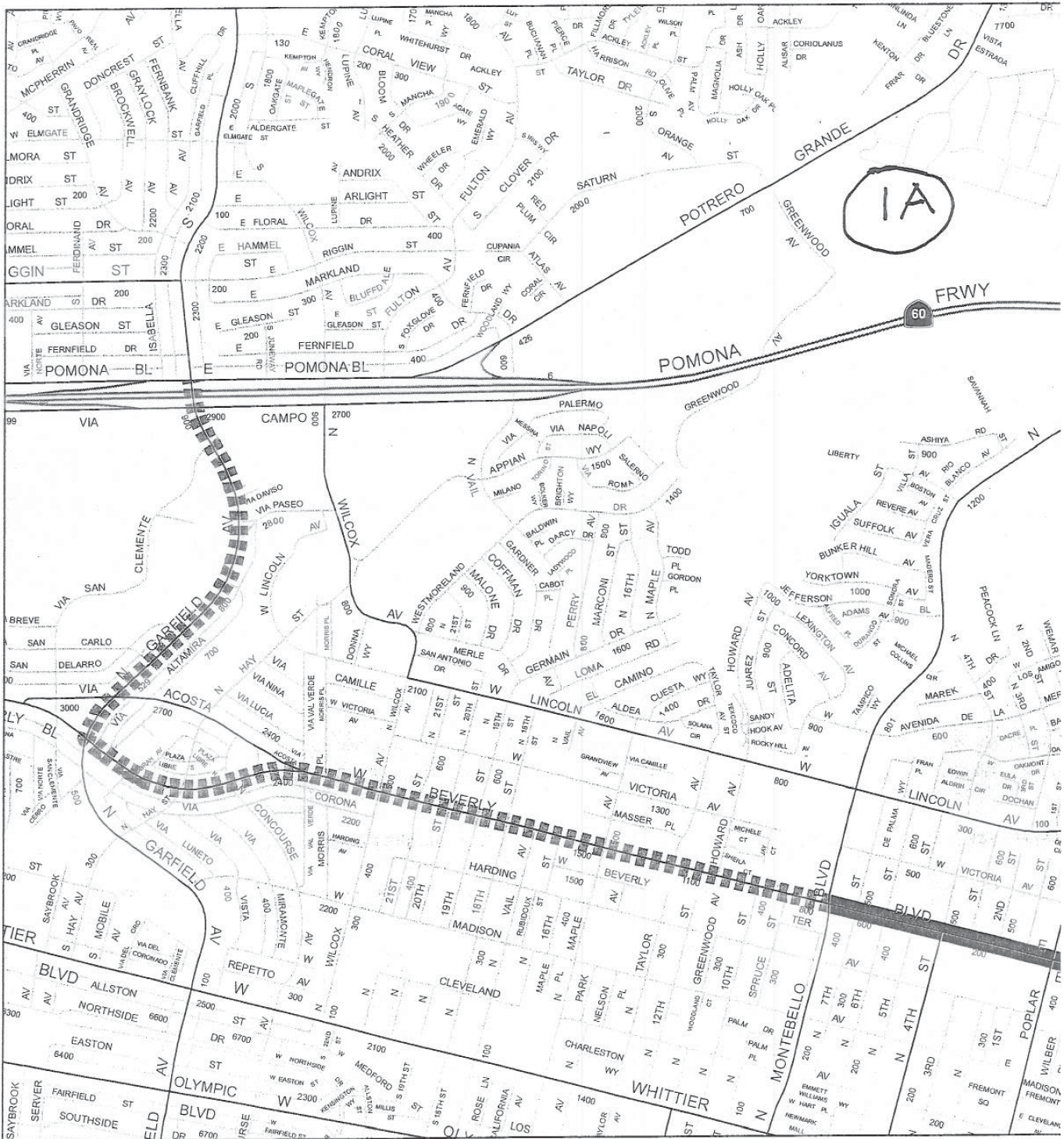
U.S. Department of Transportation Federal Highway Administration- California Division- Title 23 Damage Assessment Form (DAF)	DAF # <u>RBS</u> - <u>LACO</u> - <u>001</u> - <u>0</u>
	Sheet # _____ of _____ Applicant _____


