



July 2015

HURRICANE SANDY

An Investment Strategy Could Help the Federal Government Enhance National Resilience for Future Disasters

Accessible Version

GAO Highlights

Highlights of [GAO-15-515](#), a report to congressional requesters

Why GAO Did This Study

The Disaster Relief Appropriations Act of 2013 appropriated about \$50 billion for recovery from Hurricane Sandy, part of which was intended for disaster resilience and hazard mitigation. In March 2015, GAO identified the cost of disasters as a key source of federal fiscal exposure. GAO and others have advocated hazard mitigation to help limit the nation's fiscal exposure.

GAO was asked to review federal efforts to strengthen disaster resilience during Hurricane Sandy recovery. This report addresses (1) how federal recovery funds were used to enhance resilience, (2) the extent to which states and localities were able to maximize federal funding to enhance resilience; and (3) actions that could enhance resilience for future disasters.

To conduct this work, GAO reviewed key federal documents such as the *National Mitigation Framework*, interviewed federal officials responsible for programs that fund disaster resilience, and administered structured interviews and surveys to all 12 states, the District of Columbia, and New York City in the Sandy affected-region.

What GAO Recommends

GAO recommends that (1) FEMA assess the challenges state and local officials reported and implement corrective actions as needed and (2) MitFLG establish an investment strategy to identify, prioritize, and implement federal investments in disaster resilience. The Department of Homeland Security agreed with both.

View [GAO-15-515](#). For more information, contact Chris Currie at (404) 679-1875 or curriec@gao.gov.

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An Investment Strategy Could Help the Federal Government Enhance National Resilience for Future Disasters

What GAO Found

During the Hurricane Sandy Recovery, five federal programs—the Federal Emergency Management Agency's (FEMA) Public Assistance (PA), Hazard Mitigation Grant Program (HMGP), the Federal Transit Administration's Public Transportation Emergency Relief Program, the Department of Housing and Urban Development's Community Development Block Grant-Disaster Recovery, and the U.S. Army Corps of Engineers' Hurricane Sandy program—helped enhance disaster resilience—the ability to prepare and plan for, absorb, recover from, and more successfully adapt to disasters. These programs funded a number of disaster-resilience measures, for example, acquiring and demolishing at-risk properties, elevating flood-prone structures, and erecting physical flood barriers.

State and local officials from the states affected by Hurricane Sandy GAO contacted reported that they were able to effectively leverage federal programs to enhance disaster resilience, but also experienced challenges that could result in missed opportunities. The challenges fell into three categories:

- implementation challenges with PA and HMGP—for example, officials reported that FEMA officials did not always help them pursue opportunities to incorporate mitigation into permanent construction recovery projects;
- limitations on comprehensive risk reduction approaches in a postdisaster environment—for example, officials reported difficulties with navigating multiple funding streams and various regulations of the different federal programs funded after Hurricane Sandy; and
- local ability and willingness to participate—for example, officials reported that some home and business owners were unwilling or unable to bear the required personal cost share for a home-elevation or other mitigation project.

FEMA officials told us that they were aware of some of these challenges and recognize the need to further assess them. Assessing the challenges and taking corrective actions, as needed, could help enhance disaster resilience.

There is no comprehensive, strategic approach to identifying, prioritizing and implementing investments for disaster resilience, which increases the risk that the federal government and nonfederal partners will experience lower returns on investments or lost opportunities to strengthen key critical infrastructure and lifelines. Most federal funding for hazard mitigation is available after a disaster. For example, from fiscal years 2011-2014, FEMA obligated more than \$3.2 billion for HMGP postdisaster hazard mitigation while the Pre-Disaster Mitigation Grant Program obligated approximately \$222 million. There are benefits to investing in resilience postdisaster. Individuals and communities affected by a disaster may be more likely to invest their own resources while recovering. However, there are also challenges. Specifically, the emphasis on the postdisaster environment can create a reactionary and fragmented approach where disasters determine when and for what purpose the federal government invests in disaster resilience. The Mitigation Framework Leadership Group (MitFLG) was created to help coordinate hazard mitigation efforts of relevant local, state, tribal, and federal organizations. A comprehensive investment strategy, coordinated by MitFLG, could help address some challenges state and local officials experienced.

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Abbreviations

BBEDCA	Balanced Budget and Emergency Deficit Control Act of 1985
BCA	Budget Control Act of 2011
CDBG-DR	Community Development Block Grant-Disaster Recovery

CDFI	Community Development Financial Institution
DHS	Department of Homeland Security
DOT	Department of Transportation
EHP	environmental planning and historical preservation
EO	executive order
ERP	Emergency Relief Program
FEMA	Federal Emergency Management Agency
FTA	Federal Transit Administration
HFIAA	Homeowner Flood Insurance Affordability Act of 2014
HMGP	Hazard Mitigation Grant Program
HUD	Department of Housing and Urban Development
MitFLG	Mitigation Framework Leadership Group
NACCS	North Atlantic Coast Comprehensive Study
NDRF	<i>National Disaster Recovery Framework</i>
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NMF	<i>National Mitigation Framework</i>
NOFA	notice of funds availability
OCFO	Office of the Chief Financial Officer
OMB	Office of Management and Budget
PA	Public Assistance
PDM	Pre-Disaster Mitigation
PPA	programs, projects, and activities
PPD	presidential policy directive
RSF	Recovery Support Function
Sandy Supplemental	Disaster Relief Appropriations Act, 2013
SRIA	Sandy Recovery Improvement Act of 2013
SRIRC	Sandy Regional Infrastructure Resilience Coordination
SRO	Sandy Recovery Office
USACE	U.S. Army Corps of Engineers

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July 30, 2015

Congressional Requesters:

In late October 2012, Hurricane Sandy devastated portions of the Mid-Atlantic and northeastern United States.¹ As a result, more than 650,000 homes were damaged or destroyed, and hundreds of thousands of businesses were damaged or forced to close at least temporarily. On January 29, 2013, the President signed the Disaster Relief Appropriations Act, 2013 (Sandy Supplemental), which appropriated about \$50 billion in funding to support recovery across 19 federal agencies.²

As we reported in December 2014, from fiscal years 2004 through 2013, the Federal Emergency Management Agency (FEMA) obligated over \$95 billion in federal disaster assistance for 650 major disasters declared during this time frame.³ In 2014, the United States Global Change Research Program reported that the impacts and costliness of weather disasters—resulting from floods, drought, and other events—will increase in significance as what are considered rare events become more common

¹Sandy has been referred to as both a hurricane and a Superstorm. The National Hurricane Center declared Sandy a hurricane, but changed that designation to “post-tropical” storm just before it made landfall. In this report, we refer to the event as “Hurricane Sandy.”

²Pub. L. No. 113-2, div. A, 127 Stat. 4. Through the Sandy Supplemental, Congress appropriated \$50.7 billion in disaster relief funding. The funding was reduced by sequestration. Sequestration is an automatic, across-the-board cancellation of budgetary resources. Sequestration was first established in the Balanced Budget and Emergency Deficit Control Act of 1985 (BBEDCA) to enforce discretionary spending limits and control the deficit. This budgetary enforcement mechanism was recently revived by the Budget Control Act of 2011 (BCA), which provided the legal basis for the fiscal year 2013 sequestration. Pub. L. No. 112-25, 125 Stat. 240 (2011). Accordingly, on March 1, 2013—5 months into the fiscal year—the President ordered the sequestration of budgetary resources to achieve \$85.3 billion in reductions across federal government accounts and their subunits, known as programs, projects, and activities (PPA). Because these cuts were to be achieved during the 7 remaining months of the fiscal year, OMB estimated that the effective percentage reductions to fiscal year 2013 spending over that time period were approximately 13 percent for defense programs and 9 percent for nondefense programs.

³GAO, *Federal Emergency Management Agency: Opportunities Exist to Strengthen Oversight of Administrative Costs for Major Disasters*, [GAO-15-65](#) (Washington, D.C.: Dec. 17, 2014).

and intense because of climate change.⁴ In addition, less acute effects of changes in the climate, such as sea level rise, could also result in significant long-term effects on people and property. We have recognized the rise in the number—and the increase in severity—of disasters as a key source of federal fiscal exposure.⁵ Similarly, managing fiscal exposure due to climate change has been on our high risk list since 2013, in part, because of concerns about the increasing costs of disaster response and recovery efforts.⁶ We and others have recommended building disaster resilience—by taking actions to mitigate vulnerabilities to the effects of severe weather and to adapt to effects of climate change—as one strategy to help to limit the nation’s fiscal exposure.

You expressed interest in whether and how federal funds used to help the region affected by Hurricane Sandy are contributing to the recovery process and enhancing disaster resilience to help reduce the potential for future losses. This report addresses the following questions:

1. How have states and localities in the Sandy-affected area used federal funds to help enhance resilience during disaster recovery?
2. To what extent did state officials report being able to use federal programs to maximize resilience-building during disaster recovery?
3. What actions did the federal government take to promote disaster resilience in the recovery effort, and what, if any, improvements could be made for future large-scale disasters?

To address our first objective, we reviewed program documentation—such as grant guidance and federal rules—and discussed program purposes with key agency officials to determine whether and how administered programs and activities facilitate community and regional

⁴*Climate Change Impacts in the United States: The Third National Climate Assessment*. U.S. Global Change Research Program (U.S. Government Printing Office: 2014).

⁵The term *fiscal exposure* refers to the responsibilities, programs, and activities that may either legally commit the federal government to future spending or create the expectation for future spending. See *GAO Fiscal Exposures: Improving Cost Recognition in the Federal Budget*, GAO-14-28 (Washington, D.C.: Oct. 29, 2013). Also, see GAO’s Federal Fiscal Outlook webpage: http://www.gao.gov/fiscal_outlook/federal_fiscal_outlook/overview#t=3

⁶GAO, *Limiting the Federal Government’s Fiscal Exposure by Better Managing Climate Change Risks* http://www.gao.gov/highrisk/limiting_federal_government_fiscal_exposure/why_did_study

disaster resilience as part of rebuilding. We obtained information on appropriations from the Sandy Supplemental and information related to the purposes of programs and activities from the Sandy Supplemental and federal agency documents. We focused on describing five federal programs that have the ability to support disaster resilience-building efforts that are administered by four federal agencies that received 92 percent of the Sandy Supplemental.⁷ We collected and analyzed information from the District of Columbia, New York City, and each of the 12 states that had a major disaster declaration about the types of projects for which they used federal funds to enhance disaster resilience as part of the Hurricane Sandy recovery effort.⁸ We also reviewed state hazard mitigation plans and local hazard mitigation plans and guidance. In addition we reviewed information about large-scale state projects provided by FEMA headquarters, FEMA's Sandy Recovery Office and state officials. During a site visit to New Jersey, 1 of the 2 states that sustained the most damage, we also toured damaged areas and projects in progress to observe and discuss planned resilience-building efforts.

To address our second objective, we obtained information about the disaster resilience-building efforts from documentation and information requests,⁹ structured interviews, and a survey instrument that was emailed to all 13 State Hazard Mitigation Officers from Sandy-affected states and the District of Columbia.¹⁰ In seven of the interviews, State

⁷The four agencies that administer the five programs we reviewed include the Departments of Housing and Urban Development, Transportation, and Homeland Security and the U.S. Army Corps of Engineers.

⁸The 12 states were Connecticut, Delaware, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Virginia, and West Virginia. For the purposes of this report, we will refer to states to include Washington, D.C., for a total of 13 states.

⁹We requested that State Hazard Mitigation Officers, in coordination with other knowledgeable state officials, identify the federal and state funding streams that were available for hazard mitigation projects and those that were used for projects during the Sandy recovery. We also requested a comprehensive list or selected examples of hazard mitigation projects their states had planned or underway. Additionally, we asked officials to discuss their opinions of the successes and challenges of FEMA's Public Assistance and Hazard Mitigation Grant Program, the Department of Housing and Urban Development's (HUD) Community Development Block Grant- Disaster Recovery program, and the Department of Transportation's (DOT) Public Transportation Emergency Relief Program.

¹⁰State Hazard Mitigation Officers are typically responsible for managing states' hazard mitigation programs and developing, as well as implementing, hazard mitigation plans, among other responsibilities.

Hazard Mitigation Officers were joined by their state counterparts or supervisors in state emergency management departments with responsibility for managing other aspects of recovery efforts. We also administered the structured interview and survey to New York City's Office of Recovery and Resiliency, which administers some streams of federal funds and oversees strategic planning for disaster resilience efforts. In addition, we interviewed the New York Governor's Office of Storm Recovery, which is largely responsible for administering certain non-FEMA federal funds and the New Jersey Governor's Office of Recovery and Rebuilding, which coordinates the state's recovery effort, including overseeing disaster resilience priorities. In New York and New Jersey, the governors' offices collaborated with the state emergency management offices (particularly the State Hazard Mitigation Officers) to complete the survey.

We compared information we learned from interviews with federal, state, and local officials and from federal documents with the goals stated in the *National Disaster Recovery Framework* (NDRF) and *National Mitigation Framework* (NMF). Specifically, these policies call for the government to integrate hazard mitigation and risk reduction opportunities into all major decisions and reinvestments during the recovery process and to capitalize on opportunities during the recovery building process to further reduce vulnerability. In this respect, we considered the extent to which the reported experiences of the state and local officials using these federal programs were consistent governmentwide and reflected agency management priorities for disaster resilience. The documentation and information requests, structured interviews, and follow-up surveys were administered in a selected group of states and are not generalizable to the nation as a whole. However, they represent the entire population of states involved in the recovery from Hurricane Sandy. The states span 4 of 10 FEMA regions and multiple geographic regions of the eastern United States. In interviews and the follow-up survey, we discussed the Hurricane Sandy recovery effort, as well as recovery from smaller disasters that occurred since 2011. Accordingly, the results of the interviews and surveys offer insights into the recent experiences nonfederal users have building resilience during disaster recovery. The overall response rate for the surveys was 92 percent.

To address our third objective, we reviewed federal statutes, regulations, executive orders, and studies related to hazard mitigation and disaster

resilience. These included the Disaster Relief Appropriations Act of 2013 (Sandy Supplemental), the Sandy Recovery Improvement Act of 2013 (SRIA),¹¹ the President's Executive Order (EO) 13632—*Establishing the Hurricane Sandy Rebuilding Task Force*,¹² and the 2013 *Hurricane Sandy Rebuilding Strategy: Stronger Communities, A Resilient Region*. We also analyzed the recommendations of the Hurricane Sandy Task Force report that were intended to help facilitate or remove obstacles to disaster resilience. We obtained information about the status of implementing the recommendations in the task force report from FEMA, the Department of Housing and Urban Development (HUD) and the Department of Transportation (DOT) and U.S. Army Corps of Engineers (USACE) via documents and interviews with officials involved in the Hurricane Sandy recovery. In addition, we obtained information on the status of implementing disaster resilience-building related provisions of SRIA from FEMA officials. We interviewed officials representing HUD, FEMA, and the interdepartmental Mitigation Framework Leadership Group (MitFLG) to discuss the challenges state officials reported to us and challenges experienced at the federal level.¹³ As evidenced by the various recipients of federal appropriations in the Sandy Supplemental, both disaster recovery and building disaster resilience to reduce the federal fiscal exposure to future disaster losses are missions that cut across federal departments. Therefore, we compared the challenges reported by state

¹¹Pub. L. No. 113-2, div. B, 127 Stat. 39.

¹²77 Fed. Reg. 74,341 (Dec. 14, 2012).

¹³The Mitigation Framework Leadership Group (MitFLG) is an intergovernmental coordinating body that was created to integrate federal efforts and promote a national cultural shift that incorporates risk management and hazard mitigation in all planning, decision making, and development to the extent practicable. It was established to coordinate mitigation efforts across the federal government and to assess the effectiveness of mitigation capabilities as they are developed and deployed across the nation.

and federal officials to elements of a national strategy that we have previously recommended to help support such efforts.¹⁴

We conducted this performance audit from November 2013 to July 2015 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. For further information on our objectives, scope, and methodology, see appendix I.

Background

Resilience, Mitigation, and Related Concepts

As shown in figure 1, resilience is a concept that has gained increasing attention for its potential to decrease disaster losses.

¹⁴We identified desirable characteristics by consulting statutory requirements pertaining to certain strategies we reviewed, as well as legislative and executive branch guidance for other national strategies. In addition, we studied the Government Performance and Results Act of 1993, general literature on strategic planning and performance, and guidance from the Office of Management and Budget (OMB) on the President's Management Agenda. We also gathered published recommendations made by national commissions chartered by Congress, past GAO work, and various research organizations that have commented on national strategies. See GAO, *Combating Terrorism: Evaluation of Selected Characteristics in National Strategies Related to Terrorism*, [GAO-04-408T](#) (Washington, D.C.: Feb 3, 2004) for additional details.

Figure 1: Resilience What, Why, and How



What is resilience?

Broadly speaking, resilience is the ability to prepare and plan for, absorb, recover from, and more successfully adapt to actual or potential adverse events. In the context of disasters—natural or man-made—disaster resilience describes the ability of individuals, communities, localities, states, regions, and the nation to respond and recover in a manner that minimizes disaster life and property losses and enables rapid return of normal economic and other life activities in the wake of disasters. Two related concepts are hazard mitigation and climate change adaptation. Hazard mitigation refers to the actions taken to reduce loss of life and property by lessening the impact of disasters. The idea of hazard mitigation is not prevention of the actual hazard—i.e., disaster—but rather to mitigate the effects of that hazard. Climate change adaptation is specific to such adjustments made in response to actual or expected climate change. Both hazard mitigation and climate change adaptation are activities that can be undertaken to achieve greater disaster resilience, which in turn contributes to the overall resilience of individuals, localities, states, regions, and the nation.



Why is disaster resilience important?

As we reported in 2014, for presidentially declared major disasters from fiscal years 2004 through 2013, the Federal Emergency Management Agency (FEMA) obligated over \$95 billion in federal assistance for disasters, and the growing number of major disaster declarations had contributed to increasing federal disaster assistance expenditures. Moreover, the United States Global Change Research Program has reported that the impacts and costliness of weather disasters—resulting from floods, drought, and other events such as hurricanes—will increase in significance as what are considered rare events become more common and intense because of climate change. In the face of increasing federal spending on disaster response and recovery, GAO has identified disasters and the environment as a key source of federal fiscal exposure. GAO and others have pointed to enhancing disaster resilience as one of the primary means the federal government has to help control the federal fiscal exposure to disasters.



How is disaster resilience achieved?

Governments at all levels and the private sector have various responsibilities and a stake in increasing disaster resilience. Because planning to increase resilience starts with understanding disaster risk, some resilience-related activities, like flood mapping and threat and hazard assessment, are designed to increase knowledge. Ultimately, however, the aim is to implement changes in the physical and built environment that protect critical infrastructure and human lives or reduce specific vulnerabilities to disaster damage—by, for example, implementing flood, wind, and seismic protections. In addition, state and local laws and regulations can heavily influence resilience efforts, for example, by strengthening building codes.



Source: GAO analysis. | GAO-15-515

Federal Roles, Responsibilities, and Doctrine for Promoting Disaster Resilience

FEMA, a component of the Department of Homeland Security (DHS), leads the federal effort to mitigate, respond to, and recover from disasters, both natural and man-made. Major disaster declarations can trigger a variety of federal response and recovery programs for government and nongovernmental entities, households, and individuals, including hazard mitigation programs intended to increase the nation’s disaster resilience.

However, multiple federal agencies can play a role in rebuilding after a major disaster. For example, 19 agencies were appropriated funds for more than 60 programs for Hurricane Sandy recovery in the Sandy Supplemental, some of which provide opportunities to incorporate hazard mitigation and other disaster resilience-building activities into disaster recovery efforts. These programs include the (1) FEMA Hazard Mitigation Grant Program (HMGP), (2) FEMA Public Assistance (PA), (3) HUD

Community Development Block Grant-Disaster Recovery (CDBG-DR), (4) the Department of Transportation’s Federal Transit Administration (FTA) Emergency Relief Program (ERP), and (5) USACE’s Sandy Program. See table 1 for a description of these key programs and how they help to support disaster resilience-building efforts.

Table 1: Key Federal Programs Funded by Sandy Supplemental that Support Disaster Resilience Building

Agency	Program	Eligible Grantees	How it supports resilience-building
Federal Emergency Management Agency (FEMA)	Hazard Mitigation Grant Program	State, tribal, and local governments	The only federal program explicitly designed to improve resilience to future disasters during recovery Funds a wide range of projects, including purchasing properties in flood-prone areas, adding shutters to windows to prevent future damage from hurricane winds and rains, or rebuilding culverts in drainage ditches to prevent future flooding damage
FEMA	Public Assistance	State, tribal, and local governments and some nonprofit organizations	May fund measures to reduce future risks in conjunction with repair of disaster damaged facilities if cost-effectiveness can be demonstrated
Housing and Urban Development	Community Development Block Grant—Disaster Recovery	Eligible grantees, such as states and local governments	Designed to address needs not met by other disaster recovery programs, which can include disaster resilience-building projects
Federal Transit Administration	Public Transportation Emergency Relief Program	Transit authorities	Can fund transit resilience projects
U.S. Army Corps of Engineers (USACE)	USACE Sandy Program	Not a grant program	Coastal and tidal riverine flood risk management projects and investigations

Source: GAO analysis of FEMA, HUD, FTA, and USACE documentation. | GAO-15-515

Because FEMA is the lead federal agency for emergency management, FEMA’s national-level strategies for recovery and hazard mitigation also highlight the importance of incorporating hazard mitigation and other disaster resilience activities into the recovery process. FEMA’s September 2011 NDRF recognizes resilient rebuilding as one of the keys to recovery success, stating that recovery is an opportunity for communities to rebuild in a manner that reduces or eliminates risk from

future disasters.¹⁵ Similarly, FEMA's NMF states that linking recovery and hazard mitigation breaks the cycle of damage-repair-damage resulting from rebuilding without hazard mitigation measures following disasters.

The NMF issued in May 2013 addresses, in part, how the nation will develop, employ, and coordinate core hazard mitigation capabilities to reduce loss of life and property by lessening the impact of disasters. The NMF explains that building widespread disaster resilience throughout communities is a national priority and is a responsibility that is shared by individuals; businesses; non-profit organizations; and federal, state, local, tribal, and territorial governments. The NMF also established MitFLG to help coordinate hazard mitigation efforts of relevant local, state, tribal, and federal organizations. MitFLG is an intergovernmental coordinating body that was created to integrate federal efforts and promote a national culture shift that incorporates risk management and hazard mitigation in all planning, decision making, and development to the extent practicable. Although federal agencies play a critical role in promoting disaster resilience through the use of federal resources, a large part of disaster resilience-building efforts and decision-making also occurs at the state and local level. State and local laws and regulations can heavily influence disaster resilience efforts, for example, by strengthening building codes. In addition, state emergency management officials, such as State Hazard Mitigation Officers, play an important role by coordinating with local communities to enhance disaster resilience.

¹⁵The NDRF is intended to provide guidance that enables effective recovery support to disaster- affected states, tribes, and local jurisdictions by enabling disaster recovery managers to operate in a unified and collaborative manner. It also focuses on how to restore, redevelop, and revitalize communities and build a more resilient nation.

States and Localities Have Used Federal Funds to Help Plan and Implement Hazard Mitigation Projects to Enhance Resilience

States and localities have used funds appropriated to federal agencies by the Sandy Supplemental to plan and implement a variety of hazard mitigation activities, including but not limited to the following types of projects:

- acquiring and demolishing properties at risk for repeated flooding,
- elevating flood prone structures,
- erecting physical flood barriers such as seawalls and berms to protect against coastal flooding,
- restoring or enhancing storm water management measures,
- restoring wetlands and coastal areas to control erosion, and
- protecting critical facilities against power loss.

Four federal agencies—DHS’s FEMA, HUD, DOT’s FTA, and USACE—administer five programs that funded the majority of these disaster resilience-building measures during the Hurricane Sandy recovery effort. These five programs are FEMA’s Hazard Mitigation Grant Program, FEMA’s Public Assistance, HUD’s Community Development Block Grant-Disaster Recovery, FTA’s Public Transportation Emergency Relief Program, and USACE’s Sandy Program.

Hazard Mitigation Grant Program Funds Helped Sandy-Affected States Plan and Implement Hazard Mitigation to Enhance Disaster Resilience

Designed specifically to ensure opportunities to reduce the risk of loss of life and property from future disasters are not lost during the reconstruction process, HMGP can fund a variety of long-term solutions, including but not limited to acquisition and demolition; elevation; and retrofitting to minimize damages from high winds, earthquake, flood, wildfire, or other natural hazards. FEMA requires that HMGP projects (1) advance the state’s Hazard Mitigation Plan; (2) meet the environmental and historical requirements; and (3) be cost-effective, as determined by FEMA’s Benefit-Cost Analysis Tool or other FEMA-approved methodologies. In addition, HMGP projects must contribute to a long-term solution, meaning that temporary measures—such as sandbagging to protect against flooding—are not eligible.

FEMA awards HMGP after a major disaster has been declared, and the total available amount for any given disaster is dependent on the sum of other FEMA disaster grants—generally it is 15 percent of the first \$2

billion but may be higher under specific circumstances.¹⁶ Typically, FEMA notifies the states of how much funding they are eligible to receive, and the states working with FEMA then decide how to award the funds to localities and other applicants. Recipients of HMGP are usually responsible for 25 percent of the total project cost. HMGP may be used statewide—that is, it is not required to be used only in parts of the state that sustained disaster damage—as long as the state and local recipient of funds has a FEMA-approved hazard mitigation plan in place.

