



May 2021

PUERTO RICO RECOVERY

FEMA Made Progress in Approving Projects, But Should Identify and Assess Risks to the Recovery

Accessible Version



A Century of Non-Partisan Fact-Based Work

GAO Highlights

Highlights of [GAO-21-264](#), a report to congressional requesters

Why GAO Did This Study

More than 3 years after hurricanes Irma and Maria struck the territory, Puerto Rico's recovery is ongoing and will be one of the largest in FEMA's history. Further complicating the recovery, Puerto Rico experienced a series of earthquakes in 2019 and 2020, and the impacts of COVID-19 starting in March 2020. FEMA is the lead federal agency responsible for assisting Puerto Rico as it recovers from these disasters and administers the Public Assistance program in partnership with the government of Puerto Rico to provide funds to rebuild damaged infrastructure and restore services.

GAO was asked to review federal recovery efforts in Puerto Rico. In this report, GAO examines (1) the status of FEMA's Public Assistance grant program funding and projects in Puerto Rico, and (2) the extent to which FEMA has identified and assessed potential risks to the recovery. GAO analyzed program documents and data on the Public Assistance program through January 15, 2021; conducted site visits to Puerto Rico; and interviewed FEMA and Puerto Rico government officials regarding the status and potential risks to recovery efforts.

What GAO Recommends

GAO is making two recommendations including that FEMA, in coordination with Puerto Rico and relevant federal agencies, identify and assess the risks to Puerto Rico's recovery, including Puerto Rico's capacity to carry out projects, and identify potential actions to manage the risks. The Department of Homeland Security concurred with these recommendations.

View [GAO-21-264](#). For more information, contact Chris Currie at (404) 679-1875 or curriec@gao.gov.

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FEMA Made Progress in Approving Projects, But Should Identify and Assess Risks to the Recovery

What GAO Found

As of January 15, 2021, FEMA obligated \$23.8 billion in Public Assistance funds to Puerto Rico for the 2017 hurricanes (\$23.5 billion), 2019 and 2020 earthquakes (\$243.8 million) and 2020 COVID-19 response (\$59.7 million). To help expedite obligations, FEMA changed how it implemented the Public Assistance program in Puerto Rico by, among other things, focusing on obligations for critical services like electricity and water. However, significant work for the recovery remains. FEMA and Puerto Rico are working to develop and obligate about 6,100 more projects. Further, Puerto Rico's fiscal condition has made it difficult for Puerto Rico agencies to access funds to start construction, thus work for many obligated projects has not started. Because Public Assistance is a reimbursement program, these agencies must provide the initial funding for the work and seek reimbursements afterwards. As such, of the \$23.8 billion obligated, Puerto Rico has only spent \$158 million for long-term rebuilding projects, such as rebuilding schools, the power grid, water systems, and other damaged infrastructure.

Hurricane Damage to a Water Tank and Earthquake Damage to a School in Puerto Rico, February 2020



Source: GAO. | GAO-21-264

FEMA has not comprehensively identified or assessed the risks that could affect the success of the remainder of Puerto Rico's recovery. For example, FEMA and Puerto Rico officials said that Puerto Rico agencies' staff lack the expertise to develop thousands of projects, which presents risks of delays. Further, Puerto Rico will have to start construction on thousands of projects, presenting risks such as lack of construction funding and capacity to procure labor, equipment and materials. FEMA is in the process of implementing an enterprise risk management framework, an approach that federal agencies use to identify and assess risks to their mission. FEMA officials said that they could use this framework, or other methods, to identify and assess the risks to Puerto Rico's recovery. Given the time elapsed since the 2017 hurricanes and the work remaining, urgent and diligent action is needed to help ensure the recovery's success. Identifying and assessing risks to the recovery, jointly with Puerto Rico and relevant federal agencies, could help FEMA monitor emerging risks and identify potential actions to manage them. Further, continuously monitoring risks could help ensure that FEMA's response to risks remain current and relevant.

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Abbreviations

CDBG-DR	Community Development Block Grant Disaster Recovery
COR3	Central Office for Recovery, Reconstruction, and Resiliency
COVID-19	Coronavirus Disease 2019
DHS	Department of Homeland Security
ERM	Enterprise Risk Management
FEMA	Federal Emergency Management Agency
HUD	Department of Housing and Urban Development
Stafford Act	Robert T. Stafford Disaster Relief and Emergency Assistance Act

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May 19, 2021

Congressional Requesters

In a span of 14 days in September 2017, two major hurricanes—Irma and Maria—struck Puerto Rico causing billions of dollars in damage to its infrastructure, housing, and economy.¹ In its recovery plan, Puerto Rico estimates that \$132 billion would be needed from 2018 through 2028 to repair and reconstruct its damaged infrastructure. The recovery plan noted that the damages exacerbated an already difficult financial situation in Puerto Rico, which had operated under severe fiscal constraints prior to the storms, faced outdated infrastructure and power systems, and lacked the emergency management capacity needed to respond to such catastrophic events.² Further complicating Puerto Rico's recovery, the territory experienced a series of earthquakes in December 2019 and January 2020, with strong aftershocks felt through July 2020, and the effects of the Coronavirus Disease 2019 (COVID-19) pandemic starting in March 2020.

More than 3 years after the hurricanes struck the territory, Puerto Rico's recovery is ongoing and will be one of the largest in the history of the Federal Emergency Management Agency (FEMA)—the lead federal agency responsible for assisting states and territories like Puerto Rico in disaster recovery.³ A component of the Department of Homeland Security

¹The National Oceanic and Atmospheric Administration (NOAA) measures hurricanes on a scale from 1 to 5 with a Category 1 being the least intense and a Category 5 being the most intense. NOAA defines a Category 4 hurricane as one with winds above 130 miles per hour but less than 157 miles per hour. Hurricane Maria made landfall on Puerto Rico as a Category 4 hurricane. On September 10, 2017, the president issued a major disaster declaration for Hurricane Irma, and on September 20, 2017, a major disaster declaration for Hurricane Maria.

²In fiscal year 2016, the last year for which audited financial statements are available at the time of our 2019 review of Puerto Rico's public debt, total public debt outstanding stands at \$65.2 billion. Puerto Rico's total public debt outstanding increased continuously between fiscal years 2005 and 2014, prior to a default in 2015. Puerto Rico is in the process of restructuring its outstanding debt. See GAO, *U.S. Territories: Public Debt Outlook – 2019 Update*, [GAO-19-525](#) (Washington, D.C.: June 28, 2019).

³See 6 U.S.C. § 313. According to FEMA, Hurricane Maria is among the five costliest hurricanes on record. The five are Hurricane Katrina at \$170 billion, Hurricane Harvey at \$131.3 billion, Hurricane Maria at \$94.5 billion, Hurricane Sandy at \$74.8 billion, and Hurricane Irma at \$52.5 billion. These values are based on the 2020 Consumer Price Index adjusted cost.

(DHS), FEMA administers various disaster recovery and mitigation grant programs, such as the Public Assistance and Hazard Mitigation Grant Programs, in partnership with state or territorial governments, such as the government of Puerto Rico. The Public Assistance program provides funding for debris removal; life-saving emergency protective measures; and the repair or replacement of disaster-damaged publicly-owned facilities, such as roads and bridges, among other activities. The Hazard Mitigation Grant Program provides funding for mitigation measures for both damaged and undamaged facilities to reduce risk of loss of life and property from future disasters.

We previously reported on Puerto Rico's recovery, including challenges in developing long-term permanent work projects under the Public Assistance program. For example, in February 2020, we reported that a large number of damaged sites and delays in establishing cost estimate guidance specific to Puerto Rico presented challenges to developing projects.⁴ We recommended, among other things, that FEMA develop a repository for all current applicable Public Assistance policies and guidance for Puerto Rico and make it available to all recovery partners. FEMA agreed and, as of January 2021, was working to address the recommendation. In November 2020, we reported that 3 years after the hurricanes destroyed much of Puerto Rico's electricity grid, neither FEMA nor the U.S. Department of Housing and Urban Development (HUD) had approved any long-term grid recovery projects in Puerto Rico.⁵

You asked us to review the federal government's continued response and recovery efforts related to the 2017 hurricanes. This report addresses: (1) changes FEMA made to the Public Assistance program in Puerto Rico since the 2017 hurricanes and the status of funding and projects under this program and the Hazard Mitigation Grant Program; and (2) the extent

⁴GAO, *Puerto Rico Disaster Recovery: FEMA Actions Needed to Strengthen Project Cost Estimation and Awareness of Program Guidance*, [GAO-20-221](#) (Washington, D.C.: Feb. 5, 2020).

⁵In our November 2020 report, we also reiterated prior recommendations that we made in October 2019 to FEMA and the Department of Housing and Urban Development (HUD) to support grid recovery efforts. As of October 2020, FEMA had fully implemented one recommendation and partially implemented two others, while HUD had not implemented its recommendation. GAO, *Puerto Rico Electricity: FEMA and HUD Have Not Approved Long-Term Projects and Need to Implement Recommendations to Address Uncertainties and Enhance Resilience*, [GAO-21-54](#) (Washington, D.C.: November 17, 2020). GAO, *Puerto Rico Electricity Grid Recovery: Better Information and Enhanced Coordination is Needed to Address Challenges*, [GAO-20-141](#) (Washington, D.C.: Oct. 8, 2019).

to which FEMA has identified and assessed any potential risks for the success of Puerto Rico's remaining recovery efforts.

To address these objectives, we reviewed relevant laws and FEMA's Public Assistance grant program guidance, including the September 2019 and February 2020 versions of the *Public Assistance Alternative Procedures Guide for Permanent Work* in Puerto Rico. In February 2020, we conducted site visits to Puerto Rico to observe hurricane and earthquake-damaged areas and interview FEMA and Puerto Rico government officials from the Central Office for Recovery, Reconstruction, and Resiliency (COR3). The information gathered from these site visits was not generalizable to all damaged areas across Puerto Rico, but provided important context about the status of recovery efforts. We also interviewed officials from FEMA headquarters, including from the Office of Response and Recovery, and Grants Program Directorate about various aspects of the recovery efforts, as well as officials from FEMA Region 2, the regional office that oversees federal emergency management for Puerto Rico.⁶ In addition, we interviewed officials from six Puerto Rico government agencies and public corporations headquartered in San Juan, Puerto Rico that have received Public Assistance funds.⁷ We also interviewed officials from the six FEMA sectors that work with the selected Puerto Rico government agencies and public corporations.⁸ In interviews with agencies and FEMA sectors, we asked officials about their experience implementing the Public Assistance program in Puerto Rico. The results from our interviews cannot be generalized to all of Puerto Rico's government agencies and public corporations; however, they provide important context about the Public Assistance program in Puerto Rico.

⁶FEMA Region 2 is responsible for assisting with disaster-related recovery efforts in the states of New Jersey and New York, the Commonwealth of Puerto Rico, the territory of the U.S. Virgin Islands, and eight Tribal Nations.

⁷These six entities are the same six entities we selected for interviews in 2019 to obtain their perspectives on their experience working with FEMA to implement the Public Assistance program and any challenges they faced. In 2019, we selected these six entities because they had the greatest shares of Public Assistance obligations in Puerto Rico as of December 6, 2018. [GAO-20-221](#).

⁸FEMA's recovery in Puerto Rico is organized into four main branches—municipalities, infrastructure, community services, and operations. Within the infrastructure and community services branch, we interviewed officials from the six sectors that worked with the selected Puerto Rico government agencies and public corporations in the development of Public Assistance projects.

To address our first objective on changes to the Public Assistance program and status of this program and the Hazard Mitigation Grant Program, we obtained and analyzed data from four FEMA systems –the Emergency Management Mission Integrated Environment, National Emergency Management Information, Integrated Financial Management Information System, and FEMA Applicant Case Tracker. The data included FEMA’s obligations and Puerto Rico’s expenditures related to hurricanes Irma and Maria, the earthquakes and COVID-19 from September 2017 through January 15, 2021, the most recent data available at the time of our review.⁹ We reviewed information about these systems, including user manuals, interviewed data users and managers responsible for these data, checked for obvious errors in accuracy and completeness, and cross-checked data across sources to determine the reliability of these data. Based on these steps, we determined these data to be sufficiently reliable for the purposes of describing the status of Public Assistance and Hazard Mitigation Grant Program projects and funding in Puerto Rico. We also reviewed policies, procedures, and guidance on the Public Assistance program and the use of alternative procedures in Puerto Rico, including the April 2018 *Public Assistance Program and Policy Guide*, and the September 2019 and February 2020 versions of the *Public Assistance Alternative Procedures Guide for Permanent Work* in Puerto Rico.

To address our second objective on the extent to which FEMA has identified and assessed potential risks for the remaining recovery efforts, we reviewed FEMA’s Enterprise Risk Management (ERM) Framework and compared it to selected essential elements and good practices,

⁹These data do not include obligations and expenditures for, among other federal disaster assistance programs, direct federal mission assignments, in which a federal agency is tasked with providing eligible emergency work or debris removal services to a territory or state, or for other categories of mission assignments. An obligation is a definite commitment that creates a legal liability of the government for the payment of goods and services ordered or received. For the purposes of this report, obligations represent the amount of grant funding FEMA provided through the Public Assistance program for specific projects in Puerto Rico. An expenditure is an amount paid by federal agencies, by cash or cash equivalent, during the fiscal year to liquidate government obligations. For the purposes of this report, an expenditure represents the actual spending by the Puerto Rico government of money obligated by the federal government.

identified in our prior work for ERM.¹⁰ We interviewed FEMA officials in Puerto Rico, FEMA Region 2, and FEMA headquarters. These interviews focused on the agency's plans for Puerto Rico's recovery, including those for developing and obligating projects, and identifying and assessing risks. We also reviewed documents, including Puerto Rico's recovery plan, and interviewed officials from Puerto Rico's COR3 and six Puerto Rico government agencies and public corporations to learn about their recovery efforts.

We conducted this performance audit from December 2019 to May 2021 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.

