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## → Disaster recovery: 5 best practices

By Dolores Acurso and Doug White, ICF

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### Introduction

Disasters are related to numerous conditions: drought can result in wildfires; severe winter storms cause power lines to collapse; hurricanes and other tropical cyclones are getting more intense. Those working in disaster recovery understand all too well that anticipating the next big event means being ready—and that securing funds and assistance takes careful planning both before and after a disaster.



## Recovery requires cashflow

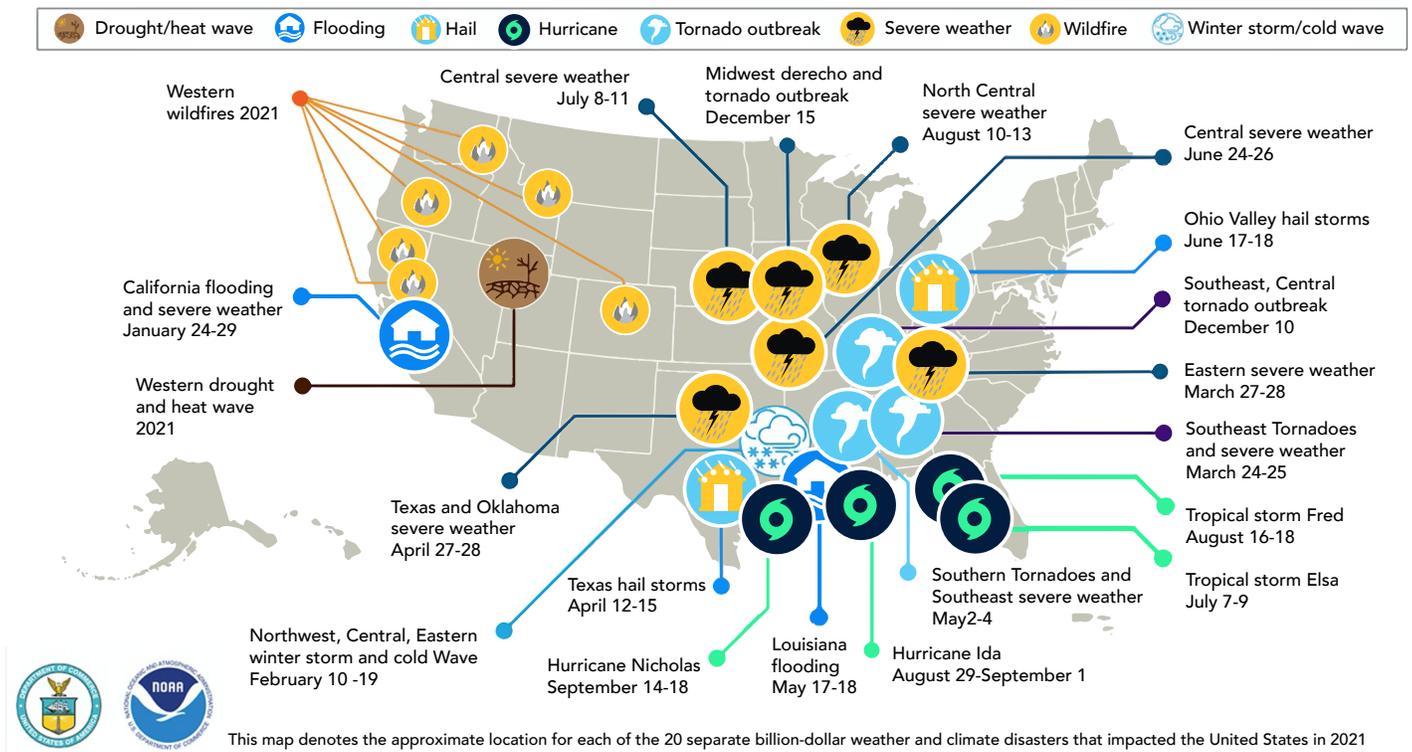
Preparedness means more than knowing how to coordinate with relief agencies, fire, police, emergency services, volunteers, and countless others. It must include a keen understanding of what needs to happen to accelerate and maximize disaster recovery funding.