As of May 2015, FEMA has awarded over \$1.7 billion in HMGP funds from the Sandy Supplemental for damage from Hurricane Sandy. State officials we interviewed in all 13 Sandy-affected states reported using the HMGP they received as a result of Hurricane Sandy to enhance disaster resilience. These funds are being used for acquisition and demolition, home elevations, or the purchase of generators to protect critical facilities from future power loss, among other reasons. Figure 2 provides an example of how one state in the Sandy-affected area used HMGP funds to elevate homes.

¹⁶States can receive an amount not to exceed 15 percent for the first \$2 billion of federal disaster assistance received; 10 percent for amounts of more than \$2 billion and not more than \$10 billion; and up to 7.5 percent for amounts of more than \$10 billion and not more than \$35.333 billion. 42 U.S.C. § 5170c(a). A State with an approved Enhanced State Mitigation Plan may be eligible for up to 20 percent of such amounts, for amounts not more than \$35.333 billion. 42 U.S.C. § 5165(e).

Figure 2: Hazard Mitigation Grant Program (HMGP) Shore Front Home Elevation Project in Connecticut

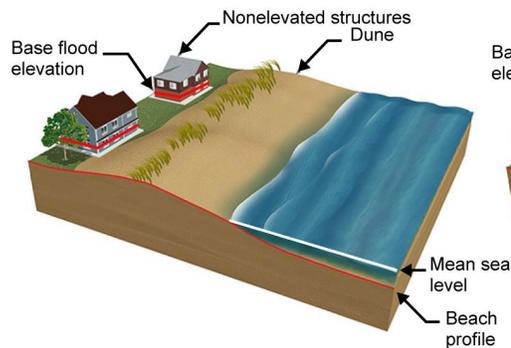
FEMA project

Residents and businesses along the shores of Connecticut suffered severe damage from Hurricane Sandy. According to Connecticut state officials, the most common hazard

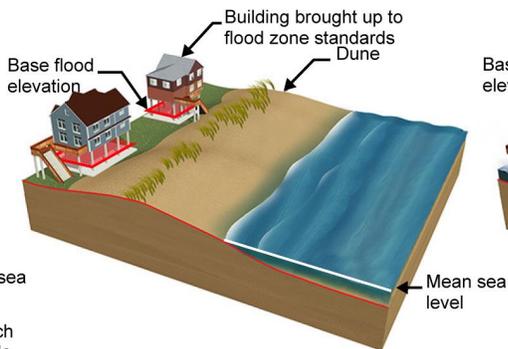
mitigation project in Connecticut has been the elevation of private residences. HMGP is currently funding 102 elevation projects, and provides up to \$100,000 for each elevation project. As of September 2014, the state was eligible to apply for nearly \$12 million in HMGP funds, but had received in excess of \$88 million in applications.



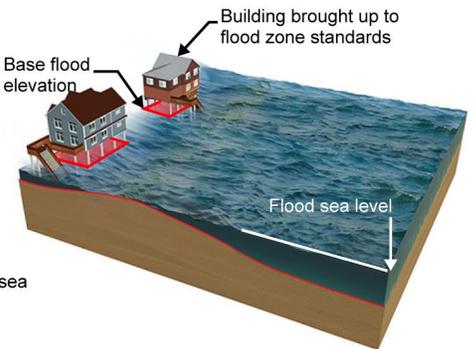
Nonelevated structures



Elevated structures before flood



Elevated structures during flood



Source: GAO analysis of Connecticut State information (State Hazard Mitigation Officer and documents); Federal Emergency Management Agency (photograph) U.S. Army Corps of Engineers (illustrations). | GAO-15-515

Public Assistance Funds Have Helped to Restore Damaged Infrastructure while Enhancing Resilience to Future Damage

The Public Assistance program provides grants to states, local governments, federally recognized Indian tribes, and certain private non-profit entities to assist them with the response to and recovery from disasters.¹⁷ Specifically, the program provides assistance for debris removal, emergency protective measures, and permanent restoration of infrastructure, including funding hazard mitigation measures to reduce future risks in conjunction with repair of disaster-damaged facilities (under Stafford Act section 406) if cost-effectiveness can be demonstrated. The federal share of assistance is not less than 75 percent of the eligible cost for debris removal, emergency protective measures, and permanent restoration. The state grantee determines how the non-federal share (up to 25 percent) is split between the state and eligible applicants. There is no pre-set limit to the amount of Public Assistance funds a community may receive; however, Public Assistance hazard mitigation measures must be determined to be cost-effective.¹⁸ In addition, Public Assistance may fund measures that are not classified as “hazard mitigation measures” but nevertheless serve to prevent or reduce future damage. For example, in one state, Public Assistance was used to replace boat docks that had been damaged by Sandy with floating docks instead of the stationary docks that had previously been in place. Although this activity was not classified as hazard mitigation under Public Assistance guidelines, the state official expected the floating docks to be more resilient than stationary docks during future disasters.

Sometimes, a combination of Public Assistance and HMGP funding may be appropriate. That is, Public Assistance hazard mitigation funding may

¹⁷For more information on the Public Assistance program, see *GAO, Disaster Recovery: FEMA’s Public Assistance Grant Program Experienced Challenges with Gulf Coast Rebuilding*, [GAO-09-129](#) (Washington, D.C.: Dec. 18, 2009).

¹⁸FEMA Public Assistance policy allows three different methods to test for cost-effective hazard mitigation. First, under the 15 percent rule, hazard mitigation measures may amount to up to 15 percent of the total eligible cost of repair work on a project. Second, certain hazard mitigation measures that have been pre-determined to be cost-effective may qualify under the 100 percent rule, which permits the hazard mitigation as long as it does not exceed 100 percent of the eligible cost of the repair work on a project. And, third for measures that exceed eligible costs, the grantee or sub-grantee must demonstrate through an acceptable benefit/cost analysis methodology that the measure is cost-effective. The following hazard mitigation measures pre-determined to be cost-effective, if they meet certain requirements, include drainage structures; roadway crossings; and bridges; sanitary and storm sewer systems including access covers, sewer lines, and pump stations; wastewater treatment plants; potable water well systems; electric power distribution equipment; above ground storage tanks; and underground pipelines.

be used to enhance the resilience of parts of the facility that were damaged and HMGP funding may be used to provide future protection to the undamaged parts of the facility.

States can also receive funds through the Public Assistance program Alternative Procedures, under the authority of Stafford Act section 428, which provides flexibility and financial incentives, some of which can be used to enhance disaster resilience.¹⁹ For example, applicants using the Alternative Procedures Program may choose to combine multiple critical facilities of a state, tribal, or local government that were damaged by a disaster and rebuild them in a manner that makes them less likely to incur future disaster damages. For example, a community that had a fire and police station destroyed could combine the facilities, rebuild them in an area less prone to be affected by a future disaster, and enhance the construction of the facility to meet up-to-date building codes.

As of March 2015, FEMA has awarded over \$1.8 billion in total Public Assistance permanent work funds to the 13 Sandy-affected states, of which \$400.6 million (22 percent) was approved to fund hazard mitigation activities. FEMA data shows that 11 of the 13 Sandy-affected states used PA funding for mitigation. Figure 3 provides an example of how Public Assistance funded hazard mitigation measures for a critical facility that was damaged by Sandy-related flooding.

¹⁹The Sandy Recovery Improvement Act of 2013 included key reforms to the Stafford Act such as adding section 428 which provides for alternative procedures, such as those allowing communities to opt for up-front grants of disaster relief funds based upon estimates, rather than waiting to be reimbursed for the actual costs of rebuilding. 42 U.S.C. § 5189f.

Figure 3: Public Assistance (PA) Flood Control Project at Sayreville, New Jersey Pumping Station

FEMA project

As a result of Hurricane Sandy the Sayreville Pumping Station—the largest wastewater pumping station in New Jersey, serving 33 municipalities and 700,000

people—flooded and lost power for 10 days. In addition to funding for repairs to the station, PA is to provide over \$61.6 million for mitigation measures to prevent disruption during future disasters. Mitigation projects include a perimeter flood wall, standby generators, and relocation of critical equipment, among other things.



Pumping station power grid



Main pumps and discharge pipe

Source: GAO analysis of New Jersey Middlesex County Utilities Authority information (pumping station officials); New Jersey Office of Information Technology, Office of GIS and R3M Engineering, Inc. (aerial photograph); GAO (photographs). | GAO-15-515

Community Development
Block Grant-Disaster
Recovery Program Funds
Helped Sandy-Affected
States Explore New
Disaster Resilience
Approaches, Pay Project
Costs, and Implement
Additional Hazard
Mitigation Initiatives

Congress appropriated \$16.0 billion in the Sandy Supplemental to HUD's Community Development Fund for disaster relief, long-term recovery, restoration of infrastructure and housing, and economic revitalization.²⁰ This program is designed to address needs not met by other disaster recovery programs—including but not limited to disaster resilience initiatives—particularly for low and moderate income persons. The Sandy Supplemental directed these funds to be available for areas most impacted and distressed as a result of Presidentially-declared major disasters from 2011-2013.

HUD allocated \$930 million of the Sandy Supplemental appropriation to fund resilient recovery projects that resulted from Rebuild by Design—a competition sponsored under the authority of the America COMPETES Reauthorization Act of 2010—to promote innovative disaster resilience solutions in the Sandy-affected area that are compatible with local circumstances and then to fund selected solutions.²¹ The HUD Secretary awarded funds ranging from \$10 million to \$335 million to four jurisdictions in the Sandy-affected area that also received other CDBG-DR funding. Building on lessons learned from Rebuild by Design, HUD later announced that it would use \$1 billion in CDBG-DR to fund a nationwide competition—the National Disaster Resilience Competition—with the aim of helping communities inside and outside the Sandy-affected area explore how they can recover from a past disaster and avoid future disaster losses.²² Applicants were required to link their proposals to the disaster from which they are recovering while demonstrating how they will reduce future risks and advance broader community development goals.

Enhanced disaster resilience can be an outcome of many CDBG-DR-funded activities, whether they are specifically designed to enhance disaster resilience or have another primary goal. For example, HUD requires any new construction or substantial repair or rehabilitation that it

²⁰Pub. L. No. 113-2, 127 Stat. 4, 36 (2013).

²¹Pub L No. 111-358, § 105, 124 Stat. 3989 (2011) (codified at 15 U.S.C. § 3719).

²²By statute HUD funds could be made available to the most impacted and distressed areas resulting from Presidentially-declared major disasters in 2011, 2012, and 2013. HUD made the National Disaster Resilience Competition (NDRC) available to 67 states and local jurisdictions (effectively covering 48 of 50 states plus Puerto Rico and Washington, D.C.). The states of Nevada and South Carolina were not covered.

funds to be at least 1 foot above the base flood elevation level. According to HUD officials, such efforts are classified according to the type of activity performed and the disaster resilience measures within each activity are not isolated and are therefore unable to be tracked separately. As a result, HUD cannot break down exactly how much of the remaining Sandy Supplemental appropriation that has been or will be used to help enhance disaster resilience, although some of the appropriation is being used for those purposes.

New York City and the states of New York, New Jersey, Connecticut, Rhode Island, and Maryland, among others, received a CDBG-DR allocation that was not part of one of the resilience competitions. State officials we interviewed that reported receiving CDBG-DR said it served as a complement to FEMA-funded mitigation activities in two ways. First, CDBG-DR was used, in some cases, to cover all or part of the applicant's share of HMGP and Public Assistance project costs if the project was determined to be CDBG eligible. Second, CDBG-DR funded some of the same type of mitigation activities that HMGP typically funds, such as acquisition and elevation of properties in high-risk areas, thereby increasing the number or scope of these projects states were able to offer. Figure 4 provides an example of an acquisition and demolition project undertaken by one Sandy-affected locality using 100 percent CDBG-DR funds to cover project costs.

Figure 4: Community Development Block Grant-Disaster Recovery (CDBG-DR) Acquisition and Demolition in New Jersey



New Jersey is pursuing the acquisition of more than 1,000 flood-prone properties under the State's Blue Acres Program. New Jersey's Blue Acres Program is designed to move New

Jersey citizens out of high-risk areas by acquiring and demolishing flood-prone properties, and allowing natural systems to absorb flood waters from future storms. The State has allocated nearly \$300 million, including \$100 million in CDBG-DR, funds for this purpose. Under the program, homes can be purchased from willing sellers at 100 percent of their prestorm fair market value. In Old Bridge Township, CDBG-DR plans to provide an estimated \$8.7 million to Blue Acres for the planned acquisition and demolition of up to 29 residential properties creating acres of permanent green space and a natural flood barrier for adjacent neighborhoods.

Home acquisitions and demolitions



Old Bridge Township, Middlesex County, New Jersey



Source: GAO analysis of information and photographs provided by the New Jersey Department of Environmental Protection Blue Acres Program. | GAO-15-515

FTA's Emergency Relief Program Helped State and Local Transit Authorities Take Actions to Prevent Future Damages

FTA received \$10.9 billion under the Sandy Supplemental appropriation for the new Public Transportation ERP, which funds transit authority recovery, relief, and resilience projects and activities in areas affected by Hurricane Sandy.²³ ERP is intended to provide operating assistance and capital funding to aid recipients and sub-recipients in restoring public transportation service, and in repairing and reconstructing public transportation assets as expeditiously as possible following an emergency or major disaster that affects a wide area. Eligible projects include emergency operations; emergency repairs; permanent repairs; actual engineering and construction costs on eligible projects; and resilience projects designed to protect equipment, facilities, and infrastructure from future damage.

An initial FTA damage assessment in February 2013 estimated the costs of repairing facilities damaged by Hurricane Sandy in New York and New Jersey to be about \$5.8 billion. As of May 2015, FTA has allocated \$9.3 billion for recovery and resilience projects to public transportation agencies affected by Hurricane Sandy. According to FTA officials, the agency has obligated about \$4.2 billion and disbursed about \$938 million to reimburse transit agencies for emergency response, recovery, repair, and resilience costs. Generally, the federal cost share for FTA ERP projects is not to be more than 80 percent of the total project cost, and the federal cost share for competitive resilience projects is 75 percent of the total project cost.²⁴ As of May 2015, FTA had allocated \$4.4 billion for recovery expenses and approximately \$4.9 billion for resilience projects, most of which were selected through a competitive grant process. Figure 5 provides an example of how ERP's competitive resilience awards are expected to protect New York City transit from future damages.

²³The ERP was established by the Moving Ahead for Progress in the 21st Century Act, Pub. L. No. 112-141, § 20017(a), 126 Stat. 405, 703 (2012) (codified at 49 U.S.C. § 5324). This program was authorized by Congress for the first time in 2012.

²⁴Funds are awarded to eligible agencies based on the demonstrated costs of responding to and recovering from an emergency or major disaster. Funds are also awarded to affected agencies for projects that improve the resiliency of public transportation assets and infrastructure to future emergencies or disasters.

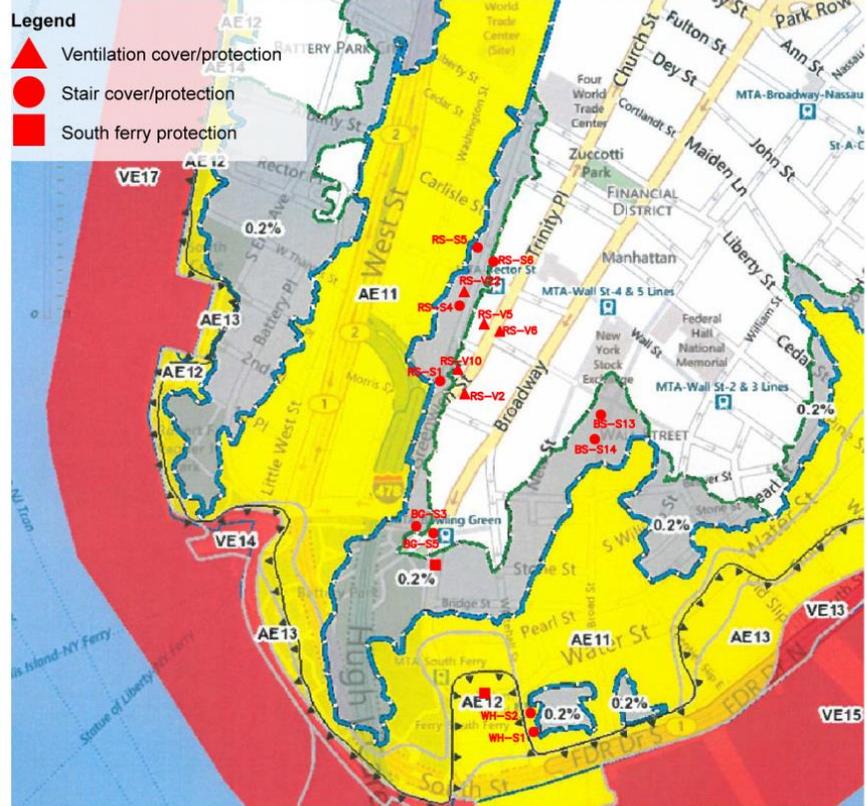
Figure 5: Federal Transit Administration Resiliency Implementation Project in New York City



The New York City subway and transit assets experienced significant damage due to salt water infiltration from the storm surge during Hurricane Sandy. Due to the relatively low

elevations of the facilities in lower Manhattan, salt water from the storm surge entered the subway system through street-level openings, causing damage within tunnels, stations, and facilities. The Lower Manhattan Resiliency Implementation Project is to create water-tight systems to temporarily seal these street-level openings at vulnerable points within lower Manhattan. The \$12.5 million investment request is expected to minimize and prevent major damage from the entry of water into the subway system from major storms.

Lower Manhattan resiliency implementation—near term



Slots are to accept deployable covers to protect the stairs and escalators against flooding



Source: GAO analysis of Federal Transit Administration information (FTA); FTA (map and photographs). | GAO-15-515

USACE Has Conducted Studies and Undertaken Projects to Help Sandy-Affected Areas Understand and Address Future Flood Risk

Language in the Sandy Supplemental charged USACE with reducing future flood risk in ways that will support the long-term sustainability of the coastal ecosystem and communities, and reduce the economic costs associated with large-scale flooding.²⁵ It also mandated the North Atlantic Coast Comprehensive Study, which has the following goals: (1) reduce flood risk to vulnerable coastal populations, and (2) promote coastal resilient communities to ensure a sustainable and robust coastal landscape system.²⁶ USACE released the North Atlantic Coast Comprehensive Study—covering more than 31,000 miles of coast line—in January 2015. More than 8 million people live in areas at risk of coastal flooding. Along the U.S. Atlantic coast alone, almost 60 percent of the land that is within a meter of sea level is planned for further development. According to USACE officials, the comprehensive nature of the study represents a significant improvement in planning to manage coastal flood risk. In addition to the study, USACE has dedicated funding and undertaken a number of coastal risk reduction projects and studies in five Sandy-affected states—Delaware, New Jersey, New York, Rhode Island, and Virginia. Figure 6 provides an example of one such study and associated projects designed to increase disaster resilience of communities at risk for flooding along one coastal system.

²⁵Pub. L. No. 113-2, 127 Stat. 4, 24 (2013).

²⁶ Pub. L. No. 113-2, 127 Stat. at 5.

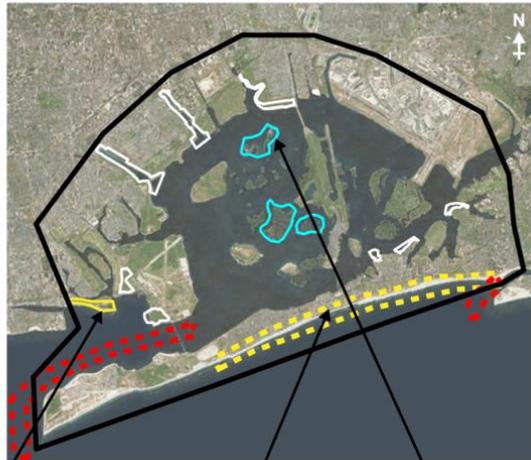
Figure 6: U.S. Army Corps of Engineers (USACE) Flood Control Measures in Rockaway Peninsula and Jamaica Bay



US Army Corps of Engineers

The USACE project constructed prior to Hurricane Sandy on the Atlantic Coast between East Rockaway and Rockaway Inlet in New York City was being reevaluated at the time of Hurricane Sandy; and a separate study was under way for Jamaica Bay and other nearby areas. Hurricane Sandy caused significant damage and exposed the vulnerability of communities on the Rockaway Peninsula and Jamaica Bay. In keeping with the findings and outcomes of North Atlantic Coast Comprehensive Study, USACE is now using a more comprehensive approach to try to identify cost-effective coastal storm risk management alternatives for the Rockaway-Jamaica Bay region. According to USACE, the Atlantic Coast of New York City, East Rockaway and Rockaway Inlet and Jamaica Bay Re-evaluation will consider a full array of coastal storm risk management measures. Construction of the original Rockaway Beach effort was estimated at \$150 million. However, construction as a result of the re-evaluation effort and prompted by the level of damage inflicted by Sandy is expected to cost significantly more when the draft plan is scheduled to be completed, in December 2015, according to USACE officials.

Rockaway Inlet to East Rockaway Inlet and Jamaica Bay Reformulation Study



- Legend**
- Jamaica Bay ecosystem coastal restoration feasibility sites
 - Marsh Island restoration sites
 - Coastal storm risk management
 - Navigation projects
 - Completed projects

Plumb Beach coastal storm risk management



Rockaway Beach vegetated sand dune resilience measure



Elder's Point wetlands restoration



Source: GAO analysis of U.S. Army Corps of Engineering information (USACE); USACE (photographs). | GAO-15-515

State Officials Reported Successes Using Federal Funds to Enhance Disaster Resilience, but Experienced Challenges That Limited Their Ability to Maximize Those Funds

The 16 groups of state and city officials from the Sandy-affected area that we interviewed reported successes in leveraging federal Sandy recovery efforts to enhance disaster resilience. However, in the interviews and in 13 follow-up survey responses, officials also reported a series of challenges that hindered their ability to maximize federal funds in the wake of recent disasters.²⁷ Challenges generally fell into three categories: (1) specific challenges with the implementation of postdisaster programs where program implementation was not always consistent with agency disaster resilience priorities, (2) challenges from the broader structure of disaster resilience funding that limited a comprehensive approach to reducing overall risk, and (3) local challenges that are not directly in the federal purview but may be exacerbated by other challenges that are.

State Officials Reported Successes with Their Efforts to Enhance Disaster Resilience

Thirteen of the 16 groups of state and city officials we interviewed said that they were able to effectively or very effectively use the post-Sandy effort as an opportunity to make communities more resilient against future disasters. Officials cited residential acquisitions or elevations, the purchase of generators to ensure the continuity of operations of critical facilities, increased local hazard mitigation planning, and other projects such as those discussed previously as key efforts supported by federal funding in the Sandy recovery.

In addition, officials from 12 of 16 states and cities said that their leaders value efforts to enhance community resilience to a great extent, as demonstrated by actions like the availability of state funding for mitigation, legislative efforts to strengthen building codes, or the establishment of state offices to focus on disaster resilience efforts. For example, New York City strengthened building codes to account for long-term sea level rise, and the Governor of Maryland issued an executive order that new construction and improvements of state structures must consider potential impacts of climate change. In addition, states that received a presidential

²⁷During our initial interviews, we spoke separately with the State Hazard Mitigation Officers and Governors' offices established to coordinate storm recovery efforts in New York and New Jersey. In responding to the follow-up survey, each state chose to provide a unified response, consolidating the perspectives of both the State Hazard Mitigation Officer's and Governor's office officials. During the time we administered the follow-up survey, the most knowledgeable official for the state of Rhode Island was no longer with the agency. As a result, state officials declined to complete the follow-up survey.

major disaster declaration as a result of Hurricane Sandy collectively used more than 20 percent of the FEMA Public Assistance funds they received for disaster recovery and repair to implement hazard mitigation measures.

State Officials Reported That Challenges Implementing Hazard Mitigation Grant Program and Public Assistance Limited Their Ability to Maximize Those Programs' Opportunities

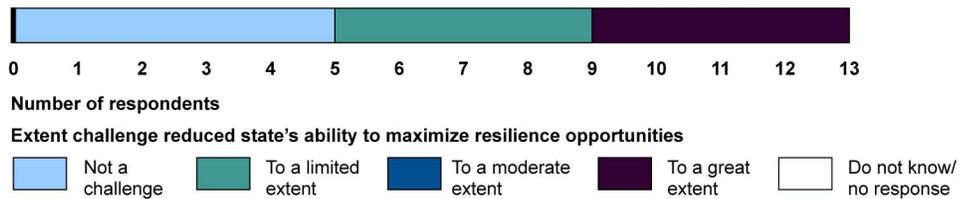
One of the goals of the NDRF is to integrate hazard mitigation and risk reduction opportunities into all major decisions and reinvestments during the recovery process. Similarly, the *National Mitigation Framework* calls for governments at all levels to capitalize on opportunities during the recovery building process to further reduce vulnerability. However, state and city officials we interviewed and surveyed reported experiencing or perceiving several conditions that limited achievement of that goal with FEMA's PA and HMGP programs, including (1) the complexities of the hazard mitigation planning process, (2) FEMA PA and HMGP staff turnover, (3) limitations on eligibility, and (4) lack of FEMA officials' support for PA-funded hazard mitigation during project formulation. FEMA has a stated goal of integrating hazard mitigation into the recovery process to capitalize on opportunities to reduce future risk, but state officials' experiences with recovery efforts from Hurricane Sandy and other disasters in the 2011-2013 timeframe suggest that, in some cases, implementation of these programs has not always been consistent with that goal.