Background

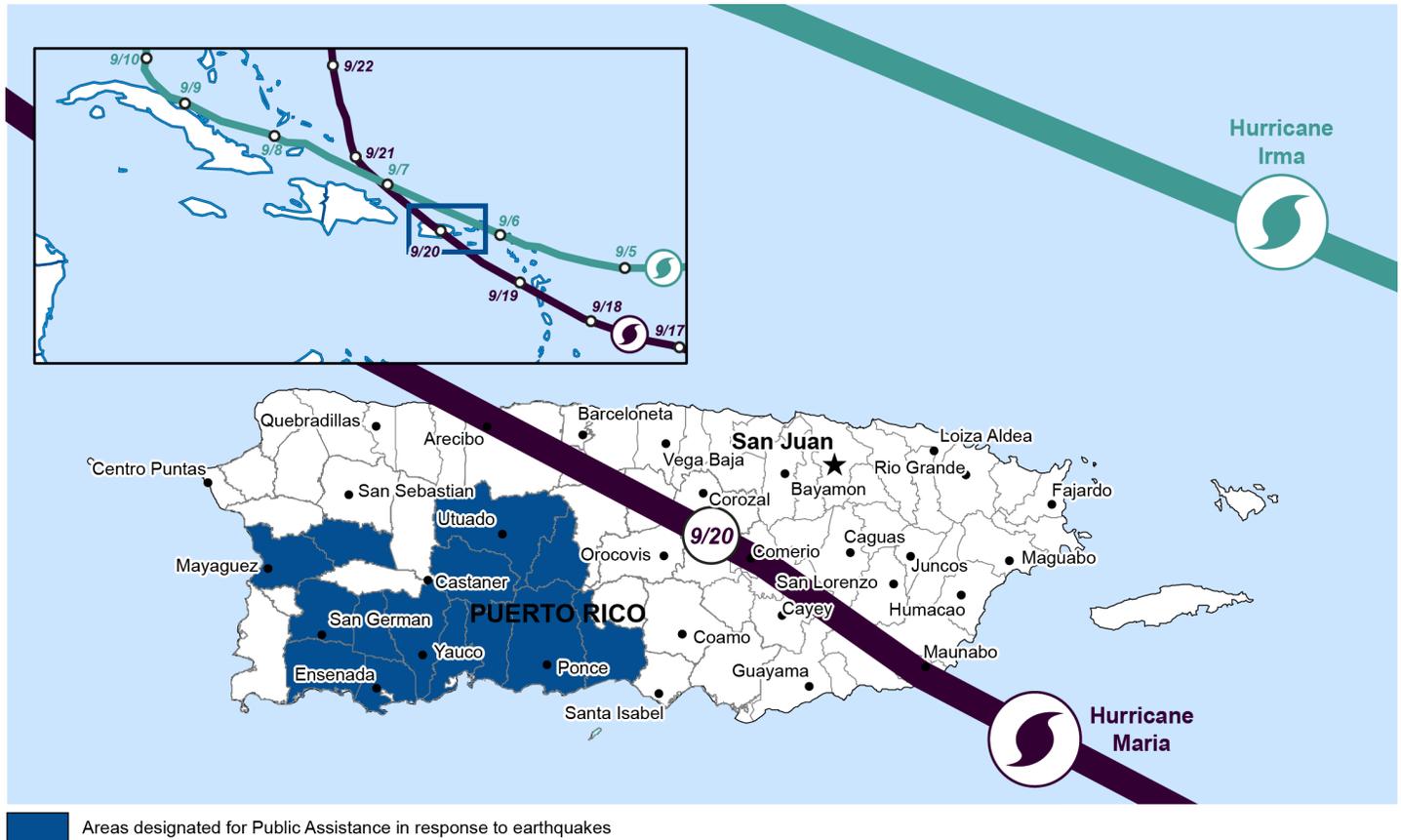
On September 6, 2017, the eye of Hurricane Irma traveled about 50 nautical miles to the north of Puerto Rico as a category 5 hurricane. On September 20, 2017, Hurricane Maria made landfall as a category 4 hurricane on the main island of Puerto Rico, with wind speeds up to 155 miles per hour.¹¹ Since December 28, 2019, Puerto Rico has experienced a series of earthquakes with aftershocks felt through July 2020. The largest, a magnitude 6.4 earthquake, occurred on January 7, 2020.¹² Figure 1 shows the paths of hurricanes Irma and Maria, as well as the areas affected by the earthquakes.

¹⁰In our prior work for Enterprise Risk Management (ERM), we identified essential elements by reviewing literature to identify good ERM practices and validated these with subject matter specialists. We identified good practices by interviewing selected agencies about ERM activities and reviewed documentation where available to corroborate officials' statements. GAO, *Enterprise Risk Management: Selected Agencies' Experiences illustrate Good Practices in Managing Risk*, GAO-17-63 (Washington, D.C.: Dec. 1, 2016).

¹¹NOAA measures hurricanes on a scale from 1 to 5 with a Category 1 being the least intense and a Category 5 being the most intense. NOAA defines a Category 5 hurricane as one with winds above 157 miles per hour and a Category 4 hurricane as one with winds above 130 miles per hour but less than 157 miles per hour.

¹²Magnitude is a number that characterizes the relative size of an earthquake and is a measurement of the maximum motion recorded by a seismograph. The severity of an earthquake can be expressed in terms of magnitude.

Figure 1: The Paths of Hurricanes Irma and Maria in Puerto Rico and Areas Affected by Earthquakes

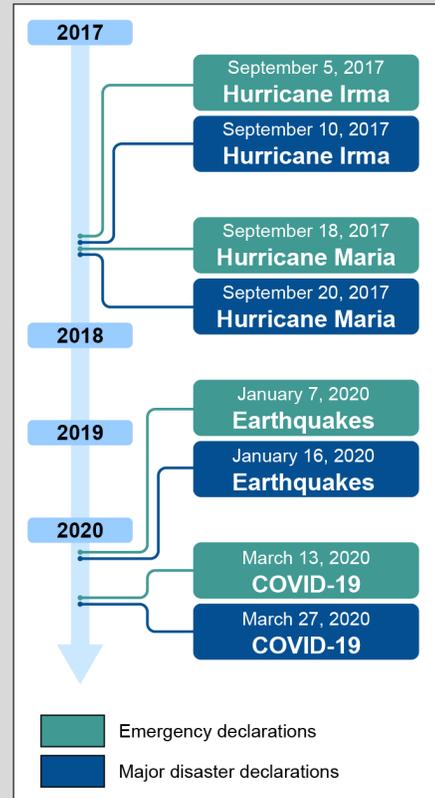


Source: GAO analysis of National Oceanic and Atmospheric Administration data and Federal Emergency Management Agency documents; Map Resources (map). | GAO-21-264

In response to the requests of the Governor of Puerto Rico, the President declared an emergency the day after each hurricane struck Puerto Rico.¹³ On September 10, 2017 and September 20, 2017 the President declared a major disaster for hurricanes Irma and Maria, respectively. On January 7, 2020, the President declared a state of emergency and on January 16, 2020, the President declared a major disaster covering the southwest

¹³In accordance with the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), as amended, the President of the United States may declare that a major disaster or emergency exists in response to a Governor's or tribal chief executive's request if the disaster is of such severity and magnitude that effective response is beyond the capabilities of a state, territorial, tribal, or local government and federal assistance is necessary. See 42 U.S.C. § 5170.

Timeline of Emergency and Major Disaster Declarations in Puerto Rico



Note: The President can declare an emergency for any occasion or instance when the President determines federal assistance is needed. The President can declare a major disaster for any natural event that the President determines has caused damage of such severity that it is beyond the combined capabilities of state and local governments to respond and will trigger a wide range of federal assistance programs, including the Public Assistance program and Hazard Mitigation Grant Program.

Source: GAO analysis of Federal Emergency Management Agency documents. | GAO-21-264

region of Puerto Rico in response to the earthquakes. Major disaster declarations trigger the availability of various federal response and recovery programs, including assistance through the Public Assistance program and Hazard Mitigation Grant Program.¹⁴

On March 13, 2020, the President declared an emergency due to the threat posed by COVID-19. On March 27, 2020, the President declared a major disaster related to COVID-19 in Puerto Rico. To address the risks posed by COVID-19, federal funding under this declaration is available for emergency protective measures such as buying personal protective equipment and implementing sanitation measures to prevent the spread of COVID-19. As of January 2021, Puerto Rico is still operating under COVID-19 restrictions, such as a daily curfew and social distancing protocols. See sidebar for the timeline of emergency and major disaster declarations in Puerto Rico.

Puerto Rico’s Fiscal Situation and Congressional Oversight of Recovery Efforts

The government of Puerto Rico began to default on its debt in August 2015 and has been operating with austerity measures in place, such as hiring freezes and budget cuts. We reported previously that Puerto Rico’s total public debt outstanding increased continuously from fiscal years 2005 through 2014, prior to the default in 2015.¹⁵ In response to Puerto Rico’s financial crisis, Congress passed and the President signed the Puerto Rico Oversight, Management, and Economic Stability Act in June

¹⁴See 42 U.S.C. §§ 5170b, 5170c, 5172. Presidential Policy Directive-8: National Preparedness establishes a national preparedness system made of an integrated set of guidance, programs, and processes designed to strengthen the security and resilience of the United States through systematic preparation for the natural and human-caused threats that pose the greatest risk. This system breaks preparedness activities into five different lines of effort—prevention, protection, mitigation, response, and recovery—each of which requires a separate planning framework.

¹⁵GAO-19-525.

2016, which established the Fiscal Oversight and Management Board with broad budgetary and financial control over Puerto Rico.¹⁶

After the 2017 hurricanes and the magnitude of the federal investment required for the recovery, Congress directed FEMA and the federal government to take a more active role in Puerto Rico's recovery. Specifically, the Bipartisan Budget Act of 2018 directed the Governor of Puerto Rico to develop a recovery plan in coordination with FEMA and with support and contributions from other federal agencies with designated responsibilities under the National Disaster Recovery Framework.¹⁷ To assist with the recovery plan development, FEMA retained the Homeland Security Operational Analysis Center, a federally-funded research and development center operated by the RAND Corporation under contract with the Department of Homeland Security.

On August 8, 2018, Puerto Rico submitted an economic disaster recovery plan to Congress that defines priorities, goals, and expected outcomes of Puerto Rico's recovery.¹⁸ The recovery plan identifies 276 recommendations (known as courses of action) to aid strategic initiatives and capital investments to capitalize on Puerto Rico's unique assets and

¹⁶The Puerto Rico Oversight, Management, and Economic Stability Act established the Financial Oversight and Management Board to provide guidance to Puerto Rico in fiscal responsibility. See Pub. L. No. 114-187, 130 Stat. 549 (2016). In accordance with the Act, the Board was established to provide a method for Puerto Rico to achieve fiscal responsibility and access to the capital markets. Under the Act, the Board may certify Puerto Rico's financial plans, approve and monitor budgets and budgetary activities, advise Puerto Rico on financial management, and certify restructuring and approve actions related to debt issuance.

¹⁷Pub. L. No. 115-123, § 21209, 132 Stat. 64, 108-09 (2018). The National Disaster Recovery Framework provides context for how the whole community works together to restore, redevelop, and revitalize the health, social, economic, natural, and environmental fabric of the community. This framework also identifies Recovery Support Functions that provide a structure to facilitate problem solving, improve access to resources, and foster coordination among state and federal agencies, tribes, territories, nongovernmental partners and stakeholders. FEMA, *National Disaster Recovery Framework*, Second Edition (June 2016).

¹⁸Central Office for Recovery, Reconstruction and Resiliency, Government of Puerto Rico, *Transformation and Innovation in the Wake of Devastation: An Economic and Disaster Recovery Plan for Puerto Rico* (August 8, 2018).

promote economic growth.¹⁹ For example, some courses of action are intended to build the infrastructure and systems that support Puerto Rico's economy, society, and disaster resilience. According to FEMA officials, the courses of action are not binding but can help guide recovery efforts. In 2020, the Homeland Security Operational Analysis Center published 20 supplemental reports to continue to support recovery efforts by, for example, detailing recovery needs and recommendations by sector.

Entities Involved in Puerto Rico's Recovery

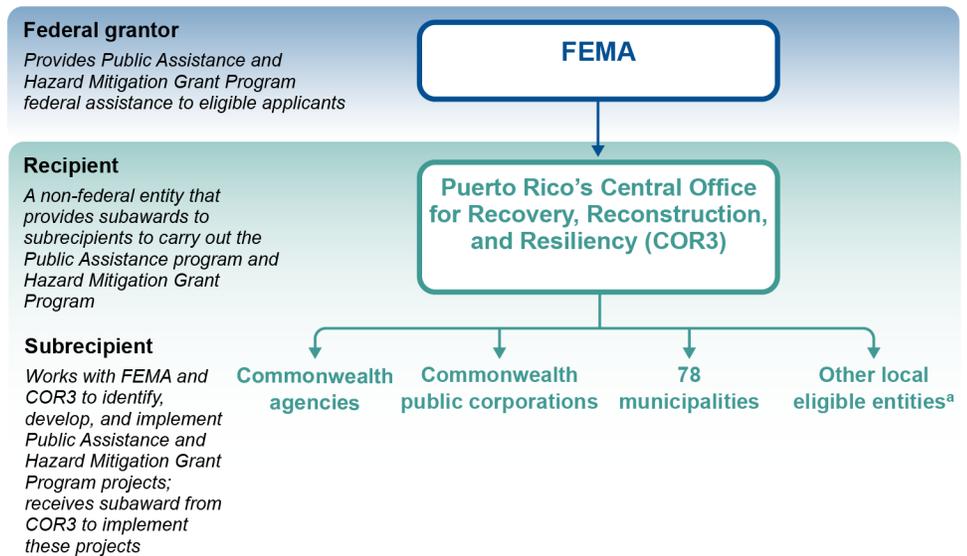
Given the immense scale and scope of devastation, disaster recovery in Puerto Rico is a complex and dynamic process involving a large number of entities. FEMA is the lead federal agency for assisting state, territorial, and local governments in disaster recovery, including in achieving their recovery goals. FEMA administers the Public Assistance program and the Hazard Mitigation Grant Program in partnership with Puerto Rico's COR3, an office established after the 2017 hurricanes to guide recovery investment and policy and to serve as a focal point for managing Puerto Rico's recovery. As shown in figure 2, implementing the Public Assistance program and the Hazard Mitigation Grant Program involves recovery partners from the federal government; the Commonwealth of Puerto Rico; and Puerto Rico government agencies, public corporations, municipalities, and eligible nonprofits in Puerto Rico.²⁰ These recovery

¹⁹The courses of action outlined in the plan reflect Puerto Rico's short-term and long-term vision, organized into three areas. First, the recovery plan proposes "precursor" actions—those that serve as a foundation for all future actions—that will be prioritized for implementation. Second, the recovery plan proposes a set of actions that aim to build the infrastructure and systems that support Puerto Rico's economy, society, and disaster resilience, such as addressing vulnerabilities in Puerto Rico's electric grid. Finally, the recovery plan proposes a set of actions that address Puerto Rico's long-term recovery goals, such as developing and enhancing Puerto Rico's visitor economy. The nine fundamental capital investments the Government of Puerto Rico identified are: energy, communications and information technology, water, transportation, housing, public buildings, education, health and well-being, and natural environment. The eight strategic initiatives are: ocean economy, visitor economy, emergency services modernization, agricultural transformation, digital transformation, 21st century workforce, entrepreneurship, and advanced manufacturing.

²⁰In October 2017, the governor of Puerto Rico established the Central Office for Recovery, Reconstruction, and Resiliency (COR3) to be the recipient for all Public Assistance program and Hazard Mitigation Grant Program funding in accordance with the conditions provided in Amendment 5 to the President's disaster declaration requiring Puerto Rico to establish an oversight authority supported by third-party experts and provide centralized oversight over recovery funds. Amendment No. 5 to Notice of a Major Disaster Declaration, 82 Fed. Reg. 53,514 (Nov. 16, 2017).

partners help develop projects under both programs by providing or receiving grants and sub-grants (subawards).

Figure 2: Entities Involved in Implementing Federal Emergency Management Agency’s (FEMA) Public Assistance Program and Hazard Mitigation Grant Program in Puerto Rico



Source: GAO analysis of Federal Emergency Management Agency documents. | GAO-21-264

^aOther local eligible entities include eligible private nonprofit organizations that provide eligible services such as education, utility, emergency or medical, among others.