Failure to be prepared can lead to reduced or missed opportunities or being compelled to refund grants after the fact—many millions of local taxpayers’ dollars are on the line. This is especially important for local resources, as well as for state and local authorities, including tribal and territorial. When a disaster strikes, some officials, especially at the state level, will likely have been through a similar experience. But it’s often a new experience for front-line local teams, leaving them to scramble and learn as they go.

The rules for the Federal Emergency Management Agency (FEMA), the Department of Housing and Urban Development (HUD), and other sources of disaster financing are strict, complex, and unforgiving. When mistakes are made, they may not be uncovered until an audit takes place as many as five, 10, or even 15 years after the fact. Mistakes can lead to the funding provider reducing the size of the overall grant and demanding reimbursement of any overpayment.

The resulting hit affects the local community, which will be forced to pay the difference back. While it’s vital for both state and local teams to understand and follow the rules, it’s local communities that have the most at stake. It’s incumbent on both state and local authorities to ensure, cooperatively, that they’re prepared for the worst. Focusing principally on disaster recovery financing aspects, here are five fundamental best practices:

## U.S. 2021 billion-dollar weather and climate disasters



## 1. Maintain an up-to-date baseline assessment

After a disaster, one of the first things an insurer or agency such as FEMA will ask is: What were the conditions of the site the day before the event? These entities need to get a clear picture of the site before it was damaged so they can compare it to post-disaster conditions and determine how much damage truly occurred.

It is critical that FEMA, insurers, and other agencies understand the extent of damage that occurred because it informs their decision on the amount of funding to provide. If there is not enough documented information about a site's pre-event status, they might underestimate the extent of the damage and fail to provide the amount of money required for full recovery.

At the start of the FEMA Public Assistance (PA) grant process, FEMA officials meet with potential subrecipients to assess damages and needs and establish a plan of action. If local officials arrive at this meeting already prepared with comprehensive documentation of the site's pre-event conditions, the damage assessment can be expedited, funding will be maximized, and the overall process will be accelerated.

For example, part of that discussion might seek to evaluate losses stemming from severe roofing damage across multiple structures because of high winds. Not all infrastructure is equal—newly installed roofing is more valuable than structures that are aging and have been poorly maintained. FEMA needs to establish the age and condition of each building's roof to arrive at an appropriate valuation, and if a municipality is unable to prove the condition of each roof, the agency will receive a lower valuation and payout.

To avoid this scenario and maximize the grant, it's essential that local officials document meticulously all aspects of their public infrastructure. Detailed photographic evidence is tangible and compelling: local officials can take advantage not only of high-definition cameras now being standard on

smartphones, but also of relatively low-cost, but highly effective, drone technology terrestrial imaging. Remote sensing and using satellite technology to assess moisture, temperature, topography, and related conditions can be useful tools to establish baselines and, when needed, to assess damage. Detailed logs should be kept tracking purchase costs, additions, upgrades, replacements, maintenance, and related investments.

FEMA does not provide funding or reimbursement to local communities for the development of these baseline assessments through the Public Assistance Program, but other federal funding sources such as Homeland Security, Mitigation, or Infrastructure grants could be available. Lack of local funding has traditionally limited subrecipients from conducting detailed baseline assessments. Nonetheless, allocating resources for the development of comprehensive baseline assessments is a wise investment because it helps maximize the funding received post-disaster.



Advanced mapping and modeling such as the photogrammetry software shown above allows users to take precise measurements, annotate maps, and enhance situational awareness in multiple environments.

The following checklist highlights the main pieces of information that should be collected to form a comprehensive baseline assessment:

- Detailed photographic evidence of existing infrastructure, updated regularly
- Satellite imagery and data using advanced technologies such as Google Earth and Street View
- Drone footage of existing infrastructure to provide an overall visual record, updated regularly
- Pictorial evidence of the interior condition of facilities and asset inventory
- Procurement and payment records detailing dates, amounts spent, and specifications
- Construction records including plans and estimates, amounts budgeted and spent, firms hired, and dates of start and completion
- Maintenance and repair records of all infrastructure and mechanical installations that are at risk of damage

## 2. Understand available funding sources

Several sources of funding are available for disaster recovery. It's important to have a clear understanding of the available sources, as well as where and when their funds can be used, to maximize the amount received and to prevent issues with compliance.