Photos, Sketches and/or Narrative

Photo description: Paramount Blvd at Bradbury Drive Looking South



PARAMOUNT BOULEVARD OVER

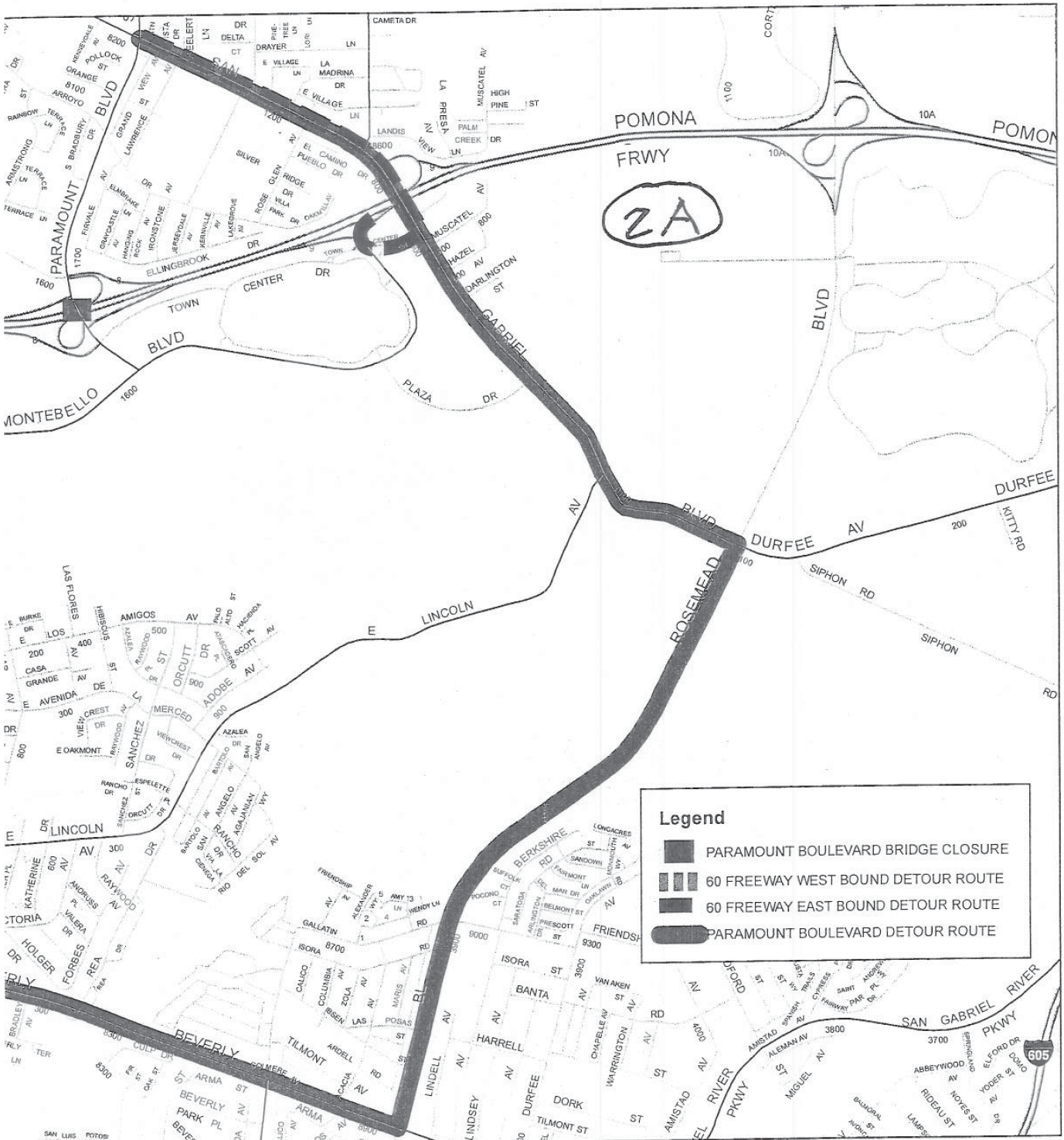



 DEPARTMENT OF PUBLIC WORKS
 900 S. Fremont Ave.
 Alhambra, CA 91803
 TRAFFIC & LIGHTING DIVISION
 DESIGN SECTION





Data contained in this map is produced in whole or part from the Thomas Bros. Maps ©. This map is copyrighted, and reproduced with permission granted, by Thomas Bros. Maps ©. All rights reserved.

Data contained in this map is produced in whole or part from the L County Department of Public Work's precise database.

R 60 FREEWAY DETOUR MAP



Legend

-  PARAMOUNT BOULEVARD BRIDGE CLOSURE
-  60 FREEWAY WEST BOUND DETOUR ROUTE
-  60 FREEWAY EAST BOUND DETOUR ROUTE
-  PARAMOUNT BOULEVARD DETOUR ROUTE

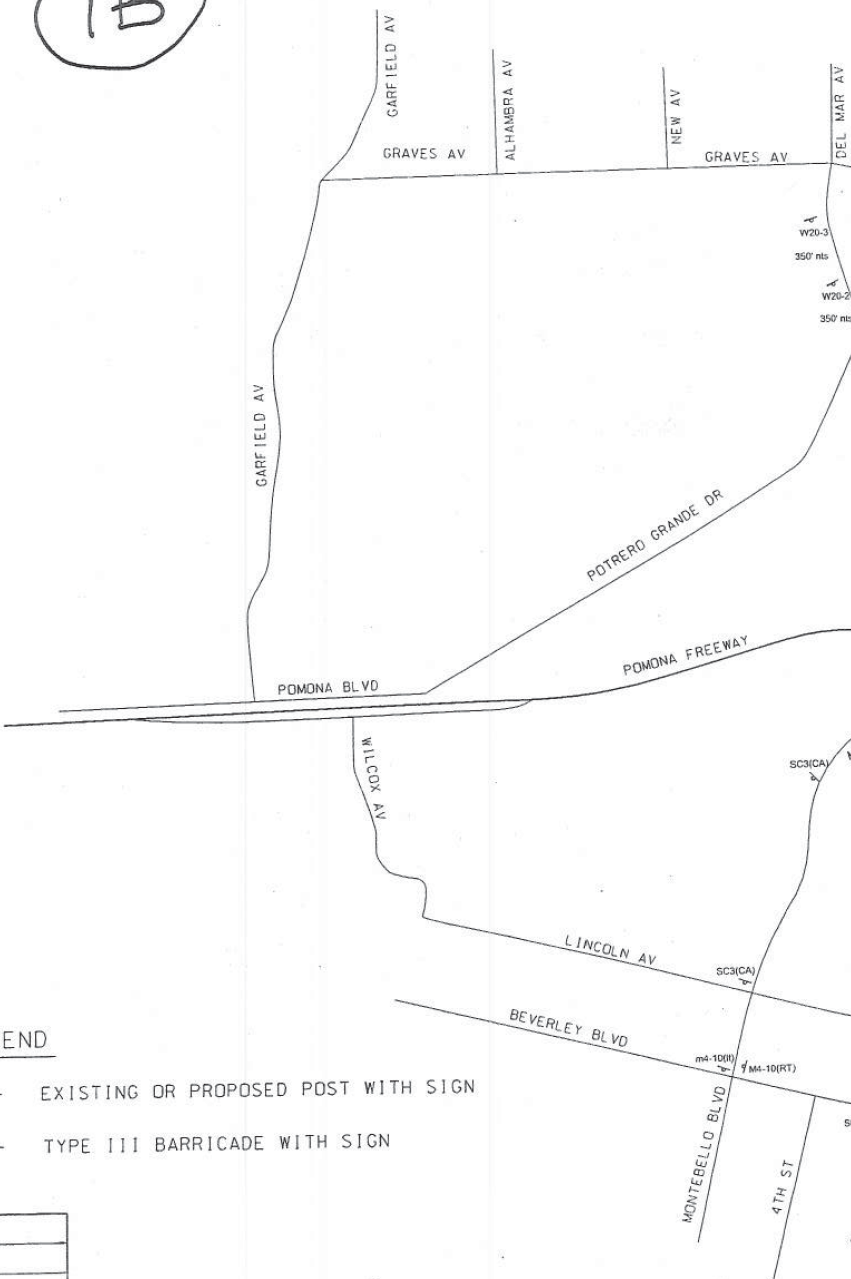


Path: \\Pwnas1\m\pmgis\SMP\MGIS\projects\tr\Paramount & 60Fwy\Paramount_60fwy_11x17T.mxd