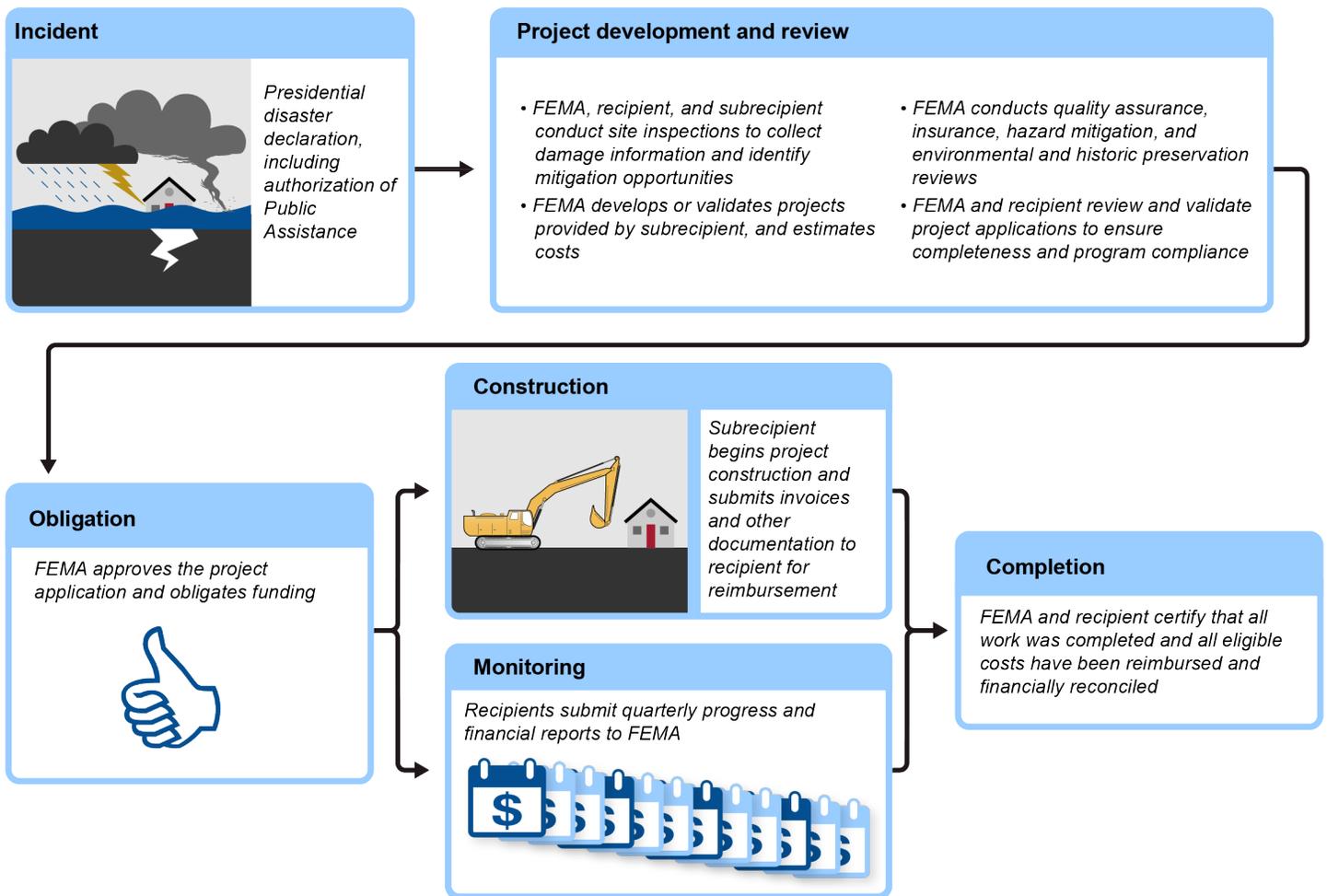
FEMA’s Public Assistance Program and Hazard Mitigation Grant Program in Puerto Rico

Public Assistance and Alternative Procedures: FEMA’s Public Assistance program provides grant funding to state, territorial, local, and tribal governments, as well as certain types of private nonprofit organizations, to assist them in responding to and recovering from major disasters or emergencies.²¹ As mentioned, in Puerto Rico, FEMA’s Public

²¹The Public Assistance program represents the largest share of the Disaster Relief Fund, which is the primary source of federal disaster assistance for state and local governments when a disaster is declared. The Disaster Relief Fund is appropriated no-year funding, which allows FEMA to fund, direct, coordinate, and manage response and recovery efforts-including certain efforts by other federal agencies and state and local governments, among others-associated with domestic disasters and emergencies.

Assistance program is administered through a partnership between FEMA and the recipient, COR3, which in turn provides funding to local entities who are the subrecipients of a Public Assistance grant award.²² Figure 3 describes the process these entities use to develop, review, obligate, construct, monitor and complete Public Assistance projects.

Figure 3: Public Assistance Grant Process



Source: GAO analysis of Federal Emergency Management Agency (FEMA) documents. | GAO-21-264

²²FEMA's Public Assistance program entails an extensive paperwork and review process between FEMA and grantee officials based on specific eligibility rules that outline the types of damage that can be reimbursed by the federal government and steps that federal, state, and local governments must take to document eligibility.

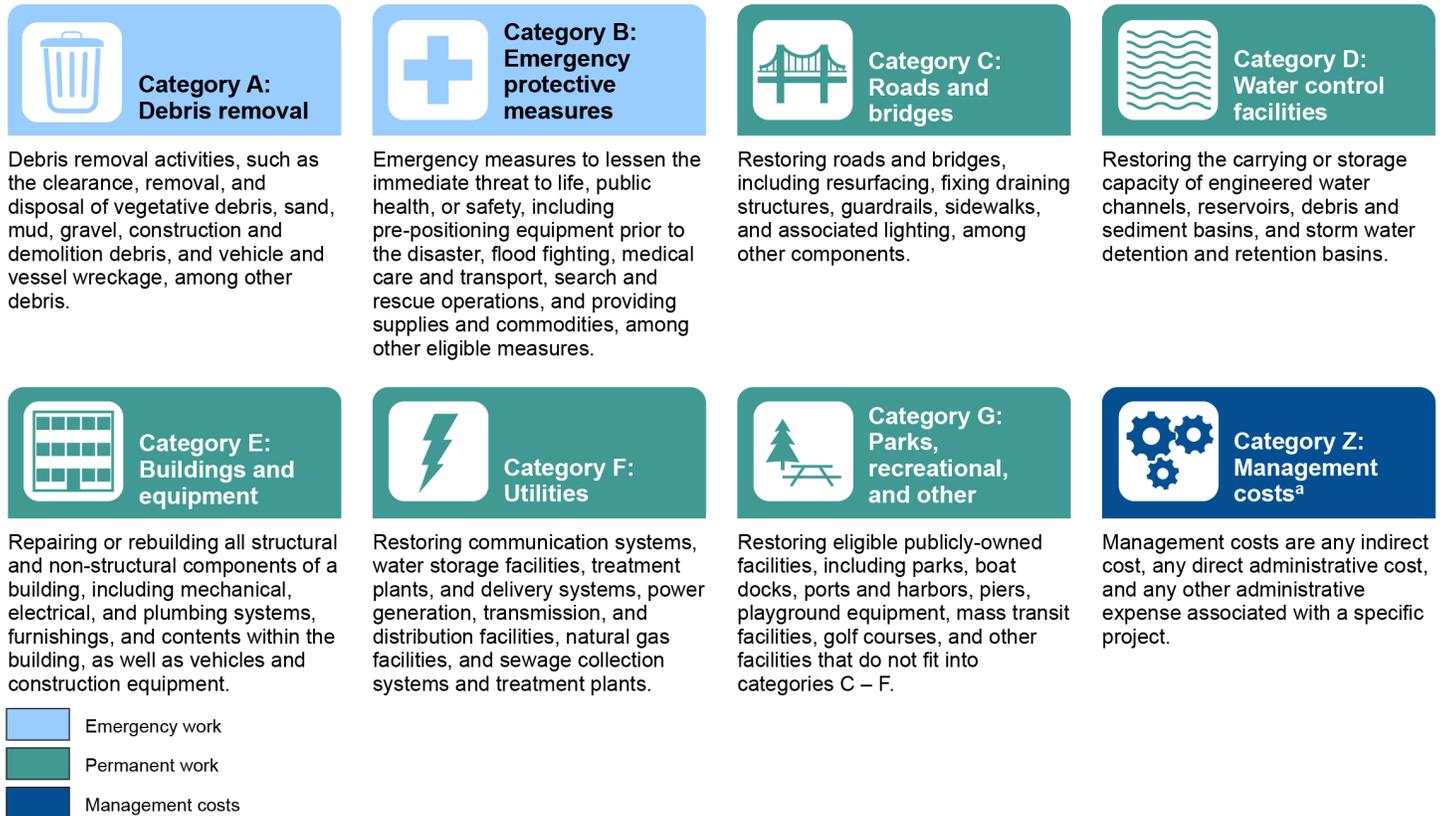
Text of Figure 3: Public Assistance Grant Process

- 1) Incident:
Presidential disaster declaration, including authorization of Public Assistance
- 2) Project development and review
 - a) FEMA, recipient, and subrecipient conduct site inspections to collect damage information and identify mitigation opportunities
 - b) FEMA develops or validates projects provided by subrecipient, and estimates costs
 - c) FEMA conducts quality assurance, insurance, hazard mitigation, and environmental and historic preservation reviews
 - d) FEMA and recipient review and validate project applications to ensure completeness and program compliance
- 3) Obligation
FEMA approves the project application and obligates funding
 - a) Construction: Subrecipient begins project construction and submits invoices and other documentation to recipient for reimbursement
 - b) Monitoring: Recipients submit quarterly progress and financial reports to FEMA
- 4) Completion: FEMA and recipient certify that all work was completed and all eligible costs have been reimbursed and financially reconciled

As shown in figure 4, Public Assistance program funds are categorized broadly as either “emergency work” or “permanent work.” Within those two broad categories are separate sub-categories A through G. In addition to the emergency work and permanent work categories, FEMA’s Public Assistance program includes a Category Z, which represents any indirect costs, any direct administrative costs, and any other administrative expense associated with a specific project.²³

²³The Disaster Recovery Reform Act of 2018 amended the definition of management cost, referred to as category Z. See Pub. L. No. 115-254, § 1215, 132 Stat. 3186, 3449 (codified at 42 U.S.C. § 5165b(a)).

Figure 4: Federal Emergency Management Agency’s Public Assistance Program Categories of Work



Source: Federal Emergency Management Agency. | GAO-21-264

Text of Figure 4: Federal Emergency Management Agency’s Public Assistance Program Categories of Work

- **Category A: Debris removal. (Emergency Work)**
Debris removal activities, such as the clearance, removal, and disposal of vegetative debris, sand, mud, gravel, construction and demolition debris, and vehicle and vessel wreckage, among other debris.
- **Category B: Emergency protective measures. (Emergency Work)**
Emergency measures to lessen the immediate threat to life, public health, or safety, including pre-positioning equipment prior to the disaster, flood fighting, medical care and transport, search and rescue operations, and providing supplies and commodities, among other eligible measures.
- **Category C: Roads and Bridges. (Permanent Work)**
Restoring roads and bridges, including resurfacing, fixing draining

structures, guardrails, sidewalks, and associated lighting, among other components.

- **Category D: Water Control Facilities. (Permanent Work)**
Restoring the carrying or storage capacity of engineered water channels, reservoirs, debris and sediment basins, and storm water detention and retention basins.
- **Category E: Buildings and Equipment. (Permanent Work)**
Repairing or rebuilding all structural and non-structural components of a building, including mechanical, electrical, and plumbing systems, furnishings, and contents within the building, as well as vehicles and construction equipment.
- **Category F: Utilities. (Permanent Work)**
Restoring communication systems, water storage facilities, treatment plants, and delivery systems, power generation, transmission, and distribution facilities, natural gas facilities, and sewage collection systems and treatment plants.
- **Category G: Parks, recreational and other. (Permanent Work)**
Restoring eligible publicly-owned facilities, including parks, boat docks, ports and harbors, piers, playground equipment, mass transit facilities, golf courses, and other facilities that do not fit into categories C – F.
- **Category Z: Management Costs.**
Management costs are any indirect cost, any direct administrative cost, and any other administrative expense associated with a specific project.

^aThe Disaster Recovery Reform Act of 2018 amends the definition of Category Z management costs. See Pub. L. No. 115-254, § 1215, 132 Stat. 3186, 3449 (codified at 42 U.S.C. § 5165b(a)).

The November 2, 2017 amendment to the presidential disaster declaration for Hurricane Maria stated that due to the extraordinary level of infrastructure damage caused by Hurricane Maria, as well as Puerto Rico's difficult financial position, FEMA must obligate all large project funding for Public Assistance permanent work through alternative procedures.²⁴ Unlike the standard Public Assistance program in which FEMA will fund the actual cost of a project, the alternative procedures require awards for permanent work projects to be made based on fixed-cost estimates to provide financial incentives for the timely and cost-

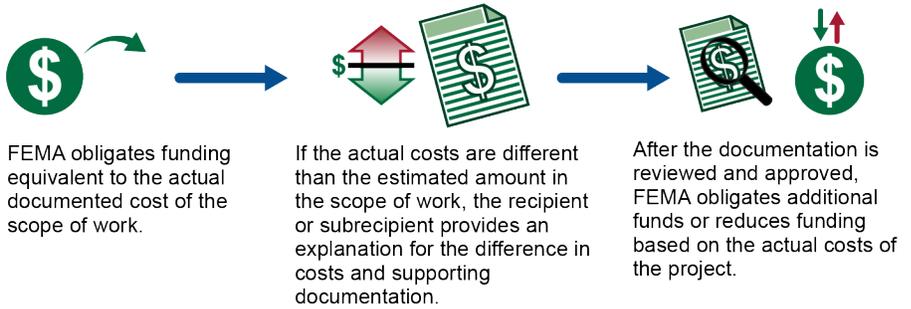
²⁴See 82 Fed. Reg. 53,514.

effective completion of work.²⁵ This makes the recipient or subrecipient responsible for any project costs that exceed the agreed-upon fixed-cost estimate. However, if actual costs are less than the fixed-cost estimate, the recipient or subrecipient may use all or part of excess funds for other eligible purposes, such as additional cost-effective hazard mitigation measures to increase the resilience of public infrastructure, as detailed in figure 5 below.

Figure 5: Standard Public Assistance and Alternative Procedures for the Federal Emergency Management Agency’s (FEMA) Public Assistance in Puerto Rico.

Standard Public Assistance^a

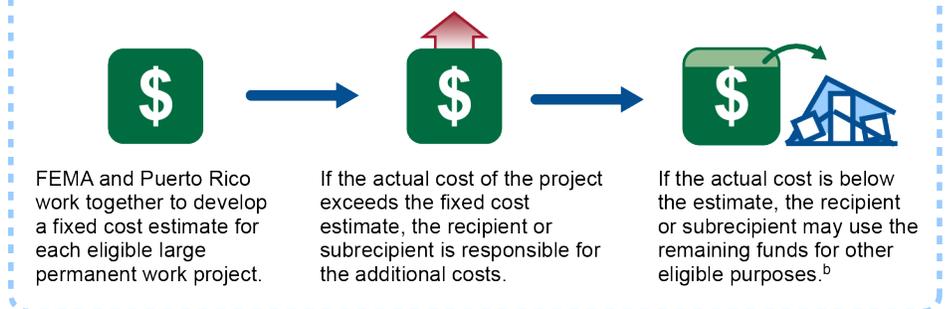
Funding is equivalent to actual cost



Alternative Procedures in Puerto Rico

Fixed cost estimate

Use of excess funds



Source: GAO analysis of FEMA documents. | GAO-21-264

²⁵The Sandy Recovery Improvement Act of 2013 amended the Stafford Act by adding Section 428, which authorized FEMA to approve Public Assistance program projects under the alternative procedures provided by that section for any presidentially-declared major disaster or emergency. This section further authorized FEMA to carry out the alternative procedures as a pilot program until FEMA promulgates regulations to implement this section. Pub. L. No. 113-2, div. B, § 1102(2), 127 Stat. 39, amending Pub. L. No. 93-288, tit. IV, § 428 (codified at 42 U.S.C. § 5189f).