Hazard Mitigation Planning Process

As shown in figure 7, 8 of 13 states and cities responding to our follow up survey reported that the complexity of FEMA's review process for hazard mitigation plans limited their ability to maximize disaster resilience as part of the recovery. In interviews, officials said FEMA's focus on detailed, nationally-standardized requirements during the review process for hazard mitigation plans often overshadowed the substance of the plans or, according to state officials, the plans' capacity to meet local needs. FEMA requires that in order to be eligible for HMGP funding, both the state and local jurisdiction have a hazard mitigation plan that has been reviewed and approved by the agency. In order to be approved, a plan must document the planning process—including how it was prepared, who was involved, and how public comments were integrated—and must also include a comprehensive range of mitigation actions to address each hazard identified by the plan's risk assessment, among other requirements. However, in 1 state, officials said that two of their localities had decided not to pursue FEMA-approved hazard mitigation plans—forgoing eligibility for HMGP as a result—because of the agency's requirements and review comments for the plans. For example, the officials stated that among the reasons why FEMA returned the two plans were that they did not contain a definition of "hurricane," did not follow the

agency's formatting guidelines, or because they included hazard mitigation activities that were not eligible for FEMA funding but may have been of benefit to the local jurisdictions. A senior FEMA official told us that they require the plans to be detailed so that they result in preidentified hazard mitigation projects that can be implemented quickly after a disaster.

Figure 7: Survey Response to Challenges Associated with the Complexity of the Federal Emergency Management Agency's Review Process for Hazard Mitigation Plans



Source: GAO survey. | GAO-15-515

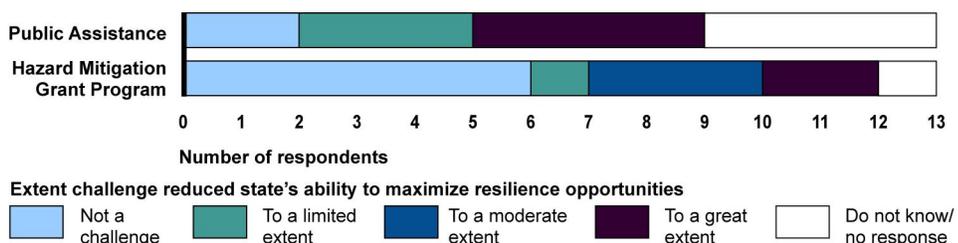
FEMA PA and HMGP Staff Turnover

Ten of the 13 states and cities responding to our follow up survey reported that turnover among either PA or HMGP staff at joint field offices or recovery offices was a challenge that limited their ability to maximize disaster resilience as part of the recovery, as illustrated by figure 8.²⁸ One state official said that the high rate of turnover at FEMA causes discontinuity in grant staff expertise, which hinders the state's ability to efficiently submit applications. Another said that the rate of turnover among project specialists for FEMA's Public Assistance program was a frequent complaint of applicants and led to inconsistent guidance and repetition of project formulation processes. For example, 1 state reported that what had been acceptable to one FEMA reviewer may not be to the standards of the reviewer's successor, requiring the state to go back to square one and re-visit everything that was previously agreed upon. The state reported that changes in FEMA personnel resulted in the need to "retread ground long-since covered" and resulted in inconsistent guidance

²⁸Eight respondents said that turnover of PA staff was a challenge, and one of these respondents did not know or respond to the extent this challenge reduced the state's ability to maximize resilience opportunities. Three respondents said they did not know whether this was a challenge. Two respondents said it was not a challenge. Seven respondents said that turnover of HMGP staff was a challenge, and one of the respondents did not know or respond to the extent to which this challenge reduced the state's ability to maximize resilience opportunities. Six respondents said it was not a challenge.

from FEMA personnel. FEMA officials acknowledged that staff turnover in joint field offices and recovery offices has been a long standing challenge.

Figure 8: Survey Response to Challenges Associated with Turnover among Federal Emergency Management Agency Public Assistance or Hazard Mitigation Grant Program Staff



Source: GAO survey. | GAO-15-515

Note: One respondent said that turnover of FEMA Public Assistance staff was a challenge but did not know or respond to the extent this challenge reduced the state’s ability to maximize resilience opportunities. One respondent said that turnover of FEMA Hazard Mitigation Grant Program staff was a challenge but did not know or respond to the extent this challenge reduced the state’s ability to maximize resilience opportunities.

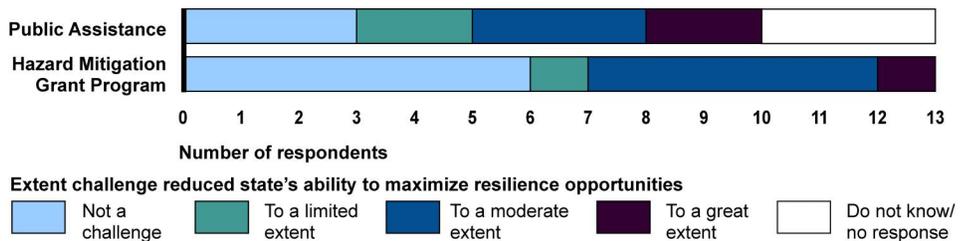
Eligibility Limitations

State and city officials in the Sandy-affected region that we interviewed and surveyed reported that they were not always able to capitalize on federal recovery assistance to strengthen resilience because the kind of projects they thought would be most useful were not eligible. Figure 9 shows that 7 of 13 states and cities responding to our follow-up survey reported that the type of projects eligible for HMGP limited their ability to maximize resilience during the recovery effort, and 8 of 13 said the same for PA.²⁹ Concerns about eligibility generally centered on unique attributes of a locality or region that did not align with HMGP regulations and guidance designed for broad national characteristics. For example, one hazard mitigation official suggested that more needed to be done to address the needs of dense urban areas, including hazard mitigation projects suited to those environments. In particular, elevation is not feasible for historic row homes in these urban areas, and the property

²⁹Of the eight respondents who said the types of projects eligible for Public Assistance was a challenge, one respondent said that this was a challenge but did not know or respond to the extent this challenge reduced the state’s ability to maximize resilience opportunities. Two respondents said they did not know whether this was a challenge. Three respondents said it was not a challenge.

values in some areas may make it difficult to demonstrate cost-effectiveness of the acquisition of homes in flood prone areas.

Figure 9: Survey Response to Challenges Associated with Eligibility of Projects for Federal Emergency Management Agency Public Assistance or Hazard Mitigation Grant Program Funding

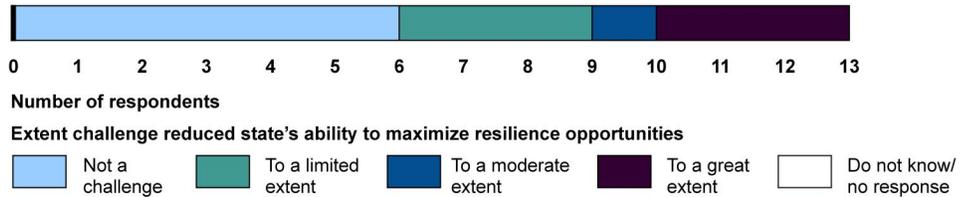


Source: GAO survey. | GAO-15-515

Note: One respondent said that the types of projects eligible for FEMA Public Assistance funding was a challenge but did not know or respond to the extent this challenge reduced the state's ability to maximize resilience opportunities.

Although law, regulation, and grant guidance prescribe the types of projects eligible for these programs, there is sometimes flexibility in interpreting those criteria to be responsive to state and local needs. State Hazard Mitigation Officers we interviewed reported that they frequently communicate with their counterparts in other states to share information and ideas, and discovered inconsistent application of flexibility in making eligibility determinations across states and regions. As shown in figure 10, 7 of 13 states and cities responding to our survey said that FEMA officials in their region had not applied discretion, under the current regulations and guidance, in a way that maximizes hazard mitigation opportunities under the HMGP program. For example, in interviews officials from 1 state told us that their regional FEMA officials determined HMGP could be used only to elevate utilities, such as water heaters, to the first floor, because elevation was to be to base flood elevation plus 1 foot, and any other floor would be higher than that, and therefore not considered a "reasonable cost." According to state officials, for practical and aesthetic reasons, homeowners declined to participate unless they could elevate utilities to the attic level. When we described this scenario to a senior official from the FEMA Mitigation Directorate, the official said that elevation of utilities to an attic generally could be determined eligible, and the small additional cost in that situation should not be a barrier to mitigating their risk from future disasters. The official later followed up and found that FEMA employees in that region had misunderstood FEMA's authority to allow the additional cost for utilities.

Figure 10: Survey Response to Challenges Associated with Federal Emergency Management Agency Officials' Use of Discretion under Current Regulations



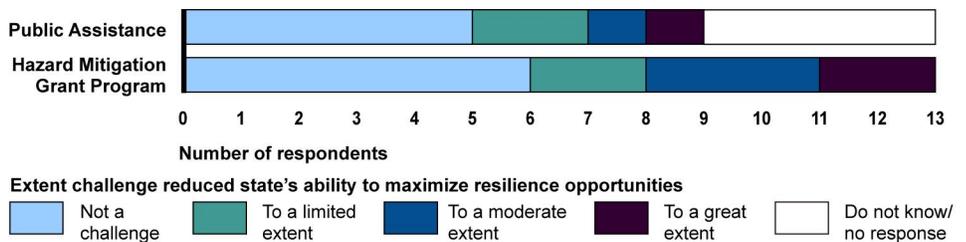
Source: GAO survey. | GAO-15-515

Another factor states reported affecting HMGP and PA eligibility is the benefit-cost calculation. For both HMGP and PA, FEMA typically requires a benefit cost analysis to compare the cost of a hazard mitigation project with its future benefits. Eight of 13 states and cities responding to our follow up survey reported that they experienced challenges with the consideration of appropriate benefits (e.g., environmental) in at least one of these programs, as shown in figure 11.³⁰ For example, acquisition projects, which result in open space, can enhance environmental quality in a community. According to a senior official in FEMA's Mitigation Directorate, the goal of HMGP is to protect against damages from future severe weather, and it would not be appropriate to consider benefits that do not relate directly to that purpose. However, FEMA has already taken some action that may help to address this problem. FEMA issued a policy in 2013 describing additional environmental benefits that could be considered for property acquisitions. In addition, on the basis of an analysis by the agency's Risk Reduction Division, FEMA issued guidance in 2013 that the acquisition or elevation of structures located within the 100-year floodplain will be considered cost-effective as long as the total project costs are under \$276,000 for acquisitions and \$175,000 for elevations. For projects meeting these guidelines, applicants are not required to submit a benefit cost analysis. During our interviews, officials from multiple states praised this practice, in part because it reduced the burden for them and their local partners and in part because it recognized the overall benefit of elevation, even when some elevation projects may

³⁰Five respondents said that the consideration of benefits for PA mitigation projects was a challenge, and one of these respondents did not know or respond to the extent this challenge reduced the state's ability to maximize resilience opportunities. Three respondents said they did not know whether this was a challenge. Five respondents said it was not a challenge. Seven respondents said that the consideration of benefits for HMGP projects was a challenge, and six said it was not a challenge.

not have been determined to be cost-effective under the previous guidelines because of variations in construction costs across regions. Multiple state officials told us during interviews that they appreciated FEMA’s decision to establish a standard benefit cost analysis threshold for these hazard mitigation activities. On the other hand, some state officials cautioned that by making more projects eligible without a benefit cost analysis requirement, predetermined benefits can lead to more strain on limited resources and make the prioritization process more difficult for state decision-makers.

Figure 11: Survey Response to Challenges Associated with the Consideration of Benefits in Federal Emergency Management Agency’s Benefit Cost Analysis



Source: GAO survey. | GAO-15-515

Note: One respondent said that the consideration of benefits in FEMA’s Benefit Cost Analysis for Public Assistance was a challenge but did not know or respond to the extent this challenge reduced the state’s ability to maximize resilience opportunities.

Inconsistent Implementation of the Agency’s Goal of Prioritizing Hazard Mitigation during Public Assistance Project Formulation

FEMA officials responsible for overseeing PA told us that hazard mitigation is a priority and the agency uses its authority to pursue it whenever possible. However, as shown in figure 12, 6 of 13 states and cities responding to our follow-up survey said that they experienced FEMA officials actively discouraging PA hazard mitigation projects as a challenge that limited their ability to maximize resilience in the recovery effort.³¹ Specifically, during our interviews, some state officials described situations where FEMA Project Specialists had told local officials, while they were jointly developing project worksheets, not to try to include hazard mitigation. Moreover, a May 2012 FEMA after-action report following multiple disaster declarations in 1 state noted that Project

³¹One respondent said that this was a challenge but did not know or respond to the extent this challenge reduced the state’s ability to maximize resilience opportunities. Two respondents said they did not know whether this was a challenge. Five respondents said it was not a challenge.

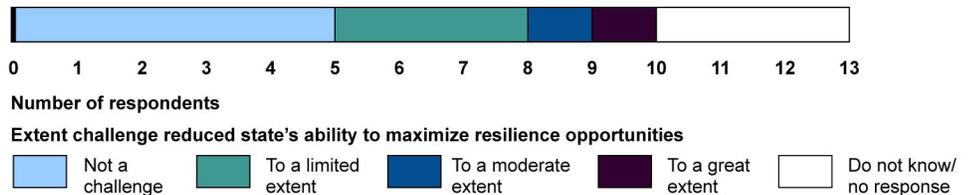
Identifying PA Hazard Mitigation Projects

Generally, when applicants wish to be considered for Public Assistance funding, they work directly with FEMA Project Specialists. Project Specialists are primarily responsible for collecting information about potential projects and for assessing and determining project eligibility. The formal documentation of this process is called a project worksheet. Project worksheet guidance states that project specialists should complete a hazard mitigation proposal if the applicant requests hazard mitigation measures, and in such cases, a justification for the proposed mitigation measures must be provided.

Source: GAO analysis of Federal Emergency Management Agency documentation | GAO-15-515

Specialists had avoided writing or had inadequately prepared hazard mitigation proposals prior to Hurricane Sandy. In addition, a seventh respondent reported that the state did not experience Project Specialists actively discouraging hazard mitigation, but not encouraging it when working with locals to identify projects had been a challenge.

Figure 12: Survey Response to Challenges Associated with Federal Emergency Management Agency Officials Actively Discouraging Public Assistance Mitigation Projects



Source: GAO survey. | GAO-15-515

Note: One respondent said that FEMA officials actively discouraging Public Assistance mitigation projects was a challenge but did not know or respond to the extent this challenge reduced the state's ability to maximize resilience opportunities.

FEMA's *Project Worksheet Development Guide*, the internal guidance for completing project worksheets, directs project specialists to ask applicants if they would like to pursue hazard mitigation activities but does not direct the employees to actively identify opportunities for hazard mitigation during the process of scoping a project. On the contrary, the guidance categorizes hazard mitigation within a class of "special considerations," which can result in additional processes or layers of review. Although the guidance notes that hazard mitigation is a priority for FEMA and suggests that project specialists should sometimes consider providing an explanation when it is not implemented, the agency's position to make hazard mitigation a priority is not fully emphasized throughout the guidance.

FEMA's May 2012 after-action report identified possible solutions to instances where hazard mitigation opportunities are not pursued, including having all PA permanent work projects reviewed by hazard mitigation specialists to determine whether or not hazard mitigation opportunities exist. FEMA officials told us that hazard mitigation specialists currently work with Project Specialists to identify and evaluate hazard mitigation opportunities, and that this practice should be consistent across joint field offices, although the number of hazard mitigation specialists available at a given joint field office may vary. However, this expectation for involvement of hazard mitigation specialists

Federal Emergency Management Agency's (FEMA) Hazard Mitigation Assistance

FEMA has multiple programs to help states and localities enhance disaster resilience. The primary programs for mitigation against all hazards are Hazard Mitigation Grant Program (HMGP) and the Pre-Disaster Mitigation Program (PDM). In addition, the Flood Mitigation Assistance Program is available through the National Flood Insurance Fund for flood hazard mitigation projects.

Generally, PDM receives annual appropriations that are small, compared with the amount of funding typically provided following a disaster. In fiscal year 2014, for example, the total appropriation for the entire nation was \$25 million. Each of the 50 states, the District of Columbia, and U.S. territories automatically receives at least either 1 percent of PDM allocations or \$575,000, whichever is less. Each of these entities is eligible for additional PDM awards on a competitive project basis, regardless of disaster history.

HMGP, by contrast, is funded through FEMA's Disaster Relief Fund, and is available only in the wake of a presidentially-declared disaster—generally 15 percent of the first \$2 billion in disaster assistance awarded in association with a declared disaster. As a result, nationwide annual HMGP spending tends to be significantly higher than annual PDM allocations, but the size of any individual award will vary. In addition, in any given year, some states and other nonfederal governments may not be eligible for HMGP.

Source: GAO analysis of FEMA documents | GAO-15-515

is not documented in FEMA's current internal guidance for completing project worksheets. In addition, FEMA officials told us that making adjustments to project specialists' roles in identifying hazard mitigation opportunities during the project worksheet formulation process could help to further integrate disaster resilience into the recovery process.

Given the challenges state and local officials experienced during the Hurricane Sandy recovery, evaluating the extent that corrective actions are needed to help ensure FEMA consistently reinforces its resilience goals in the NDRF and NMF could better position FEMA to assist state and locals in maximizing opportunities to enhance disaster resilience. According to FEMA officials, the agency has launched a reengineering initiative to develop a new operating model for PA that is intended to enable greater efficiency and improve the delivery of disaster assistance. FEMA plans to test the new model during 2015 and then begin full implementation during 2016 or 2017, depending on how many disasters occur during that time. In addition, according to officials, FEMA is exploring the effect of and potential solutions to staff turnover as part of this effort. Whether as part of the PA review or outside of it, identifying corrective actions that respond to the experiences of state officials with responsibility for resilience during recovery from the most recent multi-billion dollar disaster could enhance FEMA's ability to meet the goal of integrating hazard mitigation into the recovery process. For example, FEMA could enhance communication, guidance, training, or documentation of decision making to address issues arising from staff turnover, promote maximum flexibility within the law to meet local needs, and ensure that PA project specialists appropriately identify hazard mitigation opportunities. FEMA officials acknowledged the importance of reviewing the challenges identified by state and local officials and told us that they appreciated us bringing these challenges—which they have not necessarily already planned to address in their review—to their attention.

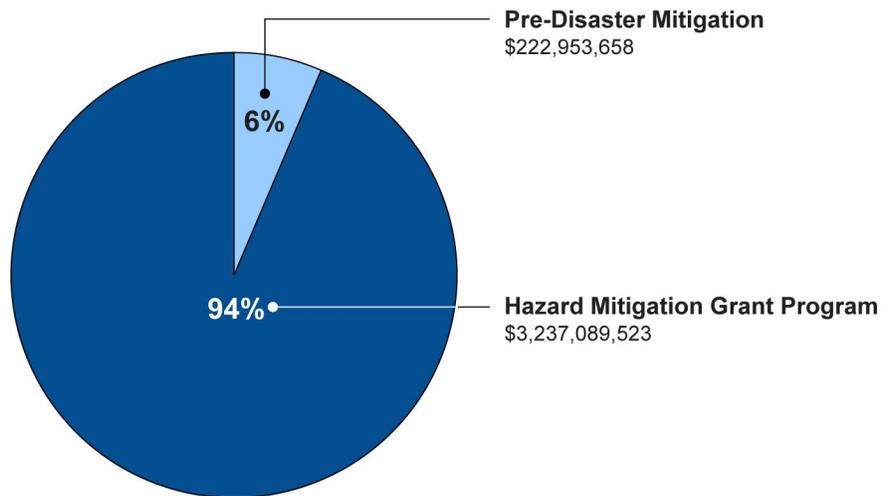
State and Local Officials Experienced Challenges Enhancing Resilience in the Postdisaster Recovery Environment

The bulk of federal disaster resilience funding, such as PA and HMGP, that is provided to states and localities comes after they have experienced a disaster, particularly a large or catastrophic disaster. Although there are advantages to focusing on disaster resilience in the postdisaster environment, our interviews and follow-up surveys revealed that the emphasis on spending in the postdisaster environment and the inherent fragmentation of federal funds and programs in the post-catastrophe environment limited states' ability to plan and prioritize for maximum risk reduction.

Federal Emphasis on Postdisaster and Catastrophic Disaster Resilience Funding

Except when supplemental funding is approved following a catastrophic disaster, PDM and HMGP are the primary federal programs that provide funding to states and localities to help enhance their disaster resilience—PDM for pre-disaster mitigation and HMGP in the postdisaster environment. As demonstrated in figure 13, PDM spending has historically been a fraction of HMGP spending. In addition, PDM grants limit states to a certain number of applications per year—for instance, in fiscal year 2014, states could submit a maximum of 11 applications, of which only 2 could be for projects, as opposed to hazard mitigation planning or management costs, which according to officials, limits the states’ capacities to implement “brick and mortar” hazard mitigation projects with the pre-disaster grant funds.

Figure 13: Predisaster Mitigation Allocations and Hazard Mitigation Grant Program Estimated Awards from Fiscal Years 2011-2014



Source: GAO analysis of FEMA data. | GAO-15-515

As demonstrated by the Sandy Supplemental and the associated recovery effort, in the wake of a catastrophic disaster, affected areas can receive substantial sums to enhance disaster resilience. For example, HMGP provided approximately \$1.7 billion to New York and New Jersey following Hurricane Sandy. In addition, other programs like CDBG-DR and FTA’s ERP provided billions of disaster resilience dollars that are not available on an annual basis. There are advantages to making funds available in the postdisaster environment. For example, the recent and tangible experience with the disaster can help motivate individuals and communities to focus on mitigating their risk, because they do not want to

relieve the losses they have just experienced or to incur losses they observe in their neighbors' experience.

State officials we interviewed confirmed that, in their experience, local applicants were more likely to invest their own resources in hazard mitigation activities following a disaster. In some states, state officials reported Hurricane Sandy was a catalyst to strengthen the state's culture of resilience. Officials in the most severely affected states—for example, New York and New Jersey—told us that disaster resilience is now a point of discussion across sectors and throughout communities that had not previously pursued hazard mitigation. Of the six officials who said their state's culture of resilience had not changed as a result of Sandy, three attributed the lack of change to the less severe impact experienced by their states, relative to the impact on other states that had been affected, and one official reported that seeing the damage sustained in New York and New Jersey made citizens and leaders more aware of their own risk. Another official stated that the culture of resilience in his state had already changed prior to Sandy, following two disasters that significantly affected business and employment interests.

Challenges in the Postdisaster Environment

Although 9 of 16 groups of state officials we interviewed said that disaster resilience and hazard mitigation activities should be integrated into recovery efforts within the first hours and days after a disaster occurs, 3 said that actually happened in the Hurricane Sandy recovery. Although all of the officials said that disaster resilience and hazard mitigation activities should be incorporated within the initial hours to initial weeks, 5 of the groups we interviewed said that it was months to years before that happened in the wake of Hurricane Sandy because, in part, they were focused on more immediate recovery concerns such as restoring power.

In some states, officials with primary responsibility for hazard mitigation noted that they wore other hats in the emergency operations center in the initial hours to days and were too focused on response functions to think about hazard mitigation. Of the 7 that said hazard mitigation should be integrated in days to weeks (rather than hours to days) some also expressed skepticism about the feasibility of focusing on future disaster resilience activities while life-saving activities were in progress. For example, one State Hazard Mitigation Officer told us that it is more important to restore power to the affected area quickly than it is to ensure that the power grid is repaired in a manner that mitigates future disaster risk.

During our discussions about how soon after a disaster hazard mitigation and disaster resilience planning should be integrated into recovery, officials noted that a more effective approach to disaster resilience would be to plan and implement hazard mitigation before a disaster occurs. In this regard, 12 of 13 states and cities responding to our survey reported that the emphasis of federal resources on the postdisaster environment challenged their ability to maximize federal disaster resilience investments, as illustrated in figure 14.

Figure 14: Survey Response to Challenges Associated with the Emphasis of Federal Resources on the Postdisaster Environment



Source: GAO survey. | GAO-15-515

A related challenge that state and city officials we interviewed discussed stems from the general structure of HMGP funding. Although, outside the recent response to Hurricane Sandy, HMGP is generally the primary vehicle through which the federal government has invested in disaster resilience, state and local officials noted that the (1) amounts, (2) political context, and (3) timing and uncertainty associated with the program can lead to a less coherent approach to reducing overall risk.

In terms of amounts, a senior FEMA official said that when HMGP is awarded for most disasters, the total award is generally not enough to address larger critical infrastructure needs, and as a result, states and localities tend to focus on smaller projects to the exclusion of those that have more potential to reduce their most critical risks. One state official said that localities tend to avoid including those larger needs in hazard mitigation planning, because they did not even think it was feasible to consider addressing them.

State officials also described a delicate political environment in the wake of disasters where decisions about what hazard mitigation projects to fund can be challenging. A senior MitFLG official stated that political pressure can often dictate how and where states and localities spend resilience funding in the wake of a disaster. For example, elected officials can direct the use of disaster resilience funding to one or a few large-scale infrastructure projects or spread the funds throughout the state for

numerous small projects across multiple communities. The official said it has been his experience that the state officials often choose to distribute the funds throughout multiple communities in a way that makes a positive impact on individuals and sometimes communities, but not in a way that necessarily changes the overall risk profile of the state.

Officials in one state we visited described an example where they had initially planned to use HMGP funds for flood control measures in the economic center of a small town that regularly floods—a project they had determined was the best path to enhancing the state’s overall disaster resilience. However, in the wake of the disaster, political considerations trumped their experience and professional judgment, and the funds were used instead to elevate beachfront properties.