jeles

COUNTY C
DEPARTMENT

1B



LEGEND

- ⊥ - EXISTING OR PROPOSED POST WITH SIGN
- ⊥ - TYPE III BARRICADE WITH SIGN

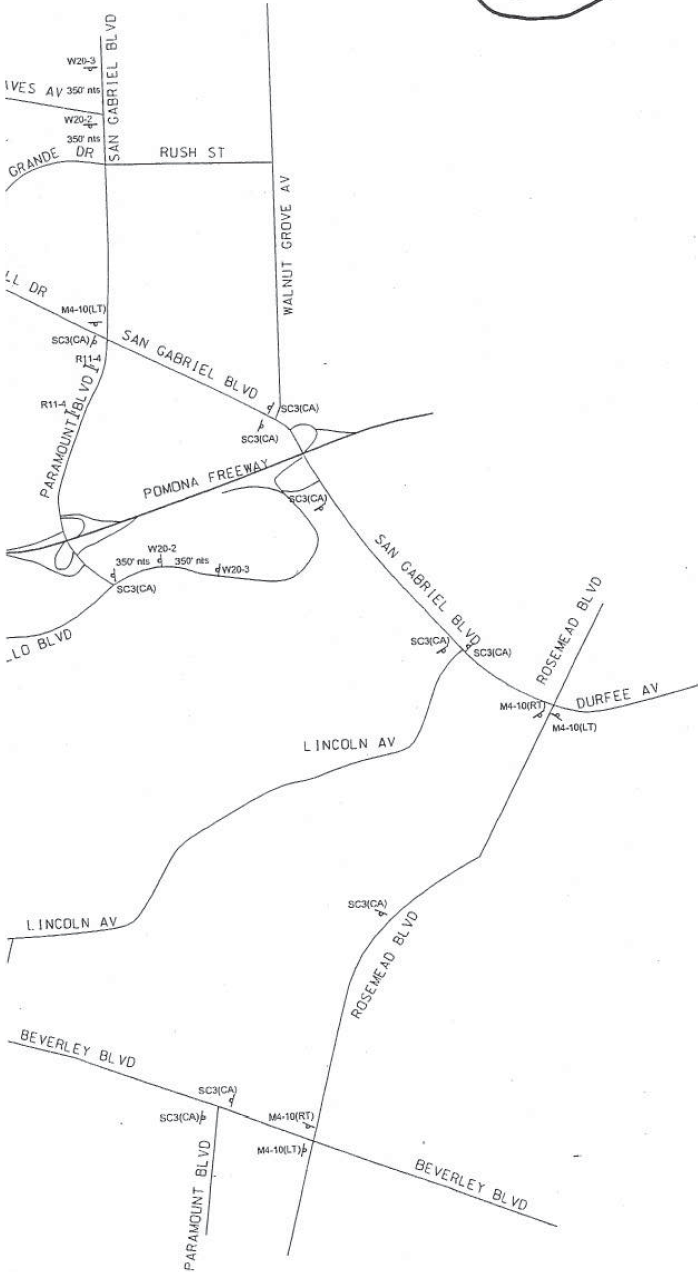
DATE	MK	DESCRIPTION

DRAWN BY: E. LEE

TG 677 H3

LOS ANGELES OF PUBLIC WORKS

2B



SIGN LEGEND		

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
TRAFFIC AND LIGHTING DIVISION

TRAFFIC DETOUR PLAN

PARAMOUNT BLVD
AT POMONA FWY

SHT. 1 OF 1 SCALE: NONE

Federal Aid Data System

HELP (Rev 1/2012)

Friday, June 15, 2012
 You are logged in as:
 S127512 REYNALDO SARMIENTO

Project Request DAF Reports User Profile Administration Log Off Home

Listing of Revisions for This DAF
 Select Edit to update the DAF below. Select Delete to delete the DAF. Select Create Revision to create a revision for this DAF.

Report No: RBS-LACO -001	Disaster No: CA2012-1	County: 037 - LA		
Rev No	Created By	Create Date	Last Updated By	Update Date
Edit Delete 0	SARMIENTO, REYNALDO	06/15/2012	SARMIENTO, REYNALDO	06/15/2012
Create Revision				

DAF DAF Status

Report No: RBS-LACO -001-0 Disaster No: CA2012-1 County: 037 - LA Incident Date: 12/14/2011 mm/dd/yyyy Inspect Date: 06/12/2012

District: 07 Admin: LOCAL Responsible Agency: 5953 Func. Class Code: DP - DIVIDED/PRINCIPAL ARTERIAL

Applicant: LOS ANGELES CO DEPT OF PUBLIC WOR Save

Road/Bridge Name: PARAMOUNT BL OVER STATE ROUTE 60 Per Site or Per Mile: PER SITE Begin PM: 7.77 End PM: 7.77 Total Feet: 0.00

Bridge No: 531910 Type: Federal Aid Hwy: Yes No Map No: 13V25

Traveled Way Width: Type: Select one Forest Hwy System: Yes No State/Local Rte No:

Shoulder Width: Type: Select one Interstate: Yes No ADT (Existing):

Damage Description (at most 400 characters):
 THE PARAMOUNT BL BRIDGE OVER SR-60 FAILED DUE TO A TANKER FIRE THAT OCCURRED ON THE FREEWAY BELOW. THE RESULTING FAILURE REQUIRED THAT THE COUNTY IMPLEMENT A DETOUR TO DIRECT THE PEOPLE AROUND THE CLOSURE.

COST ESTIMATE

Emergency Opening Agency Forces	Description of Work	Cost Summary
SPN/Contract No:	DESIGNED & IMPLEMENTED DETOUR FOR THE PARAMOUNT BL CLOSURE. EVALUATION OF ROADWAY TO DETERMINE PAVEMENT DEGRADATION DUE TO THE INCREASED TRAFFIC.	PE: 18,000.00 CE: 9,000.00 CON: 18,000.00
CT Work Order No: 1: 2: 3: 4: 5:		
Emergency Opening Contract		Cost Summary
SPN/Contract No: X21000440	CONTRACTED WITH THE SHERIFF FOR DETOUR ENFORCEMENT & NEWSPAPERS FOR ADVERTISING THE DETOUR.	PE: CE: CON: 22,000.00 RW: 0.00
Subtotal Emergency Opening:		67,000.00
Permanent Restoration		Cost Summary
Contract Type: Select one		PE: CE: CON: RW: 0.00
SPN:		
Subtotal Permanent Restoration:		

Preliminary Engineering Total:	18,000.00
Construction Engineering Total:	9,000.00
Right of Way Total:	
Construction Total:	40,000.00
Total Estimated:	67,000.00

Eligible <input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A <input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A		Local Agency: <input type="text" value="ABRAMSON"/>	Last Name <input type="text" value="ABRAMSON"/>	First Name <input type="text" value="ALLAN"/>	Date <input type="text" value="06/11/2012"/> <small>mm/dd/yyyy</small>
		Caltrans: <input type="text" value="SARMIENTO"/>	<input type="text" value="SARMIENTO"/>	<input type="text" value="REYNALDO"/>	<input type="text" value="06/15/2012"/> <small>mm/dd/yyyy</small>
		FHWA: <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/> <small>mm/dd/yyyy</small>
Created By: SARMIENTO, REYNALDO		Date: 06/15/2012	Last Updated By: SARMIENTO, REYNALDO		Date: 06/15/2012
<input type="button" value="Save"/>		<input type="button" value="Reset"/>			

APPENDIX H

VTrans Checklists

FHWA ER Submittal Checklist

Disaster #: VT11-2
DDIR #:
Grantee: VTrans
Grant#: ER _____
Town:
DDIR Estimate:
DDIR Actual:
VTrans Project Manager:
180 Day Period End Date: 2-23-12

Town Section:

- | | Yes | No | N/A |
|--|--------------------------|--------------------------|--------------------------|
| 1. All invoices and timesheets from town properly authorized (signed) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Verified no tax included on any of the receipts | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Proof of payment from town to contractors (minimum check # & date paid) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Verified "Work Performed" dates when determining % reimbursement | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Verified all calculations on backup documentation are correct | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Verified no markup on materials purchased by town | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Markup on contractors' materials limited to 10% or less | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Paperwork organized in order of FHWA Spreadsheet | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Clearly mark items for reimbursement on invoices (ex. Highlight) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Clearly Mark "Final Invoice" on last invoice to State. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. TA-65 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Signature on Behalf of Town: _____ *Date:* _____

Project Manager Section:

- | | | | |
|---|--------------------------|--------------------------|--------------------------|
| 1. Completely fill out VTrans FHWA Payment Submission Sheet | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Reviewed all supporting documentation for compliance (see above) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

