



February 2021

2018 PACIFIC ISLAND DISASTERS

Federal Actions Helped Facilitate the Response, but FEMA Needs to Address Long-Term Recovery Challenges

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GAO Highlights

Highlights of [GAO-21-91](#), a report to congressional committees

Why GAO Did This Study

The CNMI, Guam, and Hawaii experienced an unprecedented number of natural disasters in 2018—including typhoons, earthquakes, mudslides, and volcanic eruptions. FEMA is the lead federal agency responsible for helping states and territories prepare for, respond to, and recover from natural disasters. Due to the remoteness of Hawaii and the Pacific territories, disaster response and recovery can be challenging.

Title IX of the Additional Supplemental Appropriations for Disaster Relief Act of 2019 includes a provision for GAO to review FEMA's response and recovery efforts for 2018 natural disasters, including those in the Pacific region. This report examines (1) how FEMA and its federal partners prepared for and responded to the 2018 disasters in the CNMI, Guam, and Hawaii; and (2) the extent to which FEMA assisted the CNMI, Guam, and Hawaii in recovering from the 2018 natural disasters.

GAO analyzed program documents, response plans, and data on FEMA obligations, expenditures, and grant process steps as of October 2020; interviewed federal, state, territorial, and local officials; and visited disaster-damaged areas in Hawaii.

What GAO Recommends

GAO is making four recommendations, including that FEMA (1) incorporate lessons learned into Permanent Housing Construction guidance; and (2) use performance data to identify and address inefficiencies in the Public Assistance program. The Department of Homeland Security concurred, and FEMA is taking actions in response.

View [GAO-21-91](#). For more information, contact Chris Currie at (404) 679-1875 or curriec@gao.gov.

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What GAO Found

The Federal Emergency Management Agency (FEMA) took steps prior to the 2018 disasters in the Commonwealth of the Northern Mariana Islands (CNMI), Guam, and Hawaii to facilitate response in the region, where time and distance from the continental United States create unique challenges. For instance, FEMA increased the capacity of two Pacific-area supply distribution centers and helped develop area specific disaster response plans. FEMA and its federal partners, such as the Department of Defense (DOD), had varied response roles, which local officials in the CNMI, Guam, and Hawaii considered effective. For example, DOD provided temporary roof repair for disaster survivors in the CNMI.

Damage from Typhoon Yutu in the Commonwealth of the Northern Mariana Islands (left) and the Kilauea Volcano Eruption in Hawaii (right)



Source: Forest Service photo by Incident Command Team; GAO. | GAO-21-91

As of October 2020, FEMA obligated \$877 million—more than 70 percent of which was for Individual and Public Assistance missions—following the 2018 disasters and made progress addressing some region specific challenges. However, FEMA has not fully addressed housing assistance issues in the CNMI. For example, it experienced delays implementing its Permanent Housing Construction program in the CNMI due to contracting shortfalls and lack of experienced staff. As of October 2020, only about 30 percent of homes were completed and returned to survivors. GAO found that these housing assistance challenges are consistent with lessons learned from prior FEMA missions in other remote areas of the U.S. Developing guidance that addresses lessons learned in the Permanent Housing Construction program could help streamline assistance to disaster survivors.

GAO also identified delays in FEMA's obligation of Public Assistance program funds—used to repair or replace disaster-damaged public infrastructure such as utilities, roads, and schools—in the CNMI, Guam, and Hawaii. Specifically, on average, it took over a year for FEMA to approve funds for projects awarded after the 2018 disasters. FEMA and local officials identified potential reasons for the delays, including cost estimation challenges. FEMA established cost factors in the CNMI to account for higher construction costs, and GAO found that FEMA collects some data on the timeliness of individual steps in the process. However, FEMA has not analyzed the data to help identify causes of the delays, which could allow it to target solutions to address them.