Text of Figure 5: Standard Public Assistance and Alternative Procedures for the Federal Emergency Management Agency's (FEMA) Public Assistance in Puerto Rico.

Standard Public Assistance. Funding is equivalent to actual cost.

1. FEMA obligates funding equivalent to the actual documented cost of the scope of work.
2. If the actual costs are different than the estimated amount in the scope of work, the recipient or subrecipient provides an explanation for the difference in costs and supporting documentation.
3. After the documentation is reviewed and approved, FEMA obligates additional funds or reduces funding based on the actual costs of the project.

Alternative Procedures. Fixed Cost Estimate With Use of excess funds.

1. . FEMA and Puerto Rico work together to develop a fixed cost estimate for each eligible large permanent work project.
2. If the actual cost of the project exceeds the fixed cost estimate, the recipient or subrecipient is responsible for the additional costs.
3. If the actual cost is below the estimate, the recipient or subrecipient may use the remaining funds for other eligible purposes.^b

^aPermanent work projects with an estimated cost of under \$123,100 (the threshold for large projects for hurricanes Irma and Maria) are administered using the standard Public Assistance program in Puerto Rico.

^bExamples of eligible purposes include additional cost-effective hazard mitigation measures to increase the resilience of public infrastructure, or funding for activities that improve the recipient's or subrecipient's future Public Assistance operations or planning.

Further, section 20601 of the Bipartisan Budget Act of 2018 authorized FEMA, when using the alternative procedures, to help fund the replacement or restoration of disaster-damaged infrastructure that provides critical services-such as medical and educational facilities-to an

industry standard without regard to pre-disaster condition.²⁶ For example, FEMA may fund the restoration of a disaster-damaged school building—which provides a critical service—to accepted industry standards for education facilities, even if the building was in poor condition or not up to industry standards prior to the disaster.

FEMA also funds cost-effective hazard mitigation measures for permanent work projects under the Public Assistance program for both critical and non-critical disaster-damaged facilities.²⁷ FEMA provides grant funding in conjunction with the repair of these facilities to enhance their resilience during future disasters. For example, the funding could be used to replace damaged wooden utility poles with composite fiberglass ones to increase the resilience of an electricity distribution system and mitigate the potential for future damage from hurricane-force winds.

Under the Public Assistance program, both FEMA and the recipient are responsible for paying a share of the projects costs, with FEMA covering no less than 75 percent of the eligible costs (federal share). Given the magnitude of the hurricanes in Puerto Rico, the President authorized for the federal share to be 90 percent of total eligible costs for hurricanes Irma and Maria, except for assistance previously approved at 100 percent.²⁸ In response to the earthquakes and COVID-19 in Puerto Rico,

²⁶See Pub. L. No. 115-123, § 20601(1), 132 Stat. 64 (2018). For the purposes of our report, discussion of the Bipartisan Budget Act of 2018 refers specifically to section 20601. Critical services include public infrastructure in the following sectors: power, water, sewer, wastewater treatment, communications, education, and emergency medical care. See 42 U.S.C. § 5172(a)(3)(B). Section 20601 applies only to assistance provided through the Public Assistance alternative procedures program for the duration of the recovery for the major disasters declared in Puerto Rico and the U.S. Virgin Islands following hurricanes Irma and Maria. Further, the Additional Supplemental Appropriations for Disaster Relief Act of 2019, which was signed into law on June 6, 2019, provides additional direction to FEMA in the implementation of section 20601. Pub. L. No. 116-20, tit. VI, § 601, 133 Stat. 871, 882 (2019). Specifically it directs FEMA to “include the costs associated with addressing pre-disaster condition, undamaged components, codes and standards, and industry standards in the cost of repair” when calculating the whether a facility should be repaired or replaced. According to FEMA officials, FEMA evaluated this and other provisions of the Act and, in September 2019, issued an updated policy to provide clear guidance.

²⁷FEMA may fund hazard mitigation measures related to the damaged facilities receiving Public Assistance funding pursuant to Section 406 of the Stafford Act, as amended. 42 U.S.C. § 5172; 44 C.F.R. § 206.226.

²⁸FEMA authorized 100 percent federal funding of emergency work from September 2017 through May 2018 for emergency protective measures and through June 2018 for debris removal.

the President authorized for the federal share to be 75 percent of total eligible costs. On February 3, 2021, FEMA issued a statement that stated—based on a presidential directive—the agency would pay 100 percent federal funding for eligible COVID-19 costs from the beginning of the pandemic in January 2020 to September 30, 2021. Thus, Puerto Rico is responsible for none of the project costs for COVID-19, 10 percent of the project costs under hurricanes Irma and Maria, and 25 percent of the project costs under the earthquakes.

Hazard Mitigation Grant Program: FEMA’s Hazard Mitigation Grant Program provides grant funding for long-term mitigation solutions to improve resilience by reducing the risk of loss of life and property from future disasters.²⁹ Unlike mitigation measures funded through the Public Assistance program to further protect disaster-damaged infrastructure, the Hazard Mitigation Grant Program may fund measures for systems, facilities, or properties that were not damaged in the disaster. For example, program funding can be used to construct floodwater control measures—such as berms and rock linings—that did not exist prior to the disaster, or to update existing hazard mitigation plans to accurately reflect current mitigation goals. The amount of Hazard Mitigation Grant Program funding available for a given disaster is based on a percentage of the estimated total federal assistance provided under the Stafford Act for the major disaster.³⁰

Prior Work on Puerto Rico Disaster Recovery Efforts

We have previously reported on Puerto Rico’s recovery, including the challenges in implementing the Public Assistance program. In March 2019, we reported that uncertainty in guidance and delays in establishing

²⁹See 42 U.S.C. § 5170c; 44 C.F.R. §§ 206.430-440.

³⁰The amount of funding FEMA can provide under the Hazard Mitigation Grant Program is not to exceed 15 percent of the first portion of total disaster assistance up to \$2 billion; not to exceed 10 percent of the portion of such assistance between \$2 billion and \$10 billion; and not to exceed 7.5 percent of the portion of such assistance between \$10 billion and \$35.333 billion. If Puerto Rico meets higher mitigation planning criteria, it may qualify for a higher percentage. According to FEMA, the total amount of Hazard Mitigation Grant Program funding is based on a percentage of the estimated total federal assistance for the event projected one year after the disaster.

cost estimation guidance specific to Puerto Rico presented challenges to developing fixed-cost estimates.³¹

Since Puerto Rico is responsible for any costs that exceed fixed cost estimates for large permanent work projects under the alternative procedures, FEMA and Puerto Rico had to agree on guidance to develop the fixed cost estimates. In February 2020, we reported that, after delays, FEMA developed guidance for developing fixed cost estimates. However, we found that the guidance did not meet all of our best practices for estimating costs.³² We recommended that FEMA revise the guidance to adhere more fully to best practices. As of January 2021, FEMA was working to address our recommendation.

We also previously reported that Puerto Rico government and FEMA officials identified challenges with the implementation of the flexibilities authorized by section 20601 of the Bipartisan Budget Act.³³ Officials from Puerto Rico's central government said they disagreed with FEMA's interpretation of the types of damages covered by section 20601 of the Bipartisan Budget Act of 2018. FEMA officials in Puerto Rico responded that they held several briefings with Puerto Rico's central recovery office to explain FEMA's interpretation of the section, and released new guidance in September of 2019.

³¹We did not make recommendations in this report, but continued our review of Puerto Rico's recovery following publication of this report. GAO, *Puerto Rico Hurricanes: Status of FEMA Funding, Oversight, and Recovery Challenges*, [GAO-19-256](#) (Washington, D.C.: Mar. 14, 2019).

³²[GAO-20-221](#).

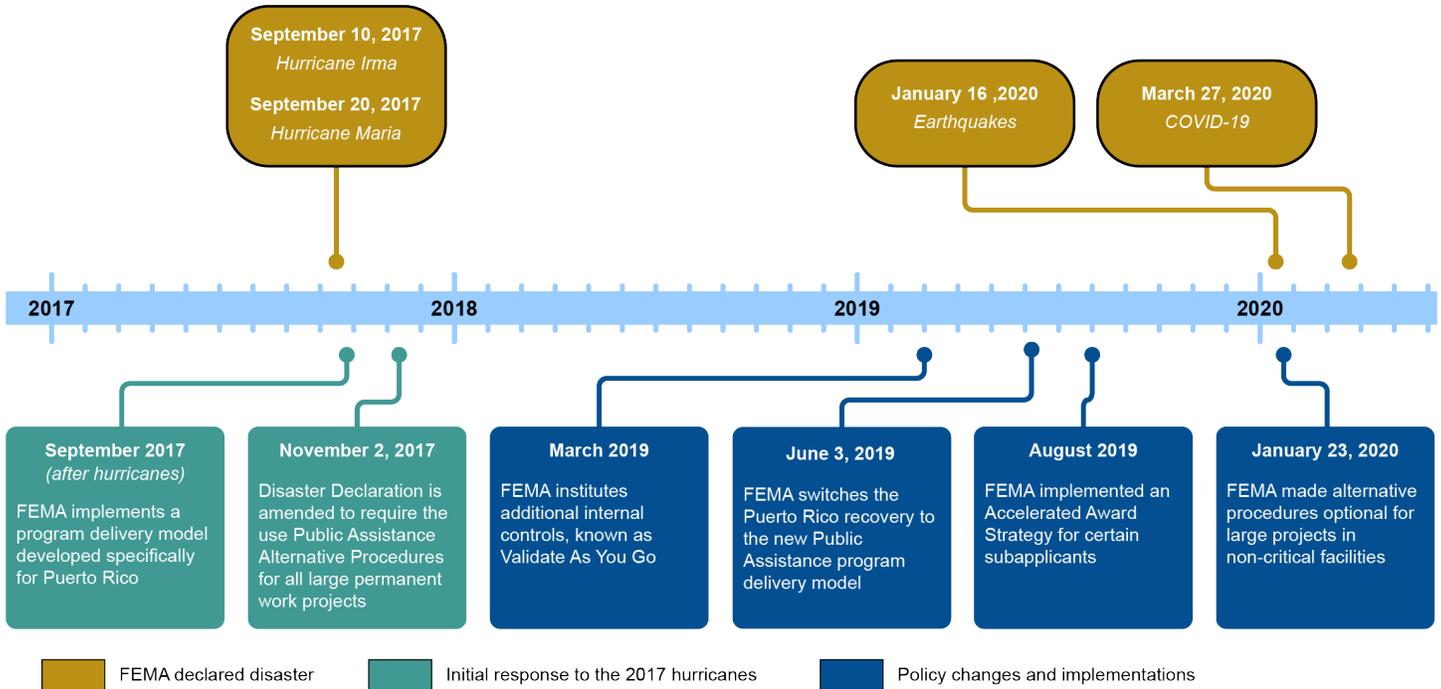
³³GAO, *Emergency Management: FEMA Has Made Progress, but Challenges and Future Risks Highlight the Imperative for Further Improvements*. [GAO-19-594T](#). (Washington, D.C.: June 12, 2019).

FEMA Made Changes to Help Expedite Public Assistance Projects in Puerto Rico, and Obligated \$23.8 Billion for Recovery

FEMA Made a Number of Changes Including Implementing a New Method of Delivering Public Assistance Program Funds in Puerto Rico

To help address challenges and expedite obligations, FEMA implemented changes to the Public Assistance program in Puerto Rico, including: 1) applying a new program delivery model (June 2019); 2) instituting an accelerated award strategy for certain recipients (August 2019); and 3) making the use of Public Assistance alternative procedures optional for certain projects (January 2020). In addition, FEMA implemented additional internal controls to help ensure proper use of obligated funds (March 2019) (see figure 6).

Figure 6: Timeline of Events and Federal Emergency Management Agency’s (FEMA) Public Assistance Program and Policy Changes since September 2017 (as of September 2020)



Source: GAO analysis of Federal Emergency Management Agency documents. | GAO-21-264

Text of Figure 6: Timeline of Events and Federal Emergency Management Agency’s (FEMA) Public Assistance Program and Policy Changes since September 2017 (as of September 2020)

- Sept. 10, 2017. Hurricane Irma (FEMA declared disaster)
- Sept. 20, 2017. Hurricane Maria (FEMA declared disaster)
- Sept. 2017 (After hurricanes) (initial response to 2017 hurricanes). FEMA implements a program delivery model developed specifically for Puerto Rico.
- Nov. 2, 2017. (initial response to 2017 hurricanes) Disaster Declaration is amended to require the use Public Assistance Alternative Procedures for all large permanent work projects.
- March 2019. (Policy Changes and Implementation) FEMA institutes additional internal controls, known as Validate As You Go

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- June 3, 2019. (Policy Changes and Implementation) FEMA switches the Puerto Rico recovery to the new Public Assistance program delivery model
 - Aug. 2019. (Policy Changes and Implementation) FEMA implemented an Accelerated Award Strategy for certain subapplicants.
 - Jan. 16, 2020. Earthquakes. (FEMA declared disaster)
 - Jan. 23, 2020. (Policy Changes and Implementation) FEMA made alternative procedures optional for large projects in non-critical facilities.
 - March 27, 2020. Covid 19. (FEMA declared disaster)

New Public Assistance Program Delivery Model. On June 3, 2019, FEMA implemented the new Public Assistance program delivery model in Puerto Rico intended to improve efficiency, accuracy, and transparency in the Public Assistance award process.³⁴ FEMA also established a Consolidated Resource Center in Puerto Rico. The new Public Assistance program delivery model had already been implemented for disasters declared since September 2017 but was not initially used for hurricanes Irma and Maria in Puerto Rico. This was because FEMA released the new model guidance after Hurricane Irma recovery efforts were already underway, and officials stated they did not want to change the process after Hurricane Maria. However, FEMA officials stated that the agency decided to begin using the model in Puerto Rico in June 2019 to ensure program consistency with other recoveries.

³⁴The new delivery model was the result of an effort by FEMA in 2015 to redesign the Public Assistance program. The redesigning effort primarily focused on specializing roles, segmenting the work, standardizing processes, and consolidating resources. It also included developing a new information system (Public Assistance Grants Manager and Grants Portal) to better maintain and share grant documentation. Other changes to the program included identifying opportunities for hazard mitigation earlier in the process; creating consolidated resource centers to standardize and centralize Public Assistance staff responsible for managing grant applications; and creating new specialized positions, such as hazard mitigation liaisons, program delivery managers, and site inspectors, to ensure more consistent guidance to applicants. In September 2017, FEMA decided to begin using the new delivery model nationwide for all subsequent declared disasters—including hurricanes Harvey and Irma in Texas and Florida and the wildfires in California—with the exception of hurricanes Irma and Maria in Puerto Rico and the U.S. Virgin Islands. See GAO, 2017 Hurricanes and Wildfires: Initial Observations on the Federal Response and Key Recovery Challenges, [GAO-18-472](#) (Washington, D.C.: Sept. 4, 2018). In May 2019, FEMA determined that it would transition to the new Public Assistance program delivery model in Puerto Rico and the U.S. Virgin Islands beginning on June 3, 2019.

Accelerated Award Strategy. In August 2019, FEMA developed an accelerated award strategy that allows Puerto Rico’s Electric Power Authority, Aqueduct and Sewer Authority, and Department of Education to use a sample of the information needed to extrapolate costs and develop a fixed cost estimate for permanent work projects. This is different from the non-accelerated approach where the costs for each damaged site are calculated to create the fixed cost estimates. Using the accelerated award strategy, FEMA approved \$10.7 billion, \$4.2 billion, and \$2.35 billion in fixed cost estimates for the abovementioned entities, respectively, and obligated \$9.46 billion, \$3.66 billion, and \$2.06 billion in federal share, respectively. Under this approach, the obligation of the fixed cost estimate works as a recovery budget rather than authorization for construction of projects. Puerto Rico agencies must still submit documentation to FEMA for review and approval of individual projects. This is different from the non-accelerated approach where projects are approved along with the obligation of funds.