Estimating Hazard Mitigation Grant Program Awards

The Federal Emergency Management Agency’s (FEMA) Office of the Chief Financial Officer (OCFO) calculates Hazard Mitigation Grant Program (HMGP) allocations using estimates from FEMA program managers, which reflect expended and projected costs. Pursuant to FEMA’s Hazard Mitigation Assistance Guidance, the OCFO is to provide preliminary estimates to states at the 35-day and 6-month marks post-declaration. At 12 months post-declaration, the OCFO is to provide recipients with a “lock-in” figure, which is the maximum that FEMA can obligate to the state for eligible HMGP activities.

Source: GAO analysis of FEMA documents | GAO-15-515

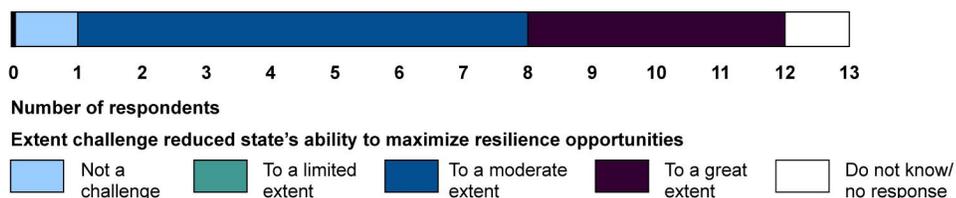
Finally, in terms of timing and uncertainty, officials reported being challenged by the manner in which FEMA estimates and finalizes HMGP awards. Because HMGP, by statute, is awarded as a portion of all other FEMA disaster assistance awarded in association with a given disaster, there is lag and uncertainty in the process of estimating and finalizing awards. States and localities typically receive the final estimate for HMGP awards 12 months after a major disaster declaration, which coincides with the deadline for states to submit their HMGP project applications. Moreover, in the wake of catastrophic disasters like Hurricane Sandy, FEMA’s Office of the Chief Financial Officer is not always able to provide “lock-in” figures at the 12-month mark. FEMA officials stated that in catastrophic disasters, such as Hurricane Sandy, a prolonged focus on projects such as debris removal, emergency protective measures, and providing survivor assistance can delay their capacity to provide estimates of the amount of HMGP funding that is available. In addition, when states are approved for additional PA funding after the 12-month mark, states can request adjustments to the amount of HMGP funding available.

Although states can get approved extensions—something that has happened in 75 percent of recent disasters, according to FEMA officials—state officials still reported challenges with the timing of final estimates. In interviews, state officials said they experienced delays in receiving their final estimates after Hurricane Sandy, and one state reported that it did not receive the final estimate until the summer of 2014. Shown in figure 15, 11 of 13 officials responding to our follow-up survey reported that they

experienced challenges in the ability to plan, develop, or prioritize HMGP project applications prior to knowing how much funding they are going to receive for HMGP projects.³² A senior FEMA official told us that they encourage states to submit HMGP applications early, prior to receiving their lock-in estimates, because localities should have already identified their priority projects through the hazard mitigation planning process.

However, state officials told us that they seek to optimize the projects based on the funds available, which could mean the difference between allocating all the funds to one larger project or deferring that project and allocating to multiple smaller projects depending on the total amount, and this optimization cannot occur when the amounts are unknown before applications are due. In addition, 1 official reported that projects identified in local hazard mitigation plans are generally not developed to the level required for an HMGP application, because few communities have the resources to dedicate to this effort without knowing whether the project will ultimately be funded.

Figure 15: Survey Response to Challenges Associated with the Ability to Develop Hazard Mitigation Grant Program Project Applications prior to Receiving Final Estimate of Available Funding



Source: GAO survey. | GAO-15-515

Fragmentation across Federal Funding Streams

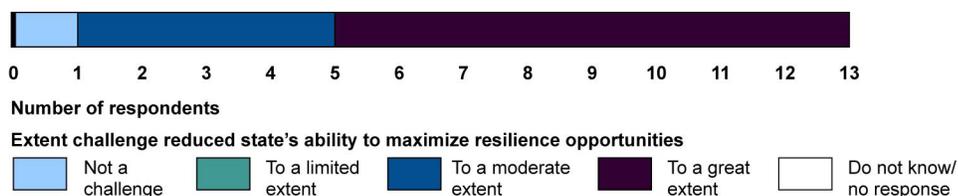
When disaster resilience funds, such as in the Sandy Supplemental, are appropriated in response to catastrophic events, multiple federal departments and programs share responsibility for enhancing disaster resilience during recovery efforts, and the risk of fragmentation across the multiple funding streams increases.³³ As a result of the postdisaster

³²One respondent said they did not know whether this was a challenge, and one said it was not a challenge.

³³We have defined fragmentation as those circumstances in which more than one federal agency is involved in the same broad area of national need and opportunities exist to improve service delivery. See, for example, GAO, *2015 Annual Report: Additional Opportunities to Reduce Fragmentation, Overlap, and Duplication and Achieve Other Financial Benefits*, [GAO-15-404SP](#) (Washington, D.C.: April 14, 2015).

response, different programs are initiated at different points in the wake of the disaster, making it more difficult for state and local officials to plan to use federal funds in a way that comprehensively addresses overall risk reduction. For example, states become eligible for PA once the President grants the state a major disaster declaration, but HUD CDBG-DR funds become available only if Congress makes a special appropriation as a result of a catastrophic disaster, such as Hurricane Sandy. More specifically, following Hurricane Sandy, FEMA Public Assistance funding became available to most states within days to weeks, while HUD CDBG-DR funding was not available for several months, because the Sandy Supplemental was enacted 3 months after the storm occurred. In addition, other funds that can be used for disaster resilience—related construction, such as FTA’s Emergency Relief Program, were appropriated in the Sandy Supplemental and could be obligated only after FTA was able to publish regulations governing the use of the funds because it was standing up a newly created program. In response to our follow up survey, 12 of 13 states and cities reported that navigating the multiple funding streams and various regulations is a challenge that affected their ability to maximize disaster resilience opportunities, shown in figure 16.

Figure 16: Survey Response to Challenges Associated with the Effects of Multiple Sets of Time Frames, Regulations, and Application Procedures across Different Federal Programs

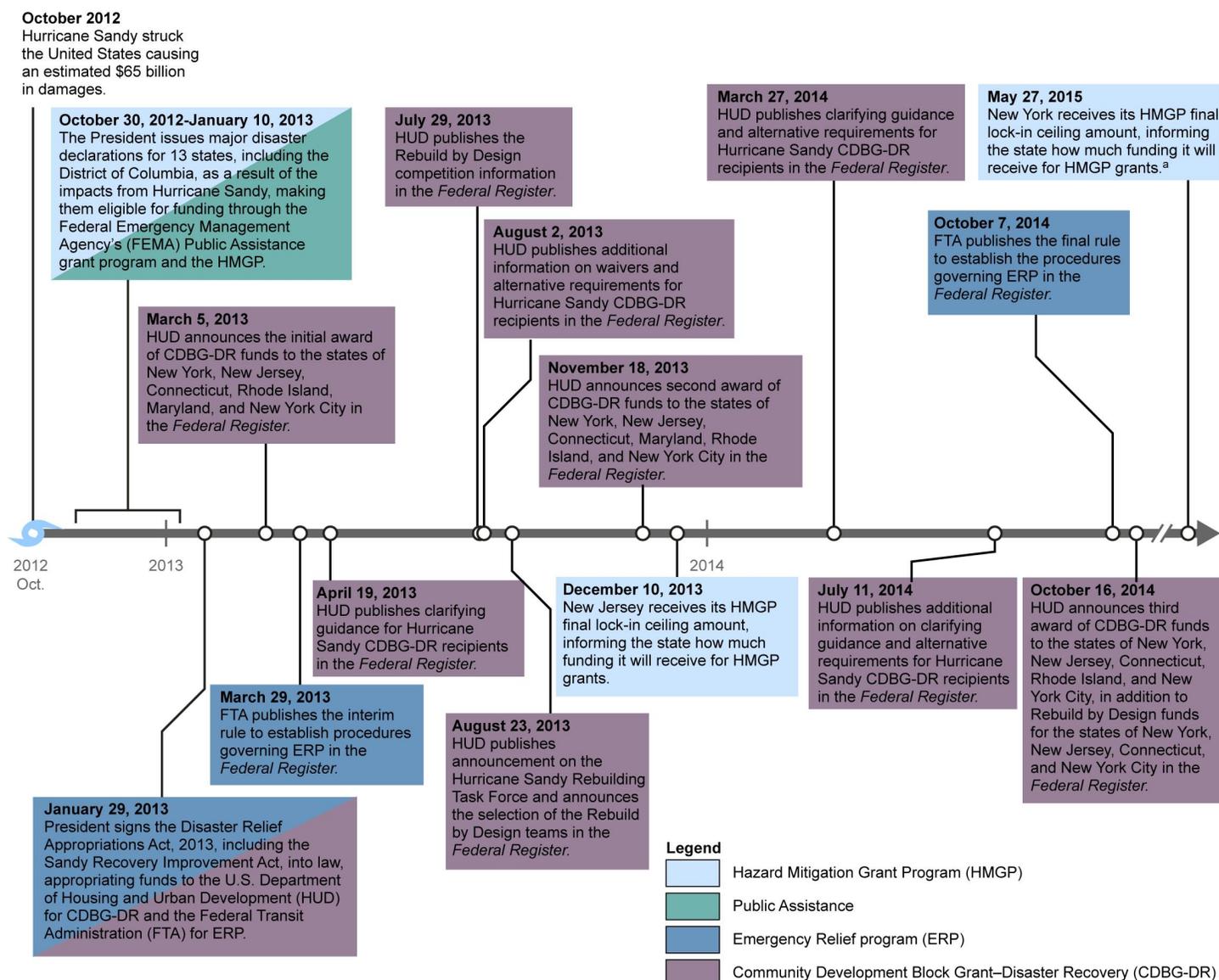


Source: GAO survey. | GAO-15-515

State officials we interviewed said there is no focal point in their state with the time, responsibility, and authority to ensure a holistic approach to reducing risk and increasing disaster resilience. Although state hazard mitigation plans are to identify funding sources to pursue disaster resilience, we found variation in the extent to which these plans actively identified multiple funding streams. In addition, especially in the wake of a large disaster like Sandy, State Hazard Mitigation Officers do not always have visibility over all federal funding streams available for hazard mitigation. For example, all of the 13 State Hazard Mitigation Officers we interviewed said that they had little or no involvement with coordinating hazard mitigation activities with FTA’s ERP and most had minimal

visibility over CDBG-DR disaster resilience-related projects, apart from the program's ability to be used to cover the required applicant's share of HMGP and PA projects. Figure 17 illustrates the multiple timeframes and program regulations that confronted state officials in the wake of Hurricane Sandy.

Figure 17: Time Frames for Program Initiation and Funding Availability Resulting from Major Disaster Declarations and the Sandy Supplemental



Source: GAO analysis and Federal Register; National Oceanic and Atmospheric Administration (clip art). | GAO-15-515

^aAt the request of the state of New York, FEMA recalculated the HMGP final lock in amount and provided the state an updated ceiling of approximately \$1.38 billion in May 2015.

With the multiple rules, regulations, and timelines, state officials responsible for enhancing disaster resilience who we interviewed reported that it is difficult to navigate and leverage the multiple programs available during recovery efforts. As illustrated by figure 18, 11 of the 13 states and cities that responded to our survey reported that the timeliness, availability, or usefulness of the federal government’s guidance about what type of federal assistance is available after a disaster, and how it can be used to most effectively pursue disaster resilience, was a challenge that reduced their state’s ability to maximize resilience opportunities. For example, one state official who responded to our survey said that key stakeholders, including state and local officials and representatives from other federal disaster recovery programs, were not adequately represented in discussions that occur at FEMA joint field offices and disaster recovery centers, which are often the state’s focal point for guidance during the recovery effort. Other officials stated that the available guidance could be variously incomplete, overwhelming, contradictory, or require numerous clarifications. For example, officials in 1 state interpreted guidance to mean that moving critical infrastructure out of the floodplain was an activity eligible for PA funding, but they were later told by FEMA officials that the guidance did not apply to their specific circumstance. Officials in another state said that agency guidance sometimes seemed inconsistent with applicable portions of the Code of Federal Regulations.

Figure 18: Survey Response to Challenges Associated with the Timeliness, Availability, and Usefulness of the Federal Government’s Guidance

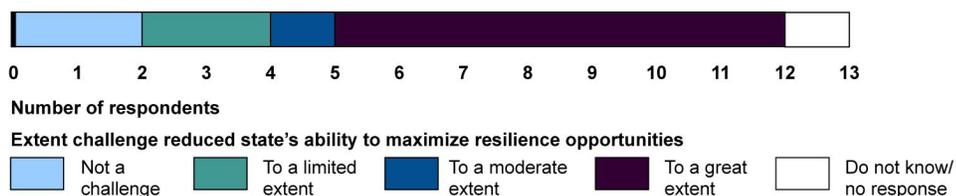


Source: GAO survey. | GAO-15-515

The multiple federal regulations, if they are not harmonized, can also create inefficiency or the appearance of inefficiency for the states and localities. For example, officials from 10 of the 13 states and cities cited

challenges due to inefficiencies in the implementation of environmental planning and historic preservation (EHP) reviews that prolonged work on projects, shown in figure 19.³⁴ EHP reviews are required for many disaster recovery projects that receive federal funding, because of requirements that the agencies comply with certain federal environmental protection laws including the National Environmental Policy Act.³⁵ State officials told us that these reviews were often time- and resource-consuming, which could dissuade individuals from pursuing hazard mitigation projects. For example, one state official said that managers of a marina damaged by Sandy chose not to pursue PA funding because of concerns that the required EHP review would delay the project's completion and potentially prevent the marina from reopening in time for the following season. In addition, officials said that FEMA's EHP reviews were sometimes redundant, with similar reviews required by other federal or state agencies. For example, both FEMA and HUD require an EHP review, which in some cases could result in a duplication of requirements.

Figure 19: Survey Response to Challenges Associated with Inefficiencies in the Implementation of Environmental and Historic Preservation Reviews



Source: GAO survey. | GAO-15-515

SRIA amended the Stafford Act and required the President to establish an expedited and unified interagency review process to ensure compliance with environmental and historic preservation requirements under federal law relating to disaster recovery projects in order to

³⁴One respondent said they did not know whether this was a challenge, and two said it was not a challenge.

³⁵Under the National Environmental Policy Act (NEPA), all federal agencies generally are to evaluate the potential environmental effects of actions they propose to carry out, fund, or approve (e.g., by permit). 42 U.S.C. § 4321-4347. Before FEMA can fund or implement an action that may affect the environment, agency decision makers must study the potential impacts that the proposed action and alternatives will have on the human and natural environment, and make that information available to the public.

expedite the recovery process.³⁶ As a result, a steering group led, in part, by FEMA and consisting of federal partners in emergency management, environmental quality, and historic preservation was established to develop and implement a more efficient process for federal EHP reviews for disaster recovery projects. In addition, according to HUD officials, while the Unified Federal Review process is underway, a Sandy-specific team—the Federal Sandy Infrastructure Permitting and Review Team—has been established to facilitate coordinated review and permitting of the certain infrastructure projects, as recommended in the Hurricane Sandy Rebuilding Strategy.

In response, through the Unified Federal Review process, 11 federal agencies that perform environmental and historic preservation reviews during disaster recovery entered into a memorandum of understanding to coordinate their independent review processes in an attempt to expedite decision making and implementation of recovery projects. The Unified Federal Review Process was established and effective on July 29, 2014 through the *Memorandum of Understanding Establishing the United Federal Environmental and Historic Preservation Review Process*. It is too soon to evaluate the extent to which the Unified Federal Review, as implemented, has resulted in harmonized and streamlined review requirements for applicants.

In keeping with the Unified Federal Review agreement, FEMA's 2015 *Hazard Mitigation Assistance Guidance* specifies that the agency can accept EHP documentation from other federal agencies if the documentation addresses the scope of the FEMA-approved activity and FEMA verifies that it meets FEMA's EHP compliance requirements. In addition, according to a FEMA official there are multiple complicating factors that could affect applicants undergoing EHP review; however, the official stated that the vast majority of FEMA projects—when the environmental planning and historic preservation review process is begun early during project planning—are not delayed. Moreover, a senior FEMA official responsible for EHP compliance noted that during EHP reviews the act of considering various alternatives can actually result in solutions that promote greater disaster resilience.

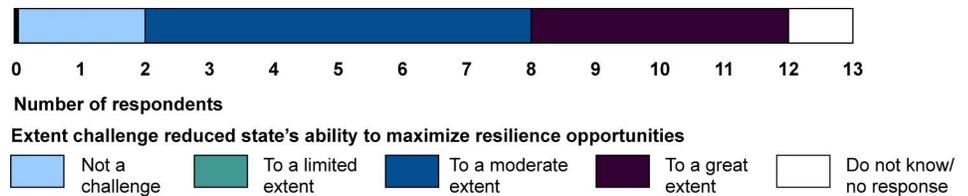
³⁶42 U.S.C. § 5189g.

State Disaster Resilience-Building Efforts Are Dependent on Local Capacity and Participation, Which Can Present Challenges

Although states are usually the grant recipients for PA, HMGP, and CDBG, local partners or federally-recognized Indian tribes often plan and execute the projects these grants fund. Although state officials we interviewed reported widespread support for disaster resilience investment, they also reported some challenges with capacity and willingness at the local level.

Illustrated in figure 20, 10 of 13 states and cities responding to our follow up survey said that the capacity of localities to access or manage federal funds for hazard mitigation was a challenge.³⁷ In some cases localities do not have full-time staff dedicated to disaster resilience-related activities, and may have difficulty keeping hazard mitigation plans current, making grant applications, or monitoring and reporting on compliance with multiple grant requirements. For example, 11 of 13 respondents to our follow-up survey reported that local applicants may have difficulty collecting the information required to complete FEMA’s Benefit Cost Analysis Tool for their PA or HMGP applications, as shown in figure 21.³⁸ Officials in 1 state said that the amount of documentation required for the benefit cost analysis limited the number of project applications the state was able to submit.

Figure 20: Survey Response to Challenges Associated with the Capacity of Localities to Access or Manage Federal Funds

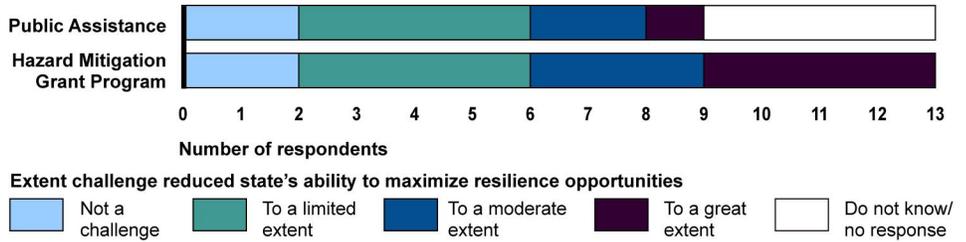


Source: GAO survey. | GAO-15-515

³⁷One respondent said they did not know whether this was a challenge, and two said it was not a challenge.

³⁸Eight respondents said that applicants’ ability to collect information needed to complete the benefit cost analysis for PA applications was a challenge, and one of these respondents did not know or respond to the extent this challenge reduced the state’s ability to maximize resilience opportunities. Three respondents said they did not know whether this was a challenge. Two respondents said it was not a challenge. Eleven respondents said that applicants’ ability to collect information needed to complete the benefit cost analysis for HMGP applications was a challenge, and two said it was not a challenge.

Figure 21: Survey Response to Challenges Associated with Local Applicants' Difficulty Collecting Information Required to Complete Federal Emergency Management Agency's Benefit Cost Analysis Tool for Public Assistance or Hazard Mitigation Grant Program Applications



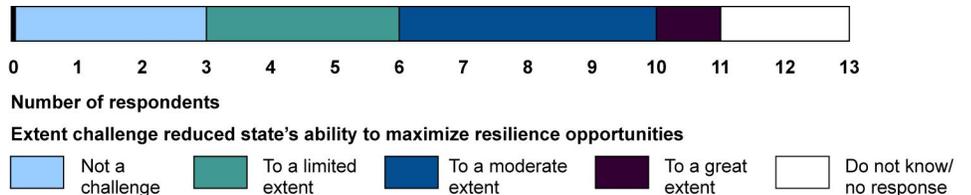
Source: GAO survey. | GAO-15-515

Note: One respondent said local applicants' difficulty collecting information required to complete FEMA's Benefit Cost Analysis tool for FEMA's Public Assistance was a challenge but did not know or respond to the extent this challenge reduced the state's ability to maximize resilience opportunities.

In addition, some officials reported that localities or individual businesses or homeowners were not willing to pursue hazard mitigation opportunities because of competing concerns. For example, some communities may be hesitant to pursue acquisition activities, which result in permanently replacing homes or businesses with open space, because of the potential to diminish the tax base or limit future economic development opportunities. In our follow-up survey, 8 of 13 respondents said that the willingness of individuals to pursue hazard mitigation opportunities presented a challenge to their ability to maximize disaster resilience, as demonstrated in figure 22.³⁹ In other cases, home or business owners in communities with high flood risk may be unwilling to relocate.

³⁹Two respondents said they did not know whether this was a challenge, and three said it was not a challenge.

Figure 22: Survey Response to Challenges Associated with the Willingness of Individuals to Take Advantage of Federal Funding to Pursue Hazard Mitigation Opportunities



Source: GAO survey. | GAO-15-515

Alternatively, individuals may have been willing, but not able, to pursue hazard mitigation activities. More specifically, officials from 10 of the 13 states and cities said they experienced challenges due to the lack of ability of individual businesses or homeowners to take advantage of federal funding for acquisitions or elevations, as shown in figure 23.⁴⁰ For example, individuals may not have access to the financial resources needed to cover the remaining costs of these projects, or they may be faced with a choice between completing necessary repair work immediately (thereby forgoing hazard mitigation measures) or continuing to incur displacement costs while waiting to complete the steps required to receive federal funding to pursue hazard mitigation.

Figure 23: Survey Response to Challenges Associated with the Ability of Individuals to Take Advantage of Federal Funding to Pursue Hazard Mitigation Opportunities



Source: GAO survey. | GAO-15-515

Note: One respondent said the ability of individuals to pursue hazard mitigation opportunities was a challenge but did not know or respond to the extent this challenge reduced the state's ability to maximize resilience opportunities.

⁴⁰Three respondents said they did not know whether this was a challenge. One respondent said that this was a challenge but did not know or respond to the extent to which this challenge reduced the state's ability to maximize resilience opportunities.

Federal agencies have limited ability to address community and local participation. However, the program implementation challenges discussed above may serve to exacerbate any reluctance at the local level. For example, challenges related to the complexity of hazard mitigation planning or that increase the lag time or complexity of grant applications may feed the perception that the costs of participation outweigh the benefits. Conversely, actions that help to streamline processes and reduce workloads can positively affect local participation.

A Comprehensive Federal Investment Strategy Could Enhance Disaster Resilience and Reduce Fiscal Exposure

The President and Congress have taken multiple steps to enhance the federal government's focus on disaster resilience, including issuing new EOs and presidential policy directives (PPD), and enacting SRIA. As we have previously concluded, complex interagency and intergovernmental efforts—such as the federal government's focus on enhancing the nation's disaster resilience—can benefit from a national strategy. The issuance of EOs and PPDs in the aftermath of Hurricane Sandy demonstrates the federal government's focus on disaster resilience, linking hazard mitigation and recovery to break the cycle of damage-repair-damage. For example, the President signed EO 13632 on December 7, 2012 creating the Hurricane Sandy Rebuilding Task Force and charged the task force with developing the Hurricane Sandy Rebuilding Strategy.⁴¹ It also charged the task force with taking into account existing and future risks and promoting the long-term sustainability of communities and ecosystems in the Sandy-affected region. In addition, the EO on Sandy rebuilding called for the federal government to:

1. remove obstacles to resilient rebuilding in a manner that addresses existing and future risks and vulnerabilities and promotes long-term sustainability of communities,
2. plan for the rebuilding of critical infrastructure damaged by Hurricane Sandy in a manner that increases community and regional resilience in responding to future impacts, and
3. identify resources and authorities that can contribute to strengthening community and regional resilience as critical infrastructure is rebuilt.

⁴¹Exec. Order No. 13,632, 77 Fed. Reg. 74,341 (Dec. 14, 2012).

Further, in 2013, the President issued an EO titled *Preparing the United States for the Impacts of Climate Change* (EO 13653)⁴² and a PPD titled *Critical Infrastructure Security and Resilience* (PPD-21), both calling for the nation to manage risks in a way that makes the United States more resilient in the future. The President also issued a Climate Action Plan to improve the nation's resilience to flooding and better prepare the nation for the impacts of climate change. The plan directs federal agencies to take appropriate actions to reduce risk to federal investments, specifically to "update their flood-risk reduction standards." In January 2015, to further the Climate Action Plan, the President released EO 13690, *Establishing a Federal Flood Risk Management Standard*.⁴³ The standard requires all future federal investments in, and affecting, floodplains to meet a certain elevation level, as established by the standard. Such agency actions include those in which federal funds are being used to build new structures and facilities, or to rebuild those that have been damaged.⁴⁴ The new flood risk standard builds on work done by the Hurricane Sandy Rebuilding Task Force, which announced in April 2013 that all Sandy-related rebuilding projects funded by the Sandy Supplemental must meet a consistent flood risk reduction standard.

In addition, Congress passed and the President signed SRIA. The law authorized several changes to the way FEMA may deliver federal disaster assistance. For example, it authorizes FEMA to use expedited procedures in HMGP.⁴⁵ As a result, FEMA has issued guidance for streamlining the program and is planning actions to continue to refine the changes and measure their effectiveness. SRIA also allows FEMA to provide up to 25 percent of the estimated costs for eligible hazard mitigation measures to a state or tribal grantee before eligible costs are incurred.⁴⁶

⁴²Exec. Order No. 13,653, 78 Fed. Reg. 66,819 (Nov. 6, 2013).

