



Testimony

Before the Subcommittee on Economic
Development, Public Buildings, and Emergency
Management, Committee on Transportation and
Infrastructure, House of Representatives

2017 HURRICANES

Update on FEMA's Disaster Recovery Efforts in Puerto Rico and the U.S. Virgin Islands

Statement of Statement of Chris Currie, Director,
Homeland Security and Justice

Accessible Version

GAO Highlight

Highlights of [GAO-22-106211](#), a testimony before the Subcommittee on Economic Development, Public Buildings, and Emergency Management, Committee on Transportation and Infrastructure, House of Representatives

Why GAO Did This Study

In September 2017, hurricanes Irma and Maria struck Puerto Rico and the USVI, causing billions of dollars in damage. FEMA is the lead federal agency responsible for assisting Puerto Rico and the USVI to recover from these natural disasters. Among other responsibilities, FEMA is responsible for administering grant programs in partnership with the governments of Puerto Rico and the USVI, to rebuild damaged infrastructure and restore services.

This statement describes, among other things, (1) actions FEMA has taken to address GAO recommendations to improve disaster recovery efforts in Puerto Rico and the USVI, (2) the status of FEMA's Public Assistance funding in Puerto Rico and the USVI as of August 2022, and (3) potential challenges FEMA and Puerto Rico face related to ongoing disaster recovery efforts and actions they are taking to address them.

This statement is based on prior GAO reports issued between November 2019 and May 2021; it also includes preliminary observations from an ongoing GAO review of FEMA operations in Puerto Rico. For ongoing work, GAO analyzed documents and data on obligations and expenditures; interviewed agency officials; and visited disaster-damaged areas in Puerto Rico, where GAO also interviewed FEMA and local officials.

GAO will continue to monitor FEMA's progress toward implementing GAO's prior recommendations.

View [GAO-22-106211](#). For more information, contact Chris Currie at (404) 679-1875 or curriec@gao.gov.

September 15, 2022

2017 HURRICANES

Update on FEMA's Disaster Recovery Efforts in Puerto Rico and the U.S. Virgin Islands

What GAO Found

In response to recommendations GAO made in prior reports, the Federal Emergency Management Agency (FEMA) has taken steps to improve its management of disaster recovery programs in Puerto Rico and the U.S. Virgin Islands (USVI). For example, GAO found in February 2020 that Puerto Rico government officials did not always understand what FEMA guidance was in effect for the Public Assistance grant program. Thus, GAO recommended that FEMA develop a repository of current applicable Public Assistance policies and guidance for Puerto Rico and make it available to all recovery partners. In response, FEMA made these documents accessible to Puerto Rico recovery partners through an internal application management system.

As of August 2022, GAO found that FEMA has obligated about \$32.2 billion in funding for Public Assistance projects in response to hurricanes Irma and Maria. In turn, the governments of Puerto Rico and the USVI have expended approximately \$7.7 billion of the Public Assistance obligations as of the same period. About \$1 billion of these Public Assistance expenditures were for permanent work projects that support long-term rebuilding, such as rebuilding schools, the power grid, water systems, and other damaged infrastructure. GAO also visited Puerto Rico in March 2022 and July 2022 as part of its ongoing work, in part to observe disaster-damaged areas and assess the progress of projects it had visited for prior work (see figure).

Status of Selected Recovery Projects in Puerto Rico



(left to right) A damaged water tank from the winds of Hurricane Maria observed in February 2020. The largely repaired water tank observed in March 2022. A school with internal mold and water damages caused by Hurricane Maria observed in March 2019. The same school observed in March 2022 awaiting repairs. According to a FEMA official, a construction crew removed doors, windows, and some walls due to asbestos and lead in the building.

Source: GAO. | [GAO-22-106211](#)

In GAO's ongoing work, officials interviewed thus far have described potential challenges to the continuing disaster recovery efforts in Puerto Rico including the increasing cost of projects due to inflation and difficulties procuring resources to construct projects, among others. Preliminary observations from GAO's ongoing work also indicate that FEMA and the government of Puerto Rico are regularly communicating through formal and informal means to, among other things,

discuss the status of projects and related grant funding or construction issues. Further, FEMA has taken actions, such as providing trainings, to help address some of these issues.

GAO will continue to evaluate disaster recovery efforts in Puerto Rico and plans to report its findings in 2023.

Chair Titus, Ranking Member Webster, and Members of the Subcommittee:

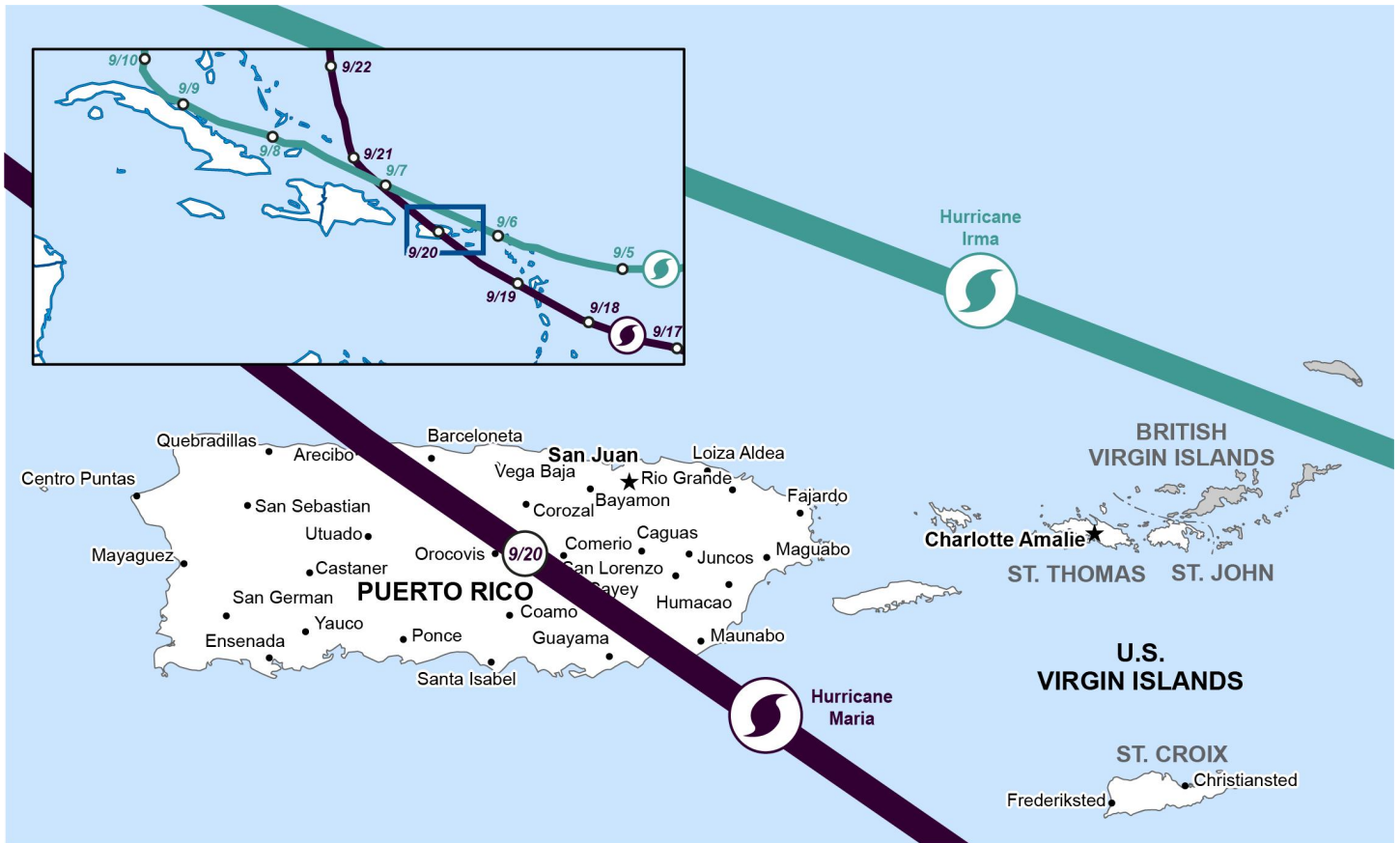
Thank you for the opportunity to provide an update on our work on the Federal Emergency Management Agency's (FEMA) disaster recovery efforts in Puerto Rico and the U.S. Virgin Islands (USVI) as we mark the 5-year anniversary of hurricanes Irma and Maria.