The Electric Power Authority, Aqueduct and Sewer Authority, and Department of Education have 5 years from the date of obligation to complete these projects. In November 2020, FEMA issued guidance on how project development and approval will proceed for these projects.³⁵ FEMA officials said they will update the guide as necessary to ensure efficient project development and approval of the permanent work.

Optional Use of Public Assistance Alternative Procedures. On January 23, 2020, FEMA made the use of Public Assistance alternative procedures optional for the repair of non-critical service facilities damaged by Hurricane Maria.³⁶ As described earlier, alternative procedures require FEMA to obligate funds to cover fixed-cost estimates developed before the project begins, in contrast to standard Public Assistance where FEMA obligates funds equivalent to the actual cost of the project. These alternative procedures are intended to provide an incentive for state and local entities to ensure efficiency and avoid cost over-runs, but use of these alternative procedures can delay a project’s obligation because

³⁵FEMA. *FEMA-4339-DR-PR Public Assistance: Post-Fixed Cost Estimate Obligation for PREPA, PRASA, and PRDE Courses of Action Guide*. November 18, 2020.

³⁶FEMA, Region 2. *Letter to the Governor’s Authorized Representative on FEMA-4339-DR-PR- Section 428 Applicability and Guidance*, (Guaynabo, Puerto Rico: January 23, 2020). Facility means any publicly or privately owned building, works, system, or equipment, built or manufactured, or an improved and maintained natural feature. 44 C.F.R. § 206.201(c).

more time is required to develop a fixed-cost estimate. Prior to January 23, 2020, FEMA had to obligate all large project funding for Public Assistance permanent work through alternative procedures.³⁷ FEMA still requires large projects for critical service facilities to use Public Assistance alternative procedures, but projects for non-critical service facilities may use either standard Public Assistance or alternative procedures.³⁸

Additional Internal Controls. In addition to the various monitoring activities FEMA has in place, such as reviewing quarterly progress and financial reports, in March 2019, FEMA instituted additional internal controls to help ensure the proper use and management of projects funded under the Public Assistance program.³⁹ In response to a March 2018 Office of Management and Budget memorandum, FEMA instituted the new Validate As You Go process to oversee the post-award process for Public Assistance projects under hurricanes Harvey, Irma, and Maria.⁴⁰ As part of this process, FEMA is to select a sample of recipients' and subrecipients' expenditures to ensure that sufficient documentation,

³⁷See 82 Fed. Reg. 53,514.

³⁸Any non-critical service facility that has not been requested for participation in Public Assistance alternative procedures by March 6, 2020 will be processed using standard Public Assistance. Additionally, any non-critical service facility projects obligated under alternative procedures, as of February 10, 2020, are still required to participate in Public Assistance alternative procedures.

³⁹In February 2020, we reported that FEMA and Puerto Rico have structures in place to manage and oversee federal funds. Following the 2017 hurricanes, Puerto Rico took steps to provide management and oversight of the Public Assistance program to ensure the program is implemented in compliance with applicable laws and regulations, as well as FEMA policies and guidance. Specifically, Puerto Rico (1) established the central recovery office to provide management and oversight of recovery funds, (2) developed an administrative plan, as required by FEMA policy, (3) developed an internal controls and recovery management plan; and (4) created a system to oversee and assess subrecipient risk. [GAO-20-221](#).

⁴⁰The Office of Management and Budget memorandum M-18-14 provides guidance to agencies to implement the internal control provisions of the 2017 disaster relief supplemental appropriations, and in particular, it explains agency responsibilities for managing disaster relief funds for hurricanes Harvey, Irma and Maria and the California wildfires. M-18-14 notes that as required by the Office of Management and Budget Circular No. A-123, *Management's Responsibility for Enterprise Risk Management and Internal Control* (Circular A-123), each agency has overall responsibility for establishing internal controls to manage the risk of fraud—one source of improper payments. Office of Management and Budget, *Implementation of Internal Controls and Grant Expenditures for the Disaster-Related Appropriations*, Memorandum M-18-14 (Washington, D.C.: Mar. 30, 2018).

such as receipts or timesheets, was provided for the full amount expended and that all of the expenses fall within the scope of the project. FEMA officials said that in Puerto Rico, Validate As You Go helps them monitor COR3's internal controls and provides an additional layer of oversight between obligations and completion of projects for hurricanes Irma and Maria.

For fiscal year 2018, FEMA selected a sample of 155 award expenditures for hurricanes Irma and Maria in Puerto Rico for \$1.7 billion, which constituted about 93 percent of expenditures during the year, to go through this process. As of February 2021, the review was completed and resulted in FEMA issuing a letter with initial findings to Puerto Rico identifying \$243 million in improper funding to be recovered.⁴¹ For fiscal year 2019, FEMA selected a sample of 267 award expenditures in Puerto Rico totaling about \$2 billion for testing, which constituted about 91 percent of expenditures for the year, according to FEMA officials. The testing for fiscal year 2019 was temporarily paused in March 2020 due to COVID-19, but testing activities have resumed as of December 2020.

FEMA Has Obligated \$23.8 Billion Through Two Puerto Rico Recovery Programs

As of January 15, 2021, FEMA had obligated \$23.8 billion in Public Assistance to recover from hurricanes Irma and Maria, the earthquakes and COVID-19, according to our analysis of FEMA's data.⁴² Most of the obligations (\$23.5 billion) were for hurricanes Irma and Maria, while the remaining amounts were for the earthquakes (\$243.8 million) and COVID-19 (\$59.7 million). In addition to the \$23.8 billion in Public Assistance obligations, FEMA obligated \$69.5 million for the Hazard Mitigation Grant Program. While FEMA's changes to the Public Assistance program in Puerto Rico have contributed to an increase in obligations in recent months, many steps remain to develop, obligate funding for, and start construction of Public Assistance projects for Puerto Rico's recovery. For example, in addition to the almost 6,500 projects already obligated, FEMA

⁴¹This letter is referred to as a Notice of Potential Debt and generally includes the basis for the audit finding, the amount of improper funding to be recovered. See FEMA, *Public Assistance Recovery of Improper Payments Standard Operating Procedures*, SOP9570.16 (Washington, D.C.: Jan 2014). The findings may be appealed by the Recipient within 60 days after the date on which the Recipient is notified by FEMA. See 42 U.S.C. § 5189a; 44 C.F.R. § 206.206

⁴²These obligations are for the federal share for Public Assistance projects.

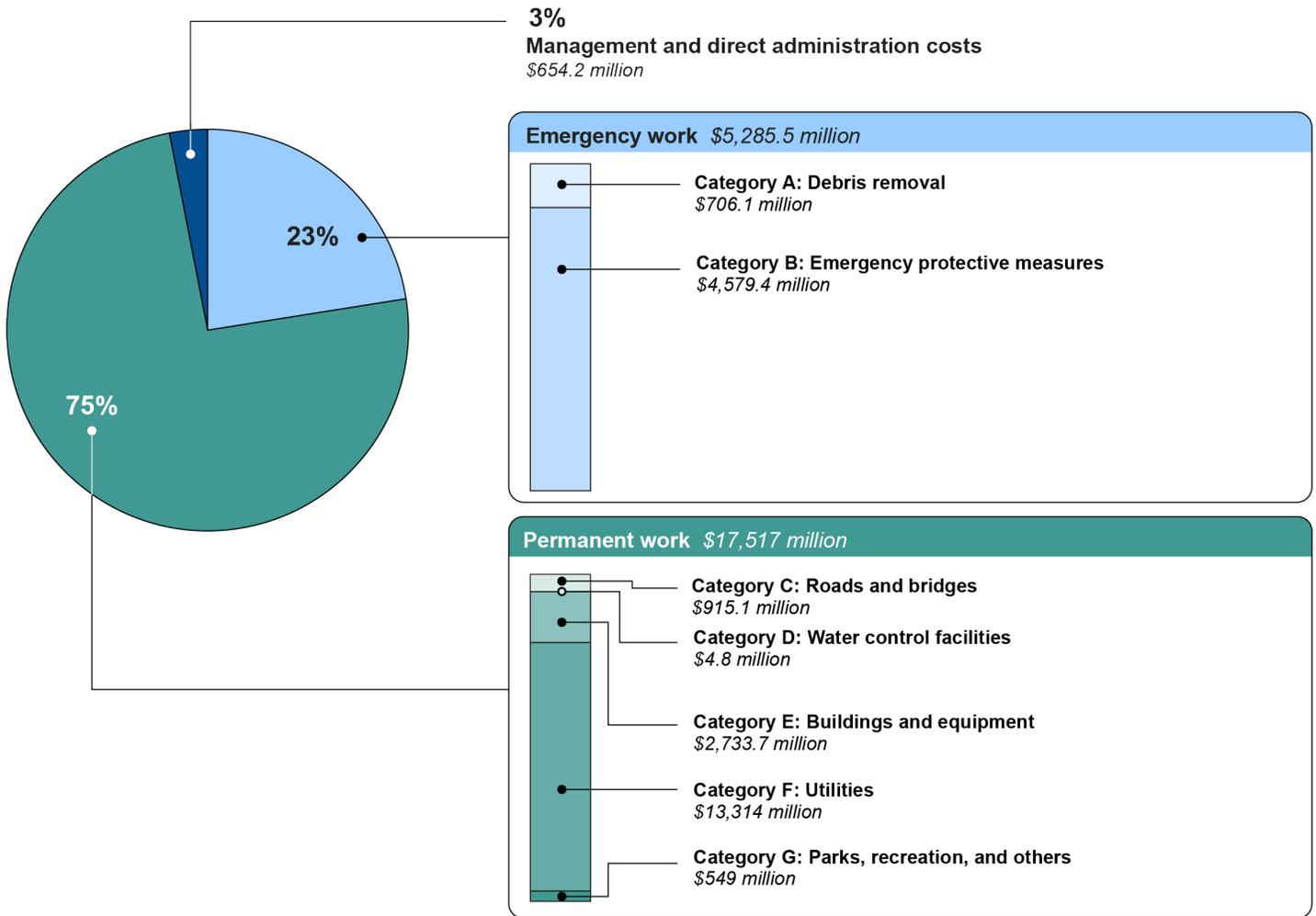
and Puerto Rico are working to develop and obligate about 6,100 more Public Assistance projects to address damages from these disasters. FEMA estimates it will obligate an additional \$9.2 billion for these projects. However, this amount is likely to increase as projects are developed and costs are estimated.

Hurricanes Irma and Maria

FEMA obligated \$23.5 billion in Public Assistance program funding for at least 6,400 projects across Puerto Rico and related management costs to recover from hurricanes Irma and Maria.⁴³ Specifically, 23 percent of FEMA's total obligations were for 1,622 emergency work projects, 75 percent for at least 4,793 permanent work projects, and 3 percent for management costs, according to our analysis of FEMA's data (see figure 7). This reflects progress FEMA has made in contrast to September 30, 2019— 2 years after hurricanes Irma and Maria, when FEMA had obligated about \$6 billion for 1,558 projects. FEMA and COR3 officials attributed this progress to the implementation of the new Public Assistance program delivery model in Puerto Rico. As of January 15, 2021, FEMA was developing 5,279 more projects for the hurricanes. Appendix I provides additional category-specific information on Public Assistance funding obligated for hurricanes Irma and Maria.

⁴³The number of projects obligated is likely to increase as Puerto Rico's Electric Power Authority, Aqueduct and Sewer Authority, and Department of Education develop projects under the fixed cost estimates that FEMA already approved and obligated.

Figure 7: Federal Emergency Management Agency (FEMA) Public Assistance Obligations in Puerto Rico for Hurricanes Irma and Maria as of January 15, 2021



Source: FEMA's Emergency Management Mission Integrated Environment (EMMIE) and Integrated Financial Management Information System (IFMIS) data as of January 15, 2021. | GAO-21-264

Data table for Figure 7: Federal Emergency Management Agency (FEMA) Public Assistance Obligations in Puerto Rico for Hurricanes Irma and Maria as of January 15, 2021

	AMOUNT	PERCENT
Emergency work Total	\$5,285,572,442	
Emergency work Category A: Debris removal	\$706,169,044	0.133603134
Emergency work Category B: Emergency protective measures	\$4,579,403,397	0.866396866
Permanent work Total	\$17,517,013,882	
Permanent work Category C: Roads and bridges	\$915,145,231	0.052243221

	AMOUNT	PERCENT
Permanent work Category D: Water control facilities	\$4,870,967	0.000278071
Permanent work Category E: Buildings and equipment	\$2,733,735,547	0.156061733
Permanent work Category F: Utilities	\$13,314,223,057	0.760073786
Permanent work Category G: Parks, recreation, and others	\$549,039,079	0.031343189
Management and direct administration costs	\$654,207,256	

Note: Numbers might not total 100 percent due to rounding.

FEMA has made progress obligating projects for permanent work, which support the longer-term rebuilding and restoration of Puerto Rico's infrastructure. For example, for those projects for which alternative procedures were required, FEMA and COR3 made progress in developing and obligating fixed cost estimates, increasing the number of obligated estimates from 19 to 2,405 from September 30, 2019 to January 15, 2021. Table 1 shows the amount obligated for permanent work projects under standard Public Assistance and alternative procedures.

Table 1: Federal Emergency Management Agency (FEMA) Public Assistance Permanent Work Obligations to Puerto Rico for Hurricanes Irma and Maria by Category of Work as of January 15, 2021.

Dollars in millions

Public Assistance Work Category	Standard Public Assistance		Alternative Procedures		Total	
	Number of projects	Obligated amount	Number of projects	Obligated amount	Number of projects	Obligated amount
C- Roads and Bridges	1,124	359.43	884	555.72	2008	915.14
D- Water Control Facilities	11	0.73	9	4.14	20	4.87
E- Public Buildings	529	98.49	650 ^a	2,635.24	1,179	2,733.73
F- Public Utilities	46	183.14	116 ^a	13,131.08	162	13,314.22
G- Recreational or Other	678	141.90	746	407.14	1,424	549.04
Total	2,388	783.70	2,405	16,733.32	4,973	17,517.01

Source: GAO analysis of FEMA data. | GAO-21-264

Note: The obligated amount represents the federal share for the project's costs.

^aThe number of projects under this category is likely to increase as Puerto Rico's Electric Power Authority, Aqueduct and Sewer Authority, and Department of Education develop projects to execute obligations under their fixed cost estimates.