⁴³Exec. Order No. 13,690, 80 Fed. Reg. 6425 (Feb. 4, 2014).

⁴⁴The standard provides three approaches that federal agencies can now use to establish the flood elevation and hazard area for consideration in their decision making: (1) climate-informed science approach, (2) adding 2-3 feet of elevation to the 100-year floodplain, and (3) using the 500-year floodplain.

⁴⁵42 U.S.C. § 5170c(d).

⁴⁶42 U.S.C. § 5170c(e).

In addition, the Hurricane Sandy Rebuilding Strategy—as a result of EO 13632—recognized the need to institutionalize regional approaches to resilient planning and coordinate Sandy recovery infrastructure resilience projects. More specifically, one of the recommendations stated that MitFLG should institutionalize regional approaches to disaster resilience planning in the NDRF and NMF. In addition, federal agencies have taken a variety of actions to enhance regional resilience—particularly as they implemented select Hurricane Sandy Rebuilding Strategy recommendations aimed at enhancing the Sandy-affected region’s disaster resilience. The Hurricane Sandy Task Force recommendations related to disaster resilience and a brief status update for each recommendation are included in appendix II.

As a result of the recommendations, the Sandy task force developed its Resilience Guidelines in the spring and summer of 2013. The guidelines are intended to ensure that federal agencies have a consistent approach to enhancing disaster resilience and to improve decision making to ensure wise investments by establishing criteria for those investments. The Task Force found that the main challenges involved complex interagency issues that called for a more streamlined approach to prioritizing the myriad of guidance, executive orders, frameworks, and plans related to disaster resilience.

We have previously concluded that complex interagency and intergovernmental efforts can benefit from a national strategy. In 2004, we identified elements of an effective national strategy including: (1) identifying the purpose, scope, and particular national problems the strategy is directed toward; (2) establishing goals, priorities, milestones, and performance measures; (3) defining costs, benefits, and resource and investment needs; (4) delineating roles and responsibilities; and (5) integrating and articulating the relationship with related strategies’ goals, objectives, and activities.⁴⁷

The NMF, by articulating a vision where the nation shares a culture of resilience and describing the national capabilities required to focus on disaster risk and resilience in everyday activities, to some extent serves as such a strategy in that it has begun to address purpose, scope, and

⁴⁷GAO, *Combating Terrorism: Evaluation of Selected Characteristics in National Strategies Related to Terrorism*, [GAO-04-408T](#) (Washington, D.C.: Feb. 3, 2004).

responsibilities. Although the current framework—the first-ever version—may evolve in future updates to reflect the more expansive and nuanced understandings that come from sustained attention to an issue and lessons learned from recent and future events, it already serves the highest-level functions of an effective national strategy. What the nation lacks and the framework does not significantly address, however, is information; direction; and guidance for costs, benefits, and investments needed to ensure that the nation is prioritizing federal resources in the most effective and efficient manner possible.

As previously described, states' and localities' experiences with the Hurricane Sandy recovery demonstrate that the fragmentation and the postdisaster emphasis inherent in the current approach to disaster resilience investment can create obstacles to most effectively marshaling resources toward the goal of overall risk reduction. In interviews, senior officials at FEMA and HUD who provide MitFLG leadership acknowledged that the current approach does not lead to the most efficient or effective disaster resilience investments. As one of these officials put it, the federal government's current investments aimed at enhancing the nation's disaster resilience—for instance, projects such as home acquisitions and elevations—have benefited individuals and, often, communities, but may not have effectively reduced states' overall risk profiles. The official stated that there are better investments that could be made, bringing into question whether the federal government is getting the most effective return on its disaster resilience investments.

Findings of the Sandy Task Force Report also align with some of the challenges states and city officials reported experiencing. For example, Sandy Task Force Infrastructure Resilience Guidelines found that there is significant overlap among various sets of guidelines, and, apart from regulatory requirements and agency mission, which take primacy, there is no guidance on prioritizing or differentiating across these sets of guidelines.⁴⁸ Further, the guidelines also found that relief from regulatory and administrative processes may help communities recover and rebuild more quickly; however, the guidelines also warned that relief from these processes may contribute to decisions that are not aligned with resilience

⁴⁸The Infrastructure Resilience Guidelines are intended to encourage the adoption of clear and consistent standards to guide resilient rebuilding—such as using science-based analysis when selecting, prioritizing, implementing, and maintaining infrastructure investments.

principles, because, for example, immediate needs following a disaster are prioritized over long-term goals—a condition that relates to challenges states and cities experience with both the general postdisaster emphasis and the inherent fragmentation in the postcatastrophe environment.

Although there are benefits to investing in disaster-resilience in a postdisaster environment, there are challenges and tradeoffs that may limit effective risk reduction. According to MitFLG officials, the federal government may not have focused enough attention on pre-disaster hazard mitigation. A study endorsed by the American Society of Civil Engineers, the Association of State Flood Plain Managers, the National Emergency Management Association, and the International Code Council, among others, found that investing resources and capital to prevent harm before it occurs is a rational and logical course of action; however, social, political, and economic realities tend to drive public choice away from investments that attempt to eliminate or minimize disasters' impacts before they occur.⁴⁹ More comprehensive considerations afforded to the balance of pre- and postdisaster investments could help ensure better returns on investments designed to limit federal fiscal exposures by buying down risk.

Moreover, information about the benefits of various types of investments and the context in which they are made—information that could guide decision makers at every level of government and in the private sector—is largely not available. Conducting a comprehensive study to assess the cost-benefit trade-offs and return on investment of hazard mitigation activities would require substantial investment and expertise. FEMA has developed a modeling methodology to assess the performance of flood mitigation projects—loss avoidance studies—drawing on experience with flood programs in actual postproject hazard events. However, modeling the difference between losses with and without hazard mitigation measures presents challenges, in part because of the lack of concrete data to inform assumptions that underpin the models. Another challenge is that savings depend on two highly uncertain variables—(1) the frequency and severity of future disasters affecting the property in which federal investments are made, and (2) the extent to which the federal

⁴⁹White paper funded through a cooperative agreement between the National Emergency Management Association and FEMA, *Recommendations for an Effective National Mitigation Effort: Building Stronger Partnerships, Increased Resilience, and Disaster Resistance for a Safer Nation*, (July, 9, 2009).

government will bear the costs to recover from those disasters. However, multiple catastrophic events over the last decade—including Hurricanes Katrina, Rita, Wilma, Ike and Sandy—have resulted in the federal government bearing anywhere from 75 to 100 percent of the total recovery costs for FEMA eligible projects across 18 states.

The return on investment of hazard mitigation also depends on the nature of the specific activities and their impact on the affected property and thus varies on a project-by-project basis. A 2005 Multihazard Mitigation Council study attempted to quantify the future savings (in terms of losses avoided) from hazard mitigation activities related to earthquake, wind, and flood funded through three major FEMA natural hazard mitigation grant programs—the Hazard Mitigation Grant Program, Project Impact, and the Flood Mitigation Assistance Program.⁵⁰ The study results indicated that the natural hazard mitigation activities funded by the three FEMA grant programs between 1993 and 2003 were cost-effective and reduced future losses from earthquake, wind, and flood events by \$4 for every dollar of investment. This figure has been cited in congressional hearings and other arenas to describe the benefits of hazard mitigation; however, it is dated and generalizes the benefit to all disasters based on a relatively narrow set of disaster-loss data.

In recent months, leaders and experts from multiple sectors—including a former FEMA director and representatives from the insurance industry—have called for a more strategic approach to making disaster resilience investments. Without a comprehensive strategic approach to help Congress and federal agencies that implement disaster resilience-related programs prioritize, align, and guide federal investments, the federal government’s approach has been largely reactionary and fragmented. Further, the lack of a strategic approach increases the risk that the federal government and its nonfederal partners will experience lower returns on investments or lost opportunities to effectively mitigate critical lifelines against known threats and hazards. It also ignores the question of what the right balance of federal and nonfederal investment should be and whether incentives within the various statutes, regulations, and program policies are appropriately aligned to encourage that balance. Moreover, because states may rely on postdisaster federal funds to mitigate future

⁵⁰Multihazard Mitigation Council, a council of the National Institute of Building Sciences, *Natural Hazard Mitigation Saves: An Independent Study to Assess the Future Savings from Mitigation Activities*, (Washington, D.C.: 2005).

risks, states may not be incentivized to dedicate resources to comprehensively address their overall risk profiles prior to a disaster occurring.

An investment strategy to complement the *National Mitigation Framework* could help provide a more comprehensive and complete national strategy to help ensure that the federal government is receiving the most beneficial return on its disaster resilience funding activities. In particular, an investment strategy would help to ensure that federal funds expended to enhance disaster resilience achieve as effectively and efficiently as possible the goal of reducing the nation's fiscal exposure as a result of climate change and the rise in the number of federal major disaster declarations. For example, an investment strategy could:

- identify the most critical components of disaster resilience, such as critical infrastructure, to help target financial resources in a way that would protect those components from future disasters;
- identify and oversee an approach to developing the information required to more effectively and accurately determine which, and under what circumstances, investments in disaster resilience reduce overall risk, and in turn reduce federal fiscal exposures to disasters;
- describe the appropriate balance of federal and nonfederal investment and help to identify how policymakers and program implementers should structure incentives to help reach this balance; and
- consider the current balance between pre- and postdisaster resource allocation and advise the President and Congress on the benefits and challenges of the current balance, including whether the nation should seek to take a more proactive position in funding and encouraging pre-disaster mitigation activities.

A senior MitFLG official told us that executive-level leadership with decision-making power is necessary for MitFLG to be able to effect change. This is particularly important when multiple agencies are responsible for managing fragmented federal efforts, such as the nation's efforts to enhance its overall disaster resilience. An investment strategy that complements the NMF could help support the ongoing leadership from the executive and legislative branches by identifying what new or amended federal policies, regulations, and laws are required to enhance the nation's disaster resilience in the most efficient and effective way possible.

Conclusions

From fiscal years 2004 to 2013, FEMA obligated over \$95 billion in federal assistance for disaster recovery for presidentially declared major disasters during that period, and the number of major disaster declarations has increased significantly in recent decades. In the wake of Hurricane Sandy, the federal government has demonstrated increased focus on disaster resilience as a mechanism to limit the nation's fiscal exposure to future disasters and has taken steps to improve states' abilities to use federal disaster recovery funding to incorporate resilient rebuilding into recovery. However, state and local officials have still experienced challenges enhancing their states' overall disaster resilience when using federal funds through FEMA's Public Assistance and Hazard Mitigation Grant Programs.

During the Sandy recovery, states and localities were in some cases constrained in their ability to pursue hazard mitigation activities using FEMA PA and HMGP funding streams. State and city officials we interviewed and surveyed reported experiencing several challenges in the implementation of FEMA's PA and HMGP, including the complexities of the hazard mitigation planning process, FEMA PA and HMGP staff turnover, limitations on eligibility, and lack of FEMA support for PA mitigation during project formulation. In addition, officials reported being challenged by the manner in which HMGP estimates and final awards were determined, specifically, the timing of the final estimate of HMGP awards in tandem with the HMGP project application deadline. These challenges could result in missed opportunities to improve states' disaster resilience when providing federal funding for that purpose. Further, such challenges may inhibit the federal government's efforts to reduce vulnerabilities and integrate hazard mitigation into disaster recovery and its ability to meet risk reduction goals established in the NDRF and *National Mitigation Framework*. Assessing the challenges state and local officials reported, including the extent to which the challenges can be addressed and corrective actions can be implemented, as needed, may help ensure that FEMA's hazard mitigation priorities are effectively reflected in implementation of the agency's PA and HMGP programs.

Although federal efforts helped to improve the nation's disaster resilience during the recovery from Hurricane Sandy, a comprehensive federal strategy to prioritize and guide federal investments intended to enhance the nation's overall disaster resilience has not been developed. The federal government primarily funds disaster resilience projects in the wake of disasters—when damages have already occurred and opportunities to pursue hazard mitigation may conflict with the desire for the immediate restoration of critical infrastructure. As the federal

government's fiscal exposure continues to be threatened by extreme weather, the increase in the number of major disaster declarations, and—according to some state officials—states' reliance on the federal government to fund most of the costs associated with disaster response and recovery, it is critical that the federal government ensures that it is getting the best return on its disaster resilience investments.⁵¹ Also, federal programs that provide disaster resilience funding are fragmented, resulting in challenges to lowering the overall risk profiles of states and enhancing the nation's disaster resilience from future disasters. An investment strategy to identify, prioritize, and guide future federal investments in disaster resilience could result in more effective returns on federal investments and enhance the federal government's capacity to effectively mitigate critical lifelines against known threats and hazards.

Recommendations for Executive Action

To increase states' abilities to improve disaster resilience and mitigate future damage when using federal funding in the wake of disasters, we recommend that the FEMA Administrator take the following action:

Consistent with the goals of the NDRF to integrate hazard mitigation and risk reduction opportunities into all major decisions and reinvestments during the recovery process, FEMA should assess the challenges state and local officials reported, including the extent to which the challenges can be addressed and implement corrective actions, as needed.

To help the federal, state, and local governments plan for and invest in hazard mitigation opportunities to enhance resilience against future disasters, we recommend that the Director of the Mitigation Framework Leadership Group, in coordination with other departments and agencies that are MitFLG members, take the following action:

Supplement the *National Mitigation Framework* by establishing an investment strategy to identify, prioritize, and guide federal investments in disaster resilience and hazard mitigation-related activities and make recommendations to the President and Congress on how the nation should prioritize future disaster resilience investments. Such a strategy could address, among other things, (1) the extent to which current hazard mitigation and disaster resilience

⁵¹GAO, *Budgeting for Disasters: Approaches for Budgeting for Disasters in Selected States*, [GAO-15-424](#) (Washington, D.C.: Mar. 26, 2015).

programs are adequately addressing critical lifelines and critical infrastructure, (2) an approach to identifying information on what disaster resilience and hazard mitigation efforts are most effective against known risks and their potential impacts on the nation's fiscal exposure, (3) the balance of federal and nonfederal investments, and (4) the balance of pre- and postdisaster resilience investments.

Agency Comments and Our Evaluation

We provided a draft of this report to DHS, HUD, DOT, and USACE for their review and comment. DHS provided written comments on July 21, 2015, which are summarized below and reproduced in full in appendix IV. DHS concurred with both of our recommendations and described planned actions to address them. In addition, DHS and HUD provided technical comments, which we incorporated into the report as appropriate. DOT and USACE had no comments on the draft report.

DHS concurred with the first recommendation, that the FEMA Administrator, consistent with the goals of the National Disaster Recovery Framework (NDRF) to integrate hazard mitigation and risk reduction opportunities into all major decisions and reinvestments during the recovery process, assess the challenges state and local officials reported, including the extent to which the challenges can be addressed and implement corrective actions, as needed. DHS stated that FEMA is aware of and acknowledges the challenges state and local officials reported. FEMA is planning to seek input from federal, tribal, state, and local stakeholders as part of its efforts to reengineer the PA program, which they believe will address many of the issues raised in the report. In addition, in accordance with its strategic plan, FEMA is exploring ways to improve risk reduction through the Federal Insurance Mitigation Administration and Recovery mitigation programs, which will focus on three concurrent work streams: (1) policy, regulation, and statute; (2) codes and standards; and (3) operations. For example, FEMA will encourage states, tribes, and localities to adopt and enforce the most current version of the International Building Code and the International Resilience Code. DHS anticipates these efforts, among others, to be complete by December 31, 2016. These actions, if they include an assessment of the challenges identified by state and local officials, could address our recommendation and help ensure that FEMA meets its goal to integrate hazard mitigation into all major decisions and reinvestments during the recovery process.

DHS also concurred with our second recommendation that the Director of MitFLG, who is a FEMA official, in coordination with departments and

agencies that are MitFLG members supplement the *National Mitigation Framework* by establishing an investment strategy to identify, prioritize, and guide federal investments in disaster resilience and hazard mitigation–related activities and make recommendations to the President and Congress on how the nation should prioritize future disaster resilience investments. DHS stated that MitFLG recognizes the benefit of prioritizing federal investments to identify those with the best potential to enhance resilience against future disasters. DHS also stated that although MitFLG does not have the authority to compel other federal agencies to prioritize their funding to achieve a specific goal, it is working with the interagency group on a variety of resilience activities. We recognize that MitFLG does not have the authority to compel other federal

agencies to comply with the recommendations developed as part of the investment strategy. However, we believe creating a strategy that helps guide federal decisions makers across the interagency group—including recommendations to the executive and legislative branches of the federal government on how to best prioritize federal resources aimed at enhancing disaster resilience—would be consistent with MitFLG’s purpose, which is to coordinate mitigation efforts across the federal government. We also believe that as the interagency group established expressly for this purpose, MitFLG is the most appropriate organizational entity to undertake the creation of this strategy.

DHS stated that the Chair of MitFLG will take the following three steps to address the recommendation:

1. brief MitFLG members on our recommendation and FEMA’s response on behalf of MitFLG and call for work group members from the interagency group for support by August 31, 2015;
2. form a working group to develop the scope, coordinate the effort, and develop a draft of the recommendations for MitFLG to consider by September 30, 2016; and,
3. finalize a deliverable through MitFLG review and coordination with the interagency membership by August 30, 2017.

DHS stated that the estimated completion date for implementing this recommendation is September 30, 2017. These actions could address our recommendation and help the nation prioritize federal resources to further enhance national resilience against future disasters. We will continue to monitor the efforts to implement our recommendations.

We will send copies of this report to the Secretaries of Homeland Security, Housing and Urban Development, Defense, Transportation; the FEMA Administrator; and appropriate congressional committees.

If you or your staff have any questions about this report, please contact me at (404) 679-1875 or curriec@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Other key contributors to this report are listed in appendix IV.

A handwritten signature in black ink that reads "Chris P. Currie". The signature is written in a cursive style with a large initial "C".

Chris Currie
Director
Homeland Security and Justice

List of Requesters

The Honorable Ron Johnson
Chairman
The Honorable Thomas R. Carper
Ranking Member
Committee on Homeland Security and Governmental Affairs
United States Senate

The Honorable Michael T. McCaul
Chairman
The Honorable Bennie G. Thompson
Ranking Member
Committee on Homeland Security
House of Representatives

The Honorable Bill Shuster
Chairman
The Honorable Peter A. DeFazio
Ranking Member
Committee on Transportation & Infrastructure
House of Representatives

The Honorable Martha McSally
Chairman
The Honorable Donald M. Payne Jr.
Ranking Member
Subcommittee on Emergency Preparedness, Response, and
Communications
Committee on Homeland Security
House of Representatives

The Honorable Jack Reed
United States Senate

The Honorable Sheldon Whitehouse
United States Senate

The Honorable Susan W. Brooks
House of Representatives

Appendix I: Objectives, Scope, and Methodology

This report examines (1) how states and localities in the Sandy-affected area have used federal funds to help enhance disaster resilience, (2) the extent to which state officials report being able to use federal programs to maximize resilience-building during disaster recovery, and (3) actions the federal government has taken to promote disaster resilience in the recovery effort and what, if any, improvements could be made for future large-scale disasters.

To determine how states and localities used federal funds to enhance disaster resilience during the Hurricane Sandy disaster recovery effort, we reviewed program documentation—such as grant guidance and federal rules—and discussed program purposes with key agency officials to determine whether and how administered programs and activities facilitate community and regional resilience as part of rebuilding. We obtained information on appropriations from the Disaster Relief Appropriations Act, 2013 (Sandy Supplemental), and the information related to the purposes of programs and activities from the Sandy Supplemental and federal agency documents. We focused on describing five federal programs that have the ability to support resilience-building efforts and that are administered by four federal agencies that received 92 percent of the Sandy Supplemental.¹ We collected and analyzed information from the District of Columbia, New York City, and each of the 12 states that had a major disaster declaration about the types of resilience-building projects for which they used federal funds to enhance resilience as part of the Hurricane Sandy recovery effort.² We also reviewed state hazard mitigation plans, local hazard mitigation plans and guidance, and information regarding large-scale state projects from Federal Emergency Management Agency (FEMA) headquarters, FEMA's Sandy Recovery Office, and state officials. During a site visit to New Jersey, 1 of the 2 states that sustained the most damage, we also toured damaged areas and projects in progress to observe and discuss planned resilience-building efforts.

¹The four federal agencies that administer the five program reviewed include the Departments of Housing and Urban Development, Transportation, and Homeland Security and the U.S. Army Corps of Engineers.

²The 12 states were Connecticut, Delaware, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Virginia, and West Virginia. For the purposes of this report, we will refer to states to include Washington, D.C., for a total of 13 states.

To determine to what extent selected state officials reported being able to use federal programs to maximize resilience as part of the Sandy recovery effort we obtained information about the resilience-building efforts from data requests, structured interviews, and a follow-up survey we conducted with State Hazard Mitigation Officers and other knowledgeable officials in the 13 states that received presidential major disaster declarations in the wake of Hurricane Sandy. In seven of the interviews, State Hazard Mitigation Officers were joined by their state counterparts or supervisors in state emergency management departments with responsibility for managing other aspects of recovery efforts. We also administered the structured interview and survey with officials from New York City's Office of Recovery and Resiliency, which administered some streams of relevant federal funds—including FEMA Hazard Mitigation Grant Program (HMGP) and Public Assistance (PA) and the Department of Housing and Urban Development (HUD) Community Development Block Grant-Disaster Recovery (CDBG-DR)—and oversees strategic planning for resilience efforts, the New York Governor's Office of Storm Recovery, which is largely responsible for administering FEMA HMGP and HUD CDBG-DR funds, and the New Jersey Governor's Office of Recovery and Rebuilding, which coordinates the state's recovery effort, including overseeing resilience priorities. In New York and New Jersey the governors' offices collaborated with the state emergency management offices (particularly the State Hazard Mitigation Officers) to complete the survey.

In the data calls, we requested that State Hazard Mitigation Officers, in coordination with other knowledgeable state officials, identify the names of federal and state funding streams that were available for hazard mitigation projects and those that were used for projects during the Sandy recovery. We also requested a comprehensive list, or selected examples, of hazard mitigation projects that their states had planned or underway.

We developed structured interview questions to collect information about officials' experiences using federal funding to enhance resilience in recovering from Hurricane Sandy and other disasters that occurred since 2011, and successes or challenges states have encountered in trying to rebuild resilience. We chose 2011 because the Sandy Supplemental directed these funds to be available for areas most impacted and distressed as a result of Presidentially-declared major disasters from

2011-2013.³ To begin development of the data calls and structured interviews, we had open-ended, unstructured interviews with three State Hazard Mitigation Officers from 3 states outside the Sandy-affected area—Florida, Iowa, and Tennessee—and multiple professional associations about what kind of information was available and about specific terminology within the field. We then pretested the structured interview protocol with State Hazard Mitigation Officers from three Sandy-affected states. We conducted these pretests to ensure the questions were clear and unbiased and that the questionnaire did not place an undue burden on respondents. An independent reviewer within GAO also reviewed a draft of the questionnaire prior to the administration of the interviews. We made appropriate revisions to the content and format of the questionnaire based on the pretests and independent review.

We conducted the structured interviews in-person and via telephone from August 26, 2014 to December 2, 2014. The interviews were primarily conducted in person, with the exception of interviews with officials from 3 states because of scheduling conflicts. On the basis of a content analysis of the information gathered in the structured interviews, we developed close-ended questions for the follow-up survey where we asked officials whether their states experienced specific challenges identified during the interviews, and the extent to which these challenges affected states' ability to maximize federal support for enhancing disaster resilience.

We conducted survey pretests with State Hazard Mitigation Officers from 2 states and governor's office officials from 1 state. An independent reviewer within GAO also reviewed a draft of the questionnaire prior to administration of the survey. We made appropriate revisions to the

³Through the Sandy Supplemental, Congress appropriated \$50.7 billion in disaster relief funding. The funding was reduced by sequestration. Sequestration is an automatic, across-the-board cancellation of budgetary resources. Sequestration was first established in the Balanced Budget and Emergency Deficit Control Act of 1985 (BBEDCA) to enforce discretionary spending limits and control the deficit. This budgetary enforcement mechanism was recently revived by the Budget Control Act of 2011 (BCA), which provided the legal basis for the fiscal year 2013 sequestration. Pub. L. No. 112-25, 125 Stat. 240 (2011). Accordingly, on March 1, 2013—5 months into the fiscal year—the President ordered the sequestration of budgetary resources to achieve \$85.3 billion in reductions across federal government accounts and their subunits, known as programs, projects, and activities (PPA). Because these cuts were to be achieved during the 7 remaining months of the fiscal year, OMB estimated that the effective percentage reductions to fiscal year 2013 spending over that time period were approximately 13 percent for defense programs and 9 percent for nondefense programs.

content and format of the questions based on feedback from the pretests and independent review. The final questionnaire is in appendix III. We sent the survey questionnaire by email in an attached Microsoft Word form that respondents could return electronically after completing it. When we completed the final survey questions and format, we sent the questionnaire with a cover letter on March 4, 2015. On March 13, 2015, we sent a reminder email to everyone who had not responded, attaching an additional copy of the questionnaire. Following this reminder, we conducted follow-up with participants on an individual basis. Completed questionnaires were accepted until April 29, 2015. In all, we received completed questionnaires from officials in 13 states and cities.

We also conducted five follow-up phone calls and one email exchange with officials who responded to our survey. The purpose of these follow-ups was to clarify the answers of respondents in the case of (1) questions that were left blank on the completed questionnaire, (2) multiple responses being chosen for a single question, or (3) responses that indicated that an item listed was not a challenge but also the challenge had reduced their state's ability to maximize resilience opportunities to some extent. We adjusted the responses recorded on these officials' questionnaires to reflect the clarifications made during these phone calls.