VTrans Project Manager Signature: _____ *Date:* _____

Reviewer Signature: _____ *Date:* _____

CONSTRUCTION CHECKLIST

Invitation for Bids:

- 1. advertise for bids for a minimum of three weeks
- 2. hold a public bid opening at a specified date and time
- 3. summarize and analyze bid results with a statement of intent relative to the bid award
- 4. Confirm that apparent low bidder was responsive and responsible

Award and execution of construction contract:

- 5. municipality executes contract with low bid contractor
- 6. pre-construction conference held with appropriate parties

Project Construction:

- 7. oversight by municipality (construction inspector)
- 8. proposed waste, borrow & staging areas approved by VTrans
- 9. shop drawing submittal & review if appropriate
- 10. materials sampling, testing and certification
- 11. project final inspection

Completion & Acceptance:

- 12. submittal of project certification & acceptance form
- 13. submittal & payment of final invoice

**VERMONT AGENCY OF TRANSPORTATION
OPERATIONS DIVISION
PROJECT CONSTRUCTION CHECKLIST**
Shaded Areas to be Completed by District

PROJECT INFORMATION

Date: _____
 District: _____
 Town: _____ Route: _____ DDIR# _____
 EA: _____
 Location: _____
 Description of Work: _____

CHECKLIST (Mark Not Applicable items N/A)

<u>Date of document</u>		<u>Date of document</u>	
_____	Right-of-Way Clearance	_____	RESOURCE REVIEW
_____	RR Clearance / Agreement	_____	Archaeological Clearance
_____	Permitting "All Clear" Memo	_____	Historic Site Clearance
_____	Utility Clearance/Special Provisions	_____	T & E Species
		_____	Farmlands
		_____	Wetlands
		_____	Floodplains
		_____	AOP
STATE APPROVALS		FEDERAL APPROVALS	
_____	Stream Alteration Permit	_____	Section 106 Determination
_____	Storm Water Discharge Permit	_____	Section 4(f) Eval./Determination
_____	NPDES Construction GP	_____	Section 6(f) Eval./Determination
_____	EPSC Plan Acceptance Memo	_____	401 - Water Quality Certification
_____	Wetlands CUD	_____	Coast Guard Permit
_____	Lakes and Ponds Permit	_____	404 - Army COE Permit
_____	T&E Species Permit	_____	USF&WS End. Spec. Act Consultation
_____	Act 250 Land Use Permit	_____	US Dept. of Agriculture
_____	Agency of Agriculture	_____	NEPA Documentation - Categorical Exclusion
_____	Floodplain Permit	_____	FEMA
Individual Completing Form: _____		Contact Number: _____	



State Of Louisiana State of Louisiana
 Department of Transportation and Development
 Office of Operations
EOC VSA Transportation Asset Tracking Form

Location				Name (Day Shift)				Phone #				
				Name (Night Shift)				Phone #				
Date		Date		Date		Date		Date		Date/Time/Total		Reported
Time		Time		Time		Time		Time		Date of Report		
In Use		In Use		In Use		In Use		In Use		Time of Report		
On Site		On Site		On Site		On Site		On Site		Total In Use		
										Total On Site		
Date		Date		Date		Date		Date		Date of Report		
Time		Time		Time		Time		Time		Time of Report		
In Use		In Use		In Use		In Use		In Use		Total In Use		
On Site		On Site		On Site		On Site		On Site		Total On Site		
Date		Date		Date		Date		Date		Date of Report		
Time		Time		Time		Time		Time		Time of Report		
In Use		In		In		In		In		Total In Use		
On Site		On Site		On Site		On Site		On Site		Total On Site		
Date		Date		Date		Date		Date		Date of Report		
Time		Time		Time		Time		Time		Time of Report		
In Use		In		In		In		In		Total In Use		
On Site		On Site		On Site		On Site		On Site		Total On Site		

- Reports will be made to the EOC VSA Tracker every 4 hours or significant changes
- Date = Date of Report
- Time = Time Report Submitted
- In Use = Transportation Resources operating out of the VSA (i.e. convenience, shuttle...)
- On Site = Transportation Resources staged at the VSA
- Reported = Initials of person reporting after report submitted



State of Louisiana
 Department of Transportation and Development
 Office of Operations
ESF-1 Transportation Asset Tracking Form

Check In Location: _____

For (circle one): Motor Coach Para-transit Vehicle Passenger Van School Bus Other _____

Assigned #: _____ Replacement Vehicle: YES NO

Date of Arrival: _____ Time of Arrival: _____ AM or PM

Vendor Assigned #: _____ Odometer Reading: _____

Driver's Name: _____ Contact #: _____

 Driver's Signature

 DOTD Representative Signature

Check Out Location: _____

LADOTD Assigned #: _____

Date of Release: _____ Time of Release: _____ AM or PM

Vendor Assigned #: _____ Odometer Reading: _____

Driver's Name: _____ Contact #: _____

 Driver's Signature

 DOTD Representative Signature

INSTRUCTIONS:

Passenger Vans -Person picking up and dropping off passenger vans will complete driver information and return entire form to Emergency Operations Logistics

Motor Coaches, Para-transit Vehicles & School Buses – ALL VEHICLES MUST BE CHECKED IN AND OUT BY LADOTD

CHECK IN -

- Drivers will maintain the completed original (WHITE copy) and YELLOW copy.
- LADOTD representative will retain the PINK copy.

CHECK OUT -

- Drivers must provide LADOTD representative with this form that was completed upon Check In.
- LADOTD representative will complete the checkout section.
- LADOTD will retain the completed original (WHITE copy).
- Driver will retain YELLOW copy for the driver and Contractor's records.

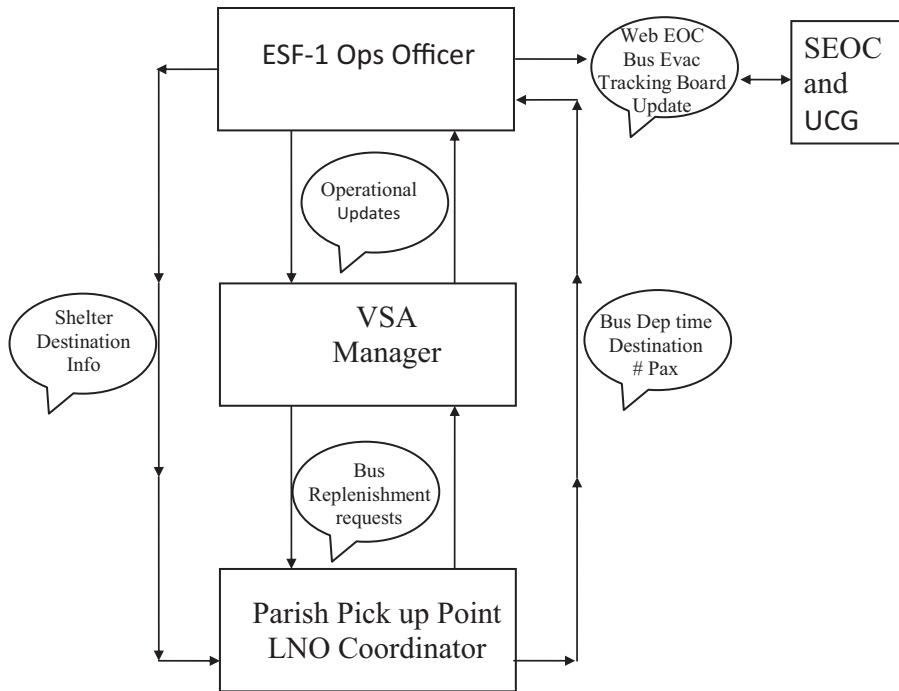
IN ORDER TO RECEIVE FULL PAYMENT ALL VEHICLES MUST BE CHECKED IN AND OUT AND THIS FORM COMPLETED BY A LADOTD REPRESENTATIVE.