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Abbreviations

CNMI	Commonwealth of the Northern Mariana Islands
CRC	Consolidated Resource Center
DHS	Department of Homeland Security
DOD	Department of Defense
DRF	Disaster Relief Fund
EPA	Environmental Protection Agency
ESF	Emergency Support Function
FEMA	Federal Emergency Management Agency
HMGP	Hazard Mitigation Grant Program
IA	Individual Assistance
IMAT	Incident Management Assistance Team
KPI	Key Performance Indicator
PA	Public Assistance
PHC	Permanent Housing Construction
USACE	U.S. Army Corps of Engineers

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February 3, 2021

Chair
Ranking Member
Subcommittee on Homeland Security
Committee on Appropriations
United States Senate

Chair
Ranking Member
Subcommittee on Homeland Security
Committee on Appropriations
House of Representatives

The Commonwealth of the Northern Mariana Islands (CNMI), Guam, and Hawaii experienced an unprecedented number of natural disasters in a 6-month period during 2018, including catastrophic typhoons, volcanic eruptions, mudslides, and earthquakes.¹ These disasters caused road closures that cut off access to entire communities, as well as communication failures and catastrophic damage to homes and critical public facilities and infrastructure. The CNMI and Hawaii were particularly hard hit with multiple devastating events, including Super Typhoon Yutu, which crossed the CNMI as the equivalent of a Category 5 hurricane in

¹There are three U.S. territories located in the Western Pacific Ocean—the CNMI, Guam, and American Samoa. The CNMI is composed of the 14 northernmost islands in the Mariana Archipelago, the largest of which is Saipan, followed by Tinian and Rota. The five major disasters in the scope of this review resulted in six major disaster declarations under the Robert T. Stafford Relief and Emergency Assistance Act (Stafford Act), as amended. In accordance with the Stafford Act, and in response to the request of a governor, territorial, or tribal chief executive's request, the President may declare that a major disaster exists. 42 U.S.C. § 5170. The Stafford Act defines a "major disaster" as any natural catastrophe ((including, among others, any hurricane, tornado, storm, high water, or tsunami) or, regardless of cause, any fire, flood, or explosion, in any part of the United States that the President determines causes damage of sufficient severity and magnitude to warrant major disaster assistance to supplement the efforts and available resources of states, local governments, and disaster relief organizations in alleviating damage, loss, hardship, or suffering. See 42 U.S.C. § 5122(2).

late October 2018 and the eruption of Hawaii's Kilauea Volcano throughout the spring and summer of 2018.²

Rebuilding from these disasters is critical to the region's economy, because in addition to the physical damage to homes and public infrastructure, these disasters created economic vulnerability to a region that relies heavily on the tourism industry. For example, the CNMI experienced more than a 21 percent decrease in visitor arrivals in 2018 and Hawaii estimated a \$415 million tourism revenue loss from the volcanic eruption. As of October 2020, the Federal Emergency Management Agency (FEMA) obligated about \$877 million from the Disaster Relief Fund (DRF) to provide response and recovery assistance for six major disasters in the CNMI, Guam, and Hawaii.³

FEMA, a component of the Department of Homeland Security (DHS), is the lead federal agency responsible for assisting U.S. states and territories to prepare for, mitigate, respond to, and recover from natural disasters.⁴ FEMA's Region IX office is responsible for coordinating government-wide disaster response efforts and implementing all of FEMA's recovery programs in Hawaii and the U.S. territories in the Pacific, among other locations.⁵ Region IX, one of 10 FEMA regions, is headquartered in Oakland, California. The Pacific Area Office in Honolulu, HI, and an Area Field Office in Pasadena, CA, support region IX.

²The National Oceanic and Atmospheric Administration 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. The National Oceanic and Atmospheric Administration defines a Category 5 hurricane as one with winds above 157 miles per hour.

³The DRF is the primary source of federal funding to provide disaster assistance to state, local, tribal, and territorial governments following a major disaster or emergency declared by the President under the Stafford Act. Through this fund, FEMA directs, coordinates, manages, and funds eligible response and recovery efforts associated with domestic major disasters and emergencies. For example, the DRF funds (1) the repair and restoration of qualifying disaster-damaged public infrastructure, (2) hazard mitigation initiatives, (3) financial assistance to eligible disaster survivors, and (4) Fire Management Assistance Grants for qualifying large forest or grassland wildfires.