Because this was not a sample survey, it has no sampling errors. However, the practical difficulties of conducting any survey may introduce errors, commonly referred to as nonsampling errors. For example, difficulties in interpreting a particular question, sources of information available to respondents, or entering data into a database or analyzing them can introduce unwanted variability into the survey results. We took steps in developing the questionnaire, collecting the data, and analyzing them to minimize such nonsampling errors. For example, we performed pretesting and obtained internal review with independent survey experts. In addition, an independent analyst checked the database used to collect survey responses against the questionnaires completed by survey respondents to ensure that all data were recorded correctly.

The structured interviews and surveys were administered in a selected group of states and are not generalizable to the nation as a whole. However, they represent the entire population of states involved in the recovery from Hurricane Sandy. The states span 4 of 10 FEMA regions and multiple geographic regions of the eastern United States. In interviews and the follow-up survey we discussed the Hurricane Sandy recovery effort, as well as recovery from smaller disasters that occurred since 2011. Accordingly, the results of the interviews and surveys offer

insights into the recent experiences nonfederal users have had when building resilience during disaster recovery. The overall response rate for the surveys is 92 percent.

We compared information we learned from interviews with federal, state, and local officials and from federal documents with the goals stated in the *National Disaster Recovery Framework* (NDRF) and *National Mitigation Framework* (NMF). Specifically, these policies call for the government to integrate hazard mitigation and risk reduction opportunities into all major decisions and reinvestments during the recovery process and to capitalize on opportunities during the recovery process to further reduce vulnerability.

To determine what actions the federal government took to promote resilience in the Hurricane Sandy recovery effort, and what, if any, improvements could be made for future large-scale disasters, we reviewed federal statutes, regulations, executive orders, and federal studies related to hazard mitigation and resilience. These included the Disaster Relief Appropriations Act of 2013 (the Sandy Supplemental),⁴ the Sandy Recovery Improvement Act of 2013 (SRIA),⁵ the President's Executive Order (EO) 13632—Establishing the Hurricane Sandy Rebuilding Task Force,⁶ and the 2013 *Hurricane Sandy Rebuilding Strategy: Stronger Communities, A Resilient Region*. We also analyzed the recommendations of the Hurricane Sandy Task Force report that were intended to help facilitate or remove obstacles to resilience. We obtained information about the status of implementing the recommendations in the task force report from FEMA, HUD and Transportation (DOT) and the U.S. Army Corps of Engineers (USACE) via documents and interviews with officials involved in the Hurricane Sandy recovery. In addition, we obtained information on the status of implementing resilience-building-related provisions of SRIA from FEMA officials. We interviewed officials representing HUD, FEMA, and the interdepartmental Mitigation Framework Leadership Group (MitFLG) to discuss the challenges state officials reported to us and challenges experienced at the federal level. As evidenced by the various recipients of federal appropriations in the Sandy

⁴Pub. L. No. 113-2, div. A, 127 Stat. 4.

⁵Pub. L. No. 113-2, div. B, 127 Stat. 39.

⁶77 Fed. Reg. 74,341 (Dec. 14, 2012).

Supplemental, both disaster recovery and building disaster resilience to reduce the federal fiscal exposure to future disaster losses is a mission that cuts across federal departments. Therefore, we compared the challenges reported by state and federal officials with elements of a national strategy that we have previously recommended to help support such efforts.⁷

We conducted this performance audit from November 2013 to July 2015 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

⁷GAO, *Combating Terrorism: Evaluation of Selected Characteristics in National Strategies Related to Terrorism*, [GAO-04-408T](#) (Washington, D.C.: Feb. 3, 2004).

Appendix II: Status Updates on Selected Recommendations from the Hurricane Sandy Rebuilding Task Force

Executive Order (EO) 13632 on *Establishing the Hurricane Sandy Rebuilding Task Force* established and charged the Hurricane Sandy Rebuilding Task Force with identifying actions that federal agencies can take to enhance resilient rebuilding. The task force developed the Hurricane Sandy Task Force Rebuilding Strategy, which consists of 69 recommendations to federal agencies and working groups. We identified 19 recommendations that had aspects of resilience-rebuilding, as described by EO 13632, and had at least one of the four agencies we chose to review as part of the scope of this report—Department of Transportation (DOT), Federal Emergency Management Agency (FEMA), Department of Housing and Urban Development (HUD), and U.S. Army Corps of Engineers (USACE)—designated as a lead or supporting agency for implementing the recommendation. The table below reflects the status and progress of the implementation of the recommendations, as reported in the Rebuilding Strategy, subsequent progress updates (spring and fall 2014), and interviews with agency officials.

Table 2: Progress of the Recommendations from the Task Force’s Rebuilding Strategy Related to Resilience-Rebuilding

Recommendation	Lead agency(ies)	Supporting agency(ies)	Completion status	Progress [Note A]
Facilitate the incorporation of future risk assessment, such as sea-level rise, into rebuilding efforts with the development of a sea-level rise tool.	Federal Emergency Management Agency (FEMA) United States Army Corps of Engineers (USACE)		Complete	In October 2013, the agencies released an interactive web-based map to estimate the 100-year floodplain boundaries and a sea-level rise calculator to project future 100-year flood elevations.
Create a design competition to develop innovative resilient design solutions that address the Sandy-affected region’s most pressing vulnerabilities.	Department of Housing and Urban Development (HUD)		Complete	In the summer of 2013, HUD launched its Rebuild by Design competition. In June 2014, \$930 million was awarded to six winning proposals and one finalist project. HUD officials estimated that the smaller projects will be completed within 5 years and the larger projects will be completed within 5-8 years.

**Appendix II: Status Updates on Selected
Recommendations from the Hurricane Sandy
Rebuilding Task Force**

Recommendation	Lead agency(ies)	Supporting agency(ies)	Completion status	Progress – [ote A]
Apply Infrastructure Resilience Guidelines to all federal infrastructure investments and projects for Sandy recovery.	Mitigation Framework Leadership Group (MitFLG) Sandy Recovery Office (SRO) [Note B]	Department of Transportation (DOT)	Complete	The task force established an interagency working group that developed the Infrastructure Resilience Guidelines, a set of shared federal guidelines to govern Sandy-related infrastructure investments. These guidelines, according to HUD officials, have been incorporated into notices of funds availability (NOFA), including HUD’s Community Development Block Grants-Disaster Recovery (CDBG-DR) and DOT Competitive Resilience Transit Emergency Relief Program. In addition, DHS is working with the National Planning Framework leads to incorporate language on the guidelines and the concept of investing in infrastructure resilience into the Federal Interagency Operational Plans.
Federal, state, and local agencies should continue to coordinate Sandy recovery infrastructure resilience projects.	HUD Sandy Recovery Office		Complete	The Sandy Regional Infrastructure Resilience Coordination (SRIRC) group was established—according to SRIRC officials—to coordinate long-term recovery, examine gaps in resilience, and determine the funding and resources available from various federal agencies. In doing so, the SRIRC created a database of planned and proposed infrastructure projects in the Sandy region. The SRIRC works in geographic and subject matter Technical Coordination Teams to holistically discuss project scope, recommend resilience opportunities, and assist in the technical reviews of projects. According to SRIRC officials, the SRIRC forms adjunct teams consisting of HUD, FEMA, Environmental Protection Agency, and USACE to discuss issues in combining streams of federal funding and identify other potential implementation challenges.
Institutionalize regional approaches to resilience planning in the National Disaster Recovery Framework and the National Mitigation Framework.	MitFLG		Complete	MitFLG and the Recovery Support Function (RSF) Leadership Group have developed a plan for incorporating regional coordination best practices into Standard Operating Procedures documents, guidance, performance plans, and training for key disaster staff.

**Appendix II: Status Updates on Selected
Recommendations from the Hurricane Sandy
Rebuilding Task Force**

Recommendation	Lead agency(ies)	Supporting agency(ies)	Completion status	Progress [note A]
Establish a Sandy Regional Infrastructure Permitting and Review Team that leverages the Executive Order 13604 framework for Sandy projects.	HUD	FEMA	Complete	The Sandy Regional Infrastructure Permitting and Review Team, within the body of the SRIRC, created standard processes for developing and managing project schedules and is working to draft an integrated project plan template for Sandy projects. According to task force officials, there is strong interest in coordinating hazard mitigation activities between the state and local governments, but they need federal funding.
Leverage the Executive Order 13604 framework to identify opportunities to expedite and improve other types of review processes through programmatic agreement or consultation where appropriate.	Infrastructure Steering Committee	DOT	In progress	In May 2014, the Steering Committee finalized its Implementation Plan for the Presidential Memorandum on Modernizing Infrastructure Permitting, identifying strategies and reforms to reduce permitting times; institutionalize best practices and lessons learned; and modernize federal regulations, policies, procedures, and guidance for the review and permitting of major infrastructure projects. Among these reforms is the expansion of programmatic approaches, similar to the programmatic agreements that FEMA developed with state agencies to satisfy historical preservation compliance responsibilities and significantly accelerate the review process. According to HUD officials, the Department's Regional Coordination Working Group is working to expedite reviews of project work plans and ensure coordination across state agencies. The Sandy Supplemental language allows recipients of HUD's CDBG-DR program to adopt an EHP review conducted by another agency, but recipients of FEMA's grant programs were not able to do so. As of November 2014, a Unified Federal Review process is being developed as a streamlined process to satisfy the EHP review requirements of both agencies to avoid duplication of efforts.

**Appendix II: Status Updates on Selected
Recommendations from the Hurricane Sandy
Rebuilding Task Force**

Recommendation	Lead agency(ies)	Supporting agency(ies)	Completion status	Progress <i>[note A]</i>
Provide technical assistance to states and localities to help optimize Sandy recovery infrastructure funding, share best practices, leverage resources, advance sustainability, and meet the needs of vulnerable communities.	DOT HUD		Complete	DOT developed a Build America Transportation Investment Center to serve as a one-stop shop to provide information on innovative financing strategies for transportation infrastructure projects and, according to DOT officials, required applicants to attend preapplication training webinars on topics such as benefit-cost analyses to ensure accurate and efficient applications. According to HUD officials, HUD provided technical assistance to grantees in New Jersey, New York, and New York City four times per year: twice per year for technical assistance and twice per year for on-site monitoring, which lasts 2 to 3 days. In addition, the agency conducts weekly technical assistance calls with these three grantees. According to HUD officials, the Department also hosts national live technical assistance seminars approximately every 2 years to provide new and prior grantees opportunities to share experiences and lessons learned.
Ensure that Sandy recovery energy investments are resilient.		DOT FEMA HUD	Complete	The task force and the Department of Energy provided technical assistance to New York and New Jersey (NJ) to help them evaluate and develop pilot projects and promote cost effective investments in resilient energy generation and storage. Flagship projects include funding from DOT and HUD for the NJ TransitGrid, NJ Prize Competition, and the New Jersey Energy Resilience Bank. However, according to HUD officials, as of November 2014, the NJ Energy Resilience Bank, which was awarded through the second allocation of CDBG-DR funding, has not yet launched because of unresolved issues with HUD's program income and urgent need rules.

**Appendix II: Status Updates on Selected
Recommendations from the Hurricane Sandy
Rebuilding Task Force**

Recommendation	Lead agency(ies)	Supporting agency(ies)	Completion status	Progress <i>[Note A]</i>
Expedite flow of Sandy transportation funding to needed repairs.	DOT Federal Transit Administration (FTA)	FEMA	Complete	To ensure FEMA and Federal Transit Administration (FTA) did not provide duplication of funding to state and local transit agencies, FEMA and the FTA signed a memorandum of understanding on March 25, 2013. [Note C] FTA worked closely with transit agencies to assess damages, estimate the costs of repairs, and ensure that the design for the repair work improved the resilience of the systems against future storms. In December 2013, FTA released a NOFA making available \$3 billion in competitive grants for resiliency projects in the Sandy-affected region.
Align Sandy transportation funding expenditures with national policy goals.	DOT FTA		Complete	FTA's Competitive Resiliency NOFA emphasized resilience-rebuilding by incorporating language about the Rebuilding Strategy's Flood Risk Reduction Standard and Infrastructure Resilience Guidelines, and required a cost-benefit analysis from applicants for consideration of funding.
Ensure Sandy recovery water infrastructure investments are timely, resilient, sustainable, and effective.	USACE	FEMA HUD	In progress	USACE conducted a North Atlantic Coast Comprehensive Study (NACCS) to develop a flood risk reduction framework; and—according to USACE officials—explore opportunities to integrate strategic coastal investments; and offer hazard mitigation solutions and alternatives to the issue areas identified. USACE reported the results of the NACCS in January 2015. As of November 6, 2013, USACE assessed and identified projects for reducing flood and storm risks. USACE also conducted a performance evaluation study to evaluate the performance of existing projects, determine their effectiveness, and make recommendations for improvements.

**Appendix II: Status Updates on Selected
Recommendations from the Hurricane Sandy
Rebuilding Task Force**

Recommendation	Lead agency(ies)	Supporting agency(ies)	Completion status	Progress <i>[note A]</i>
States and localities should adopt and enforce the most current version of the International Building Code and International Residential Code (collectively, the I-Codes).	MitFLG		In progress	MitFLG established the Building Code Adoption & Enforcement Strategy Workgroup, whose goal is to develop a comprehensive approach and standard mechanisms for federal agencies to encourage and aid state and local communities to adopt the most recent I-Codes. According to a senior HUD official, while the I-Codes are the most broadly accepted nationally and globally, these codes are not government-sponsored or federally required because code enforcement and adoption are state and local roles. According to this official, MitFLG is discussing the pros and cons of incentivizing or requiring these codes, but currently has flexibility only in recommending how to encourage building codes within states and localities.
HUD should expedite future allocations from the remaining CDBG-DR funds for Sandy recovery and other eligible disasters, as well as other allocations (if appropriated) for future disasters. HUD should continue to provide consistent and appropriate standards for the use of CDBG-DR funding. In addition, HUD should encourage grantees to use toolkits and other existing resources to expedite program implementation.	HUD		Complete	HUD officials told us the Department made its initial allocation of CDBG-DR funds in February 2013, 8 days after the Sandy Supplemental was passed. As of September 2014, 93 percent of CDBG-DR funds (\$14 billion) had been allocated. HUD worked to expedite reviews and provided technical assistance, guidance, and meetings to encourage grantees to use toolkits and other resources to expedite program implementation.

**Appendix II: Status Updates on Selected
Recommendations from the Hurricane Sandy
Rebuilding Task Force**

Recommendation	Lead agency(ies)	Supporting agency(ies)	Completion status	Progress [note A]
Require grantees to use CDBG-DR funding to support public and HUD-assisted multifamily housing, as well as subsidized and tax credit-assisted affordable housing with recovery and risk mitigation efforts.	HUD		Complete	HUD's CDBG-DR NOFAs included a model provision that required grantees to identify how they would address hazard mitigation needs of each affected public housing authority (PHA) and multifamily housing. New Jersey, New York City, and Connecticut have committed millions of dollars to assist their respective public housing authorities repair and address hazard mitigation measures to reduce flood risk. The Sandy Supplemental appropriation stipulated that 50 percent of funds had to benefit persons of low- or moderate-income. States are additionally required to target 80 percent of CDBG-DR funds toward the most disaster-impacted counties.
Help identify opportunities for state and local housing programs to leverage funds and create public-private partnerships.	HUD		Complete	On May 6, 2013, HUD, in collaboration with the Opportunity Finance Network and Community Development Financial Institutions (CDFI), released the first-ever master list of CDFIs to connect state and local governments with lenders and available financial resources that can assist in repairs and hazard mitigation activities. According to HUD officials, although this list does not specify the particular activities that each CDFI may support, it allows state and local grantees to identify CDFIs within their geographic area. The index, according to HUD officials, is made available through various partners, including the Opportunity Finance Network, CDFI Fund, and Community Planning and Capacity Building Recovery Support Function (RSF).

**Appendix II: Status Updates on Selected
Recommendations from the Hurricane Sandy
Rebuilding Task Force**

Recommendation	Lead agency(ies)	Supporting agency(ies)	Completion status	Progress ^{Note A}
Improve National Flood Insurance Program (NFIP) policyholder awareness of factors that affect flood risk and insurance rating decisions.	FEMA		In progress	The Homeowner Flood Insurance Affordability Act of 2014 (HFIAA) required FEMA to provide a flood insurance advocate (FIA) to, among other things, educate property owners about individual flood risks; flood mitigation and measures to reduce insurance premium rates; rate map review and amendment processes; and changes in the NFIP as a result of newly enacted laws. As of fall 2014, FEMA conducted listening sessions with key stakeholders to better understand the flood insurance advocates' scope, potential challenges, and best practices for overcoming these challenges.
Encourage increased hazard mitigation activities including elevation in order to protect property against future losses.	FEMA		In progress	The HFIAA required FEMA to establish guidelines for alternative hazard mitigation measures to reduce flood risk to residential buildings that cannot be elevated because of structural characteristics. As of fall 2014, FEMA prioritized hazard mitigation and established work groups to analyze policies and recommend ways to better incentivize hazard mitigation.
Continue to assess actuarial soundness of decreasing premiums based on mitigation activities other than elevation.	FEMA		In progress	The HFIAA required FEMA to establish guidelines that inform property owners of hazard mitigation activities that may affect risk premium rates for flood insurance coverage under the NFIP. As of fall 2014, FEMA prioritized non-elevation-hazard mitigation measures in its 2014-2018 Strategic Plan and hired a contractor to report on the actuarial soundness of lowering premiums for non-elevation-hazard mitigation measures.

Source: GAO Analysis of Hurricane Sandy Task Force recommendations, task force reports on progress, and interviews with agency officials. | GAO-15-515

Note A: AO analysis based on the Rebuilding Strategy (August 2013) and subsequent progress reports (spring and fall 2014), and interviews with relevant agency officials

Note B: The Mitigation Framework Leadership Group (MitFLG) and Sandy Recovery Office (SRO) are interagency bodies led by FEMA officials.

Note C: We previously recommend that the Secretary of Transportation and the Secretary of Homeland Security direct the Administrators of FTA and FEMA to establish specific guidelines to monitor, evaluate, and report the results of collaborative efforts—including their communications program and protocol—for Hurricane Sandy as well as future disasters. See GAO, *Emergency Transportation Relief: Agencies Could Improve Collaboration Begun during Hurricane Sandy Response*, [GAO-14-512](#) (Washington, D.C.: May 28, 2014) for more information.

Appendix III: GAO Follow-Up Questionnaire for State Hazard Mitigation Officers Related to Hurricane Sandy Recovery and Resilience

What You Need to Know About This Survey

The U.S. Government Accountability Office (GAO) is the independent, nonpartisan, investigative arm of the U.S. Congress. GAO is conducting this survey as part of our work in response to a congressional request to review efforts to enhance resilience in the Hurricane Sandy recovery effort.

GAO conducted 16 interviews with State Hazard Mitigation Officers (SHMOs) and other knowledgeable officials in the 13 states that received Presidential Major Disaster Declarations in the wake of Hurricane Sandy. We asked these officials to discuss their experiences using federal funding to enhance resilience in recovering from Hurricane Sandy and other disasters that occurred since 2011. This survey follows up on those discussions to help us learn more about the extent to which challenges identified during the interviews could act as impediments to states' ability to maximize federal support for enhancing disaster resilience.

Who Should Respond

SHMOs and state or city resilience directors should complete this survey. They may also designate someone else who has equivalent or better knowledge about state efforts to enhance disaster resilience. The person completing this survey should feel free to consult others.

How GAO Will Use the Survey Results

GAO will aggregate survey data in our analysis that will be the basis of the report we provide to our congressional requesters. GAO reports are also available to the public. We will generally provide survey responses in summary form in the report. If we discuss individual responses, we will remove all identifying information to protect respondents' anonymity.

How We Define Resilience

Resilience, broadly speaking, is the ability to prepare and plan for, absorb, recover from, and more successfully adapt to actual or potential adverse events. This study focuses on disaster resilience, which is the aspect of resilience where communities, states, and regions take actions designed to reduce the loss of life and property that otherwise would result from the impact of disasters.

Instructions for Completing and Submitting Questionnaire

Please save the file to your computer. Then, to answer questions, either check boxes (e.g.,) by clicking the box or enter written responses in the text boxes (e.g., _____). The boxes will expand to accept your response. Resave your completed questionnaire and send it as an e-mail attachment to Serena Epstein at epsteins@gao.gov.

Please complete the following information:

- Identify your state and agency:
- Choose your position:
 - State Hazard Mitigation Officer

**Appendix III: GAO Follow-Up Questionnaire for
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- Resilience Director
- Other (please specify):

Question 1: Challenges Across Federal Disaster Resilience Programs

A. Did you experience the following challenges while trying to use federal funding to enhance resilience during recovery from disasters since 2011?

B. If yes, to what extent, if at all, did each of the challenges you experienced reduce your state's ability to maximize resilience opportunities?

(Note: Unless otherwise specified, the challenges in Question 1 refer to any source of federal funding that could support resilience building during disaster recovery, e.g., Federal Emergency Management Agency, Federal Transit Administration, Housing and Urban Development, U.S. Army Corps of Engineers, etc.)

Challenge	A. Did you experience this challenge?	B. If yes, extent challenge reduced your state's ability to maximize resilience opportunities.			
		To a limited extent	To a moderate extent	To a great extent	Do not know or no response
a) The timeliness, availability, or usefulness of guidance provided by the federal government about what type of federal assistance is available and how it can be used to most effectively pursue resilience	<input type="checkbox"/> Yes → <input type="checkbox"/> No → <input type="checkbox"/> Do Not Know ↓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) The emphasis of federal resources on the post-disaster environment, rather than proactive pre-disaster approaches	<input type="checkbox"/> Yes → <input type="checkbox"/> No → <input type="checkbox"/> Do Not Know ↓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Inefficiencies in the implementation of Environment and Historic Preservation Reviews have unnecessarily prolonged work on projects	<input type="checkbox"/> Yes → <input type="checkbox"/> No → <input type="checkbox"/> Do Not Know ↓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Effects of multiple sets of timeframes, regulations, and application procedures across different federal programs on your state's ability to take a comprehensive approach to maximizing mitigation opportunities	<input type="checkbox"/> Yes → <input type="checkbox"/> No → <input type="checkbox"/> Do Not Know ↓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Appendix III: GAO Follow-Up Questionnaire for
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Challenge	A. Did you experience this challenge?	B. If yes, extent challenge reduced your state's ability to maximize resilience opportunities.			
		To a limited extent	To a moderate extent	To a great extent	Do not know or no response
e) Other (Please describe):	<input type="checkbox"/> Yes → <input type="checkbox"/> No → <input type="checkbox"/> Do Not Know ↓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
You may use this space to provide any additional comments regarding question 1.					

Please continue to the next page.

Question 2: Challenges at the Local Level

A. Did you experience the following challenges at the local level while seeking to use federal funding to enhance resilience during recovery from disasters since 2011?

B. If yes, to what extent, if at all, did each of the challenges you experienced reduce your state's ability to maximize resilience opportunities?

(Note: Unless otherwise specified, the challenges in Question 2 refer to any source of federal funding that could support resilience building during disaster recovery, e.g., Federal Emergency Management Agency, Federal Transit Administration, Housing and Urban Development, U.S. Army Corps of Engineers, etc.)

Challenge	A. Did you experience this challenge?	B. If yes, extent challenge reduced your state's ability to maximize resilience opportunities.			
		To a limited extent	To a moderate extent	To a great extent	Do not know or no response
a) The capacity of localities to access or manage federal funds in their pursuit of hazard mitigation opportunities	<input type="checkbox"/> Yes → <input type="checkbox"/> No → <input type="checkbox"/> Do Not Know ↓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Appendix III: GAO Follow-Up Questionnaire for
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Challenge	A. Did you experience this challenge?	B. If yes, extent challenge reduced your state's ability to maximize resilience opportunities.			
		To a limited extent	To a moderate extent	To a great extent	Do not know or no response
b) Willingness of localities to pursue some hazard mitigation opportunities because of concerns that it will negatively affect the local economy, for example, acquisitions may diminish the tax base	<input type="checkbox"/> Yes → <input type="checkbox"/> No → <input type="checkbox"/> Do Not Know ↓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Willingness of localities to pursue Public Assistance mitigation projects out of concern that it will delay the restoration of critical lifelines and normal economic activity	<input type="checkbox"/> Yes → <input type="checkbox"/> No → <input type="checkbox"/> Do Not Know ↓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Willingness of individual businesses or homeowners to take advantage of federal funding for acquisitions or elevations that are designed to reduce community risk	<input type="checkbox"/> Yes → <input type="checkbox"/> No → <input type="checkbox"/> Do Not Know ↓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Ability of individual businesses or homeowners to take advantage of federal funding for acquisitions or elevations that are designed to reduce community risk	<input type="checkbox"/> Yes → <input type="checkbox"/> No → <input type="checkbox"/> Do Not Know ↓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Other (Please describe):	<input type="checkbox"/> Yes → <input type="checkbox"/> No → <input type="checkbox"/> Do Not Know ↓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
You may use this space to provide any additional comments regarding question 2.					

Please continue to the next page.

**Appendix III: GAO Follow-Up Questionnaire for
State Hazard Mitigation Officers Related to
Hurricane Sandy Recovery and Resilience**

Question 3: Challenges with FEMA’s Hazard Mitigation Grant Program

A. Did you experience the following challenges while trying to use FEMA’s Hazard Mitigation Grant Program (HMGP) to enhance resilience during recovery from disasters since 2011?

B. If yes, to what extent, if at all, did each of the challenges you experienced reduce your state’s ability to maximize resilience opportunities?