REMARKS (any reasons for changes): _____

All remarks must be signed and dated by LADOTD representative _____

Signature

Date



Info flow
 UCG= Unified Command Group
 SEOC= State Emergency Operations Center
 VSA= Vehicle Staging Area

Asset Tracking Flow

LOUISIANA DOTD's Equipment/Supply Checklist for Damage Assessment Teams

- ___ Appropriately equipped vehicles (i.e.- high ground clearance for Bridge Assessment Teams); working climate controlled (i.e. air conditioning and heating); and sufficient room to carry the assessment team and all equipment and supplies.
- ___ Handheld DOTD 700 MHZ radio
- ___ Fully stocked First Aid Kit
- ___ One spare tire, jack, and tire tools
- ___ Fully stocked Tire Repair Kit
- ___ Magnetic "Damage Assessment Team" Placards
- ___ Food (two days of MRE's: one day of snacks, drinks, etc.)
- ___ Water for drinking (two days of bottled water)
- ___ Water for cleaning (water cooler)
- ___ Toilet Paper
- ___ Paper Towels
- ___ Glass Cleaner
- ___ Tape Measure
- ___ Flashlight w/batteries
- ___ Reference Documents (upon request)
 - ___ DOTD Maps w/ FA/NFA, Control Section, and all DOTD Facilities
 - ___ Control Sections, Routes, mile posts, and length of section
 - ___ Contact Information for all DOTD Facilities and Phone Numbers
 - ___ Manuals (upon request)
 - ___ FHWA ER Manual
 - ___ FEMA Public Assistance Guidelines
 - ___ Emergency Response Guidelines
- ___ Report Forms, Templates, and Standardized Reports
- ___ Cost Estimation Data
- ___ GPS Navigation Device
 - (GPS Positioning of District's HQ, Parish Maintenance Units, and movable bridges)

- Alternate Communication Device (cell phones optional)
- Laptop Computer for Reporting (optional)
- Digital Cameras and/or camcorder and batteries
- Personal Protective Equipment (PPE)
 - Hardhat
 - Ball Cap (optional)
 - Wet Weather Gear
 - Gloves
 - Hand Cleaner
 - Safety Vest
 - Rubber boots
 - Insect Repellant (optional)
 - Sunscreen (optional)
 - Safety Glasses (optional)
 - Hand Sanitizer

LOUISIANA DOTD Emergency/Disaster Transportation Form, Labor and Equipment Worksheet

Source: "Annex D: School Bus Operations," DOTD, 2013, page D-9.

EMERGENCY/DISASTER TRANSPORTATION FORM
Labor and Equipment Worksheet

ATTACHMENT D-4

School District:

Event:

Description of Work Performed	Employee Name	Job (driver, aide, dispatcher, supervisor, etc.)	Bus #	Dates Used	Hours Worked		Total Time		Rate of Pay		Total Labor Cost	Operational - Maintenance Costs (Current FEMA Rate)	Total Lease Cost	Admin Cost	Total	
					Beg Time	End Time	Days	Hours	Daily (24 hrs)	Hourly						
																\$ -
																\$ -
																\$ -
																\$ -
																\$ -
																\$ -
																\$ -
																\$ -
																\$ -
																\$ -
																\$ -
																\$ -
																\$ -
																\$ -
																\$ -
TOTALS							0	0			\$ -		\$ -	\$ -		\$ -

I certify that the above information is correct.

Supervisor's signature: _____ Date _____

Director's signature _____ Date _____

ATTACHMENT D-1
EMERGENCY/DISASTER TRANSPORTATION FORM REIMBURSEMENT SUMMARY

Labor Cost

Bus Drivers \$ _____

Administrative Costs

(Includes Benefits) \$ _____
 All non-drivers

Operational and Maintenance

(FEMA Hourly Equipment Rate) \$ _____

Cleaning Costs

\$ _____

Eligible Repairs

\$ _____

TOTAL Request:

\$ _____

All documentation required for reimbursement is included in this request for reimbursement.

- Labor and Equipment Cost Summary Record*
- Timesheets – signed and approved*
- Receipts for: Eligible repairs – with supporting documentation verifying damage*
- Cleaning with invoices*
- Other – with justification and supporting documentation*

I certify that the above information is correct.

Authorized Agent Signature: _____ Date: _____
 (Name and Title)

Superintendent Signature: _____ Date: _____
 (Name and Title)

Emergency/Disaster Transportation Form Reimbursement Summary

Source: "Annex D: School Bus Operations," DOTD, 2013, page D-8.

LOUISIANA DOTD Debris Removal and Disposal Tracking Forms

State of Louisiana
 Department of Transportation and Development
 Debris Removal and Disposal

District: _____

Storm Name: _____

Haul Date: _____

Report Date: _____

Parish	Estimated Debris Totals	% Complete	Debris Hauled To Date (Cu. Yds.)				Debris Hauled in Last 24 Hours (Cu. Yds.)				Reduced Vegetative Debris (Cu. Yds.)		Removed C & D (Cu. Yds.)	
			Total	NFA Routes (FEMA)	FA Routes (FHWA)	by DOTD Forces	by Contractor	NFA Routes (FEMA)	FA Routes (FHWA)	by DOTD Forces	by Contractor	Total to Date	Last 24 Hours	Total Quantity to Landfill Final Disposal
		#DIV/0!	0											
		#DIV/0!	0											
		#DIV/0!	0											
		#DIV/0!	0											
		#DIV/0!	0											
		#DIV/0!	0											
		#DIV/0!	0											
		#DIV/0!	0											
		#DIV/0!	0											
		#DIV/0!	0											
		#DIV/0!	0											
Totals:	0.0	#DIV/0!	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

DOTD Contact person: Name: _____
 Phone: _____
 Email: _____

Contractor Contact person: Name: _____
 Phone: _____
 Email: _____

SITREP TEMPLATES

Type of Roadway	Total Miles In District	Total Miles In Affected Area	Total Miles Closed	Total Miles Re-Opened	% Miles Open
Interstate					
Major Roads					
Minor Roads					
TOTAL					
Total Number Of Signals		Total Number Of Signals Damaged In Storm	Total Number Of Signals Repaired To Date	Total Number Of Signals In-Operable Due To Power	
Total Number of Trees and Limbs Cut			Cubic Yards Of Debris Cleaned		
Total Number Of Bridges		Total Number Of Bridges Inspected/Treated	Total Number Of Major Bridges Closed		
Number Of Movable Bridges		Number Of Movable Bridges Open to Marine	Number Of Movable Bridges Open to Vehicles		
		Number Of Movable Bridges - Inoperable			
# Due To Damage -					
# Due To Lack Of Personnel -					
# Due To Lack Of Power -					
Total Number Open	Total Number Closed Due To Damage	Total Number Closed Due To Personnel	Total Number Closed Due To Weather		