⁴See 6 U.S.C. § 313.

⁵Specifically, FEMA Region IX's area of responsibility includes Arizona, California, Hawaii, Nevada, Guam, American Samoa, Commonwealth of the Northern Mariana Islands, Republic of the Marshall Islands, Federated States of Micronesia, and more than 150 sovereign tribal entities. This area of responsibility spans eight time zones and 399,000 square miles. There are three U.S. territories located in the Western Pacific Ocean—Guam, the CNMI, and American Samoa.

We have previously reported on federal disaster response and recovery efforts led by FEMA in the continental U.S. and in Puerto Rico and the U.S. Virgin Islands, as well as on the financial conditions of the Pacific territories.⁶ We made recommendations related to, among other things, the recovery efforts in Puerto Rico and the U.S. Virgin Islands to help improve guidance for FEMA's Public Assistance program. DHS concurred with these recommendations and has either fully implemented them or taken action to begin addressing them. Also, in July 2020, we reported preliminary observations on federal response and recovery efforts relating to the 2018 Pacific-area disasters.⁷

Title IX of the Additional Supplemental Appropriations for Disaster Relief Act of 2019 includes a provision for GAO to review FEMA's response and recovery efforts for 2018 natural disasters, including those in the Pacific region.⁸ This report addresses:

1. How FEMA and its federal partners prepared for and responded to the 2018 disasters in the CNMI, Guam, and Hawaii; and
2. The extent to which FEMA assisted the CNMI, Guam, and Hawaii to recover from the 2018 natural disasters, and mitigate impacts from future disasters.

To address our first objective on federal preparedness and response efforts following the 2018 disasters in the Pacific region, we reviewed the Robert T. Stafford Relief and Emergency Assistance Act (Stafford Act) and the most recent related DHS and FEMA policies, such as the *National Response Framework, Third Edition* (June 2016). We reviewed relevant catastrophic disaster response plans for the CNMI, Hawaii, Guam, and FEMA Region IX. We also reviewed prior GAO reports on disaster response efforts conducted by FEMA and other federal agencies.

⁶GAO, *2017 Hurricanes and Wildfires: Initial Observations on the Federal Response and Key Recovery Challenges*, [GAO-18-472](#) (Washington, D.C.: Sept. 4, 2018), GAO, *U.S. Virgin Islands Recovery: Additional Actions Could Strengthen FEMA's Key Disaster Recovery Efforts*, [GAO-20-54](#) (Washington, D.C.: Nov. 19, 2019), GAO, *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), GAO, *U.S. Territories: Public Debt Outlook – 2019 Update*, [GAO-19-525](#) (Washington, D.C.: June 28, 2019), and GAO, *Commonwealth of the Northern Mariana Islands: Recent Economic and Workforce Trends*, [GAO-20-305](#) (Washington, D.C.: Feb. 13, 2020).

⁷GAO, *2018 Pacific Disasters: Preliminary Observations on FEMA's Disaster Response and Recovery Efforts*, [GAO-20-614T](#) (Washington, D.C.: July 8, 2020).

⁸See Pub. L. No. 116-20, 133 Stat. 871, 892-93 (2019).

We reviewed after-action reports and briefing documents provided by the Department of Defense (DOD), FEMA, the CNMI and Hawaii to identify response activities and challenges. In addition, we obtained and analyzed data on DRF obligations and expenditures for relevant response programs.⁹ These data were obtained from FEMA's Integrated Financial Management Information System and were current as of October 2020—the most recent data available at the time of our review. We also obtained and analyzed data on mission assignments—orders FEMA issues to other federal agencies—from FEMA's web-based Emergency Operations Command system for six major disasters that occurred in the Pacific in 2018, current as of July 2020.¹⁰ A major disaster was declared for all six events, and they were selected because they represent more than 90 percent of all DRF obligations for 2018 disasters in the Pacific region. To assess the reliability of data obtained from these systems, we reviewed existing information about these systems, analyzed the data for obvious errors, and interviewed knowledgeable agency officials about the processes for collecting and maintaining these data. Based on these steps, we found these data sufficiently reliable for the purposes of describing the amount of funding obligated and the types of federal activities needed for various response-related activities.