Challenge	A. Did you experience this challenge?	B. If yes, extent challenge reduced your state’s ability to maximize resilience opportunities.			
		To a limited extent	To a moderate extent	To a great extent	Do not know or no response
a) Type of projects eligible for HMGP	<input type="checkbox"/> Yes → <input type="checkbox"/> No → <input type="checkbox"/> Do Not Know →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Turnover of FEMA HMGP staff at joint field offices or recovery offices	<input type="checkbox"/> Yes → <input type="checkbox"/> No → <input type="checkbox"/> Do Not Know →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) The ability to plan, develop, or prioritize HMGP projects before receiving lock-in estimates	<input type="checkbox"/> Yes → <input type="checkbox"/> No → <input type="checkbox"/> Do Not Know →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) The complexity of FEMA’s review process for state or local hazard mitigation plans	<input type="checkbox"/> Yes → <input type="checkbox"/> No → <input type="checkbox"/> Do Not Know →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) FEMA HMGP officials in my region have not applied discretion, under current regulations, in a way that maximizes mitigation opportunities	<input type="checkbox"/> Yes → <input type="checkbox"/> No → <input type="checkbox"/> Do Not Know →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Appendix III: GAO Follow-Up Questionnaire for
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Challenge	A. Did you experience this challenge?	B. If yes, extent challenge reduced your state's ability to maximize resilience opportunities.			
		To a limited extent	To a moderate extent	To a great extent	Do not know or no response
f) Applicants' ability to collect the information needed to complete FEMA's Benefit-Cost Analysis for HMGP project applications	<input type="checkbox"/> Yes → <input type="checkbox"/> No → <input type="checkbox"/> Do Not Know →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) FEMA's Benefit-Cost Analysis tool has not considered all the appropriate benefits of proposed HMGP mitigation projects	<input type="checkbox"/> Yes → <input type="checkbox"/> No → <input type="checkbox"/> Do Not Know →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) Other (Please describe):	<input type="checkbox"/> Yes → <input type="checkbox"/> No → <input type="checkbox"/> Do Not Know →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
You may use this space to provide any additional comments regarding question 3.					

Please continue to the next page.

Question 4: Challenges with FEMA's Public Assistance Program

A. Did you experience the following challenges while trying to use FEMA's Public Assistance Program to enhance resilience during recovery from disasters since 2011?

B. If yes, to what extent, if at all, did each of the challenges you experienced reduce your state's ability to maximize resilience opportunities?

Challenge	A. Did you experience this challenge?	B. If yes, extent challenge reduced your state's ability to maximize resilience opportunities.			
		To a limited extent	To a moderate extent	To a great extent	Do not know or no response

**Appendix III: GAO Follow-Up Questionnaire for
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Challenge	A. Did you experience this challenge?	B. If yes, extent challenge reduced your state's ability to maximize resilience opportunities.			
		To a limited extent	To a moderate extent	To a great extent	Do not know or no response
a) Type of projects eligible for Public Assistance mitigation funding	<input type="checkbox"/> Yes → <input type="checkbox"/> No → <input type="checkbox"/> Do Not Know ↓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Turnover of FEMA Public Assistance staff at joint field offices or recovery offices	<input type="checkbox"/> Yes → <input type="checkbox"/> No → <input type="checkbox"/> Do Not Know ↓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) FEMA officials did not actively identify opportunities to incorporate mitigation into Public Assistance (406) permanent work projects	<input type="checkbox"/> Yes → <input type="checkbox"/> No → <input type="checkbox"/> Do Not Know ↓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) FEMA officials actively discouraged incorporating mitigation activities into Public Assistance (406) permanent work projects	<input type="checkbox"/> Yes → <input type="checkbox"/> No → <input type="checkbox"/> Do Not Know ↓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) FEMA Public Assistance officials in my region have not applied discretion, under current regulations, in a way that maximizes mitigation opportunities	<input type="checkbox"/> Yes → <input type="checkbox"/> No → <input type="checkbox"/> Do Not Know ↓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Applicants' ability to collect the information needed to complete FEMA's Benefit-Cost Analysis for Public Assistance project applications	<input type="checkbox"/> Yes → <input type="checkbox"/> No → <input type="checkbox"/> Do Not Know ↓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Appendix III: GAO Follow-Up Questionnaire for
State Hazard Mitigation Officers Related to
Hurricane Sandy Recovery and Resilience**

Challenge	A. Did you experience this challenge?	B. If yes, extent challenge reduced your state's ability to maximize resilience opportunities.			
		To a limited extent	To a moderate extent	To a great extent	Do not know or no response
g) FEMA's Benefit-Cost Analysis tool has not considered all the appropriate benefits of proposed Public Assistance mitigation projects	<input type="checkbox"/> Yes → <input type="checkbox"/> No → <input type="checkbox"/> Do Not Know →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) Other (Please describe):	<input type="checkbox"/> Yes → <input type="checkbox"/> No → <input type="checkbox"/> Do Not Know →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
You may use this space to provide any additional comments regarding question 4.					

Please continue to the next page.

Question 5: Top Three Challenges

A) Considering the challenges above, use the following table to list the top 3 challenges (with 1 being the most significant) that have reduced your state's ability to maximize resilience opportunities during recovery from disasters since 2011.

Rank	Challenge
	Enter the corresponding number and letter (e.g., 2d) of the challenge from the sections above.
1.	
2.	
3.	

**Appendix III: GAO Follow-Up Questionnaire for
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B) If you have suggestions for how to improve any of the top three challenges that you identified above, please provide them in the space below.

Thank you very much for your assistance.

Appendix IV: Comments from the Department of Homeland Security

U.S. Department of Homeland Security
Washington, DC 20528



**Homeland
Security**

July 21, 2015

Chris P. Currie
Director, Homeland Security and Justice
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Re: Draft Report GAO-15-515, "HURRICANE SANDY: An Investment Strategy Could Help the Federal Government Enhance National Resilience for Future Disasters"

Dear Mr. Currie:

Thank you for the opportunity to review and comment on this draft report. The U.S. Department of Homeland Security (DHS) appreciates the U.S. Government Accountability Office's (GAO) work in planning and conducting its review and issuing this report.

DHS welcomes GAO's recognition that the Federal Emergency Management Agency's (FEMA) Public Assistance (PA) and Hazard Mitigation Grant Programs helped enhance disaster resilience during the Hurricane Sandy Recovery. FEMA is committed to continuing work with its partners and other stakeholders to improve the capacity of people, organizations and systems to adapt to changing conditions and withstand and rapidly recover from disruption due to emergencies.

For example, FEMA is implementing a number of initiatives to improve the efficiency and effectiveness of the PA program. Consistent with DHS Strategic Plan 2014-2018 priorities and the FEMA Strategic Plan 2014-2018¹, the PA program has completed the design phase of a project to reengineer the process by which it delivers its services to ensure it is survivor centric. As part of this initiative, FEMA aims to reevaluate and improve the delivery and implementation of the PA program. The PA reengineering process, which began with diagnostic sharing sessions involving more than 135 stakeholders from FEMA, States, Tribal nations, and local governments, now has a dedicated PA reengineering group charged with executing and testing the newly designed

¹ FEMA STRATEGIC PLAN 2014-2018 (2014), available at <http://www.fema.gov/media-library-data/1405716042966-ed93a8d8c0bab9730350d7178b840793/July18FEMAStratPlanDigital508LowResFINALh.pdf>.

system. The initial testing phase of the reengineered PA Program delivery is planned to begin in the fall of 2015.

The draft report contained two recommendations for executive action, with which the Department concurs. Specifically, GAO recommended that:

Recommendation 1: The FEMA Administrator, consistent with the goals of the National Disaster Recovery Framework (NDRF) to integrate hazard mitigation and risk reduction opportunities into all major decisions and reinvestments during the recovery process, assess the challenges state and local officials reported, including the extent the challenges can be addressed and implement corrective actions, as needed.

Response: Concur. FEMA is aware of and acknowledges many of the challenges state and local officials reported. While FEMA disagrees with the characterization that PA staff discourages mitigation and FEMA provided statistical evidence to the contrary of this characterization, it recognizes that there are ways to improve communication about the Agency's priority to incorporate mitigation into PA projects. FEMA's priority to reengineer the PA Program, which includes seeking input from Federal, Tribal, state, and local stakeholders, will address several of the issues raised in this report including: PA staff turnover; tailored processes and mitigation specialists to handle PA mitigation projects; and improved processes for Environmental and Historic Preservation review.

Additionally, as part of FEMA's Strategic Plan, Strategic Priority 4, Objective 4.2: *Incentivize and facilitate investments to manage current and future risk,*² FEMA is exploring ways to improve risk reduction through the Federal Insurance and Mitigation Administration (FIMA) and Recovery mitigation programs. Through these efforts, FEMA intends to strengthen existing Stafford Act programs; maximize resilient investments in development and rebuilding; and develop comprehensive methodologies to deliver programs more effectively. During the next 18 months, FEMA will focus on three concurrent work streams: (1) policy, regulation, and statute; (2) codes and standards; and (3) operations.

This approach will enable FEMA to more effectively execute its legal authorities, improve program delivery, and provide communities with greater flexibility in making resilient investments. FEMA will also encourage states, tribes, and localities to adopt and enforce the most current version of the International Building Code and the International Resilience Code. Finally, FEMA's PA workforce within the Recovery Directorate and Hazard Mitigation workforce within the FIMA will work together toward a "common" or integrated mitigation goal, including joint deployment and cross-training opportunities to

² *Id.* at 26 (2014).

enhance cost-effective mitigation. Products associated with these efforts will include written analyses and recommendations for action, revised policy, outreach and training, and communication plans.

Estimated Completion Date (ECD): December 31, 2016.

Recommendation 2: The Director of the Mitigation Framework Leadership Group (MitFLG), in coordination with other departments and agencies that are MitFLG members supplement the National Mitigation Framework by establishing an investment strategy to identify, prioritize, and guide federal investments in disaster resilience and hazard mitigation-related activities and make recommendations to the President and Congress on how the nation should prioritize future disaster resilience investments. Such a strategy could address, among other things (1) the extent to which current hazard mitigation and disaster resilience programs are adequately addressing critical lifelines and critical infrastructure, (2) an approach to identifying information on what disaster resilience and hazard mitigation efforts are most effective against known risks and their potential impacts on the nation's fiscal exposure, (3) the balance of federal and nonfederal investments, and (4) the balance of pre- and post-disaster resilience investments.

Response: Concur. The MitFLG recognizes the benefit of prioritizing federal investments to identify those with best potential to enhance resilience against future disasters. While MitFLG does not have the authority to compel other federal agencies to prioritize their funding to achieve a specific goal, the MitFLG Leadership Group is working together to foster a culture of integrating sustainability and mitigation into recovery actions and investments through a variety of resiliency recommendations such as implementation of the Federal Food Risk Management Standard across the Federal family.

Threats and hazards present long-term risks to people and their property. Mitigation is risk management action taken to avoid, reduce, or transfer those risks. By reducing the impact of disasters, mitigation supports protection and prevention activities, eases response, and speeds recovery to create better prepared and more resilient communities. The National Mitigation Framework establishes a common platform and forum for coordinating and addressing how the Nation manages risk through mitigation capabilities. This Framework describes mitigation roles across the whole community. The Framework addresses how the Nation will lessen the impact of disaster by developing, employing, and coordinating core mitigation capabilities to reduce loss of life and property. Building on a wealth of objective and evidence-based knowledge and community experience, the Framework seeks to increase risk awareness and leverage mitigation products, services, and assets across the whole community. The National

Mitigation Framework discusses seven core capabilities required for entities involved in mitigation: (1) threat and hazard identification, (2) risk and disaster resilience assessment, (3) planning, (4) community resilience, (5) public information and warning, (6) long-term vulnerability reduction, and (7) operational coordination.

The MitFLG coordinates mitigation efforts across the Federal government and assesses the effectiveness of mitigation capabilities developed and deployed across the Nation. The MitFLG includes relevant local, state, tribal, and Federal government representatives. The MitFLG non-Federal members help to ensure appropriate integration of Federal efforts across the whole community. In implementing the National Mitigation Framework to build national preparedness, partners are encouraged to develop a shared understanding of broad-level strategic implications as they make critical decisions and decisions about mitigation investments in building future capacity and capability.

The MitFLG, in coordination with other departments and agencies that are MitFLG members, will continue to share information on respective investment strategies, and to facilitate prioritization to guide federal investments in disaster resilience and hazard mitigation related activities. This information will be captured through the National Mitigation Framework process in order to address the intent of GAO's recommendation.

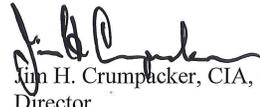
More specifically, the Chair of MitFLG will take the following actions to address this recommendation:

- (1) Brief MitFLG members on recommendation and FEMA's response on behalf of MitFLG and call for workgroup members from the interagency for support. ECD: August 31, 2015.
- (2) Form working group to develop scope, coordinate effort, and develop draft recommendations for the MitFLG consideration. ECD: September 30, 2016.
- (3) Finalize a deliverable through MitFLG review and coordination effort with interagency membership. ECD: August 30, 2017.

ECD: September 30, 2017.

Again, thank you for the opportunity to review and comment on this draft report. Technical comments were previously provided under separate cover. Please feel free to contact me if you have any questions. We look forward to working with you in the future.

Sincerely,



Jim H. Crumpacker, CIA, CFE
Director
Departmental GAO-OIG Liaison Office

Appendix V: GAO Contacts and Staff Acknowledgments

GAO Contact

Chris Currie, Director, (404) 679-1875 or curriec@gao.gov

Staff Acknowledgments

In addition to the contact named above, Kathryn Godfrey (Assistant Director), Dorian Dunbar, Melissa Duong, Serena Epstein, Lorraine Ettaro, Eric Hauswirth, R. Denton Herring, and Tracey King made significant contributions to this report. Also contributing to this report were Joel Aldape, Claudia Becker, Andrew Brown, Alicia Cackley, Martha Chow, Steve Cohen, Catherine Colwell, Roshni Dave, Katherine Davis, Peter Del Toro, Anne-Marie Fennell, Jose (Alfredo) Gomez, Joah Iannotta, Valerie Kasindi, Stuart (Stu) Kaufman, Chris Keisling, Monica Kelly, Stephen Lord, Phillip McIntyre, Susan Offutt, Anthony (Tony) Pordes, Brenda Rabinowitz, Oliver Richard, Tovah Rom, Michelle Sager, Janet Temko-Blinder, Joseph Thompson, and David Wise.

Appendix VI: Accessible Data

Accessible Text and Data Tables

Accessible Text for Figure 1: Resilience What, Why, and How

What is resilience?

Broadly speaking, resilience is the ability to prepare and plan for, absorb, recover from, and more successfully adapt to actual or potential adverse events. In the context of disasters—natural or man-made—disaster resilience describes the ability of individuals, communities, localities, states, regions, and the nation to respond and recover in a manner that minimizes disaster life and property losses and enables rapid return of normal economic and other life activities in the wake of disasters. Two related concepts are hazard mitigation and climate change adaptation. Hazard mitigation refers to the actions taken to reduce loss of life and property by lessening the impact of disasters. The idea of hazard mitigation is not prevention of the actual hazard—i.e., disaster—but rather to mitigate the effects of that hazard. Climate change adaptation is specific to such adjustments made in response to actual or expected climate change. Both hazard mitigation and climate change adaptation are activities that can be undertaken to achieve greater disaster resilience, which in turn contributes to the overall resilience of individuals, localities, states, regions, and the nation.

Why is disaster resilience important?

As we reported in 2014, for presidentially declared major disasters from fiscal years 2004 through 2013, the Federal Emergency Management Agency (FEMA) obligated over \$95 billion in federal assistance for disasters, and the growing number of major disaster declarations had contributed to increasing federal disaster assistance expenditures. Moreover, the United States Global Change Research Program has reported that the impacts and costliness of weather disasters—resulting from floods, drought, and other events such as hurricanes—will increase in significance as what are considered rare events become more common and intense because of climate change. In the face of increasing federal spending on disaster response and recovery, GAO has identified disasters and the environment as a key source of federal fiscal exposure. GAO and others have pointed to enhancing disaster resilience as one of the primary means the federal government has to help control the federal fiscal exposure to disasters.

How is disaster resilience achieved?

Governments at all levels and the private sector have various responsibilities and a stake in increasing disaster resilience. Because planning to increase resilience starts with understanding disaster risk, some resilience-related activities, like flood mapping and threat and hazard assessment, are designed to increase knowledge. Ultimately, however, the aim is to implement changes in the physical and built environment that protect critical infrastructure and human lives or reduce specific vulnerabilities to disaster damage—by, for example, implementing flood, wind, and seismic protections. In addition, state and local laws and regulations can heavily influence resilience efforts, for example, by strengthening building codes.

Source: GAO analysis. | GAO-15-515

Accessible Text for Figure 2: Hazard Mitigation Grant Program (HMGP) Shore Front Home Elevation Project in Connecticut

FEMA project: Residents and businesses along the shores of Connecticut suffered severe damage from Hurricane Sandy. According to Connecticut state officials, the most common hazard mitigation project in Connecticut has been the elevation of private residences. HMGP is currently funding 102 elevation projects, and provides up to \$100,000 for each elevation project. As of September 2014, the state was eligible to apply for nearly \$12 million in HMGP funds, but had received in excess of \$88 million in applications.

Photographs: Residential house before (front yard has construction equipment) and after (front yard has garden and grass) being elevated.

Illustrations:

1. **Nonelevated structures:** Homes at “Base flood elevation”, lower than “Dune” but above “Mean sea level”;
2. **Elevated structures before flood:** “Building brought up to flood zone standards” above “Dune”, “Base flood elevation”, and “Mean sea level”;
3. **Elevated structures during flood:** “Building brought to flood zone standards” above “Base flood elevation” and “Flood sea level”.

Source: GAO analysis of Connecticut State information (State Hazard Mitigation Officer and documents); Federal Emergency Management Agency (photograph); U.S. Army Corps of Engineers (illustrations). | GAO-15-515

Accessible Text for Figure 3: Public Assistance (PA) Flood Control Project at Sayreville, New Jersey Pumping Station

FEMA project: As a result of Hurricane Sandy the Sayreville Pumping Station—the largest wastewater pumping station in New Jersey, serving 33 municipalities and 700,000 people—flooded and lost power for 10 days. In addition to funding for repairs to the station, PA is to provide over \$61.6 million for mitigation measures to prevent disruption during future disasters. Mitigation projects include a perimeter flood wall, standby generators, and relocation of critical equipment, among other things.

Aerial photograph: Pumping Station with highlighted features:

- Perimeter flood wall;
- New substation;
- Entrance flood gate;
- New generators and switch gear.

Photographs:

- Pumping station power grid (exterior view);
- Main pumps and discharge pipe (interior view).

Source: GAO analysis of New Jersey Middlesex County Utilities Authority information (pumping station officials); R3M Engineering, Inc. (aerial photographs); GAO (photographs). | GAO-15-515

Accessible Text for Figure 4: Community Development Block Grant-Disaster Recovery (CDBG-DR) Acquisition and Demolition in New Jersey

U.S. Department of Housing and Urban Development: New Jersey is pursuing the acquisition of more than 1,000 flood-prone properties under the State’s Blue Acres Program. New Jersey’s Blue Acres Program is designed to move New Jersey citizens out of high-risk areas by acquiring and demolishing flood-prone properties, and allowing natural systems to absorb flood waters from future storms. The State has allocated nearly \$300 million, including \$100 million in CDBG-DR, funds for this purpose. Under the program, homes can be purchased from willing sellers at 100 percent of their prestorm fair market value. In Old Bridge Township, CDBG-DR plans to provide an estimated \$8.7 million to Blue Acres for the planned acquisition and demolition of up to 29 residential properties creating acres of permanent green space and a natural flood barrier for adjacent neighborhoods.

Aerial photograph: “Old Bridge Township, Middlesex County, New Jersey” with highlighted areas bordering the Atlantic Ocean and Keyport South Amboy Road (State Highway 35).

Photographs: “Home acquisitions and demolitions”:

- Home with debris in the front yard;
- Home being demolished by construction equipment.

Source: GAO analysis of information and photographs provided by the New Jersey Department of Environmental Protection Blue Acres Program. | GAO-15-515

Accessible Text for Figure 5: Federal Transit Administration Resilience Implementation Project in New York City

Federal Transit Administration (FTA): The New York City subway and transit assets experienced significant damage due to saltwater infiltration from the storm surge during Hurricane Sandy. Because of the relatively low elevations of the facilities in lower Manhattan, saltwater from the storm surge entered the subway system through street-level openings, causing damage within tunnels, stations, and facilities. The Lower Manhattan Resiliency Implementation Project is to create watertight systems to temporarily seal these street-level openings at vulnerable points within lower Manhattan. The \$12.5 million investment request is expected to minimize and prevent major damage from the entry of water into the subway system from major storms.

Map: “Lower Manhattan resiliency implementation—near term” with highlighted points marking “Ventilation cover/protection”, “Stair cover/protection”, and “South ferry protection”.

Photographs: Subway station stairways with highlighted areas showing “Slots are to accept deployable covers to protect the stairs and escalators against flooding”.

Source: GAO analysis of Federal Transit Administration information (FTA); FTA (map and photographs). | GAO-15-515

Accessible Text for Figure 6: U.S. Army Corps of Engineers (USACE) Flood Control Measures in Rockaway Peninsula and Jamaica Bay

US Army Corps of Engineers: The USACE project constructed prior to Hurricane Sandy on the Atlantic Coast between East Rockaway and Rockaway Inlet in New York City was being reevaluated at the time of Hurricane Sandy; and a separate study was under way for Jamaica Bay and other nearby areas. Hurricane Sandy caused significant damage and exposed the vulnerability of communities on the Rockaway Peninsula and Jamaica Bay. In keeping with the findings and outcomes of North Atlantic Coast Comprehensive Study, USACE is now using a more comprehensive approach to try to identify cost-effective coastal storm risk management alternatives for the Rockaway-Jamaica Bay region. According to USACE, the Atlantic Coast of New York City, East Rockaway and Rockaway Inlet and Jamaica Bay Re-evaluation will consider a full array of coastal storm risk management measures. Construction of the original Rockaway Beach effort was estimated at \$150 million. However, construction as a result of the re-evaluation effort and prompted by the level of damage inflicted by Sandy is expected to cost significantly more when the draft plan is scheduled to be completed, in December 2015, according to USACE officials.

Aerial map photograph: “Rockaway Inlet to East Rockaway Inlet and Jamaica Bay Reformulation Study” highlighting:

- **Jamaica Bay ecosystem costal restoration feasibility sites;**
- **Marsh Island restoration sites:** “Elder’s Point wetlands restoration” before (“2006” aerial photograph) and after (“2011” photograph);
- **Coastal storm risk management:** “Plumb Beach coastal storm risk management” (aerial photograph), “Rockaway Beach vegetated sand dune resilience measure (aerial photograph with inset zoom-in of dune);
- **Navigation projects;**
- **Completed projects.**

Source: GAO analysis of U.S. Army Corps of Engineering information (USACE); USACE (photographs). | GAO-15-515

Data Table for Figure 7: Survey Response to Challenges Associated with the Complexity of the Federal Emergency Management Agency’s Review Process for Hazard Mitigation Plans (Number of respondents)

Extent challenge reduced state’s ability to maximize resilience opportunities				
Not a challenge	To a limited extent	To a moderate extent	To a great extent	Do not know/no response
5	4	0	4	0

Source: GAO survey. | GAO-15-515

Data Table for Figure 8: Survey Response to Challenges Associated with Turnover among Federal Emergency Management Agency Public Assistance or Hazard Mitigation Grant Program Staff (Number of respondents)

	Extent challenge reduced state's ability to maximize resilience opportunities				
	Not a challenge	To a limited extent	To a moderate extent	To a great extent	Do not know/no response
Public assistance	2	3	0	4	4
Hazard mitigation grant program	6	1	3	2	1

Source: GAO survey. | GAO-15-515

Note: One respondent said that turnover of FEMA Public Assistance staff was a challenge but did not know or respond to the extent this challenge reduced the state's ability to maximize resilience opportunities. One respondent said that turnover of FEMA Hazard Mitigation Grant Program staff was a challenge but did not know or respond to the extent this challenge reduced the state's ability to maximize resilience opportunities.

Data Table for Figure 9: Survey Response to Challenges Associated with Eligibility of Projects for Federal Emergency Management Agency Public Assistance or Hazard Mitigation Grant Program Funding (Number of respondents)

	Extent challenge reduced state's ability to maximize resilience opportunities				
	Not a challenge	To a limited extent	To a moderate extent	To a great extent	Do not know/no response
Public assistance	3	2	3	2	3
Hazard mitigation grant program	6	1	5	1	0

Source: GAO survey. | GAO-15-515

Note: One respondent said that the types of projects eligible for FEMA Public Assistance funding was a challenge but did not know or respond to the extent this challenge reduced the state's ability to maximize resilience opportunities.

Data Table for Figure 10: Survey Response to Challenges Associated with Federal Emergency Management Agency Officials' Use of Discretion under Current Regulations (Number of respondents)

	Extent challenge reduced state's ability to maximize resilience opportunities				
	Not a challenge	To a limited extent	To a moderate extent	To a great extent	Do not know/no response
	6	3	1	3	0

Source: GAO survey. | GAO-15-515

Data Table for Figure 11: Survey Response to Challenges Associated with the Consideration of Benefits in Federal Emergency Management Agency's Benefit Cost Analysis (Number of respondents)

	Extent challenge reduced state's ability to maximize resilience opportunities				
	Not a challenge	To a limited extent	To a moderate extent	To a great extent	Do not know/no response
Public assistance	5	2	1	1	4

Hazard mitigation grant program	6	2	3	2	0
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Source: GAO survey. | GAO-15-515

Note: One respondent said that the consideration of benefits in FEMA's Benefit Cost Analysis for Public Assistance was a challenge but did not know or respond to the extent this challenge reduced the state's ability to maximize resilience opportunities.