Knowing how to “layer” funding sources is critical and starts with identifying the various agencies at play. In most federal disaster scenarios, insurance and FEMA will be the two primary sources of recovery funding. However, FEMA funding does not become available until the president declares an event to be a major disaster. In addition, the general rule is that a state or local government's insurance funds must be fully depleted before federal funds can be accessed.

If FEMA funding becomes available, state and local officials should complete the Project Formulation process with care, as FEMA reviews applications based on specific eligibility rules. Expert guidance and attention to detail are essential, potentially resulting in vastly greater allocation of funds. In a recent example, a local entity's preliminary estimate of damages in their draft FEMA application identified \$12 million in damages but following a more thorough examination by experienced professionals in the FEMA recovery process, the identified damages rose to \$176 million with the recognition of eligible reimbursement expenses relating to repair or replacement of structures. This example illustrates that understanding what can be covered and how to present information in the right context are imperative to maximizing funding opportunities. At the same time, equal care must be taken in following the rules for procurement, disbursement, and documentation (see 4 and 5 below).

The federal government is currently placing heavy emphasis on mitigating damages from future events. FEMA has two sources of Mitigation funding. When a traditional Public Assistance project is formulated a component of the project is potentially eligible for funding to ensure repairs are sustainable from future events. This is commonly referred to as 406 funding. Section 406 of the Stafford Act covers the Public Assistance Program and incorporates this funding in the program. In most large disasters, FEMA will administer funding through the Hazard Mitigation Grant Program for future mitigation efforts of projects not damaged through the event. This is known as 404 Mitigation funding originating from Section 404 of the Stafford Act.

State and local officials should also be aware of various specialist sources of disaster aid. For example, FEMA may cover much of the damage incurred by a school, but there may also be recovery funds available from the Department of Education to address damages not covered by FEMA. Other sources may include state-run programs, charities, or nonprofit organizations.

In many cases, Congress will appropriate additional funding after a Presidentially declared disaster through the HUD Community Development Block Grant Disaster Recovery (CDBG-DR) program. This process can be complex and includes the development of an action plan and a public comment period and will be a significant source of support for a community. However, CDBG-DR funding is funding of last resort after all possible funding sources have been exhausted. For example, a homeowner, renter, or personal property owner, occupying the property impacted by the disaster could apply for low-cost disaster relief lending from the Small Business Administration (SBA). Should such requests be in whole or partially denied, applicants may then have an opportunity to apply for HUD CDBG-DR funding. To insure no duplication of benefits, all insurance payments would be applied to the calculation of the award under this program.

In short, there are numerous sources of disaster relief, all requiring thoroughness and meticulous care in both the application and disbursement processes. Failure to follow the rules of the various providers can lead to delays or even denials.

### 3. Prioritize your response well before disaster strikes

Well before a disaster occurs, it's critical to take the following three actions to maximize the amount of funding received and to reduce the likelihood of further damage resulting:

#### Action 1: Develop a hazard mitigation plan

The first priority is to recognize that to be eligible to receive funding, would-be recipients must have a FEMA-approved hazard mitigation plan at the state level. The plan must be in place prior to any disaster and must account for all key aspects of the state's unique infrastructure. Potentially risky issues such as gas lines, high-voltage towers, or flood plains must be addressed.

#### Organization

Assemble the resources needed for a successful mitigation planning process: securing technical expertise, defining the planning area, and identifying

essential individuals, agencies, neighboring jurisdictions, businesses, and/or other stakeholders to participate in the process. The planning process for local and tribal governments must include opportunities for the public to comment on the plan.

#### Risk assessment

Identify the characteristics and potential consequences of hazards; understand what geographic areas each hazard might impact and what people, property, or other assets might be vulnerable.

The four basic components of a risk assessment are:

- Hazard identification
- Profiling of hazard events
- Inventory of assets
- Estimation of potential human and economic losses based on the exposure and vulnerability of people, buildings, and infrastructure

#### Development

Set priorities and develop long-term strategies for avoiding or minimizing the undesired effects of disasters. The strategy is based on an assessment of the unique set of regulatory, administrative, and financial capabilities to undertake mitigation. The strategy also includes a description of how the mitigation actions will be implemented and administered.