Finally, we interviewed FEMA, DOD, U.S. Geological Survey, state, territorial, and local government and emergency management officials on disaster response efforts and any associated challenges for the 2018 disasters. We conducted several of these interviews during a site visit in Hawaii and we conducted the remaining interviews by telephone.¹¹ The

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 report, obligations represent the amount of DRF funding FEMA provided for response activities and recovery programs. 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 CNMI, Guam, or Hawaiian governments of monies obligated by the federal government.

¹⁰The major disasters include two in the CNMI—Typhoon Mangkhut (DR-4396) and Typhoon Yutu (DR-4404), one in Guam—Typhoon Mangkhut (DR-4398), and three in Hawaii—Flooding/Landslides/Storms (DR-4365), Kilauea volcanic Eruption/Earthquakes (DR-4366), and Hurricane Lane (DR-4395). In addition to these six disaster events, a major disaster event was declared after Tropical Storm Gita passed over American Samoa in February 2018. This event is not included in the scope of this review.

¹¹We initially planned to conduct site visits to the CNMI and Guam to observe recovery projects and interview territorial officials in-person; however, due to impacts to government operations related to Coronavirus Disease 2019 (COVID-19) pandemic, we conducted telephone interviews with officials in the CNMI and Guam.

information from our site visit and interviews is not generalizable but provided valuable insights about federal disaster recovery efforts.

To address our second objective on federal recovery and hazard mitigation efforts following the 2018 disasters in the Pacific region, we reviewed relevant laws and current FEMA policies related to FEMA's Individual Assistance (IA), Public Assistance (PA), and hazard mitigation programs.¹² In instances where policy had been updated following the 2018 Pacific disaster events, we reviewed both the most recent policy as well as the policy in place at the time of the events. For example, to assess FEMA's provision of IA, we reviewed recent FEMA housing policy as well as disaster-specific policies from Hawaii for the volcanic eruption. We also reviewed contract documentation, needs assessments, and relevant after-action reports and DHS Office of the Inspector General reports related to FEMA's Permanent Housing Construction program.¹³ In addition, we analyzed the DRF data obtained for the first objective to assess the extent to which FEMA provided assistance through these three programs, and to assess the timeliness of the PA funding. These data were obtained through two systems: the Emergency Management Mission Integrated Environment and the FEMA Applicant Case Tracker. To assess the reliability of these data, we reviewed existing information about these systems, reviewed the data for obvious errors, and interviewed knowledgeable agency officials about the processes for collecting and maintaining these data. Based on these steps, we found these data sufficiently reliable for the purposes of describing the amount of funding obligated for various recovery- and mitigation-related programs, the number of projects awarded through these programs, and the timeliness with which recovery-related projects were awarded funding. We assessed how FEMA analyzes and uses PA data against the Project Management Institute's practices for monitoring and regularly assessing

¹²Key program documents we reviewed include FEMA, *Individual Assistance Program and Policy Guide, FP 104-009-03* (March 2019); FEMA, *Public Assistance Program and Policy Guide, Version 4, FP 104-009-2* (June 1, 2020); and FEMA, *Hazard Mitigation Assistance Guidance* (February 27, 2015).

¹³We reviewed a Region IX lessons learned document for the 2009 Earthquake and Tsunami in American Samoa, a Region X after-action report for the 2014 flooding in Alaska, and a Region VIII after-action report for the 2015 storms and flooding in South Dakota. DHS Office of Inspector General, *American Samoa 2009 Earthquake and Tsunami: After-Action Report*, OIG-11-03, October 2010; DHS Office of Inspector General, *FEMA's Response to the Disaster in Galena, Alaska*, OIG-14-106-D, June 2014; and DHS Office of Inspector General, *FEMA's Plan to Provide Permanent or Semi-Permanent Housing to the Oglala Sioux Tribe of the Pine Ridge Indian Reservation in South Dakota*, OIG-16-05-D, November 5, 2015.

performance.¹⁴ Finally, we discussed relevant recovery and mitigation topics during the interviews conducted with FEMA, state, and territorial officials, including 12 PA applicants across the three locations.