In a 14-day span in September 2017, these two hurricanes struck Puerto Rico and the USVI, causing severe damage to critical infrastructure estimated in the hundreds of billions of dollars in Puerto Rico and in the tens of billions of dollars for the USVI (see fig. 1).¹ According to a July 2022 analysis conducted by National Oceanic and Atmospheric Administration, Hurricane Maria is the third costliest hurricane in U.S. history, while Hurricane Irma ranks sixth.²

¹In its recovery plan, the Government of Puerto Rico estimated that the territory would need \$132 billion from 2018 through 2028 to repair and reconstruct the infrastructure damaged by the hurricanes, while a 2018 report from the USVI Hurricane Recovery and Resilience Task Force estimated that the hurricanes caused approximately \$10.7 billion in total damages across the USVI.

²National Oceanic and Atmospheric Administration, National Centers for Environmental Information, "Costliest U.S. Tropical Cyclones", accessed September 6, 2022, (Washington, D.C.: July 11, 2022) <https://www.ncei.noaa.gov/access/billions/dcmi.pdf>.

Figure 1: Path of Hurricanes Irma and Maria through Puerto Rico and the U.S. Virgin Islands



Source: GAO analysis of National Oceanic and Atmospheric Administration; Map Resources (map). | GAO-22-106211

Notably, the hurricanes devastated Puerto Rico’s electrical system. It took roughly 11 months to restore power to all of the customers in Puerto Rico, the longest blackout in U.S. history. In the USVI, its Hurricane Recovery and Resilience Task Force concluded that the storms damaged more than half of the territory’s housing units as well as its hospitals, schools, and water and wastewater facilities.³

FEMA, a component of the Department of Homeland Security, is the lead federal agency responsible for assisting states, as well as territories like

³In addition to the 2017 hurricanes, Puerto Rico also experienced a series of earthquakes in December 2019 and January 2020, with strong aftershocks felt through July 2020. Additionally, both Puerto Rico and the USVI experienced the effects of the COVID-19 pandemic.

Puerto Rico and the USVI, with disaster recovery efforts.⁴ Among other responsibilities, FEMA awards and administers various disaster recovery and mitigation grant programs, such as the Public Assistance program and the Hazard Mitigation Grant Program, in partnership with state or territorial governments.

My testimony today discusses our prior work on disaster recovery efforts in Puerto Rico and in the USVI since hurricanes Irma and Maria in 2017, as well as preliminary observations from our ongoing work related to Puerto Rico, including:

actions FEMA has taken to address recommendations we made in prior reports to improve FEMA's disaster recovery efforts in Puerto Rico and the USVI;

the status of FEMA's Public Assistance and Hazard Mitigation Grant Program funding in Puerto Rico and the USVI, as of August 2022; and

potential challenges FEMA and Puerto Rico face with ongoing disaster recovery efforts and any actions to address them.

My statement is based on products we issued in from November 2019 to May 2021 as well as data and preliminary observations from an ongoing review of FEMA's disaster recovery efforts in Puerto Rico. To conduct our prior work, we reviewed federal laws related to emergency management, analyzed FEMA data and documentation, and interviewed relevant agency officials. More detailed information on the scope and methodology for our prior work can be found in the issued reports cited throughout this statement.⁵

To develop our preliminary observations from ongoing work, we obtained and analyzed Puerto Rico and USVI obligation and expenditure data as of August 2022 from FEMA's Emergency Management Mission Integrated Environment; Integrated Financial Management Information System; as well as the Puerto Rico Central Office of Recovery, Reconstruction, and Resiliency Transparency Portal. To assess data reliability, we reviewed existing information about these systems, submitted questions to data users and managers responsible for these data, and conducted basic

⁴See 6 U.S.C. § 313.

⁵For a complete list of our previous work in this area and on other related topics, see the Related GAO Products page at the end of this statement.

tests on the data such as checking for duplicate records or missing values. We determined these data to be sufficiently reliable for the purposes of this statement. Moreover, we conducted site visits to Puerto Rico in March 2022 and July 2022 to meet with federal, territorial, and local government officials as well as nongovernmental organizations to discuss their observations on disaster recovery efforts and associated challenges, and to observe disaster-damaged areas (see fig. 2).

Figure 2: Status of Recovery Project at Berwind Intermediate School in San Juan, Puerto Rico, March 2019 and March 2022



School with internal mold and water damages caused by Hurricane Maria observed in March 2019.



School observed in March 2022 awaiting repairs. According to a FEMA official, a construction crew removed doors, windows, and some walls due to asbestos and lead in the building.

Source: GAO. | GAO-22-106211

Over the course of these site visits, we interviewed officials from FEMA, the government of Puerto Rico's Central Office of Recovery, Reconstruction, and Resiliency (COR3), and four municipalities in Puerto Rico.⁶ In addition, we interviewed a private operator of a Puerto Rico government agency and two nongovernmental organizations that have monitored the progress of Puerto Rico's disaster recovery efforts from hurricanes Irma and Maria. Outside of our site visits, we interviewed one Puerto Rico government agency in June 2022 and three additional Puerto Rico government agencies in August 2022. The information from our site

⁶COR3 is 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.

visits and interviews are not generalizable but provide important insights into the ongoing disaster recovery efforts in Puerto Rico.

We conducted the work on which this statement is based 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.