#### SAMPLE HAZARD MITIGATION PLAN

(Adapted from FEMA: Hazard Mitigation Planning Process)

**1 Organize the planning process and resources**

**2 Assess risks and capabilities**

**3 Develop a mitigation strategy**

**4 Adapt and implement the plan**

### Adoption and implementation

Once FEMA has approved the plan, bring the mitigation plan to life. To ensure success, the plan must remain a relevant, living document through routine maintenance. State, tribal, or local government need to conduct periodic evaluations to assess changing risks and needs and make revisions as needed.

#### Action 2: Plan in advance for debris removal

Debris removal is crucial before repairs can begin. A best practice for most regions is having contracts to deal specifically with this aspect in place beforehand. Prepositioning contracts should obligate parties to delivering the services in the timeframe and rates agreed to. If local staff and equipment engage in debris removal, this should be documented, as these costs are recoverable through FEMA.

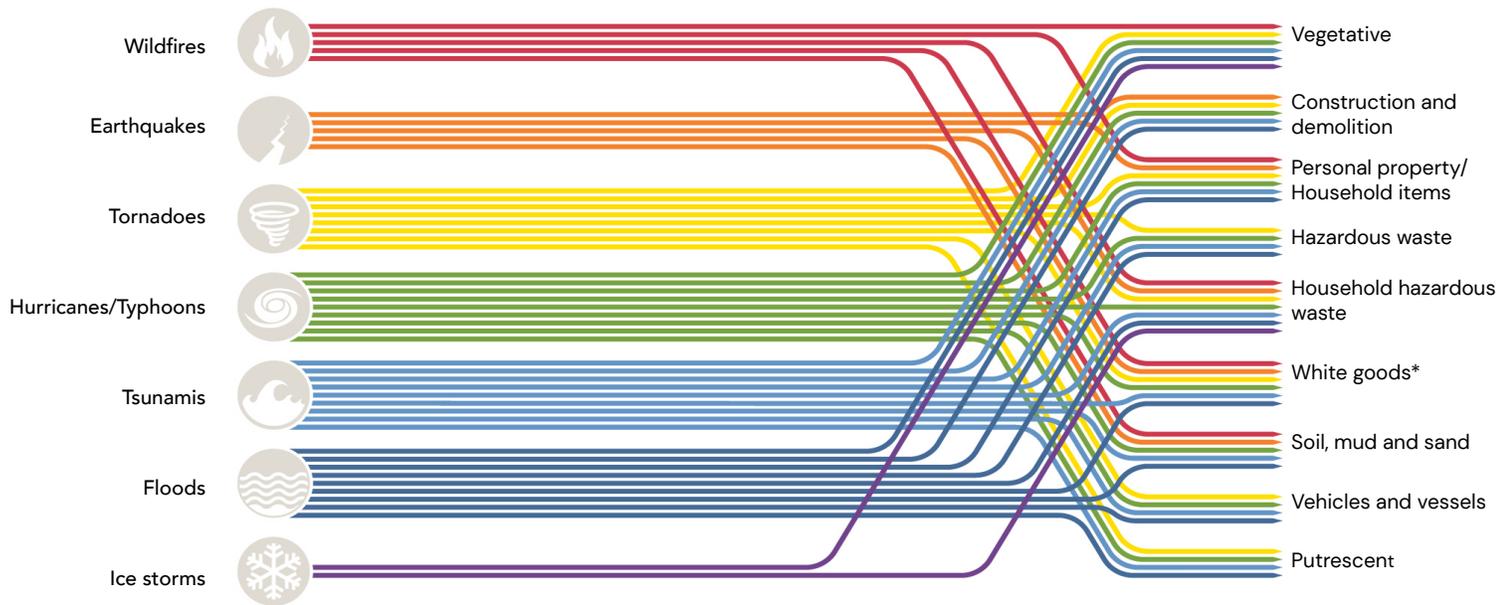
#### Action 3: Be ready to rapidly assess needs and establish priorities

Each disaster will be different. But to respond effectively, clear lines of authority need to be established well in advance. Roles and responsibilities need to be clearly understood to enable rapid response.