We determined that the information and communication component of internal controls was significant to the second objective of this work—specifically, FEMA’s Public Assistance program—along with the underlying principle that management should use quality information to achieve the entity’s objectives.¹⁵ We assessed FEMA’s procedures for the Public Assistance program to determine whether the agency was capable of achieving the program’s objectives.

We conducted this performance audit from October 2019 through February 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

2018 Pacific Disasters

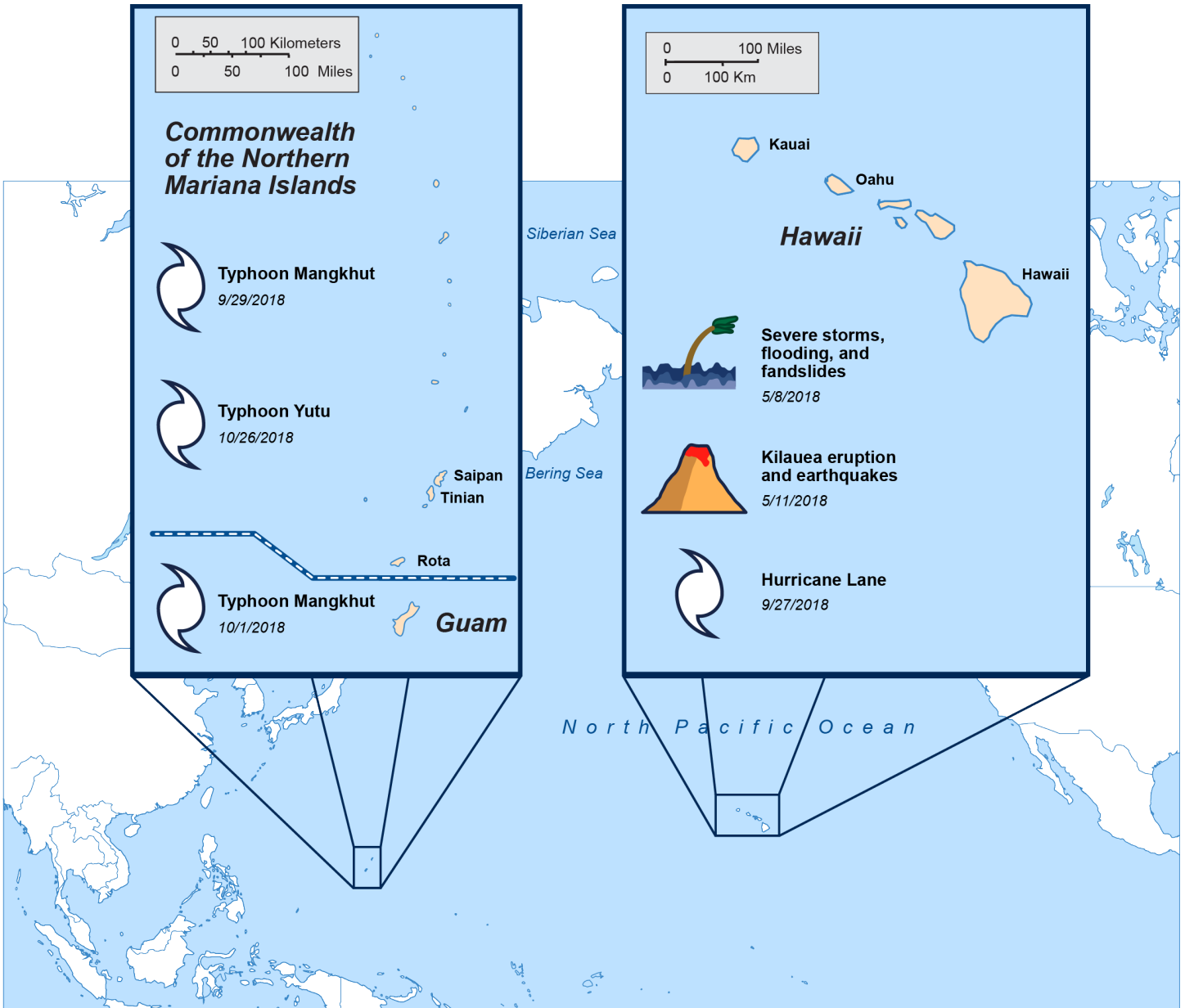
This report reviews six major disaster events that took place in the Pacific region over a period of 6 months (see fig. 1).¹⁶