Number Of Employees Working	Number Of Passenger Vehicles In Use	Number Of Pieces of Heavy Equipment In Use
Material	Hauled	Used/Installed
Sand		
Sand Bags		
Rap/Stone		
Flood Protection Material		
Deicing Agents		
Roadsigns		
Barriers		
Barricades		
Other		

APPENDIX J

Public Assistance Grant Program Summary

Public Assistance Grant Program Summary

Number and Type of Declarations with Subgrant Applications by State Departments of Transportation

State	Applicant Name	Declaration Types									
		Coastal Storm	Fire	Flood	Hurricane	Other	Severe Ice Storm	Severe Storm(s)	Snow	Tornado	Tsunami
AL	ALABAMA DEPARTMENT OF TRANSPORTATION				1			2			
AR	ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT							9		1	
CA	CALIFORNIA DEPARTMENT OF TRANSPORTATION		3								
CO	COLORADO STATE DEPT. OF TRANSPORTATION		1								
CT	CONNECTICUT DEPARTMENT OF TRANSPORTATION				1			1	1		
DC	DISTRICT OF COLUMBIA DEPARTMENT OF TRANSPORTATION				1	1		2	1		
DE	DELAWARE DEPARTMENT OF TRANSPORTATION				1				1		
FL	FLORIDA DEPARTMENT OF TRANSPORTATION				2			4			
GA	GEORGIA DEPARTMENT OF TRANSPORTATION							3			
HI	HAWAII DEPARTMENT OF TRANSPORTATION			1				2			1
IA	IOWA DEPARTMENT OF TRANSPORTATION			1			1	7			
ID	IDAHO TRANSPORTATION DEPARTMENT							1			
IL	ILLINOIS DEPARTMENT OF TRANSPORTATION							5	2		
IN	INDIANA DEPARTMENT OF TRANSPORTATION							6			
KS	KANSAS DEPARTMENT OF TRANSPORTATION							5			
KY	KENTUCKY DEPARTMENT OF TRANSPORTATION						1	10			
LA	LOUISIANA DEPARTTMENT OF TRANSPORTATION & DEVELOPMENT	1		2	3			1			
MA	MASSACHUSETTS DEPARTMENT OF TRANSPORTATION				1		1	2	1		
MD	MARYLAND DEPARTMENT OF TRANSPORTATION			1	2			1	2		
ME	MAINE DEPARTMENT OF TRANSPORTATION			1	1			5			
MI	MICHIGAN DEPARTMENT OF TRANSPORTATION							1			
MN	MINNESOTA DEPARTMENT OF TRANSPORTATION			1				4		1	
MO	MISSOURI DEPARTMENT OF TRANSPORTATION			1			2	8			
MS	MISSISSIPPI DEPARTMENT OF TRANSPORTATION			1	1			4			
MT	MONTANA DEPARTMENT OF TRANSPORTATION							1			
NC	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION				2			3			
ND	NORTH DAKOTA DEPARTMENT OF TRANSPORTATION			2				1			
NH	NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION			1	2		1	7			
NJ	NEW JERSEY STATE DEPARTMENT OF TRANSPORTATION				1			6	3		
NM	NEW MEXICO STATE HIGHWAY & TRANSPORTATION DEPARTMENT							1			
NY	NEW YORK DEPARTMENT OF TRANSPORTATION			1	1			4			
OH	OHIO DEPARTMENT OF TRANSPORTATION							1	1		
OK	OKLAHOMA DEPARTMENT OF TRANSPORTATION						1	3			
OR	OREGON DEPARTMENT OF TRANSPORTATION							3			
PA	PENNSYLVANIA DEPARTMENT OF TRANSPORTATION			1	1			1	1		
PR	PUERTO RICO DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS		1		1			4			
RI	RHODE ISLAND DEPARTMENT OF TRANSPORTATION							1			
SD	SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION			2				6	2		
TN	TENNESSEE DEPARTMENT OF TRANSPORTATION						1	8			
TX	TEXAS DEPARTMENT OF TRANSPORTATION		2		4						
UT	UTAH DEPARTMENT OF TRANSPORTATION			1		1					
VA	VIRGINIA DEPARTMENT OF TRANSPORTATION				2			3	2		
VT	VERMONT AGENCY OF TRANSPORTATION				1		1	7			
WA	WASHINGTON DEPARTMENT OF TRANSPORTATION			1				2			
WI	WISCONSIN DEPARTMENT OF TRANSPORTATION							3	2		
WV	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION			1				6	2		
WY	WYOMING DEPARTMENT OF TRANSPORTATION			1				1			
	TOTAL	1	7	21	29	2	9	155	21	2	1

Source: Number and Type of Declarations with Subgrant Applications by State Departments of Transportation for the period 10/1/2007 – 10/24/2012, Andrew Lenard, FEMA

Public Assistance Grant Program Summary

Number of Project Worksheets (Subgrant Application) for State Departments of Transportation