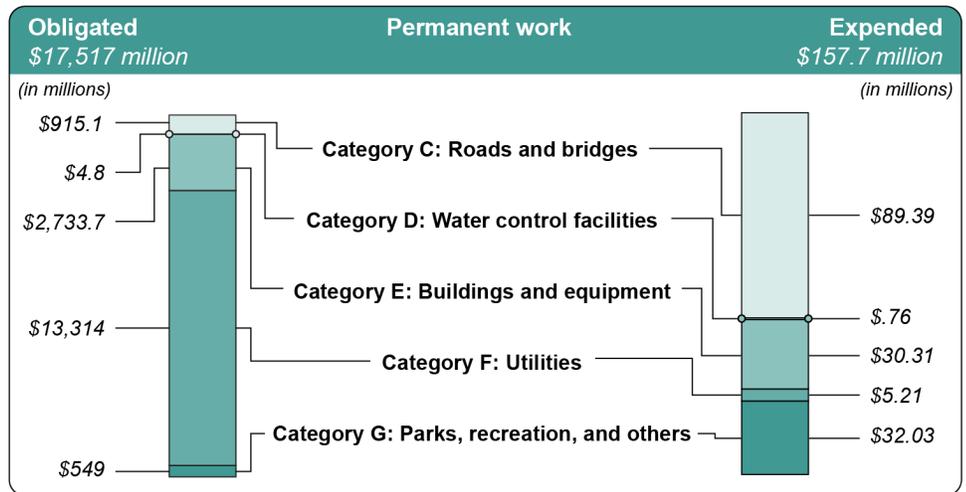
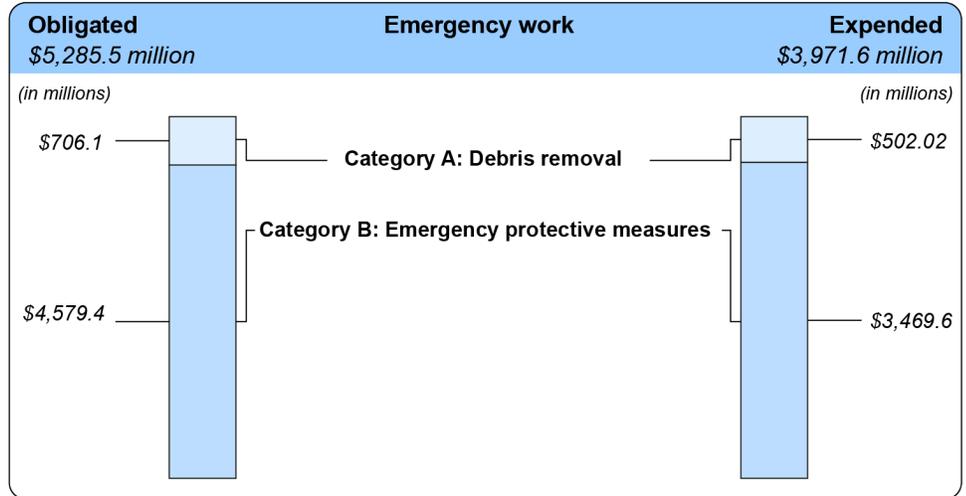
FEMA has also taken steps to incorporate resilience into Puerto Rico's permanent work. Of the \$23.5 billion obligated for hurricanes Irma and Maria, FEMA had obligated \$291.6 million for eligible mitigation work under the Public Assistance program and \$7.1 billion for work eligible

under the Bipartisan Budget Act.⁴⁴ Specifically, FEMA officials said they have obligated \$4.2 billion to the Electric Power Authority, \$2.5 billion to the Aqueduct and Sewer Authority, and \$415 million to the Department of Education for work eligible under the application of the Act. As an example of eligible work, officials from the Electric Power Authority said that the Bipartisan Budget Act will allow them to replace all of the components in their control room to raise the entire system up to current industry codes and standards, even though only two of the seven components were damaged in the storm. Appendix II provides additional information on the status of FEMA and Puerto Rico's efforts to incorporate resilience into the recovery and examples of projects with mitigation measures.

Of the \$23.5 billion FEMA has obligated for hurricanes Irma and Maria, Puerto Rico has expended \$4.5 billion—about 19 percent of total Public Assistance program obligations to Puerto Rico for the hurricanes. These expenditures have been used to reimburse subrecipients for completed work. As shown in figure 8, most of Puerto Rico's expenditures (about 88 percent of total expenditures) were for emergency work projects, according to our analysis of FEMA's data.

⁴⁴To help incorporate resilience into projects in response to damages sustained by the 2017 hurricanes in Puerto Rico, FEMA developed its *Hazard Mitigation Branch Strategy*, which details actions to be taken to address FEMA's mitigation priorities and goals.

Figure 8: Federal Emergency Management Agency (FEMA) Public Assistance Obligations to Puerto Rico and Expenditures for Hurricanes Irma and Maria by Category of Work as of January 15, 2021.



Source: FEMA's Emergency Management Mission Integrated Environment (EMMIE) and Integrated Financial Management Information System (IFMIS) data as of January 15, 2021. | GAO-21-264

Data table for Figure 8: Federal Emergency Management Agency (FEMA) Public Assistance Obligations to Puerto Rico and Expenditures for Hurricanes Irma and Maria by Category of Work as of January 15, 2021.

	OBLIGATED	OBLIGATED PERCENT	Sum of 1/15/21 Expended Amount	EXPENDED PERCENT
A - Debris Removal	\$706,169,044.65	0.133603134	\$502,020,561.06	0.126401659
B - Protective Measures	\$ 4,579,403,397.38	0.866396866	\$3,469,608,979.59	0.873598341
C - Roads and Bridges	\$915,145,231.22	0.052243221	\$89,395,920.90	0.566860727
D - Water Control Facilities	\$4,870,967.96	0.000278071	\$758,442.84	0.004809296
E - Public Buildings	\$2,733,735,547.12	0.156061733	\$30,308,701.45	0.19218788
F - Public Utilities	\$13,314,223,057.65	0.760073786	\$5,210,050.48	0.033037
G - Recreational or Other	\$549,039,079.01	0.031343189	\$32,030,384.67	0.203105097
Z - State Management	\$654,207,256.94		\$390,795,043.52	

Earthquakes

FEMA obligated over \$243.8 million and Puerto Rico expended \$188.1 million for 48 projects and management costs to recover from the earthquakes, according to our analysis of FEMA’s data as of January 15, 2021 (see table 2).

Table 2: Federal Emergency Management Agency (FEMA) Public Assistance Obligations to Puerto Rico and Expenditures for the 2019-2020 Earthquakes by Category of Work as of January 15, 2021.

Dollars in millions

	Public Assistance Work Category	Number of projects	Obligated amount	Expended amount	Percent expended
Emergency work	Total	31	243.06	188.09	77
	A- Debris Removal	2	0.01	0.00	32
	B- Protective measures	29	243.05	188.08	77
Permanent work	Total	17	0.36	0.0	0
	C- Roads and Bridges	0	0.0	0.0	0
	D- Water Control Facilities	0	0.0	0.0	0
	E- Public Buildings	11	0.15	0.0	0
	F- Public Utilities	1	0.00	0.0	0
	G- Recreational or Other	5	0.21	0.0	0
	State management	State management		0.40	0.0
All Work	Total	48	243.83	188.09	77

Source: GAO analysis of FEMA data. | GAO-21-264

Note: projects for the earthquake recovery are awarded using standard Public Assistance.

Figure 9 shows examples of damages caused by the earthquakes that will require the development and obligation of funds for permanent work projects to rebuild. In addition to the 48 projects already obligated, FEMA and Puerto Rico are working to develop and obligate approximately 784 more emergency and permanent work projects to recover from the earthquakes.

Figure 9: Earthquake Damaged School in Guanica and Church in Guayanilla, Puerto Rico



Source: GAO | GAO-21-264

COVID-19

FEMA obligated \$59.7 million in Public Assistance funds to 21 Puerto Rico agencies and municipalities to address COVID-19, according to our analysis of FEMA's data as of January 15, 2021. Puerto Rico agencies and municipalities can use these funds for eligible emergency protective measures such as buying personal protective equipment and implementing sanitation measures to prevent the spread of COVID-19. FEMA and Puerto Rico are working to obligate more funds to Puerto Rico agencies and municipalities to address COVID-19.

FEMA has obligated \$69.5 million out of the \$3 billion available for Puerto Rico under the Hazard Mitigation Grant Program for the 2017 hurricanes, according to our analysis of FEMA's data as of January 15, 2021. To be eligible to receive these funds, Puerto Rico's government and municipalities need to have up-to-date mitigation plans. On August 2016,

FEMA approved Puerto Rico's Hazard Mitigation Plan, which covers Puerto Rico's agencies. However, FEMA officials told us that 38 of 78 municipalities' mitigation plans had lapsed and municipalities were working with FEMA to develop updated mitigation plans, as of October 7, 2020. FEMA extended the deadline to October 31, 2021, which gives Puerto Rico's municipalities more time to update their mitigation plans and submit project applications for the Hazard Mitigation Grant Program.⁴⁵ Puerto Rico officials told us they are in the process of submitting project applications to FEMA for the remainder of the Hazard Mitigation Grant Program funds.

FEMA Has Not Identified or Assessed Risks to Puerto Rico's Recovery, While Significant Work Remains

Although the number of Public Assistance projects developed and obligated for Puerto Rico's recovery has increased, FEMA has not comprehensively identified or assessed the risks that could affect the success of the remainder of the recovery, or identified potential actions to manage them. As described earlier, FEMA has obligated funds for almost 6,500 projects. Some Puerto Rico agencies are starting construction for Public Assistance permanent work projects, while other agencies are coordinating with FEMA to develop projects under the accelerated award strategy before these agencies can start construction. In addition, FEMA and Puerto Rico are working to develop and obligate about 6,100 additional Public Assistance projects for Puerto Rico's recovery from the multiple disasters. In our interviews with FEMA officials in Puerto Rico and Puerto Rico officials, they identified various challenges related to (1) developing and obligating projects and (2) starting construction of these projects that could pose risks for the success of Puerto Rico's remaining recovery efforts. In addition, FEMA and Puerto Rico officials identified impacts to Puerto Rico's recovery efforts from the earthquakes and COVID-19, which delayed some of the projects. Appendix III provides additional information on the impacts to Puerto Rico's recovery efforts

⁴⁵On August 2018, FEMA extended the application deadline from September 20, 2018 to October 31, 2019. In December 2019, FEMA granted an additional extension to October 31, 2020 to allow municipalities to align their mitigation plans so that they would be eligible for other federal funding sources and in October 2020, FEMA approved a third extension to October 31, 2021 due to COVID-19.

from the earthquakes and COVID-19 and the steps FEMA has taken to help address them.

Development and obligation of recovery projects. FEMA and Puerto Rico officials we spoke with said that subrecipients' staff lack the expertise to develop projects for obligation, which can result in the need for additional coordination with FEMA officials or require subrecipients to hire contractors, further delaying the process. This could affect projects being developed by Puerto Rico's Electric Power Authority, Aqueduct and Sewer Authority, and Department of Education under the accelerated award strategy, which have been obligated and must be completed within 5 years. Additionally, FEMA officials we spoke with said that some subrecipients were unclear about how to leverage Public Assistance funds for mitigation efforts using alternative procedures or the Hazard Mitigation Grant Program. A lack of understanding of the program could present risks to subrecipients' ability to incorporate mitigation as they continue developing projects, and ultimately to their ability to rebuild to ensure resilience to future disasters.

Construction of obligated projects. FEMA and COR3 officials we spoke with also indicated that Puerto Rico's fiscal condition has made it difficult for some subrecipients to provide initial funding to start construction of projects.⁴⁶ As described earlier, the Public Assistance grant program is a reimbursement program and subrecipients must provide, in most cases, the initial funding for the construction and seek reimbursements as work is completed.⁴⁷ Because of the lack of initial funding, many projects have been approved and obligated, but the work has not been started, according to FEMA and Puerto Rico officials. As of January 15, 2021, Puerto Rico had expended less than \$158 million (or less than 1 percent) of the \$17.5 billion obligated to reimburse subrecipients for permanent work projects.

⁴⁶In June 2019, we reported on the significant financial challenges facing Puerto Rico. Specifically, we reported that Puerto Rico's government has operated with a deficit—where expenses exceed revenue—in each fiscal year since 2002 through 2016, the latest data at the time of our review. The government of Puerto Rico began to default on its debt in August 2015 and has been operating with austerity measures in place, such as hiring freezes and budget cuts. See [GAO-19-525](#).

⁴⁷For small projects under Standard Public Assistance categories A through G the subrecipient can receive the federal share right after obligation. The threshold for small projects is those with a costs of less than \$123,100 for projects under hurricane Irma and Maria, and less than \$131,100 for projects under the earthquakes and COVID-19.

According to FEMA and Puerto Rico officials we spoke with, Puerto Rico agencies have a few options to access funds to start projects. Specifically, subrecipients can use other federal funding sources, such as HUD's Community Development Block Grant Disaster Recovery (CDBG-DR) funds, obtain loans from a Puerto Rico state fund created to help start Public Assistance projects, and request advance payments from COR3. However, these options have limitations and are unlikely to fully address the need for funding.⁴⁸ For example, HUD allocated approximately \$20 billion of CDBG-DR funds to help rebuild Puerto Rico by providing funds to start the recovery process. However, as of December 2020, HUD had obligated \$3.2 billion and disbursed \$150 million to Puerto Rico. In November 2020, we reported that, given local challenges and the complexity of federal funding, enhanced coordination is needed to help Puerto Rico's recovery.⁴⁹ Recently, in February 2021, HUD took action to help streamline the process and make it easier for Puerto Rico to access the CDBG-DR funds. Nonetheless, even after funds become available, FEMA and Puerto Rico officials said that Puerto Rico will likely face risks finding the capacity to handle the sheer number of projects needing construction. According to FEMA officials, this is because thousands of projects will be going on simultaneously and will

⁴⁸As of November 2020, Puerto Rico had created a \$750 million fund to provide loans to subrecipients to help start permanent work projects. While this fund is a useful start, the need is much greater than the amount allocated to the fund. With regard to advance payments, under certain circumstances, subrecipients can request advances on payments to allow them to start Public Assistance projects. However, in accordance with federal award requirements, there must be a determination that the subrecipient has an actual, immediate need before making an advance payment. See 2 C.F.R. § 200.305(b)(1).

⁴⁹In our November 2020 report, we reiterated prior recommendations that we made in October 2019 to FEMA and other federal agencies to support grid recovery efforts. For example, in 2019, we recommended that the Administrator of FEMA, in coordination with the Department of Energy (DOE), HUD, and other federal and local entities, should establish a mechanism, or take steps to improve existing mechanisms, for coordination among the multiple local and federal entities involved in grid recovery that facilitates decision-making and information-sharing among local and federal agencies; and that the Secretary of HUD should establish time frames and a plan for publication of the grant process and requirements for CDBG-DR funding available for improvements to Puerto Rico's electricity grid, among other things. FEMA concurred with the three recommendations addressed to the agency and implemented one recommendation in April 2020. As of November 2020, FEMA has taken steps to address the remaining two recommendations, but additional actions are needed. HUD did not specifically state whether it would establish time frames and requirements for funding, and as of November 2020, it had not implemented this recommendation. [GAO-21-54](#).

likely put a strain on Puerto Rico's capacity to procure labor, equipment and materials to start construction.

While FEMA officials in Puerto Rico and Puerto Rico officials have identified risks that could affect the continued progress of Puerto Rico's remaining recovery efforts, FEMA officials at headquarters and the region responsible for managing the recovery have not comprehensively identified and assessed such risks or identified potential actions to manage or monitor them. According to FEMA officials, they have taken steps to monitor the progress of project development and obligations but have not comprehensively identified and assessed the risks because this is not something the agency regularly does for a recovery. However, Puerto Rico's recovery is unique for many reasons, as previously noted.⁵⁰ In addition, the Bipartisan Budget Act acknowledged the particular risks to Puerto Rico's recovery by providing additional flexibilities in the Public Assistance program and requiring that Puerto Rico develop a recovery plan in coordination with FEMA.⁵¹ Although Puerto Rico is responsible for its own recovery, including securing funding to start construction and completing construction of all projects, FEMA's Public Assistance program mission is to provide assistance so that communities can quickly respond and recover from major disasters or emergencies declared by the President. However, over 3 years has elapsed since the hurricanes struck Puerto Rico and significant work remains to obligate and complete construction of thousands of projects. Further, the sheer number of projects that still need to be developed and constructed will likely exacerbate capacity issues, which will place additional strains on Puerto Rico's recovery and increase the risks of further delays.