¹⁴Project Management Institute, Inc. *A Guide to the Project Management Body of Knowledge (PMBOK®)*, 6th ed. (Newtown Square, PA: 2017).

¹⁵GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: September 2014).

¹⁶Five disasters in the Pacific region resulted in six major disaster declarations under the Stafford Act, as amended, because damage from Typhoon Mangkhut involved separate declarations for Guam and the CNMI. For purposes of this report, we refer to these as separate disaster events. In addition to these six disaster events, a major disaster event was declared after Tropical Storm Gita passed over American Samoa in February 2018. This event is not included in the scope of this review.

Figure 1: 2018 Pacific-Area Major Disaster Events and Dates of Presidential Disaster Declarations



Source: GAO analysis of Federal Emergency Management Agency Information. | GAO-21-91

Text of Figure 1: 2018 Pacific-Area Major Disaster Events and Dates of Presidential Disaster Declarations

Commonwealth of the Northern Mariana Islands

- Typhoon Manghut 9/29/2018
- Typhoon Yuta 10/26/2018

Guam

- Typhoon Manghut 10/1/2018

Hawaii

- Severe storms, flooding and landslides 5/8/2018
- Kilauea eruption and earthquakes 5/11/2018
- Hurricane Lane 9/27/2018

Note: The incident periods, or time during which the events occurred, lasted days to months: April 13-16, 2018 for flooding in Hawaii; May 3 to August 17, 2018 for the Kilauea volcanic eruption; August 22-29, 2018 for Hurricane Lane; September 10-11, 2018 for Typhoon Mangkhut in Guam and the Commonwealth of the Northern Mariana Islands (CNMI); and October 24-26, 2018 for Typhoon Yutu in the CNMI.

While the CNMI, Guam, and Hawaii all sustained significant damage from these disasters, destruction in the CNMI was the most extensive, impacting the three islands with the majority of the territory's roughly 54,000 residents. Specifically, Typhoon Mangkhut caused major damage or destruction to 70 homes on the CNMI's island of Rota. About 6 weeks later, Typhoon Yutu caused major damage or destruction of over 1,000 homes on CNMI islands of Tinian and Saipan and severe damage to the CNMI's utility infrastructure (see fig. 2). With sustained winds of over 207 miles per hour, Typhoon Yutu was the strongest typhoon to ever strike the CNMI and the second-strongest tropical cyclone to ever strike any area of the United States.¹⁷ The approximately \$664 million obligated from the DRF for disaster response and recovery activities in the CNMI represents about 50 percent of the territory's Gross Domestic Product—half of the value of goods and services the CNMI produces in an entire year.

¹⁷Tropical cyclones occurring in the Northwest Pacific Ocean are called typhoons, whereas tropical cyclones in the North Atlantic and Central and Eastern North Pacific are called hurricanes.

Figure 2: Debris and Damage in the Commonwealth of the Mariana Islands Following Typhoon Yutu



Source: Federal Emergency Management Agency (left), U.S. Air Force (right). | GAO-21-91

Hawaii also sustained significant damage from the 2018 disasters. Specifically, flooding and landslides on the islands of Kauai and Oahu blocked critical roadways and isolated thousands of residents. In addition, the Kilauea volcanic eruption—which lasted for 107 days—destroyed hundreds of homes and other infrastructure on the island of Hawaii (see fig. 3).¹⁸ Finally, in late August Hurricane Lane struck several of Hawaii’s islands, causing major damage or destruction to 57 homes.