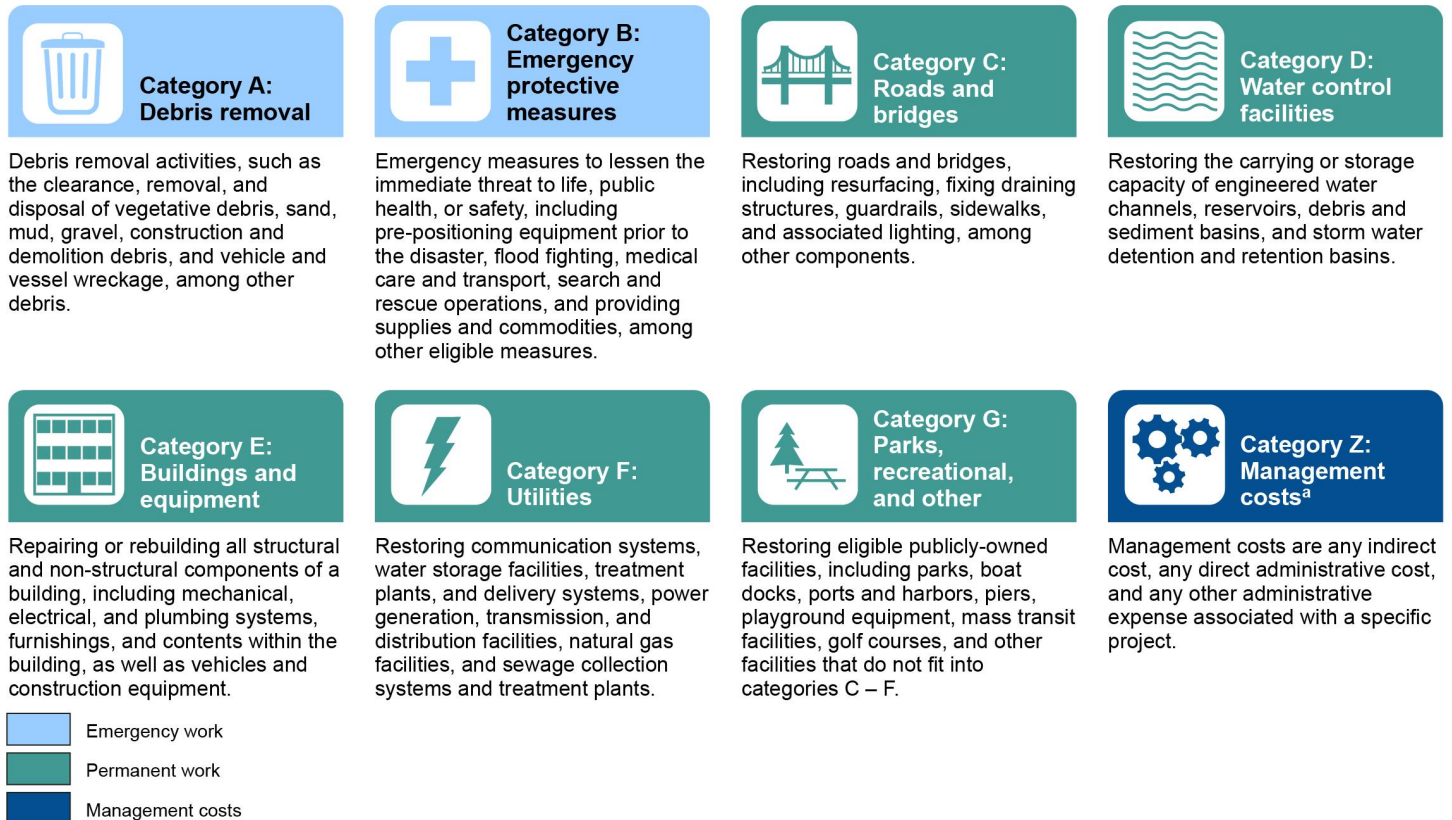
Background

FEMA's Public Assistance Program

FEMA's Public Assistance program provides grant funding to state, territorial, local, and tribal governments, as well as to certain types of private nonprofit organizations, to assist with responding to and recovering from presidentially-declared major disasters or emergencies.⁷ As shown in figure 3, FEMA categorizes Public Assistance grant funds broadly as "emergency work" or "permanent work." Within these broad categories are separate subcategories. In addition to the emergency work and permanent work categories, the program includes category Z, which represents indirect costs, direct administrative costs, and any other administrative expenses associated with a specific project.

⁷In 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, tribe, or local government and federal assistance is necessary. See 42 U.S.C. §§ 5170-5172. The 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.

Figure 3: Federal Emergency Management Agency’s Public Assistance Program Categories of Work



Source: Federal Emergency Management Agency. | GAO-22-106211

^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)).

FEMA’s Public Assistance program also provides grant funding for cost-effective hazard mitigation measures to reduce or eliminate the long-term risk to people and property from future natural and man-made disasters and their effects.⁸ For example, a community that had a fire station damaged by a disaster could use Public Assistance grant funding to repair the facility and incorporate additional measures such as installing hurricane shutters over the windows to mitigate the potential for future damage.

⁸FEMA may fund hazard mitigation measures related to the damaged facilities receiving Public Assistance grant funding pursuant to section 406 of the Stafford Act, as amended. 42 U.S.C. § 5172; 44 C.F.R. § 206.226.

FEMA, the state or territorial government (the recipient), and local or territorial entities (the subrecipient) work together to develop projects under the Public Assistance program. After a project has completed FEMA's review process and is approved, FEMA obligates funding for the project by placing money into an account where the recipient has the authority to draw down—or expend—funding to pay the subrecipient for eligible work upon completion.⁹

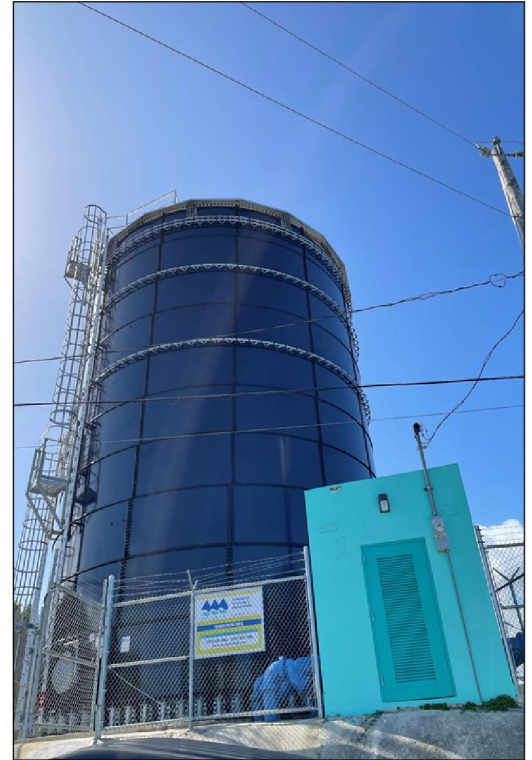
Figure 4 shows images of a Public Assistance-funded water tank project we visited in Humacao, Puerto Rico in February 2020 (image on left) and again in March 2022.

⁹An 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 statement, obligations represent the amount of grant funding FEMA provided through the Public Assistance program and the Hazard Mitigation Grant Program for specific projects in Puerto Rico and the USVI. 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 statement, an expenditure represents the actual spending by the government of Puerto Rico government or the USVI government of money obligated by the federal government.

Figure 4: Status of Federal Emergency Management Agency Public Assistance-Funded Buena Vista Arriba Water Storage Tank in Humacao, Puerto Rico, February 2020 and March 2022



Damaged water tank from winds of Hurricane Maria observed in February 2020



Largely repaired water tank observed in March in March 2022

Source: GAO. | GAO-22-106211

The Sandy Recovery Improvement Act of 2013 authorized the use of alternative procedures in administering the Public Assistance program, thereby providing new flexibilities to FEMA, states, territories, and local governments for debris removal, infrastructure repair, and rebuilding

projects using funds from this program.¹⁰ Unlike the standard Public Assistance program where FEMA will reimburse the actual costs of a project, the Public Assistance alternative procedures allow awards for permanent work projects to be made based on fixed-cost estimates to provide financial incentives for the timely and cost-effective completion of work.

Under these procedures, if the actual cost of the project exceeds the fixed-cost estimate agreed upon by FEMA and the recipient, the recipient or subrecipient is responsible for the additional costs at the time of the closeout process.¹¹ However, if the actual cost of completing eligible work for a project is below the estimate, the recipient may use the remaining funds for additional cost-effective hazard mitigation measures to increase

¹⁰The 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). The stated goals of the alternative procedures are to reduce the costs to the federal government, increase flexibility in the administration of the Public Assistance program, expedite the provision of assistance under the program, and provide financial incentives for recipients of the program for the timely and cost-effective completion of projects.

¹¹Closeout is the step is where the grant process ends. In order to complete a closeout, award recipients submit the final financial and programmatic reports. According to the OMB Uniform Grants Guidance §200.343, the recipient must submit all financial, performance, and other reports required under the grant within 90 days after the grant award expires or is terminated. The awarding agency will review these reports to ensure compliance will all the grant terms and conditions as well as to make sure recipients spent all the funds appropriately.

the resilience of public infrastructure.¹² In addition, these funds may be used for activities that improve the recipient's or subrecipient's future Public Assistance operations or planning.

In October 2017, Puerto Rico requested, and FEMA approved, the use of the alternative procedures program for all large-project funding for Public Assistance permanent work projects in categories C through G.¹³

Although FEMA had approved alternative procedure grants in 30 states as of April 2018, in these cases, it used alternative procedures on a project-by-project basis. Puerto Rico's recovery from the 2017 hurricanes is the first recovery to use alternative procedures for all large permanent work projects. On January 23, 2020, FEMA made the use of Public Assistance alternative procedures optional for the repair of non-critical service facilities in Puerto Rico damaged by Hurricane Maria; however, it still requires large projects for critical service facilities to use Public Assistance alternative procedures.

In July 2018, FEMA approved a request from the Governor of the USVI to transition to using the Public Assistance alternative procedures program for permanent work in the territory. In addition to the alternative

¹²Section 20601 of the Bipartisan Budget Act of 2018 also authorizes FEMA, when using the alternative procedures, to provide assistance to fund the replacement or restoration of disaster-damaged infrastructure that provide critical services without regard to pre-disaster condition. Bipartisan Budget Act of 2018, Pub. L. No. 115-123, § 20601(1), 132 Stat. 64 (2018). 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). The Act also authorizes FEMA to fund the repair or replacement of undamaged components of critical services infrastructure when necessary to restore the function of the facility or system to industry standards. 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 USVI following hurricanes Irma and Maria. Further, the Additional Supplemental Appropriations for Disaster Relief Act of 2019 provides additional direction to FEMA in the implementation of section 20601. See 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 whether a facility should be repaired or replaced.