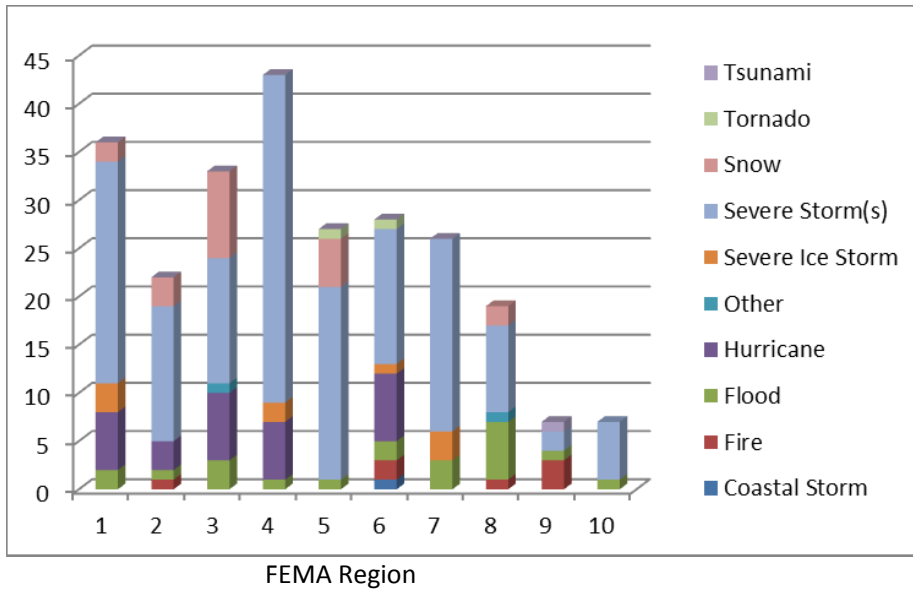
State	Applicant Name	Work Categories							
		A - Debris Removal	B - Emergency Protective Measures	C - Roads & Bridges	D - Water Control Facilities	E - Public Buildings	F - Public Utilities	G - Recreational or Other	Z - State Management
AL	ALABAMA DEPARTMENT OF TRANSPORTATION	2	1	1					
AR	ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT	9	38	14		3			
CA	CALIFORNIA DEPARTMENT OF TRANSPORTATION		4						
CO	COLORADO STATE DEPT. OF TRANSPORTATION		1						
CT	CONNECTICUT DEPARTMENT OF TRANSPORTATION	1	19						
DC	DISTRICT OF COLUMBIA DEPARTMENT OF TRANSPORTATION	5	13				9		
DE	DELAWARE DEPARTMENT OF TRANSPORTATION	1	7	4		1			
FL	FLORIDA DEPARTMENT OF TRANSPORTATION	9	27	4	2	1			
GA	GEORGIA DEPARTMENT OF TRANSPORTATION	1		2		7	1		
HI	HAWAII DEPARTMENT OF TRANSPORTATION	2	4	2		1	2		
IA	IOWA DEPARTMENT OF TRANSPORTATION	18	68	3		11	2		
ID	IDAHO TRANSPORTATION DEPARTMENT	2	1						
IL	ILLINOIS DEPARTMENT OF TRANSPORTATION	9	25	1		2	2		
IN	INDIANA DEPARTMENT OF TRANSPORTATION	4	5	1	1	7			
KS	KANSAS DEPARTMENT OF TRANSPORTATION	2	8						
KY	KENTUCKY DEPARTMENT OF TRANSPORTATION	86	88	597		9			
LA	LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT	40	58	19		19	1		
MA	MASSACHUSETTS DEPARTMENT OF TRANSPORTATION	7	26	2		1			
MD	MARYLAND DEPARTMENT OF TRANSPORTATION	17	93	2		2			
ME	MAINE DEPARTMENT OF TRANSPORTATION	15	32	111			2		
MI	MICHIGAN DEPARTMENT OF TRANSPORTATION	1		3			1		
MN	MINNESOTA DEPARTMENT OF TRANSPORTATION	7	17			5			
MO	MISSOURI DEPARTMENT OF TRANSPORTATION	11	23	51			1		
MS	MISSISSIPPI DEPARTMENT OF TRANSPORTATION	9	18	2		18			
MT	MONTANA DEPARTMENT OF TRANSPORTATION		6	5					
NC	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	57	34	50		19			
ND	NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	2	23			1			
NH	NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION	25	21	81		2	6	17	
NJ	NEW JERSEY STATE DEPARTMENT OF TRANSPORTATION	3	37	4		1			
NM	NEW MEXICO STATE HIGHWAY & TRANSPORTATION DEPARTMENT	1	1						
NY	NEW YORK DEPARTMENT OF TRANSPORTATION	10	31	63		4			
OH	OHIO DEPARTMENT OF TRANSPORTATION	1	4			1			
OK	OKLAHOMA DEPARTMENT OF TRANSPORTATION	3	22				3		
OR	OREGON DEPARTMENT OF TRANSPORTATION	1	22			10			
PA	PENNSYLVANIA DEPARTMENT OF TRANSPORTATION	80	47	769		4	1		
PR	PUERTO RICO DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS	68	22	307		1	1		
RI	RHODE ISLAND DEPARTMENT OF TRANSPORTATION					1	6		
SD	SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION	4	11						
TN	TENNESSEE DEPARTMENT OF TRANSPORTATION	16	21	8		13	3		
TX	TEXAS DEPARTMENT OF TRANSPORTATION	48	24	9		40	2		
UT	UTAH DEPARTMENT OF TRANSPORTATION	2	4	1		3			
VA	VIRGINIA DEPARTMENT OF TRANSPORTATION	102	123	96		8			
VT	VERMONT AGENCY OF TRANSPORTATION	10	2	10		1	105	42	
WA	WASHINGTON DEPARTMENT OF TRANSPORTATION	1	11			7			
WI	WISCONSIN DEPARTMENT OF TRANSPORTATION	6	9	10					
WV	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION	100	73	1236					
WY	WYOMING DEPARTMENT OF TRANSPORTATION	2	4	2					
	TOTAL	800	1128	3470	3	203	7	158	42

Source: Number of Project Worksheets (Subgrant Application) for State Departments of Transportation for the period 10/1/2007 – 10/24/2012, Andrew Lenard, FEMA

Public Assistance Grant Program Summary
Project Amounts and Total Obligated for State Departments of Transportation