Data Table for Figure 12: Survey Response to Challenges Associated with Federal Emergency Management Agency Officials Actively Discouraging Public Assistance Mitigation Projects (Number of respondents)

Extent challenge reduced state's ability to maximize resilience opportunities				
Not a challenge	To a limited extent	To a moderate extent	To a great extent	Do not know/no response
5	3	1	1	3

Source: GAO survey. | GAO-15-515

Note: One respondent said that FEMA officials actively discouraging Public Assistance mitigation projects was a challenge but did not know or respond to the extent this challenge reduced the state's ability to maximize resilience opportunities.

Data Table for Figure 13: Predisaster Mitigation Allocations and Hazard Mitigation Grant Program Estimated Awards from Fiscal Years 2011-2014

	Percentage	Dollars
Predisaster Mitigation	6%	\$222,953,658
Hazard Mitigation Grant Program	94%	\$3,237,089,523

Source: GAO analysis of Federal Emergency Management Agency data. | GAO-15-515

Data Table for Figure 14: Survey Response to Challenges Associated with the Emphasis of Federal Resources on the Postdisaster Environment (Number of respondents)

Extent challenge reduced state's ability to maximize resilience opportunities				
Not a challenge	To a limited extent	To a moderate extent	To a great extent	Do not know/no response
1	2	5	5	0

Source: GAO survey. | GAO-15-515

Data Table for Figure 15: Survey Response to Challenges Associated with the Ability to Develop Hazard Mitigation Grant Program Project Applications prior to Receiving Final Estimate of Available Funding (Number of respondents)

Extent challenge reduced state's ability to maximize resilience opportunities				
Not a challenge	To a limited extent	To a moderate extent	To a great extent	Do not know/no response
1	0	7	4	1

Source: GAO survey. | GAO-15-515

Data Table for Figure 16: Survey Response to Challenges Associated with the Effects of Multiple Sets of Time Frames, Regulations, and Application Procedures across Different Federal Programs (Number of respondents)

Extent challenge reduced state's ability to maximize resilience opportunities				
Not a challenge	To a limited extent	To a moderate extent	To a great extent	Do not know/no response
1	0	4	8	0

Source: GAO survey. | GAO-15-515

Accessible Text for Figure 17: Time Frames for Program Initiation and Funding Availability Resulting from Major Disaster Declarations and the Sandy Supplemental

October 2012: Hurricane Sandy struck the United States causing an estimated \$65 billion in damages.

October 30, 2012-January 10, 2013: The President issues major disaster declarations for 13 states, including the District of Columbia, as a result of the impacts from Hurricane Sandy, making them eligible for funding through the Federal Emergency Management Agency's (FEMA) Public Assistance grant program and the HMGP. (Hazard Mitigation Grant Program (HMGP); Public Assistance)

January 29, 2013: President signs the Disaster Relief Appropriations Act, 2013, including the Sandy Recovery Improvement Act, into law, appropriating funds to the U.S. Department of Housing and Urban Development (HUD) for CDBG-DR and the Federal Transit Administration (FTA) for ERP. (Emergency Relief program (ERP); Community Development Block Grant-Disaster Recovery (CDBG-DR))

March 5, 2013: HUD announces the initial award of CDBG-DR funds to the states of New York, New Jersey, Connecticut, Rhode Island, Maryland, and New York City in the Federal Register. (Community Development Block Grant-Disaster Recovery (CDBG-DR))

March 29, 2013: FTA publishes the interim rule to establish procedures governing ERP in the *Federal Register*. (Emergency Relief program (ERP))

April 19, 2013: HUD publishes clarifying guidance for Hurricane Sandy CDBG-DR recipients in the *Federal Register*.
(Community Development Block Grant-Disaster Recovery (CDBG-DR))

July 29, 2013: HUD publishes the Rebuild by Design competition information in the *Federal Register*.
(Community Development Block Grant-Disaster Recovery (CDBG-DR))

August 2, 2013: HUD publishes additional information on waivers and alternative requirements for Hurricane Sandy CDBG-DR recipients in the *Federal Register*.
(Community Development Block Grant-Disaster Recovery (CDBG-DR))

August 23, 2013: HUD publishes announcement on the Hurricane Sandy Rebuilding Task Force and announces the selection of the Rebuild by Design teams in the *Federal Register*.
(Community Development Block Grant-Disaster Recovery (CDBG-DR))

November 18, 2013: HUD announces second award of CDBG-DR funds to the states of New York, New Jersey, Connecticut, Maryland, Rhode Island, and New York City in the *Federal Register*.
(Community Development Block Grant-Disaster Recovery (CDBG-DR))

December 10, 2013: New Jersey receives its HMGP final lock-in ceiling amount, informing the state how much funding it will receive for HMGP grants.
(Hazard Mitigation Grant Program (HMGP))

March 27, 2014: HUD publishes clarifying guidance and alternative requirements for Hurricane Sandy CDBG-DR recipients in the *Federal Register*.
(Community Development Block Grant-Disaster Recovery (CDBG-DR))

July 11, 2014: HUD publishes additional information on clarifying guidance and alternative requirements for Hurricane Sandy CDBG-DR recipients in the *Federal Register*.
(Community Development Block Grant-Disaster Recovery (CDBG-DR))

October 7, 2014: FTA publishes the final rule to establish the procedures governing ERP in the *Federal Register*.
(Emergency Relief program (ERP))

October 16, 2014: HUD announces third award of CDBG-DR funds to the states of New York, New Jersey, Connecticut, Rhode Island, and New York City, in addition to Rebuild by Design funds for the states of New York, New Jersey, Connecticut, and New York City in the *Federal Register*.
(Community Development Block Grant-Disaster Recovery (CDBG-DR))

May 27, 2015: New York receives its HMGP final lock-in ceiling amount, informing the state how much funding it will receive for HMGP grants. [Note A]
(Hazard Mitigation Grant Program (HMGP))

Source: GAO analysis and Federal Register; National Oceanic and Atmospheric Administration (clip art). | GAO-15-515

Note A: At the request of the state of New York, FEMA recalculated the HMGP final lock in amount and provided the state an updated ceiling of approximately \$1.38 billion in May 2015.

Data Table for Figure 18: Survey Response to Challenges Associated with the Timeliness, Availability, and Usefulness of the Federal Government's Guidance (Number of respondents)

Extent challenge reduced state's ability to maximize resilience opportunities				
Not a challenge	To a limited extent	To a moderate extent	To a great extent	Do not know/no response
2	0	6	5	0

Source: GAO survey. | GAO-15-515

Data Table for Figure 19: Survey Response to Challenges Associated with Inefficiencies in the Implementation of Environmental and Historic Preservation Reviews (Number of respondents)

Extent challenge reduced state's ability to maximize resilience opportunities				
Not a challenge	To a limited extent	To a moderate extent	To a great extent	Do not know/no response
2	2	1	7	1

Source: GAO survey. | GAO-15-515

Data Table for Figure 20: Survey Response to Challenges Associated with the Capacity of Localities to Access or Manage Federal Funds (Number of respondents)

Extent challenge reduced state's ability to maximize resilience opportunities				
Not a challenge	To a limited extent	To a moderate extent	To a great extent	Do not know/no response
2	0	6	4	1

Source: GAO survey. | GAO-15-515

Data Table for Figure 21: Survey Response to Challenges Associated with Local Applicants' Difficulty Collecting Information Required to Complete Federal Emergency Management Agency's Benefit Cost Analysis Tool for Public Assistance or Hazard Mitigation Grant Program Applications (Number of respondents)

Extent challenge reduced state's ability to maximize resilience opportunities					
	Not a challenge	To a limited extent	To a moderate extent	To a great extent	Do not know/no response
Public assistance	2	4	2	1	4
Hazard mitigation grant program	2	4	3	4	0

Source: GAO survey. | GAO-15-515

Note: One respondent said local applicants' difficulty collecting information required to complete FEMA's Benefit Cost Analysis tool for FEMA's Public Assistance was a challenge but did not know or respond to the extent this challenge reduced the state's ability to maximize resilience opportunities.

Data Table for Figure 22: Survey Response to Challenges Associated with the Willingness of Individuals to Take Advantage of Federal Funding to Pursue Hazard Mitigation Opportunities (Number of respondents)

Extent challenge reduced state's ability to maximize resilience opportunities				
Not a challenge	To a limited extent	To a moderate extent	To a great extent	Do not know/no response
3	3	4	1	2

Source: GAO survey. | GAO-15-515

Data Table for Figure 23: Survey Response to Challenges Associated with the Ability of Individuals to Take Advantage of Federal Funding to Pursue Hazard Mitigation Opportunities (Number of respondents)

Extent challenge reduced state's ability to maximize resilience opportunities				
Not a challenge	To a limited extent	To a moderate extent	To a great extent	Do not know/no response
0	2	5	2	4

Source: GAO survey. | GAO-15-515

Note: One respondent said the ability of individuals to pursue hazard mitigation opportunities was a challenge but did not know or respond to the extent this challenge reduced the state's ability to maximize resilience opportunities.

Questionnaire

GAO Follow-Up

Page 1

Accessible Text for Appendix III: GAO Follow-Up Questionnaire for State Hazard Mitigation Officers Related to Hurricane Sandy Recovery and Resilience

What You Need to Know About This Survey

The U.S. Government Accountability Office (GAO) is the independent, nonpartisan, investigative arm of the U.S. Congress. GAO is conducting this survey as part of our work in response to a congressional request to review efforts to enhance resilience in the Hurricane Sandy recovery effort.

GAO conducted 16 interviews with State Hazard Mitigation Officers (SHMOs) and other knowledgeable officials in the 13 states that received Presidential Major Disaster Declarations in the wake of Hurricane Sandy. We asked these officials to discuss their experiences using federal funding to enhance resilience in recovering from Hurricane Sandy and other disasters that occurred since 2011. This survey follows up on those discussions to help us learn more about the extent to which challenges identified during the interviews could act as impediments to states' ability to maximize federal support for enhancing disaster resilience.

Who Should Respond

SHMOs and state or city resilience directors should complete this survey. They may also designate someone else who has equivalent or better knowledge about state efforts to enhance disaster resilience. The person completing this survey should feel free to consult others.

How GAO Will Use the Survey Results

GAO will aggregate survey data in our analysis that will be the basis of the report we provide to our congressional requesters. GAO reports are also available to the public. We will generally provide survey responses in summary form in the report. If we discuss individual responses, we will remove all identifying information to protect respondents' anonymity.

How We Define Resilience

Resilience, broadly speaking, is the ability to prepare and plan for, absorb, recover from, and more successfully adapt to actual or potential adverse events. This study focuses on disaster resilience, which is the aspect of resilience where communities, states, and regions take actions designed to reduce the loss of life and property that otherwise would result from the impact of disasters.

Instructions for Completing and Submitting Questionnaire

Please save the file to your computer. Then, to answer questions, either check boxes (e.g.,) by clicking the box or enter written responses in the text boxes (e.g.,). The boxes will expand to accept your response. Resave your completed questionnaire and send it as an e-mail attachment to Serena Epstein at epsteins@gao.gov.

Please complete the following information:

- Identify your state and agency:
- Choose your position:
 - State Hazard Mitigation Officer
 - Resilience Director
 - Other (please specify):

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Question 1: Challenges Across Federal Disaster Resilience Programs

4. Did you experience the following challenges while trying to use federal funding to enhance resilience during recovery from disasters since 2011?
5. If yes, to what extent, if at all, did each of the challenges you experienced reduce your state's ability to maximize resilience opportunities?
(Note: Unless otherwise specified, the challenges in Question 1 refer to any source of federal funding that could support resilience building during disaster recovery, e.g., Federal Emergency Management Agency, Federal Transit Administration, Housing and Urban Development, U.S. Army Corps of Engineers, etc.)

Challenge	A. Did you experience this challenge?*	B. If yes, extent challenge reduced your state's ability to maximize resilience opportunities			
		To a limited extent	To a moderate extent	To a great extent	Do not know or no response
a) The timeliness, availability, or usefulness of guidance provided by the federal government about what type of federal assistance is available and how it can be used to most effectively pursue resilience	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) The emphasis of federal resources on the post-disaster environment, rather than proactive pre-disaster approaches	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Inefficiencies in the implementation of Environment and Historic Preservation Reviews have unnecessarily prolonged work on projects	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Effects of multiple sets of timeframes, regulations, and application procedures across different federal programs on your state's ability to take a comprehensive approach to maximizing mitigation opportunities	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Challenge	A. Did you experience this challenge?*	B. If yes, extent challenge reduced your state's ability to maximize resilience opportunities			
		To a limited extent	To a moderate extent	To a great extent	Do not know or no response
e) Other (Please describe). [text box]	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

You may use this space to provide any additional comments regarding question 1.

Please continue to the next page.

Question 2: Challenges at the Local Level

- A. Did you experience the following challenges at the local level while seeking to use federal funding to enhance resilience during recovery from disasters since 2011?
- B. If yes, to what extent, if at all, did each of the challenges you experienced reduce your state's ability to maximize resilience opportunities?
 (Note: Unless otherwise specified, the challenges in Question 2 refer to any source of federal funding that could support resilience building during disaster recovery, e.g., Federal Emergency Management Agency, Federal Transit Administration, Housing and Urban Development, U.S. Army Corps of Engineers, etc.)

Challenge	A. Did you experience this challenge?*	B. If yes, extent challenge reduced your state's ability to maximize resilience opportunities			
		To a limited extent	To a moderate extent	To a great extent	Do not know or no response
a) The capacity of localities to access or manage federal funds in their pursuit of hazard mitigation opportunities	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Challenge	A. Did you experience this challenge?*	B. If yes, extent challenge reduced your state's ability to maximize resilience opportunities			
		To a limited extent	To a moderate extent	To a great extent	Do not know or no response
b) Willingness of localities to pursue some hazard mitigation opportunities because of concerns that it will negatively affect the local economy, for example, acquisitions may diminish the tax base	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Willingness of localities to pursue Public Assistance mitigation projects out of concern that it will delay the restoration of critical lifelines and normal economic activity	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Willingness of individual businesses or homeowners to take advantage of federal funding for acquisitions or elevations that are designed to reduce community risk	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Ability of individual businesses or homeowners to take advantage of federal funding for acquisitions or elevations that are designed to reduce community risk	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Other (Please describe). [text box]	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

You may use this space to provide any additional comments regarding question 2. [text box]

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Please continue to the next page.

Question 3: Challenges with FEMA's Hazard Mitigation Grant Program

- A. Did you experience the following challenges while trying to use **FEMA's Hazard Mitigation Grant Program (HMGP)** to enhance resilience during recovery from disasters since 2011?

B. If yes, to what extent, if at all, did each of the challenges you experienced reduce your state's ability to maximize resilience opportunities?

Challenge	A. Did you experience this challenge?*	B. If yes, extent challenge reduced your state's ability to maximize resilience opportunities			
		To a limited extent	To a moderate extent	To a great extent	Do not know or no response
a) Type of projects eligible for HMGP	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Turnover of FEMA HMGP staff at joint field offices or recovery offices	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) The ability to plan, develop, or prioritize HMGP projects before receiving lock-in estimates	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) The complexity of FEMA's review process for state or local hazard mitigation plans	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) FEMA HMGP officials in my region have not applied discretion, under current regulations, in a way that maximizes mitigation opportunities	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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6. f) Applicants' ability to collect the information needed to complete FEMA's Benefit-Cost Analysis for HMGP project applications	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. g) FEMA's Benefit-Cost Analysis tool has not considered all the appropriate benefits of proposed HMGP mitigation projects	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. h) Other (Please describe). [text box]	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

You may use this space to provide any additional comments regarding question 3. [text box]

Please continue to the next page.

Question 4: Challenges with FEMA's Public Assistance Program

A. Did you experience the following challenges while trying to use FEMA's Public Assistance Program to enhance resilience during recovery from disasters since 2011?

B. If yes, to what extent, if at all, did each of the challenges you experienced reduce your state's ability to maximize resilience opportunities?

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Challenge	A. Did you experience this challenge?*	B. If yes, extent challenge reduced your state's ability to maximize resilience opportunities			
		To a limited extent	To a moderate extent	To a great extent	Do not know or no response
a) Type of projects eligible for Public Assistance mitigation funding	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Turnover of FEMA Public Assistance staff at joint field offices or recovery offices	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) FEMA officials did not actively identify opportunities to incorporate mitigation into Public Assistance (406) permanent work projects	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) FEMA officials actively discouraged incorporating mitigation activities into Public Assistance (406) permanent work projects	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) FEMA Public Assistance officials in my region have not applied discretion, under current regulations, in a way that maximizes mitigation opportunities	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. f) Applicants' ability to collect the information needed to complete FEMA's Benefit-Cost Analysis for Public Assistance project applications	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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10. g) FEMA's Benefit-Cost Analysis tool has not considered all the appropriate benefits of proposed Public Assistance mitigation projects	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. h) Other (Please describe). [text box]	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

You may use this space to provide any additional comments regarding question 4. [text box]

Please continue to the next page.

Question 5: Top Three Challenges

A. Considering the challenges above, use the following table to list the top 3 challenges (with 1 being the most significant) that have reduced your state's ability to maximize resilience opportunities during recovery from disasters since 2011.

	Challenge
Rank	Enter the corresponding number and letter (e.g., 2d) of the challenge from the sections above.
1.	[text box]
2.	[text box]
3.	[text box]

B. If you have suggestions for how to improve any of the top three challenges that you identified above, please provide them in the space below.

12. [text box]

Thank you very much for your assistance.

Note: The cells in the column marked with an asterisk have arrows pictures that tell the reader to continue to the right if the user marked "Yes", otherwise to continue to the next row.

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Agency Comments

Department of Homeland Security

Page 1

Appendix IV: Comments from the Department of Homeland Security

U.S. Department of Homeland Security
Washington, DC 20528

July 21, 2015

Chris P. Currie
Director, Homeland Security and Justice
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Re: Draft Report GAO-15-515, "HURRICANE SANDY: An Investment Strategy Could Help the Federal Government Enhance National Resilience for Future Disasters"

Dear Mr. Currie:

Thank you for the opportunity to review and comment on this draft report. The U.S. Department of Homeland Security (DHS) appreciates the U.S. Government Accountability Office's (GAO) work in planning and conducting its review and issuing this report.

DHS welcomes GAO's recognition that the Federal Emergency Management Agency's (FEMA) Public Assistance (PA) and Hazard Mitigation Grant Programs helped enhance disaster resilience during the Hurricane Sandy Recovery. FEMA is committed to continuing work with its partners and other stakeholders to improve the capacity of people, organizations and systems to adapt to changing conditions and withstand and rapidly recover from disruption due to emergencies.

For example, FEMA is implementing a number of initiatives to improve the efficiency and effectiveness of the PA program. Consistent with DHS Strategic Plan 2014-2018 priorities and the FEMA Strategic Plan 2014-2018 [Note 1] the PA program has completed the design phase of a project to reengineer the process by which it delivers its services to ensure it is survivor centric. As part of this initiative, FEMA aims to reevaluate and improve the delivery and implementation of the PA program. The PA reengineering process, which began with diagnostic sharing sessions involving more than 135 stakeholders from FEMA, States, Tribal nations, and local governments, now has a dedicated PA reengineering group charged with executing and testing the newly designed

Note 1: FEMA STRATEGIC PLAN 2014-2018 (2014), available at <http://www.fema.gov/media-library-data/1405716042966-ed93a8d8c0bab9730350d7178b840793/July18FEMAStratPlanDigital508LowResFINALh.pdf>.

system. The initial testing phase of the reengineered PA Program delivery is planned to begin in the fall of 2015.

The draft report contained two recommendations - for executive action, with which the Department concurs. Specifically, GAO recommended that:

Recommendation 1: The FEMA Administrator, consistent with the goals of the National Disaster Recovery Framework (NDRF) to integrate hazard mitigation and risk reduction opportunities into all major decisions and reinvestments during the recovery process, assess the challenges state and local officials reported, including the extent the challenges can be addressed and implement corrective actions, as needed.

Response: Concur. FEMA is aware of and acknowledges many of the challenges state and local officials reported. While FEMA disagrees with the characterization that PA staff discourages mitigation and FEMA provided statistical evidence to the contrary of this characterization, it recognizes that there are ways to improve communication about the Agency's priority to incorporate mitigation into PA projects. FEMA's priority to reengineer the PA Program, which includes seeking input from Federal, Tribal, state, and local stakeholders, will address several of the issues raised in this report including: PA staff turnover; tailored processes and mitigation specialists to handle PA mitigation projects; and improved processes for Environmental and Historic Preservation review.

Additionally, as part of FEMA's Strategic Plan, Strategic Priority 4, Objective 4.2: *Incentivize and facilitate investments to manage current and future risk*, [Note 2] FEMA is exploring ways to improve risk reduction through the Federal Insurance and Mitigation Administration (FIMA) and Recovery mitigation programs. Through these efforts, FEMA intends to strengthen existing Stafford Act programs; maximize resilient investments in development and rebuilding; and develop comprehensive methodologies to deliver programs more effectively. During the next 18 months, FEMA will focus on three concurrent work streams: (1) policy, regulation, and statute; (2) codes and standards; and (3) operations.

This approach will enable FEMA to more effectively execute its legal authorities, improve program delivery, and provide communities with greater flexibility in making resilient investments. FEMA will also encourage states, tribes, and localities to adopt and enforce the most current version of the International Building Code and the International Resilience Code. Finally, FEMA's PA workforce within the Recovery Directorate and Hazard Mitigation workforce within the FIMA will work together toward a "common" or integrated mitigation goal, including joint deployment and cross-training opportunities to

Note 2: Id. at 26 (2014).

enhance cost-effective mitigation. Products associated with these efforts will include written analyses and recommendations for action, revised policy, outreach and training, and communication plans.

Estimated Completion Date (ECD): December 31, 2016.

Recommendation 2: The Director of the Mitigation Framework Leadership Group (MitFLG), in coordination with other departments and agencies that are MitFLG members supplement the National Mitigation Framework by establishing an investment strategy to identify, prioritize, and guide federal investments in disaster resilience and hazard mitigation-related activities and make recommendations to the President and Congress on how the nation should prioritize future disaster resilience investments. Such a strategy could address, among other things (1) the extent to which current hazard mitigation and disaster resilience programs are adequately addressing critical lifelines and critical infrastructure, (2) an approach to identifying information on what disaster resilience and hazard mitigation efforts are most effective against known risks and their potential impacts on the nation's fiscal exposure, (3) the balance of federal and nonfederal investments, and (4) the balance of pre- and post-disaster resilience investments.

Response: Concur. The MitFLG recognizes the benefit of prioritizing federal investments to identify those with best potential to enhance resilience against future disasters. While MitFLG does not have the authority to compel other federal agencies to prioritize their funding to achieve a specific goal, the MitFLG Leadership Group is working together to foster a culture of integrating sustainability and mitigation into recovery actions and investments through a variety of resiliency recommendations such as implementation of the Federal Food Risk Management Standard across the Federal family.

Threats and hazards present long-term risks to people and their property. Mitigation is risk management action taken to avoid, reduce, or transfer those risks. By reducing the impact of disasters, mitigation supports protection and prevention activities, eases response, and speeds recovery to create better prepared and more resilient communities. The National Mitigation Framework establishes a common platform and forum for coordinating and addressing how the Nation manages risk through mitigation capabilities. This Framework describes mitigation roles across the whole community. The Framework addresses how the Nation will lessen the impact of disaster by developing, employing, and coordinating core mitigation capabilities to reduce loss of life and property. Building on a wealth of objective and evidence-based knowledge and community experience, the Framework seeks to increase risk awareness and leverage mitigation products, services, and assets across the whole community. The National

Mitigation Framework discusses seven core capabilities required for entities involved in mitigation: (1) threat and hazard identification, (2) risk and disaster resilience assessment, (3) planning, (4) community resilience, (5) public information and warning, (6) long-term vulnerability reduction, and (7) operational coordination.

The MitFLG coordinates mitigation efforts across the Federal government and assesses the effectiveness of mitigation capabilities developed and deployed across the Nation. The MitFLG includes relevant local, state, tribal, and Federal government representatives. The MitFLG non-Federal members help to ensure appropriate integration of Federal efforts across the whole community. In implementing the National Mitigation Framework to build national preparedness, partners are encouraged to develop a shared understanding of broad-level strategic implications as they make critical decisions and decisions about mitigation investments in building future capacity and capability.

The MitFLG, in coordination with other departments and agencies that are MitFLG members, will continue to share information on respective investment strategies, and to facilitate prioritization to guide federal investments in disaster resilience and hazard mitigation related activities. This information will be captured through the National Mitigation Framework process in order to address the intent of GAO's recommendation.

More specifically, the Chair of MitFLG will take the following actions to address this recommendation:

- 1) Brief MitFLG members on recommendation and FEMA's response on behalf of MitFLG and call for workgroup members from the interagency for support. ECD: August 31, 2015.
- 2) Form working group to develop scope, coordinate effort, and develop draft recommendations for the MitFLG consideration. ECD: September 30, 2016.
- 3) Finalize a deliverable through MitFLG review and coordination effort with interagency membership. ECD: August 30, 2017.

ECD: September 30, 2017.

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Again, thank you for the opportunity to review and comment on this draft report. Technical comments were previously provided under separate cover. Please feel free to contact me if you have any questions. We look forward to working with you in the future.

Sincerely,

Signed by
Jim H. Crumpacker, CIA, CFE
Director
Departmental GAO-OIG Liaison Office

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