¹³According to a November 2017 amendment to Puerto Rico's major disaster declaration, due to the extraordinary level of infrastructure damage caused by Hurricane Maria, as well as the financial status of Puerto Rico, officials chose to use the alternative procedures for all large-project funding for Public Assistance categories C through G pursuant to section 428 of the Stafford Act. Puerto Rico; Amendment No. 5 to Notice of a Major Disaster Declaration, 82 Fed. Reg. 53,514 (Nov. 16, 2017). For fiscal year 2022, the large project threshold was any amount over \$139,800.

procedures process, the USVI may pursue the use of the standard Public Assistance program on a project-by-project basis.

FEMA's Hazard Mitigation Grant Program

FEMA's Hazard Mitigation Grant Program provides grant funding for long-term mitigation solutions to reduce the risk of loss of life and property from future disasters. 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 that did not exist prior to the disaster, or to update existing hazard mitigation plans to accurately reflect current mitigation goals.

FEMA Has Taken Steps to Address Recommendations to Improve the Management of Its Grant Programs

In prior reports, we made recommendations to improve FEMA's management of its recovery grant programs in Puerto Rico and the USVI, including those related to (1) the development of fixed-cost estimates under the Public Assistance alternative procedures, (2) the availability and clarity of guidance for FEMA's Public Assistance program and the Hazard Mitigation Grant Program, and (3) the identification, assessment, and management of risks to recovery in Puerto Rico. In response, FEMA has taken steps to address these recommendations, as discussed below.

Developing Fixed-Cost Estimates. In November 2019 and February 2020, we reported on the development of fixed-cost estimates for permanent work projects under the alternative procedures in the USVI and Puerto Rico, respectively. We reported in November 2019 that FEMA and USVI officials stated that developing accurate fixed-cost estimates for permanent work projects under the alternative procedures posed challenges.¹⁴ Specifically, USVI officials told us that developing fixed-cost estimates that accurately forecast the future costs of completing large, complex permanent work projects in the remote island territory was

¹⁴GAO, *U.S. Virgin Islands Recovery: Additional Actions Could Strengthen FEMA's Key Disaster Recovery Efforts*, [GAO-20-54](#) (Washington, D.C.: Nov. 19, 2019).

difficult given the unique circumstances that influence construction costs in the USVI, such as the limited availability of local resources and the need to import construction materials and labor.

To address this issue, in May 2019, FEMA approved a USVI-specific cost factor to incorporate into FEMA's process for developing fixed-cost estimates on an interim basis. The factor aims to ensure that FEMA captures actual costs of implementing permanent work projects in the territory. Given the uncertainty around these fixed-cost estimates, USVI officials told us the territory would need to balance the potential flexibilities provided by the alternative procedures program with the financial risk posed by cost overruns when deciding whether to use the alternative procedures or the standard Public Assistance program for any given permanent work project.

For Puerto Rico, in February 2020, we also reported that, given the importance of reaching mutual agreement on fixed cost estimates for projects under the alternative procedures, FEMA and Puerto Rico had taken a deliberative approach to establishing the data and procedures to use in developing these fixed cost estimates.¹⁵ This included, among other things, adapting the way FEMA estimates costs to the specific post-disaster economic conditions in the territory, including developing exceptions to FEMA's cost estimating guidance. In July 2019, FEMA approved two exceptions: (1) a cost factor to account for local labor, equipment, and material costs in Puerto Rico, and (2) a future price factor and price curve to account for anticipated rises in construction costs over time due to the massive influx of disaster recovery funds, coupled with limited material and labor resources in Puerto Rico.

At the time, we found that FEMA adapted its Public Assistance cost estimating guidance to accurately reflect costs in Puerto Rico but that it could improve the guidance to further enhance its reliability. Specifically, we found that FEMA's guidance substantially or fully met best practices for nine of the 12 steps included in the GAO Cost Estimating and Assessment Guide; however, FEMA could improve the guidance in three areas, including analyzing risks and future uncertainties that could affect

¹⁵GAO, *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).

these estimates.¹⁶ We recommended that FEMA revise its cost estimating guidance for Puerto Rico to fully align with all 12 steps. In response, FEMA addressed this recommendation by, among other things, developing a job aid to provide additional guidance on cost estimating procedures to further align its Public Assistance program guidance with the steps outlined in our guide.

We are continuing to monitor the use of fixed-cost estimates for permanent recovery projects in our ongoing work.

Availability and Clarity of FEMA's Guidance. In November 2019, we reported that the USVI and FEMA established structures for overseeing recovery efforts and had issued numerous useful documents and guidance for implementing its recovery programs.¹⁷ For example, FEMA's consolidated standard operating procedures for the Public Assistance program provided FEMA officials across all disasters nationwide with a common understanding of the expectations and requirements for managing projects. However, we found that FEMA did not have similar consolidated standard operating procedures for the Hazard Mitigation Grant Program, which were located across multiple guidance documents. Nor did the existing Hazard Mitigation Grant Program documents provide a concise roadmap that outlined roles and responsibilities, key tasks and milestones, and performance measures for FEMA officials to use when monitoring and closing out individual program projects for any given disaster.

To further strengthen its existing program guidance and management, we recommended that FEMA assess the need for an agency-wide consolidated standard operating procedures document for the Hazard Mitigation Grant Program. In response, FEMA published a new webpage in February 2021 to consolidate the program's guidance in one location for easy reference and in January 2022, issued additional guidance for FEMA personnel's use in managing its hazard mitigation programs to address the recommendation.

In addition, we reported in February 2020 that FEMA had developed Public Assistance policies and guidance to respond to complex recovery

¹⁶GAO, *GAO Cost Estimating and Assessment Guide Best Practices for Developing and Managing Capital Program Costs*, [GAO-09-3SP](#) (Washington, D.C.: Mar. 2, 2009).

¹⁷[GAO-20-54](#).

conditions in Puerto Rico, which FEMA officials said they provided throughout the Public Assistance project development process.¹⁸

However, Puerto Rico government officials we spoke with stated that they were not always certain about how to proceed in accordance with FEMA policy because they did not consistently understand what guidance was in effect. We also found that pertinent guidance may not be shared with key recovery partners and that FEMA did not maintain a repository of Public Assistance guidance available to all recovery partners that included current applicable guidance.

Without real time access to current applicable guidance, recovery partners risked using guidance that has been revised or replaced. Therefore, we recommended 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, including subrecipients. FEMA addressed this recommendation by making Public Assistance policies and guidance documents accessible to Puerto Rico recovery partners, including subrecipients, through its internal Public Assistance application management system.

Risks to Recovery Projects. In May 2021, we reported that although the number of Public Assistance projects developed and obligated for Puerto Rico's recovery had increased, FEMA had 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.¹⁹ These risks included (1) delays related to a lack of subrecipient staff expertise to develop projects for obligation and (2) difficulties providing initial construction funding for projects due to financial austerity measures put in place related to the government of Puerto Rico's default on debt beginning in August 2015.

While Puerto Rico-based FEMA officials and Puerto Rico government officials identified risks that could affect continued progress of recovery efforts, we found that FEMA headquarters officials had not comprehensively identified and assessed such risks or identified potential actions to manage or monitor them. As of February 2021, FEMA headquarters was in the early stages of implementing an enterprise risk

¹⁸[GAO-20-221](#).

¹⁹GAO, *Puerto Rico Recovery: FEMA Made Progress in Approving Projects, But Should Identify and Assess Risks to the Recovery*, [GAO-21-264](#) (Washington, D.C.: May 19, 2021).

management framework to identify and assess risks to its mission, as required by the Office of Management and Budget. However, it was too soon to tell if FEMA would use this framework to comprehensively identify, assess, and monitor risks to Puerto Rico's recovery.