When disaster strikes, public officials must immediately triage each step during recovery efforts. Local officials need to determine which actions are essential and have a firm understanding of potential flashpoints up front.

Each individual community will face different exigencies. For example, in an urban setting, re-establishing public transportation can be delayed, but utilities (water, electricity, heating infrastructure) are at the front of the line.

### TYPICAL DEBRIS STREAMS FOR DIFFERENT TYPES OF DISASTERS



\* White goods: Large, domestic electrical goods such as fridges and washing machines.

Source: FEMA (2007) Public Assistance: Debris Management Guide.

Following Hurricane Harvey, health officials from Houston understood that the lack of clean drinking water could open the door to infectious diseases—in essence, triggering a secondary event.

There's often an urge to return every element of infrastructure to normalcy as quickly as possible; local officials often prioritize those pieces that can be repaired with the least amount of effort. But to maximize funding opportunities, most—if not all—of the initial focus should be on the most heavily damaged elements and to get those funding processes underway expeditiously. It should be determined which facilities have the most severe damage, then focus on maximizing those funding opportunities.

## 4. Be prepared in procurement

Federal agencies such as FEMA and HUD rely on rigorous procurement protocols to root out waste or fraud. Local officials need to ensure they understand all the specific regulations as they apply to procurement for emergency and non-emergency circumstances—then follow those rules precisely.

The rules are demanding and extremely tedious. Various agencies require specific contract language as well as compliance with specific guidelines and templates for everything from a request for qualifications (RFQ) to a request for proposal (RFP). Smaller purchases entail less paperwork, but requirements escalate as the scale of any purchase grows. Record-keeping is mandatory: it's not enough to follow the regulations for procurement—local officials need to be able, upon audit, to prove their numbers.

One of the most closely watched aspects in local procurement is the need to conduct open bidding, which must be transparent and follow the rules of the governing agency. This includes rules for how and where potential providers are made aware of procurement needs and bidding opportunities. Local agencies need to ensure they include Minority/Women owned Business Entity (MWBE) language and efforts in the procurement process.

In some cases the entity is required to ensure a specific percentage of the project is given to MWBE businesses.

If local agencies are not willing or able to follow procedures in a manner that complies with the rules for their specific funding source, recovery efforts will come to a standstill. Alternatively, the local community will expose itself to significant audit risk and eventual “claw back” of grant funds.

A fundamental challenge is the fact that amid disaster recovery, the number of sub-recipients—groups receiving funds, approving contracts, and making disbursements—can grow rapidly. All sub-recipients must fully understand the requirements associated with their use of the financial support. Recently, a certain county was unable to monitor its debris removal in a manner consistent with FEMA requirements—as a result, it was hit with a \$90 million claw back.

### The core elements of procurement

- Identify where projects can be advertised
- Understand and apply the language specific to RFQs
- Understand and apply the language specific to RFPs
- Include language and effort to include MWBEs
- Implement detailed procedures for approving contracts
- Establish a purchase order procedure
- Be prepared to provide evidence of payouts

## 5. Be meticulous in documentation

There are no small disasters. The term “disaster” implies a calamitous event resulting loss of life, damage, and hardship. The cost of rehabilitation is likely to be massive and money will be diverted to a broad range of recipients. Insurers and federal agencies demand accurate damage assessments and are intent on preventing fraud. Accurate record keeping is core to proving the need for financial support—even for seemingly trivial or obvious circumstances.

Several years after receiving funds related to Hurricane Katrina, a certain school district was being challenged by FEMA—the district had not followed the letter of the procurement law, having failed to post a multimillion-dollar procurement need in local newspapers. Subsequently, only three bidders participated in the sealed bid auction. Fortunately, local officials had documented the reasons for their actions. First, the city and parish had little-to-no electricity, and newspapers were not being printed. Second, the officials knew of three local contractors with the needed expertise and contacted all three with a request for proposal. With limited resources, they covered their bases, presenting a valid argument that addressed the urgency of the specific procurement. FEMA listened to the story, examined the evidence, and approved the spending.