At the headquarters level, FEMA is in the early stages of implementing an enterprise risk management (ERM) framework, a broader agency effort required by the Office of Management and Budget for federal agencies to

⁵⁰Hurricane Maria is one of the costliest hurricanes on record and FEMA's efforts in Puerto Rico will be one of the largest and longest in FEMA's history. Further, the unique circumstances facing Puerto Rico, including its fiscal crisis and the magnitude of the investment expected for its recovery, compounded by COVID-19 related constraints, places an additional strain on Puerto Rico's ability to make progress in the recovery, such as to secure funding to start construction.

⁵¹Pub. L. No. 115-123, § 21209, 132 Stat. 64, 108-09 (2018).

identify and assess risks to their mission.⁵² FEMA completed the ERM framework in June 2019 and expects to implement it over several years. FEMA's ERM framework outlines steps for the agency to, among other things, identify new and emerging risks, determine the likelihood that each identified risk will occur, and determine the impact of resulting consequences.⁵³ These steps generally align with essential elements for federal government enterprise risk management.⁵⁴ Based on the current status of the recovery and the significant work that remains, we selected three essential elements most critical for the success of Puerto Rico's remaining recovery efforts:

- Identify: Assemble a comprehensive list of risks that could affect the agency from achieving its goals and objectives.
- Assess: Examine risks considering both the likelihood of the risk and the impact of the risk to help prioritize risk response.
- Monitor: Monitor how risks are changing and if responses are successful.

FEMA has not yet comprehensively identified, assessed, or monitored risks to Puerto Rico's recovery, but doing so could help ensure an effective and efficient recovery. In February 2021, FEMA officials stated that they plan to finalize the ERM framework by April 2021.⁵⁵ As such, it is too soon to tell if FEMA will use this framework to comprehensively identify, assess and monitor risks to Puerto Rico's recovery. Nonetheless, FEMA officials stated that they could use the framework, or other methods, to identify and assess the risks to Puerto Rico's recovery.

⁵²In 2016, the Office of Management and Budget issued an update to Circular A-123 requiring federal agencies to implement ERM to better ensure their managers are effectively managing risks that could affect the achievement of agency strategic objectives. See Office of Management and Budget, *Management's Responsibility for Enterprise Risk Management and Internal Control*, Circular No. A-123, (July 15, 2016).

⁵³DHS, FEMA, *Enterprise Risk Management Framework*, June 2019.

⁵⁴We have identified six essential elements to use when implementing ERM. These elements are: align ERM process to goals and objectives, identify risks, assess risks, select risk response, monitor risks, and communicate and report on risks. See [GAO-17-63](#).

⁵⁵We previously reported that, according to agency officials, FEMA had put on hold the agency's ERM efforts between April 2020 and August 2020 because of FEMA's efforts to respond to Coronavirus Disease 2019 (COVID-19). See GAO, *Disaster Assistance: FEMA Should Take Additional Actions to Strengthen Fraud Risk Management for Public Assistance Emergency Work Grants*, [GAO-20-604](#) (Washington, D.C.: Sep. 29, 2019).

Given that FEMA has already started to develop an ERM framework, the agency is well positioned to use this framework, or the elements outlined in the framework, to identify, assess, and continuously monitor the risks to Puerto Rico's recovery. The time elapsed since the 2017 hurricanes and the work remaining highlight the need for urgent and diligent action to help ensure the success of Puerto Rico's remaining recovery efforts. Specifically, comprehensively identifying risks, in coordination with Puerto Rico and relevant federal agencies, could help FEMA identify the opportunities for, or threats to, accomplishing strategic objectives by examining internal and external factors that could affect their accomplishment and could help FEMA monitor emerging risks and identify potential actions to manage them. Assessing risks, in coordination with Puerto Rico and relevant federal agencies, will allow FEMA to consider the likelihood of the risk and prioritize risk response. Continuously monitoring risks would help ensure that FEMA's response to risks remains current and relevant. Furthermore, identifying risks and the potential actions to manage them, jointly with relevant stakeholders such as COR3 and relevant federal agencies, would allow FEMA and Puerto Rico to track whether the risk response is successful or requires additional actions for the recovery's success.

Conclusions

After the devastation of the 2017 hurricane season, FEMA and Puerto Rico face a recovery of enormous scope intensified by subsequent earthquakes and the COVID-19 pandemic. Given the unique circumstances facing Puerto Rico, including its fiscal crisis, strained capacity to procure labor, equipment and materials, and the magnitude of the federal investment, which is estimated to be at least \$80 billion for its recovery, it is urgent that FEMA work with Puerto Rico and relevant federal agencies to assess current and emerging risks to the recovery. Anticipating and addressing risks to Puerto Rico's recovery will be critical to the success of the recovery and will ultimately be necessary to safeguard the investment of billions of Public Assistance federal dollars. FEMA monitors the progress of project development and obligations and has identified some risks, but implementing a formal approach to comprehensively identify and assess the risks to Puerto Rico's recovery could help FEMA provide greater assurance that FEMA is staying ahead of emerging risks and developing any contingencies to address them. Further, continuously monitoring risks would help ensure that FEMA's response to risks remains current and relevant.

Recommendations for Executive Action

We are making the following recommendations to FEMA:

The FEMA administrator should, in coordination with the Government of Puerto Rico and relevant federal agencies, identify and assess the risks to the remainder of Puerto Rico's recovery, including internal and external factors, such as Puerto Rico's capacity to carry out projects. (Recommendation 1)

The FEMA administrator should, in coordination with the Government of Puerto Rico and relevant federal agencies, identify potential actions to manage the risks to the remainder of Puerto Rico's recovery and continuously monitor risks. (Recommendation 2)

Agency Comments and Our Evaluation

We provided a draft of this report to DHS, FEMA, and Puerto Rico's Central Office for Recovery, Reconstruction, and Resiliency (COR3) for review and comment. In its comments, reproduced in appendix IV, DHS concurred with our recommendations. FEMA also provided technical comments, which we incorporated as appropriate.

DHS concurred with our first recommendation that FEMA, in coordination with the government of Puerto Rico and relevant federal agencies, identify and assess the risks to the remainder of Puerto Rico's recovery, including internal and external factors, such as Puerto Rico's capacity to carry out projects. DHS stated that, in March 2021, FEMA, in coordination with the government of Puerto Rico, started a formal risk assessment process modelled after FEMA's enterprise risk management framework. DHS also stated that FEMA will coordinate with relevant federal agencies, as appropriate, while continuing the risk assessment process to identify and assess the risks for the remainder of Puerto Rico's recovery. If implemented effectively, this should address the intent of our recommendation.

DHS concurred with our second recommendation that FEMA, in coordination with the government of Puerto Rico and relevant federal agencies, identify potential actions to manage the risks to the remainder of Puerto Rico's recovery and continuously monitor risks. DHS stated that FEMA will identify potential actions to manage risks to the remainder of

Puerto Rico's recovery through its risk assessment process. DHS also stated that FEMA will develop a process to ensure continuous monitoring of risks. These actions, if implemented effectively, should address the intent of our recommendation.

COR3 also provided comments to our draft report, which we reproduced in appendix V. In its comments, COR3 stated that despite the challenges surrounding Puerto Rico's recovery, COR3 has continued to focus on its commitment towards enabling the execution of reconstruction projects. COR3 also stated that it welcomes any assessment to identify further actions that can be taken to support Puerto Rico's recovery.

We are sending copies of this report to the appropriate congressional committees, the Secretary of Homeland Security, the Administrator of FEMA, the Puerto Rico government, and other interested parties. In addition, the report is available at no charge on the GAO website at <http://www.gao.gov>.

If you and your staff have any questions, 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. GAO staff who made key contributions to this report are listed in appendix VI.



Chris P. Currie Director,
Homeland Security and Justice

List of Requesters

The Honorable Gary C. Peters
Chairman
The Honorable Rob Portman
Ranking Member
Committee on Homeland Security and Governmental Affairs
United States Senate

The Honorable Ron Johnson
Ranking Member
Permanent Subcommittee on Investigations
Committee on Homeland Security and Governmental Affairs
United States Senate

The Honorable Rand Paul, M.D.
Ranking Member
Subcommittee on Emerging Threats and Spending Oversight
Committee on Homeland Security and Governmental Affairs
United States Senate

The Honorable Maxine Waters
Chairwoman
Committee on Financial Services
House of Representatives

The Honorable Bennie G. Thompson
Chairman
Committee on Homeland Security
House of Representatives

The Honorable Carolyn B. Maloney
Chairwoman
The Honorable James Comer
Ranking Member
Committee on Oversight and Reform
House of Representatives

The Honorable Nydia Velázquez
Chairwoman
Committee on Small Business
House of Representatives

The Honorable Peter DeFazio
Chairman
The Honorable Sam Graves
Ranking Member
Committee on Transportation and Infrastructure
House of Representatives

The Honorable Emanuel Cleaver, II
Chairman
Subcommittee on Housing, Community Development, and Insurance
Committee on Financial Services
House of Representatives

The Honorable Al Green
Chairman
Subcommittee on Oversight and Investigations
Committee on Financial Services
House of Representatives

The Honorable Marco Rubio
United States Senate

The Honorable Jim Jordan
House of Representatives

The Honorable Michael McCaul
House of Representatives

The Honorable Gary Palmer
House of Representatives

The Honorable Ann Wagner
House of Representatives

Appendix I: The Status of Public Assistance Program Funding for Hurricanes Irma and Maria in Puerto Rico

Since September 2017, the Federal Emergency Management Agency (FEMA) obligated \$23.5 billion in Public Assistance grant funding for at least 6,400 projects across Puerto Rico for the recovery from hurricanes Irma and Maria as of January 15, 2021.¹ Specifically, FEMA had obligated \$5.29 billion for emergency work projects (categories A and B), \$17.5 billion for permanent work projects (categories C through G), and \$654 million for management costs (category Z).² As of that date, Puerto Rico expended \$4.5 billion—about 19 percent of total Public Assistance obligations to Puerto Rico—to reimburse subrecipients for completed work. Of this, Puerto Rico expended about \$4 billion (88 percent of all expended funds) for emergency work projects, \$157.7 million (3 percent) for permanent work projects, and \$390.8 million (9 percent) for management costs.³

¹The number of projects obligated is likely to increase as Puerto Rico's Electric Power Authority, Aqueduct and Sewer Authority, and Department of Education develop projects under the fixed cost estimates that FEMA already approved and obligated.

²Management costs are any indirect cost, any direct administrative cost, and any other administrative expense associated with a specific project.

³The Public Assistance program provides funding for debris removal efforts, life-saving emergency protective measures, and the repair or replacement of disaster-damaged publicly-owned facilities, roads and bridges, electrical utilities, and more. An obligation is a definite commitment that creates a legal liability of the government for the payment of goods and services ordered or received. For the purposes of this report, obligations represent the amount of grant funding FEMA provided through the Public Assistance program for specific projects in Puerto Rico. An expenditure is an amount paid by federal agencies, by cash or cash equivalent, during the fiscal year to liquidate government obligations. For the purposes of this report, an expenditure represents the actual spending by Puerto Rican government of money obligated by the federal government. These data do not include obligations and expenditures for, among other federal disaster assistance programs, direct federal mission assignments, in which a federal agency is tasked with providing eligible emergency work or debris removal services to a territory or state, or for other categories of mission assignments.

The majority of the funding Puerto Rico expended as of January 15, 2021 is for emergency work projects because these projects began soon after hurricanes Irma and Maria struck and focused on debris removal and providing assistance to address immediate threats to life and property. In contrast, permanent work projects take time to identify, develop, and ultimately complete as they represent the longer-term repair and restoration of public infrastructure. While the data in this appendix represent the status of Public Assistance funding as of January 15, 2021, the amount of grant funding FEMA obligates and Puerto Rico expends will likely increase over time as additional projects are finalized and obligated.

Emergency Work. As of January 15, 2021, FEMA obligated a total of \$5.29 billion for 1,622 emergency work projects across Puerto Rico. These projects focus on debris removal activities and providing assistance to address immediate threats to life and property.

- **Category A: Debris Removal.** FEMA obligated \$706.2 million and Puerto Rico expended \$502 million for 418 projects focused on debris removal activities in Puerto Rico under category A.
- **Category B: Emergency Protective Measures.** FEMA obligated nearly \$4.6 billion for 1,204 projects under Category B. Of this, Puerto Rico has expended \$3.47 billion. For example, FEMA has obligated more than \$179 million to the Puerto Rico Aqueducts and Sewer Authority under category B to fund emergency protective measures, including using back-up generators to supply water to the island after Hurricane Maria, among other things.

Permanent Work. As of January 15, 2021, FEMA has obligated \$17.5 billion for at least 4,793 permanent work (Categories C through G) projects in Puerto Rico. These projects focus on the restoration of disaster-damaged infrastructure or systems.

- **Category C: Roads and Bridges.** FEMA obligated \$915.1 million for 2,008 projects focused on the permanent repair of roads and bridges in Puerto Rico. Puerto Rico has expended \$89.4 million of the funding obligated for these projects.
- **Category D: Water Control Facilities.** As of January 15, 2021, FEMA has obligated nearly \$4.9 million for 20 projects, of which approximately \$758,000 has been expended. This includes work on heavy water control infrastructure, such as berms or levees.

- **Category E: Buildings and Equipment.** FEMA obligated \$2.7 billion for at least 1,179 projects focused on repairing and rebuilding damaged public buildings and equipment, such as schools and public housing buildings. For example, in September 2020, FEMA obligated \$2.06 billion to repair public schools across Puerto Rico. Puerto Rico has expended \$30.3 million of the funding obligated for these projects.
- **Category F: Utilities.** Of the \$17.5 billion FEMA obligated for permanent work projects, the largest share, about \$13.3 billion was obligated to at least 160 projects focused on the permanent repair of utilities in Puerto Rico. For example, in September 2020, FEMA obligated \$9.46 billion for the repair of the electric grid. Similarly, FEMA obligated \$3.8 billion to repair potable and sewer water utilities. Puerto Rico has expended just over \$5.2 million of the funding obligated for projects related to repairing utilities.
- **Category G: Parks, Recreational and Other Facilities.** FEMA obligated \$549 million and Puerto Rico has expended just over \$32 million across 1,424 projects focused on repairing parks, playgrounds, and other facilities. For example, in January 2020, FEMA obligated nearly \$14.3 million for the repair of the Cuartel de Ballaja in Old San Juan.

Appendix II: The Status of Mitigation Funding and Project Examples for Hurricanes Irma and Maria in Puerto Rico

To enhance recovery efforts, the Federal Emergency Management Agency (FEMA) operates programs that provide funding for hazard mitigation projects in the aftermath of specific disaster incidents. In Puerto Rico, FEMA can incorporate resilience through the Public Assistance program, which include Public Assistance mitigation and work eligible under the Bipartisan Budget Act, and the Hazard Mitigation Grant Program.¹ See table 3 for additional information on these funding sources.