Nonetheless, the time that had elapsed since the 2017 hurricanes and the work remaining highlighted the need for urgent and diligent action to help ensure the success of Puerto Rico's remaining recovery efforts. Therefore, we recommended that, in coordination with the government of Puerto Rico and relevant federal agencies, FEMA 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. Further, we recommended that FEMA identify potential actions to manage the risks to the remainder of Puerto Rico's recovery and continuously monitor risks.

In response, FEMA has taken steps toward addressing these recommendations by setting risk assessment related goals for FEMA personnel involved in the process, drafting a risk assessment plan for Puerto Rico's disaster recovery, and developing plans to review the plan with Puerto Rico government officials before adoption in January 2023.

We will monitor FEMA's further actions to identify, assess, and manage risks to recovery in Puerto Rico through our ongoing work.

FEMA Has Obligated Over \$32 billion for Recovery Efforts and About \$1 Billion Has Been Expended on Public Assistance Long-Term Rebuilding Projects

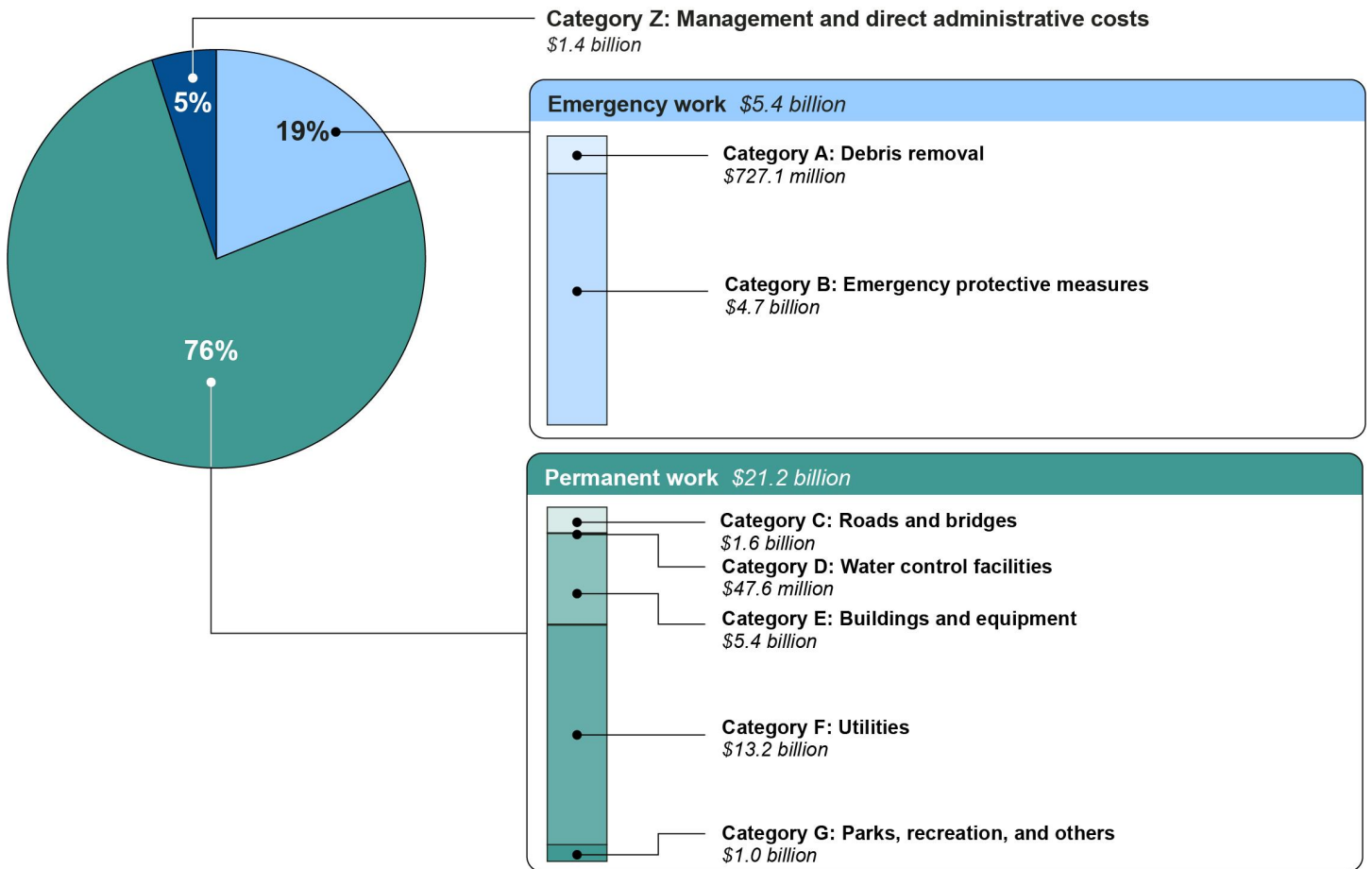
FEMA has obligated a combined total of about \$32.2 billion in grant funds for Public Assistance projects and approximately \$304.8 million for the Hazard Mitigation Grant Program in Puerto Rico and the USVI in response to hurricanes Irma and Maria as of August 2022. In turn, the governments of Puerto Rico and the USVI have expended approximately \$7.7 billion of the Public Assistance obligations and about \$39 million in Hazard Mitigation Grant Program obligations as of August 2022. About \$1 billion of the Public Assistance expenditures were for permanent work projects that support long-term rebuilding projects, such as rebuilding

schools, the power grid, water systems, and other damaged infrastructure.

Public Assistance obligations in Puerto Rico. As shown in figure 5, FEMA obligated approximately \$28 billion in Public Assistance funding to Puerto Rico related to the 2017 hurricanes as of August 2022. This funding includes approximately \$5.4 billion (19 percent) for emergency work (categories A and B), about \$21.2 billion (76 percent) for permanent work (categories C through G), and about \$1.4 billion (5 percent) in management and administrative costs (category Z).²⁰

²⁰These totals do not include FEMA's Public Assistance obligations in response to the series of earthquakes Puerto Rico experienced starting in December 2019 or to COVID-19. As of August 2022, FEMA's Public Assistance obligations in response to the earthquakes totaled about \$739.5 million, while obligations related to COVID-19 response were approximately \$194.6 million.

Figure 5: Federal Emergency Management Agency Public Assistance Grant Funding Obligated to Puerto Rico by Category, as of August 2022