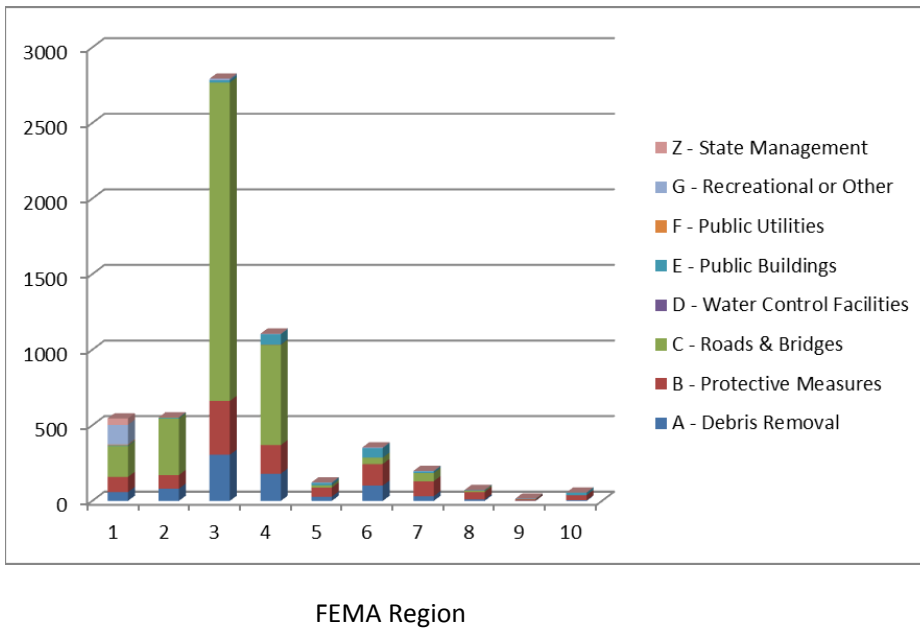
State	Applicant Name	Project Amount	Total Obligated
AL	ALABAMA DEPARTMENT OF TRANSPORTATION	\$70,353	\$52,765
AR	ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT	\$1,312,870	\$969,973
CA	CALIFORNIA DEPARTMENT OF TRANSPORTATION	\$616,750	\$465,920
CO	COLORADO STATE DEPT. OF TRANSPORTATION	\$124,023	\$93,017
CT	CONNECTICUT DEPARTMENT OF TRANSPORTATION	\$4,791,565	\$3,165,287
DC	DISTRICT OF COLUMBIA DEPARTMENT OF TRANSPORTATION	\$8,542,270	\$6,647,818
DE	DELAWARE DEPARTMENT OF TRANSPORTATION	\$4,253,547	\$3,190,161
FL	FLORIDA DEPARTMENT OF TRANSPORTATION	\$1,952,320	\$699,537
GA	GEORGIA DEPARTMENT OF TRANSPORTATION	\$710,884	\$533,163
HI	HAWAII DEPARTMENT OF TRANSPORTATION	\$574,831	\$431,123
IA	IOWA DEPARTMENT OF TRANSPORTATION	\$5,233,054	\$4,285,560
ID	IDAHO TRANSPORTATION DEPARTMENT	\$31,678	\$4,093
IL	ILLINOIS DEPARTMENT OF TRANSPORTATION	\$12,013,450	\$9,219,158
IN	INDIANA DEPARTMENT OF TRANSPORTATION	\$1,702,268	\$1,317,463
KS	KANSAS DEPARTMENT OF TRANSPORTATION	\$4,707,925	\$3,519,342
KY	KENTUCKY DEPARTMENT OF TRANSPORTATION	\$95,350,755	\$53,711,084
LA	LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT	\$80,141,659	\$73,101,211
MA	MASSACHUSETTS DEPARTMENT OF TRANSPORTATION	\$11,533,762	\$8,194,052
MD	MARYLAND DEPARTMENT OF TRANSPORTATION	\$30,920,256	\$23,175,995
ME	MAINE DEPARTMENT OF TRANSPORTATION	\$4,859,806	\$3,644,854
MI	MICHIGAN DEPARTMENT OF TRANSPORTATION	\$102,675	\$77,006
MN	MINNESOTA DEPARTMENT OF TRANSPORTATION	\$554,278	\$415,708
MO	MISSOURI DEPARTMENT OF TRANSPORTATION	\$13,795,427	\$10,346,581
MS	MISSISSIPPI DEPARTMENT OF TRANSPORTATION	\$2,928,929	\$2,507,365
MT	MONTANA DEPARTMENT OF TRANSPORTATION	\$1,298,132	\$973,599
NC	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	\$29,837,788	\$21,148,215
ND	NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	\$3,529,627	\$3,134,374
NH	NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION	\$9,757,704	\$7,318,278
NJ	NEW JERSEY STATE DEPARTMENT OF TRANSPORTATION	\$15,281,202	\$11,428,677
NM	NEW MEXICO STATE HIGHWAY & TRANSPORTATION DEPARTMENT	\$17,705	\$13,279
NY	NEW YORK DEPARTMENT OF TRANSPORTATION	\$6,810,136	\$4,659,105
OH	OHIO DEPARTMENT OF TRANSPORTATION	\$1,569,841	\$1,177,380
OK	OKLAHOMA DEPARTMENT OF TRANSPORTATION	\$4,742,407	\$3,556,805
OR	OREGON DEPARTMENT OF TRANSPORTATION	\$1,287,011	\$965,258
PA	PENNSYLVANIA DEPARTMENT OF TRANSPORTATION	\$56,208,198	\$29,017,970
PR	PUERTO RICO DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS	\$14,449,406	\$11,173,847
RI	RHODE ISLAND DEPARTMENT OF TRANSPORTATION	\$279,600	\$251,640
SD	SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION	\$305,976	\$229,482
TN	TENNESSEE DEPARTMENT OF TRANSPORTATION	\$1,481,117	\$1,195,735
TX	TEXAS DEPARTMENT OF TRANSPORTATION	\$27,047,705	\$26,617,936
UT	UTAH DEPARTMENT OF TRANSPORTATION	\$390,651	\$292,988
VA	VIRGINIA DEPARTMENT OF TRANSPORTATION	\$58,384,787	\$42,974,725
VT	VERMONT AGENCY OF TRANSPORTATION	\$26,707,825	\$22,224,710
WA	WASHINGTON DEPARTMENT OF TRANSPORTATION	\$2,280,402	\$1,710,301
WI	WISCONSIN DEPARTMENT OF TRANSPORTATION	\$4,975,960	\$3,773,189
WV	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION	\$44,595,530	\$34,379,233
WY	WYOMING DEPARTMENT OF TRANSPORTATION	\$92,352	\$69,264
	TOTAL	\$598,156,396	\$438,054,229

**Public Assistance Grant Program Summary
Event Type by FEMA Region**



Source: Number and Type of Declarations with Subgrant Applications by State Departments of Transportation for the period 10/1/2007 – 10/24/2012, Andrew Lenard, FEMA

**Public Assistance Grant Program Summary
Project Worksheets for State Departments of Transportation**



Source: Number of Project Worksheets (Subgrant Application) for State Departments of Transportation for the period 10/1/2007 – 10/24/2012, Andrew Lenard, FEMA

FEMA Regions

REGION	LOCATION	STATES
Region I	Boston, MA	CT, MA, ME, NH, RI, VT
Region II	New York, NY	NJ, NY, PR, USVI
Region III	Philadelphia, PA	DC, DE, MD, PA, VA, WV
Region IV	Atlanta, GA	AL, FL, GA, KY, MS, NC, SC, TN
Region V	Chicago, IL	IL, IN, MI, MN, OH, WI
Region VI	Denton, TX	AR, LA, NM, OK, TX
Region VII	Kansas City, MO	IA, KS, MO, NE
Region VIII	Denver, CO	CO, MT, ND, SD, UT, WY
Region IX	Oakland, CA	AZ, CA, HI, NV, GU, AS, CNMI, RMI, FM
Region X	Bothell, WA	AK, ID, OR, WA

Source: FEMA website, www.fema.gov

Abbreviations used without definitions in TRB publications:

A4A	Airlines for America
AAAE	American Association of Airport Executives
AASHO	American Association of State Highway Officials
AASHTO	American Association of State Highway and Transportation Officials
ACI-NA	Airports Council International-North America
ACRP	Airport Cooperative Research Program
ADA	Americans with Disabilities Act
APTA	American Public Transportation Association
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
ATA	American Trucking Associations
CTAA	Community Transportation Association of America
CTBSSP	Commercial Truck and Bus Safety Synthesis Program
DHS	Department of Homeland Security
DOE	Department of Energy
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
HMCRP	Hazardous Materials Cooperative Research Program
IEEE	Institute of Electrical and Electronics Engineers
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITE	Institute of Transportation Engineers
MAP-21	Moving Ahead for Progress in the 21st Century Act (2012)
NASA	National Aeronautics and Space Administration
NASAO	National Association of State Aviation Officials
NCFRP	National Cooperative Freight Research Program
NCHRP	National Cooperative Highway Research Program
NHTSA	National Highway Traffic Safety Administration
NTSB	National Transportation Safety Board
PHMSA	Pipeline and Hazardous Materials Safety Administration
RITA	Research and Innovative Technology Administration
SAE	Society of Automotive Engineers
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (2005)
TCRP	Transit Cooperative Research Program
TEA-21	Transportation Equity Act for the 21st Century (1998)
TRB	Transportation Research Board
TSA	Transportation Security Administration
U.S.DOT	United States Department of Transportation