¹⁸Property damage related to this disaster could also include damage from related lava flows and earthquakes.

Figure 3: Flood Damaged Road and Lava Flow, Hawaii



Source: National Oceanic and Atmospheric Administration (left), National Guard (right). | GAO-21-91

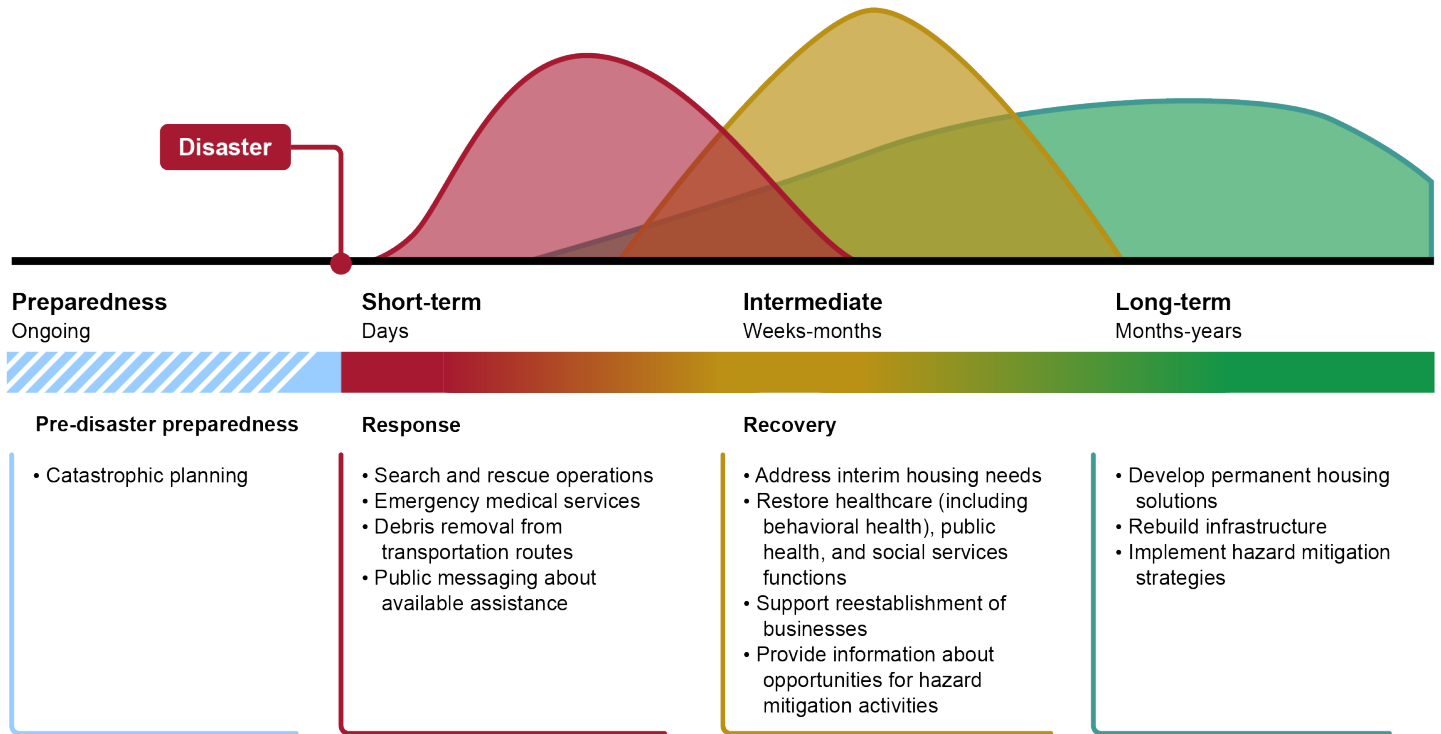
Federal Role in Disaster Response and Recovery