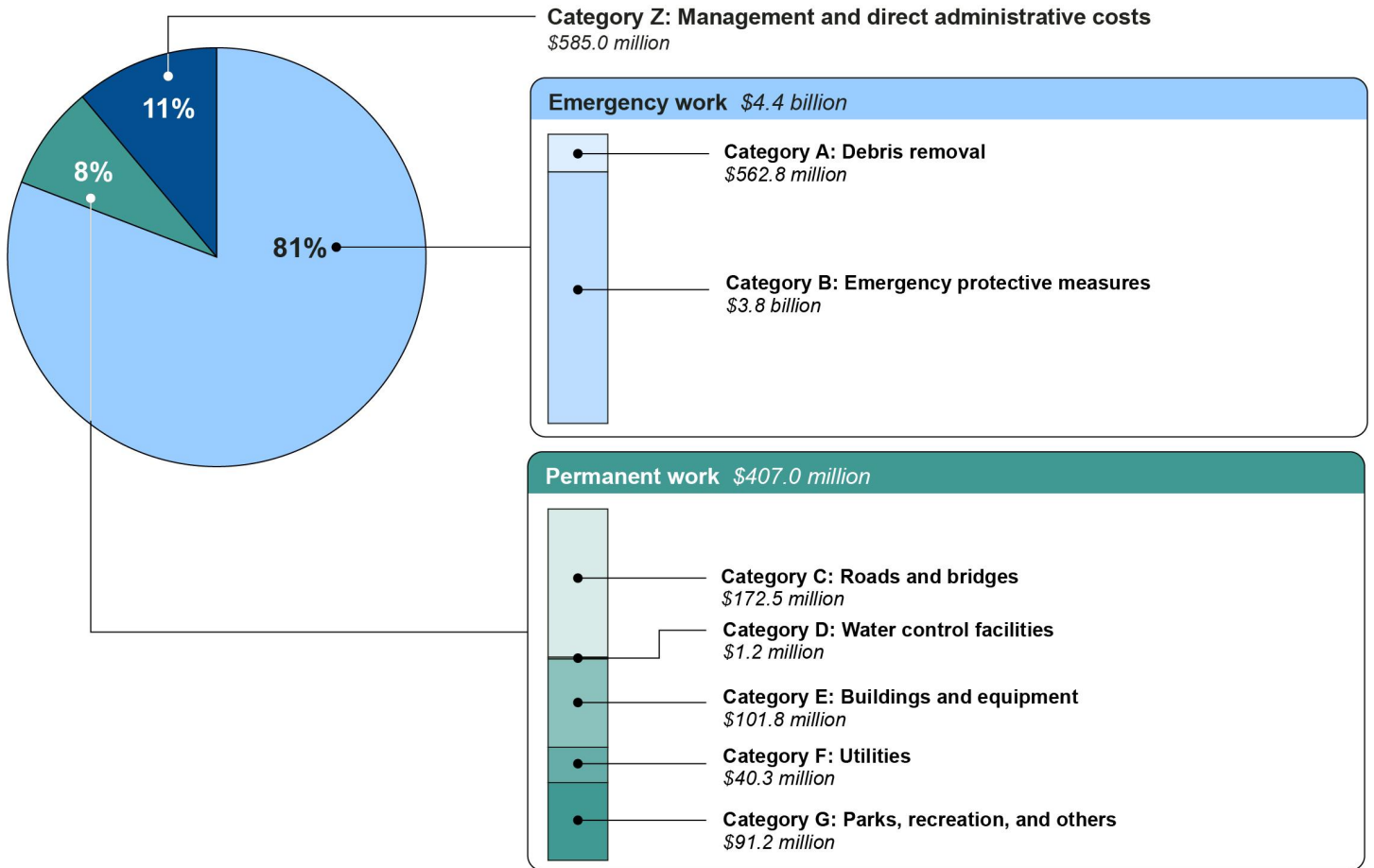
Source: Federal Emergency Management Agency's Emergency Management Mission Integrated Environment. | GAO-22-106211

Accessible Data Table for Figure 5

	Amount in dollars	Percentage
Emergency work	5.4 billion	19
Category A: Debris removal	727.1 million	
Category B: Emergency protective measures	4.7 billion	
Permanent work	21.2 billion	76
Category C: Roads and bridges	1.6 billion	
Category D: Water control facilities	47.6 million	
Category E: Buildings and equipment	5.4 billion	
Category F: Utilities	13.2 billion	
Category G: Parks, recreation, and others	1.0 billion	
Category Z: Management and direct administrative costs	1.4 billion	5

Public Assistance expenditures in Puerto Rico. The government of Puerto Rico has expended about \$5.3 billion—about 19 percent—of the approximately \$28 billion in Public Assistance obligations as of August 2022. However, expenditures for emergency work projects constitute a large majority of expended Public Assistance funding in Puerto Rico. Specifically, as of August 2022, emergency work projects account for 81 percent of the expended amount while permanent work projects account for 8 percent of the total (see figure 6).

Figure 6: Federal Emergency Management Agency (FEMA) Public Assistance Grant Funding Expended by the Government of Puerto Rico by Category, as of August 2022



Source: FEMA via the Puerto Rico Central Office for Recovery, Reconstruction, and Resiliency Transparency Portal. | GAO-22-106211

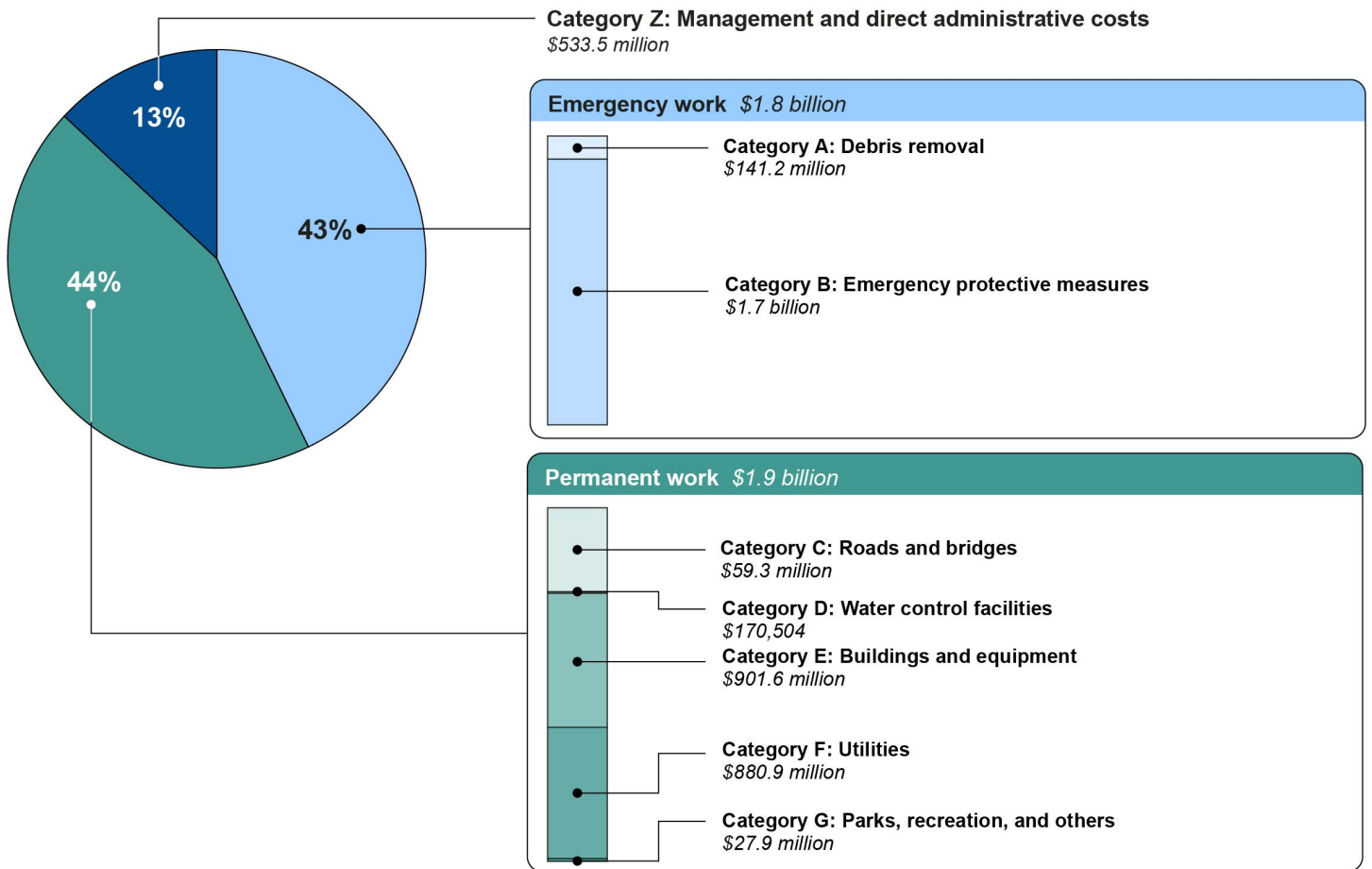
Accessible Data Table for Figure 6

	Amount	Percentage
Emergency work	4.4 billion	81
Category A: Debris removal	562.8 million	
Category B: Emergency protective measures	3.8 billion	
Permanent work	407.0 million	8
Category C: Roads and bridges	172.5 million	
Category D: Water control facilities	\$1.2 million	
Category E: Buildings and equipment	\$101.8 million	
Category F: Utilities	40.3 million	
Category G: Parks, recreation, and others	91.2 million	
Category Z: Management and direct administrative costs	585 million	11

We will continue to monitor Public Assistance obligations and expenditures for Puerto Rico through our ongoing work.