A key element in documentation is training. State officials tend to be more knowledgeable and up to date on disaster recovery funding procedures; they have ongoing contact with agencies like FEMA and serve dozens of localities, and are more likely to have disaster experience. It is the state officials who have relationships with each locality, which may not interact with their counterparts.

As the documentation workload dissipates across potentially thousands of sub-recipients, the level of experience diminishes. The result is a growing number of states that are developing annual training sessions for local officials, which cover everything from pre-disaster preparedness to the rules for contracting and disbursement. A good example is Louisiana, which is producing a range of online training videos for officials and workers across the disaster funding life cycle.

### Documentation best practices

As the world transitions to online record keeping, there remains a need to store existing records which must be transformed, then moved to a cloud-based storage system. Options include:

- Multi-function devices with built-in scanners
- Desktop scanners

- OCR (optimal character recognition) software or apps such as CamScanner and Scanbot
- Document imaging services, which handle the process from scanning to delivery of electronic records

The process can be tedious and time-consuming, but once completed, files can be indexed and stored indefinitely.

Once a fully cloud-based system is in place:

- Ensure all important documentation has been converted and is readable
- Use a concise file naming protocol so that files can be searched easily
- Load all new files onto the cloud as part of the normal workflow
- Use disbursement management software to control payments

## Be ready for what comes next

When disaster strikes—and it will—state and local officials need to act. Meaningful action requires financing, and an integral component of any emergency response is knowing how to both maximize and accelerate much needed cash. Stakeholders need to do the hard and ongoing work of baseline assessment and hazard mitigation before lightning strikes. They need to learn how to be prepared to fully comply with the various evolving rules governing procurement and disbursement sequencing. They must be meticulous in documentation.

Being ready for the next big disaster will allow for efficient reaction. Acknowledging that prevention is better than mitigation is critical to managing the unexpected. Prevention measures established when opportunities arise—specifically during periods when disasters are unlikely to occur—contribute to enhancing knowledge and expertise, streamlining operations, and building confidence in a community's ability to face the unexpected. Above all, effective prevention measures can save lives.

## About the authors



### Dolores Acurso

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Dolores works on preparing, responding, and recovering from federally declared disaster events. She has worked on all types of national disasters, including civil unrest, fires, flooding, earthquake, freeze, tropical storms, and hurricanes.

While working for the State of California, she was a response and recovery operations and program manager. In this role, she participated in planning and exercise efforts and program implementation. She also served as program manager for all three Federal Emergency Management Agency (FEMA) disaster recovery programs (Individual Assistance, Public Assistance, and Hazard Mitigation Grants), reviewing regulations for potential impacts, drafting agency and program level policies, and briefing the media and elected officials. Currently, she works under HUD to provide programmatic and operational support to the United States Virgin Islands' Infrastructure FEMA Cost Share Program.



### Doug White

Senior Director,  
Disaster Management

Doug White has 15 years of experience in disaster recovery and over 20 years of project management experience. His strong knowledge of engineering, eligibility, hazard mitigation, and project management has supported many clients in successfully recovering millions of dollars in funding for disaster recovery.

Some of Doug's notable experiences include his roles as the State of Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) Technical Team Lead and FEMA Mitigation Engineer for Hurricanes Katrina, Rita, Gustav, and Ike. He has hands-on experience reviewing proposals, contracts, FEMA PA Project Worksheets, and closeout documents. In Long Island, New York, Doug's direction and advice helped turn a hospital repair project originally estimated by FEMA as a \$23 million dollar repair into an obligation of \$176.9 million in PA funding. He also played a major role in developing and implementing the original staffing plan, initial tracking and reporting systems, and the processes and procedures for COR3 in Puerto Rico.



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Our team helps communities prepare for, respond to, and recover from natural disasters. As an established leader, we bring deep on-the-ground experience from nearly every major natural disaster in recent U.S. history. Over the last two decades, we've successfully supported recovery efforts in New Jersey, New York, Georgia, Louisiana, Puerto Rico, Texas, and more, often exceeding project requirements. From over 20 years of partnership with HUD and FEMA to our many state and local partners, we are well-known and trusted for our ability to process hundreds of thousands of applications and assist grantees in awarding over \$12 billion to affected property owners over the years. Learn more at [icf.com/work/disaster-management](https://icf.com/work/disaster-management).