Table 3: Types of Federal Emergency Management Agency (FEMA) hazard mitigation funding in Puerto Rico

Types of Hazard Mitigation Funding in Puerto Rico

Funding Source	Description	Projects Eligible
FEMA Public Assistance Program (Section 406 Mitigation)	Funds hazard mitigation measures in conjunction with the repair of disaster-damaged facilities to prevent future damage similar to that caused by the declared event.	Projects under Public Assistance and Public Assistance alternative procedures. Damaged portions of a facility are eligible if the mitigation measure directly reduces the potential of similar disaster damages to the eligible facility in the future.
Bipartisan Budget Act of 2018 (Section 20601)	Funds the replacement or restoration of disaster-damaged facilities or systems that provides critical services to an industry standard without regard to the pre-disaster condition and replacement or restoration of undamaged components to restore the function of the critical facility or system to industry standards.	Permanent work projects (Categories C-G) that provide critical services and are using Public Assistance alternative procedures program. The act allows FEMA to provide assistance to damaged facilities or systems and components not damaged by the disaster to restore the function of the facility or system to industry standards. The act does not apply to non-critical portions of a mixed-use facility.
Hazard Mitigation Grant Program (Section 404)	Funds for critical mitigation measures to help reduce the risk of loss of life and property from future disasters is not lost during the reconstruction process following a disaster.	Undamaged portions of a facility, which do not fall under a more specific authority of another program (i.e. FEMA Public Assistance) after a presidential major disaster declaration.

Source: GAO analysis of FEMA documents. | GAO-21-264

¹See 42 U.S.C. § 5172; See Pub. L. No. 115-123, § 20601(1), 132 Stat. 64 (2018).

Note: Critical services include facilities or systems that provide power, water, sewer, wastewater treatment, communications, education, emergency medical care, emergency services, or is an administrative or support building essential to the provision of the critical service.

Public Assistance Mitigation

Under FEMA's Public Assistance program, FEMA funds mitigation measures for permanent work projects to enhance a facility's resilience during future disasters and reduce or eliminate long-term risk. As of January 15, 2021, FEMA has obligated \$291.7 million in Public Assistance mitigation funds. For example:

Water Storage Tank. On January 14, 2020, FEMA obligated \$1.98 million for the replacement of a water storage tank and pump station in Humacao, Puerto Rico which includes over \$2,000 for mitigation measures (See figure 10). This water tank sustained significant damage from hurricane winds, since it was built according to outdated building codes to only sustain winds up to 120 miles per hour. This project will replace the water tank so that it will be able to sustain winds up to 180 miles per hour, which aligned more closely with the winds that hit during Hurricane Maria. This project will include mitigation measures to replace the fence to resist high velocity winds and retrofits to the pump station to prevent wind-driven water damage.

Figure 10: Damaged Water Tank, February 2020.



Source: GAO. | GAO-21-264

Housing Units. On February 5, 2019, FEMA obligated \$18.76 million for a project to repair two public housing complexes in Ciales, Puerto Rico (see figure 11). This project will use \$11.92 million in Public Assistance mitigation funds to relocate these complexes out of the flood zone to prevent future flood-related damages.

Figure 11: Damaged Public Housing units, February 2020.



Source: GAO. | GAO-21-264

Bipartisan Budget Act of 2018

In Puerto Rico and the U.S. Virgin Islands, the Bipartisan Budget Act of 2018 authorized FEMA, when using the alternative procedures, to provide assistance to fund the replacement or restoration of disaster-damaged infrastructure that provides critical services to an industry standard without regard to pre-disaster condition.² As of January 15, 2021, FEMA had obligated \$7.1 billion in Public Assistance funds for work eligible under the application of the Act. Specifically, FEMA officials said they have obligated \$4.2 billion to Puerto Rico's Electric Power Authority and \$400 million to Department of Education in September 2020, and \$2.5 billion to Aqueduct and Sewer Authority in January 2021. FEMA officials noted that these agencies represent approximately 90 percent of the critical facilities that are eligible under the Bipartisan Budget Act. As an example of a project eligible under the Bipartisan Budget Act, officials from one agency said that the Act will allow them to replace all

²See Pub. L. No. 115-123, § 20601(1), 132 Stat. 64 (2018).

components in the control room to raise the entire system up to current industry codes and standards. While only two components were damaged in the storm all seven components needed to be replaced to be compatible with the rest of the control room components and work effectively together.

Hazard Mitigation Grant Program

The Hazard Mitigation Grant Program funds projects to protect public or private property as long as the project fits within State and local government mitigation strategies to address areas of risk and the projects comply with Hazard Mitigation Grant Program guidelines. As of January 15, 2021, FEMA has obligated \$69.5 million out of the \$3 billion allocated for Puerto Rico for 15 Hazard Mitigation Grant Program projects. For example:

Building Code Initiative. In January 25, 2018, FEMA approved \$144.46 million for a building code initiative that would update current codes and standards in Puerto Rico by supporting and enhancing an island-wide program to enforce planning and zoning requirements, permit regulations, and building codes to increase Puerto Rico resources to handle the amount of work to be completed to ensure the island is not as vulnerable to hurricanes and other future disasters. As of January 15, 2021, \$24.06 million has been obligated for this project.

Early Warning System. In September 29, 2020, FEMA approved \$100 million for the installation of an island-wide dam safety warning system as a phased project. This project would identify certain conditions that may endanger dams in Puerto Rico and provide notification during different scenarios such as extreme floods and seismic activity. As of January 15, 2021, FEMA has obligated \$3 million out of \$5.5 million for the first phase of this project and plan to obligate the remaining \$2.5 million during fiscal year 2021.

Airport Cogeneration Project. In July 31, 2020, FEMA approved \$59.7 million for the installation of a back-up cogeneration system at an international airport to provide support peak-load operations for 7 days at a 90 percent capacity. The project will mitigate power loss. As of January 15, 2021, FEMA has obligated \$2.27 million for the first phase of the project.

Appendix III: Impacts to Puerto Rico's Recovery Efforts From the Earthquakes and COVID-19

Federal Emergency Management Agency (FEMA) and Puerto Rico officials identified impacts to Puerto Rico's recovery efforts from the earthquakes and COVID-19. Specifically, they cited (1) increased workload due to simultaneous disasters, and (2) delays in the development of some projects due to local curfews, stay-at-home orders, and other guidelines in response to COVID-19. FEMA has taken steps, when possible, to help address these impacts. Specifically, FEMA deployed additional staff to manage the earthquakes and issued guidance on operating in a COVID-19 environment.

Increased workload. The cluster of earthquakes in late 2019 and early 2020 added 3,835 damaged sites in the southwest part of the island to the 42,000 damaged sites from hurricanes Irma and Maria. To help address the increased staffing needs, FEMA deployed 300 additional staff after the earthquakes hit, bringing the total number of FEMA staff in Puerto Rico to 2,050. The number of additional staff decreased overtime, and as of December 2020, according to FEMA officials, FEMA had 46 staff deployed solely to support earthquake recovery efforts in Puerto Rico. In addition, FEMA designated a lead point of contact for each disaster and FEMA officials told us that staff responsible for the different disaster recovery efforts are working together to coordinate Public Assistance funding for sites that were damaged by both disasters. FEMA officials said that since hurricanes and earthquakes cause different types of damages, they do not expect having difficulties identifying damages specific to each disaster.

Delays in project development. Both FEMA and Puerto Rico officials with whom we spoke said that COVID-19 affected subrecipients' ability to provide the information needed to develop fixed cost estimates, and delayed site inspections. Specifically, FEMA officials said that COVID-19 limited subrecipients' access to physical files needed to provide documentation to process projects. Further, FEMA officials stated that they halted site inspections, including those needed to assess the damages from the earthquakes, from late March 2020 to late June 2020. FEMA and government officials from the Central Office for Recovery,

Reconstruction, and Resiliency (COR3) stated, however, that during this time they continued to make progress in obligating projects that were farther along in the application process. For example, COR3 officials said that they have focused on approving permanent work for damages caused by Hurricane Maria, since most of the site inspections for that disaster had been conducted before the onset of the pandemic. Further, FEMA issued guidance to help staff and recovery partners adapt response and recovery operations amid COVID-19, among other things.¹ For example, FEMA's guidance encouraged remote briefings, meetings, and, if possible, site inspections. Whenever site inspections could not be conducted virtually, they were to be conducted with fewer people to permit adherence to social distancing guidelines. FEMA officials stated that they were able to conduct over 5,000 site inspections from late June through December 2020, in coordination with COR3 and subrecipients related to Hurricane Maria and the earthquakes.

¹FEMA. *COVID-19 Pandemic Operational Guidance for the 2020 Hurricane Season*. May 2020

Appendix IV: Comments from the Department of Homeland Security

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



**Homeland
Security**

April 16, 2021

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

Re: Management Response to Draft Report GAO-21-264, "Puerto Rico Recovery:
FEMA Made Progress in Approving Projects, But Should Identify and Assess Risks
to the Recovery"

Dear Mr. Currie:

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

The Department is pleased to note GAO's recognition of the Federal Emergency Management Agency's (FEMA) progress in expediting the obligation of funding, such as prioritizing critical utilities and public works projects, as well as FEMA's initial efforts to identify risks that could affect continued progress of Puerto Rico's recovery efforts. In March 2021, FEMA initiated a formal risk assessment process, which will further FEMA's efforts to identify, assess, and manage risks to recovery in Puerto Rico.

The draft report contained two recommendations with which the Department concurs. Attached find our detailed response to each recommendation. DHS previously submitted technical comments addressing several accuracy issues under a separate cover for GAO's consideration.

Again, thank you for the opportunity to review and comment on this draft report. Please feel free to contact me if you have any questions. We look forward to working with you again in the future.

Sincerely,

Digitally signed by JIM H
CRUMPACKER
Date: 2021.04.16 07:54:58 -0400
JIM H. CRUMPACKER, CIA, CFE
Director
Departmental GAO-OIG Liaison Office

Attachment

**Attachment: Management Response to Recommendations
Contained in GAO-21-264**

GAO recommended that the FEMA Administrator, in coordination with the Government of Puerto Rico and relevant federal agencies:

Recommendation 1: Identify and assess the risks to the remainder of Puerto Rico's recovery, including internal and external factors, such as Puerto Rico's capacity to carry out projects.

Response: Concur. In March 2021, FEMA Region II, in coordination with the Federal Disaster Recovery Coordinator and the Government of Puerto Rico, started a formal risk assessment process modelled after FEMA's enterprise risk management framework. FEMA will also coordinate with relevant federal agencies, as appropriate, while continuing the risk assessment process to identify and assess the risks to the remainder of Puerto Rico's recovery, including internal and external factors. Estimated Completion Date (ECD): March 31, 2022.

Recommendation 2: Identify potential actions to manage the risks to the remainder of Puerto Rico's recovery and continuously monitor risks.

Response: Concur. Through its risk assessment process, FEMA Region II will identify potential actions to manage risks to the remainder of Puerto Rico's recovery. FEMA Region II will also develop a process to ensure continuous monitoring of risks.
ECD: March 31, 2022.

Text of Appendix IV: Comments from the Department of Homeland Security

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April 16, 2021

Chris P. Currie

Director, Homeland Security and Justice

U.S. Government Accountability Office 441 G Street, NW

Washington, DC 20548

Re: Management Response to Draft Report GAO-21-264, "Puerto Rico Recovery: FEMA Made Progress in Approving Projects, But Should Identify and Assess Risks to the Recovery"

Dear Mr. Currie:

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

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Again, thank you for the opportunity to review and comment on this draft report. Please feel free to contact me if you have any questions. We look forward to working with you again in the future.

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JIM H. CRUMPACKER, CIA, CFE

Director

Departmental GAO-OIG Liaison Office

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Response: Concur. Through its risk assessment process, FEMA Region II will identify potential actions to manage risks to the remainder of Puerto Rico's recovery. FEMA Region II will also develop a process to ensure continuous monitoring of risks.

ECD: March 31, 2022.

Appendix V: Comments from the Commonwealth of Puerto Rico



GOVERNMENT OF PUERTO RICO
CENTRAL OFFICE FOR RECOVERY, RECONSTRUCTION AND RESILIENCY

April 23, 2021

Mr. Chris P. Currie
Director, Homeland Security and Justice
U.S. Government Accountability Office
441 G St. N.W.
Washington, DC 20548
curriec@gao.gov

RE: Commentary to GAO-21-264 Report

Dear Mr. Currie,

The Puerto Rico Central Office of Recovery, Reconstruction and Resiliency ("COR3") appreciates the opportunity to review and provide comments to the draft report entitled *Puerto Rico Recovery: FEMA Made Progress in Approving Projects, But Should Identify and Assess Risks to the Recovery* (GAO-21-264).

This report provides a detailed and comprehensive account of what has transpired since the passing of hurricanes Irma and María in the majority of the disaster recovery related topics. Particularly, it serves to highlight many of the challenges and constraints that the Government of Puerto Rico ("GPR") and COR3 have experienced throughout the process. While some of these constraints are inherent to Puerto Rico's geographic location and fiscal situation, others respond to changes in existing federal policies and procedures that have further delayed COR3's efforts to implement a strong and efficient recovery framework.

Despite the challenges surrounding Puerto Rico's recovery, COR3 has continued to focus on its commitment towards enabling the execution of reconstruction projects and the efforts have proven to be successful. Some of



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the most recent initiatives undertaken by COR3 to accelerate the recovery process include the creation of the Puerto Rico Revolving Fund of \$750 million that will serve to advance funds to municipalities, agencies and public corporations, which guidelines were recently approved by the Financial Oversight and Management Board, as well as the development of the FEMA Accelerated Award Strategy (FAASt) guidelines, through a joint effort with FEMA. COR3 is also in the process of reviewing its Disaster Recovery Federal Funds Management Guide in order to streamline the reimbursement process and reduce unnecessary delays.

Efforts such as the ones described above were feasible because of COR3's ability to satisfy the terms and conditions imposed on the GPR in the FEMA-GPR 270 Agreement from April 2019 ("270 Agreement"). Accordingly, this past month COR3 requested FEMA to set aside the 270 Agreement and provide equal treatment for Puerto Rico, as other jurisdictions in the United States. By eliminating the 270 Agreement, Puerto Rico will have the necessary flexibility to expedite the processing of reimbursement requests and the disbursement of federal funds to subrecipients. In addition to our strict compliance with the 270 Agreement, we have also been working closely with FEMA to respond to all Validate As You Go ("VAYGo") requests in a timely and efficient manner.

Cognizant of the fact that there is a long road ahead and unprecedented challenges to face, we welcome any assessment to identify further actions that can be taken to support Puerto Rico's recovery.

We remain at your disposal should you have any questions or wish to discuss this matter further.

Cordially,



Manuel A.J. Laboy Rivera
Executive Director
Governor's Authorized Representative



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Text of Appendix V: Comments from the Commonwealth of Puerto Rico

Page 1

April 23, 2021

Mr. Chris P. Currie

Director, Homeland Security and Justice

U.S. Government Accountability Office 441 G St. N.W.

Washington, DC 20548 curriec@gao.gov

RE: Commentary to GAO-21-264 Report Dear Mr. Currie,

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This report provides a detailed and comprehensive account of what has transpired since the passing of hurricanes Irma and María in the majority of the disaster recovery related topics. Particularly, it serves to highlight many of the challenges and constraints that the Government of Puerto Rico (“GPR”) and COR3 have experienced throughout the process. While some of these constraints are inherent to Puerto Rico’s geographic location and fiscal situation, others respond to changes in existing federal policies and procedures that have further delayed COR3’s efforts to implement a strong and efficient recovery framework.

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We remain at your disposal should you have any questions or wish to discuss this matter further.

Cordially,

Manuel A.J. Laboy Rivera Executive Director

Governor's Authorized Representative

Appendix VI: GAO Contact and Staff Acknowledgements

GAO Contact

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

Staff Acknowledgements

In addition to the contact named above, Joel Aldape (Assistant Director), Imoni Hampton Timberlake (Analyst-in-Charge), Marycella Mierez (Analyst-in-Charge), Diana Chung, Benjamin Crossley, Lorraine Ettaro, Susan Hsu, Heidi Nielson, Julie Scarano, and Adam Vogt made key contributions to this report.

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