Public Assistance obligations in the USVI. FEMA’s obligations related to the 2017 hurricanes for Public Assistance projects in the USVI were approximately \$4.2 billion as of August 2022. As figure 7 shows, FEMA’s Public Assistance obligations as of August 2022 include approximately \$1.8 billion (43 percent) for emergency work (categories A and B), about \$1.9 billion (44 percent) for permanent work in categories C through G, and \$533.5 million (13 percent) in management and administrative costs (category Z).

Figure 7: Federal Emergency Management Agency Public Assistance Grant Funding Obligated to the U.S. Virgin Islands by Category, as of August 2022



Source: Federal Emergency Management Agency's Emergency Management Mission Integrated Environment. | GAO-22-106211

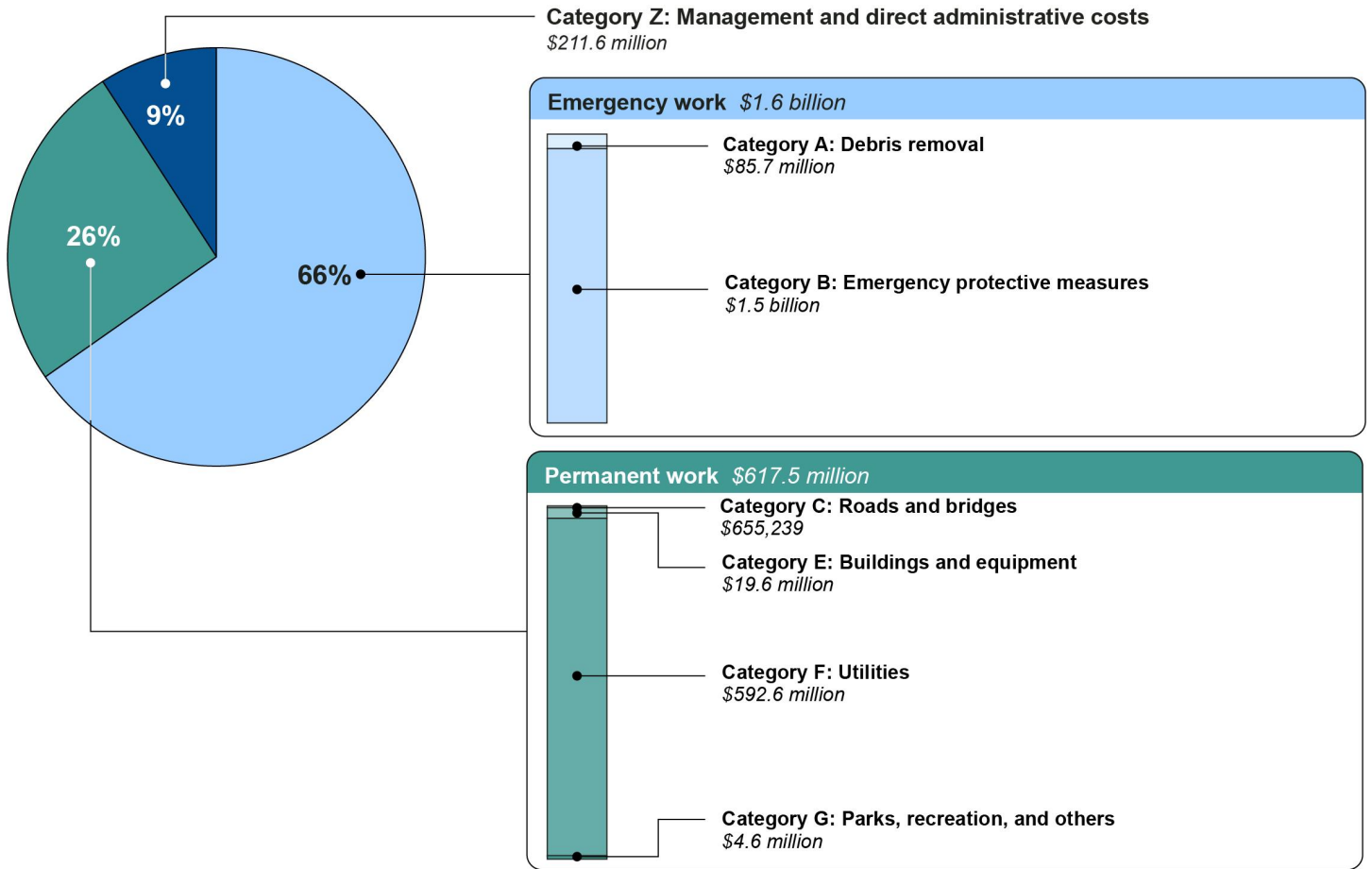
Accessible Data Table for Figure 7

	Amount	Percentage
Emergency work	1.8 billion	43
Category A: Debris removal	141.2 million	
Category B: Emergency protective measures	1.7 billion	
Permanent work	1.9 billion	44
Category C: Roads and bridges	59.3 million	
Category D: Water control facilities	170,504	
Category E: Buildings and equipment	901.6 million	
Category F: Utilities	880.9 million	
Category G: Parks, recreation, and others	27.9 million	
Category Z: Management and direct administrative costs	533.5 million	13

Public Assistance expenditures in the USVI. The USVI government has expended about \$2.4 billion—about 57 percent—of the approximately \$4.2 billion in Public Assistance obligations as of August 2022. About 66 percent of total Public Assistance expenditures in the USVI went toward emergency work projects while 26 percent went toward permanent work projects (see fig. 8).²¹

²¹The remaining Public Assistance expenditures in the USVI in response to the 2017 went toward management and administrative costs.

Figure 8: Federal Emergency Management Agency Public Assistance Grant Funding Expended by the U.S. Virgin Islands Government by Category, as of August 2022



Source: Federal Emergency Management Agency's Integrated Financial Management Information System. | GAO-22-106211

Accessible Data Table for Figure 8

	Amount	Percentage
Emergency work	1.6 billion	66
Category A: Debris removal	85.7 million	
Category B: Emergency protective measures	1.5 billion	
Permanent work	617.5 million	28
Category C: Roads and bridges	655,239	
Category E: Buildings and equipment	19.6 million	
Category F: Utilities	592.6 million	
Category G: Parks, recreation, and others	4.6 million	
Category Z: Management and direct administrative costs	211.6 million	9

Hazard Mitigation Grant Program obligations and expenditures in Puerto Rico and the USVI. FEMA has obligated a combined total of about \$304.8 million in funding for Hazard Mitigation Grant Program projects in both Puerto Rico and the USVI in response to hurricanes Irma and Maria.

Specifically, in Puerto Rico, FEMA has obligated approximately \$162.7 million as of August 2022 to 200 Hazard Mitigation Grant Program projects specifically in response to Hurricane Maria, and the government of Puerto Rico has expended about \$21.2 million—or 13 percent—of total obligations. For Hurricane Irma, FEMA has obligated about \$3.9 million to six projects related to Hurricane Irma, while the government of Puerto Rico has expended approximately \$252,000, which represents about 6 percent of total obligations, as of August 2022.

In the USVI, FEMA has obligated approximately \$138.2 million in Hazard Mitigation Grant Program funding to projects in response to the 2017 hurricanes while the USVI government has expended about \$17.6 million of these obligations as of August 2022.

With our ongoing work, we will continue to obtain updated Hazard Mitigation Grant Program obligation and expenditure data for Puerto Rico to track the progress of disaster recovery efforts.

Puerto Rico Faces Potential Challenges to Ongoing Recovery Efforts and FEMA Is Communicating Regularly with Stakeholders to Discuss Issues

In our ongoing work, officials from the agencies and organizations we have interviewed thus far have described potential challenges to the continuing disaster recovery efforts in Puerto Rico. In addition, our preliminary observations indicate that FEMA communicates regularly with government of Puerto Rico agencies about the implementation of Public Assistance and Hazard Mitigation Grant Program projects and has taken actions, such as providing trainings, to help address some of these issues.

FEMA, Puerto Rico Government Agencies, and Other Puerto Rico Stakeholders Cited Potential Challenges to Ongoing Recovery Efforts

In our ongoing work, officials we have interviewed from FEMA and selected Puerto Rico government agencies, Puerto Rico municipalities, a private operator of a Puerto Rico government agency, and nongovernmental organizations have identified potential challenges to Puerto Rico's disaster recovery efforts. These potential challenges include: (1) the limited institutional knowledge and capacity in Puerto Rico to manage disaster recovery programs; (2) difficulties between FEMA and grant applicants reaching agreement on scopes of work for projects; (3) increases in project costs due to inflation; and (4) difficulties procuring resources such as goods and services for the construction of projects.

Limited institutional knowledge for managing FEMA's grant programs. Preliminary observations from our ongoing work indicate that Puerto Rico faces challenges with building up institutional knowledge to manage FEMA grant awards and projects. In particular, officials from COR3 stated that COR3 found that some local governments—commonly known as municipalities—had relatively little knowledge of the federal procurement process or the use of Public Assistance funding for the administrative and management costs of projects. Specifically, in COR3's February 2021 analysis of its survey to identify the capacities of municipalities, it found that 31 municipalities did not have extensive knowledge of federal regulations and needed to obtain better knowledge

in the area to meet federal requirements for recovery project contracting and purchasing.²²

Difficulties reaching agreement on project scopes of work. Among the Puerto Rico government agencies and municipalities that we have interviewed thus far, some officials have described challenges with reaching agreement with FEMA on the scope of work for Public Assistance projects they are submitting to FEMA for approval. For example, officials from a municipality we interviewed stated that getting approval from FEMA to add improvements to a project above its pre-disaster design has been difficult and time consuming.²³ In addition, officials from a private operator of a Puerto Rico government agency told us that they have had disagreements with FEMA on making repairs beyond the damages sustained during Hurricane Maria. Specifically, the private operator and FEMA disagree on which aspects of the agency's proposed project the Public Assistance funding will cover. FEMA officials note that there are nuances involved in developing a complex project and ensuring it is eligible under federal laws and regulations.

Increases in project costs due to inflation. Based on preliminary observations in our ongoing work, officials in Puerto Rico we have interviewed are concerned that inflation will lead to an increase in the cost of executing projects and exceed FEMA's obligations for some projects. For example, officials from a municipality stated that the fixed cost estimates developed under Public Assistance alternative procedures no longer reflects the current costs of basic supplies, such as concrete, needed for their projects. Furthermore, officials from a nongovernmental organization stated that they were concerned with the capability of municipalities—already facing financial hardships—to afford the increased cost of projects due to inflation. Officials from this nongovernmental organization added that since FEMA's Public Assistance is a reimbursement program, grant recipients—such as municipalities—need to pay for the cost of a project upfront before FEMA

²²As a condition of receiving reimbursement for contractor costs relating to FEMA's federal assistance programs, FEMA award recipients and subrecipients must comply with all applicable federal laws, regulations, and executive orders, including federal procurement standards found at 2 C.F.R. §§ 200.317-200.327.

²³An Improved Project is a project that incorporates improvements or changes to the pre-disaster design that are not required by eligible codes or standards. Federal Emergency Management Agency. *Public Assistance Program and Policy Guide, FP 104-009-2 Version 4 (June 1, 2020)*.

can reimburse them. These officials also emphasized that with Public Assistance alternative procedures, if the costs of a project exceeds the fixed cost estimate, the grant recipient would have to pay the difference.

Additionally, officials from some Puerto Rico government agencies that received obligations through the FEMA's Accelerated Awards Strategy (FAASt) approach expressed concerns about inflation increasing the overall cost of their projects and making the fixed-cost estimate they agreed to no longer accurate.²⁴ For example, officials from a Puerto Rico government agency stated that some of its projects have doubled in cost from the original estimate. Furthermore, officials from another Puerto Rico government agency stated that they were unsure if the obligation amount estimated using FAASt would adequately cover the cost of their projects due to cost increases they ascribe to inflation. According to FEMA officials, Public Assistance fixed cost estimates accounted for some inflation; however, they told us that they are monitoring for cases of project cost increases that exceed 50 percent of the original fixed cost estimate.

Difficulties procuring resources to begin construction on projects.

According to officials from FEMA and Puerto Rico government agencies, we have interviewed for our ongoing work, procuring resources such as contractors and equipment needed to begin construction of projects can be challenging.²⁵ For example, FEMA officials we spoke with stated that municipalities have particular difficulty procuring specialized personnel such as engineers and construction contractors because they have to compete with government agencies and larger corporations for the same resources. Furthermore, officials from a Puerto Rico government agency we interviewed specified that delays in the global supply chain have affected Puerto Rico. These officials told us that obtaining parts and materials needed to start construction on a project can sometimes take up to 24 months.

²⁴FAASt allows selected Puerto Rico state agencies such as Puerto Rico's Electric Power Authority, Aqueduct and Sewer Authority, Department of Education, and the Public Housing Administration to use a sample of the information needed to extrapolate costs and develop a fixed cost estimate for Public Assistance permanent work projects. See [GAO-21-264](#) for more details.

²⁵In May 2021, we reported that Puerto Rico would likely face risks finding labor to handle the sheer number of projects that need to be constructed. According to FEMA officials, this is because thousands of projects will be going on simultaneously and will likely put a strain on Puerto Rico's capacity to procure labor, equipment, and materials to start construction. See [GAO-21-264](#).

FEMA Communicates Regularly with Puerto Rico Stakeholders about Disaster Recovery Efforts

According to FEMA, Puerto Rico government agencies, and municipal officials we interviewed thus far, communication between FEMA and Puerto Rico stakeholders generally occurs frequently through formal and informal means. For example, preliminary observations from our ongoing work indicates that FEMA holds weekly and monthly meetings with COR3 and other government agencies, such as the Puerto Rico Electric Power Authority. These meetings include discussions with FEMA officials on the status of projects and related grant funding or construction issues. Officials from one Puerto Rico government agency told us that through these meetings, they are able to ask FEMA officials for help on specific topics related to their Public Assistance projects, such as FEMA's Environmental and Historic Preservation review process.²⁶ These officials stated that they meet with FEMA and COR3 officials up to three times a week and have informal communications daily with FEMA and COR3 officials. Further, officials from some of the municipalities that we have spoken to also stated that they have constructive relationships with their FEMA Program Delivery Managers and that communication with them has improved since the beginning of the disaster recovery.²⁷

In addition, both FEMA and COR3 have provided municipalities with trainings and technical assistance. For example, in February 2021, FEMA and COR3 hosted a virtual training for municipal staff on the processing of acquisitions and contracting which all 78 municipalities attended. More recently, from December 2021 to June 2022, FEMA delivered multiple 3-day grants management training for municipalities. These trainings covered topics such as the lifecycle of grants, project management, administrative requirements, and the procurement process.

Our ongoing work will continue to explore the challenges to the disaster recovery efforts in Puerto Rico as well as potential solutions to these

²⁶According to FEMA, an Environmental and Historic Preservation review includes FEMA reviewing each Public Assistance project to ensure the work complies with applicable federal laws and implementing regulations, and applicable executive orders to protect the environment and preserve the U.S.'s historic and archeological resources. Federal Emergency Management Agency. *Public Assistance Program and Policy Guide, FP 104-009-2 Version 4 (June 1, 2020)*.

²⁷According to FEMA, Program Delivery Managers serve as the primary point of contact for applicants, providing customer service and programmatic guidance throughout the grant process.

challenges. We will also continue to identify steps FEMA is taking to help address them. We plan to issue a final report next year.

Chair Titus, Ranking Member Webster, and Members of the Subcommittee, this completes my prepared statement. I would be pleased to respond to any questions that you may have at this time.

GAO Contacts and Staff Acknowledgments

If you or your staff members have any questions about this testimony, please contact Christopher P. Currie, Director, Homeland Security and Justice 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 statement. Key contributors to this statement include Joel Aldape, Assistant Director; Steven Rucker, Analyst-in-Charge; Aditi Archer; Lorraine Ettaro; Emilio Fonseca; Taylor Gauthier; Kelsey Hawley; John Karikari; and Jeff Love. Key contributors to the previous work discussed in this statement are listed in each of the cited reports.

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