When disasters hit, state and local entities are typically responsible for disaster response efforts. The Stafford Act establishes a process by which the governor of the affected state or territory may request a presidential major disaster declaration, which can trigger a variety of federal response and recovery assistance programs.¹⁹ Under the *National Response Framework* and *National Disaster Recovery Framework*, DHS is the department with primary responsibility for coordinating federal disaster response and recovery efforts.²⁰ Within DHS, FEMA has lead responsibility for carrying out these tasks in coordination with the state or territorial partners. Disaster response activities focus on short- and medium-term priorities like saving lives, protecting property and the environment, and providing for basic human needs after a disaster incident. Disaster recovery activities, on the other hand, encompass a range of short- and long-term efforts that contribute to rebuilding resilient communities equipped with the physical, social, cultural, economic, and natural infrastructure required to meet future needs, as shown in Figure 4.

¹⁹42 U.S.C. § 5170. In accordance with the Stafford Act, as amended, and in response to the request of a governor, territorial, or tribal chief executive's request, the President of the United States may declare that a major disaster exists upon a determination that the disaster is of such severity and magnitude that effective response is beyond the capabilities of the state and the affected local governments and that federal assistance is necessary. *Id.*

²⁰Department of Homeland Security, *National Response Framework, Third Edition* (Washington, D.C.: June 2016), Department of Homeland Security, *National Disaster Recovery Framework, Second Edition*. (Washington, D.C.: June 2016).

Figure 4: Timeframes and Activities for Federal Emergency Management Agency’s Coordination Role in Disaster Response and Recovery



Source: GAO analysis of Department of Homeland Security policy. | GAO-21-91

Text of Figure 4: Timeframes and Activities for Federal Emergency Management Agency’s Coordination Role in Disaster Response and Recovery

Pre-disaster preparedness

- Catastrophic planning

Response (short term)

- Search and rescue operations
- Emergency medical services
- Debris removal from transportation routes
- Public messaging about available assistance

Recovery (Intermediate, weeks to months)

- Address interim housing needs

- Restore healthcare (including behavioral health), public health, and social services functions
- Support reestablishment of businesses
- Provide information about opportunities for hazard mitigation activities

Long term (months to years)

- Develop permanent housing solutions
- Rebuild infrastructure
- Implement hazard mitigation strategies

Note: The recovery process is a sequence of interdependent and often concurrent activities, such as the selected examples in this figure.

FEMA and other federal agencies can become involved in disaster response or recovery efforts when a disaster is of such severity and magnitude that effective response or recovery is beyond the capabilities of a state or territory and affected local governments. In such cases, the governor of a state or territory, or the chief executive of a tribal government may request federal assistance by requesting that the president declare a major disaster. Major disaster declarations can authorize a variety of federal response and recovery programs to assist government and nongovernmental entities, households, and individuals.²¹ As of October 2020, FEMA obligated \$877 million for the above programs and other initiatives that contributed to response to and recovery from the 6 major disasters in the Pacific region in 2018.²² See appendix I for disaster- and program-specific information relating to obligations for the 2018 disasters in the Pacific region.

FEMA has multiple mechanisms with which the agency can coordinate and implement federal disaster response and recovery activities. Among these mechanisms are mission assignments, which are work orders assigned to other federal agencies, requesting they use their resources and authorities granted to them under federal law in support of direct assistance to disaster-affected locations. For example, after DOD is authorized to provide support to civil authorities, FEMA can issue mission assignments tasking the department with completing specific actions in

²¹Presidential major disaster declarations are authorized in accordance with the Stafford Act. See 42 U.S.C. § 5170.

²²In general, FEMA's response and recovery activities are funded by the DRF.

support of disaster response efforts.²³ DOD can use a number of resources when supporting disaster response including federal military forces, DOD civilians, contract personnel, and component assets such as the U.S. Army Corps of Engineers (USACE). DOD's presence in the Pacific region provides unique opportunities to preposition resources, such as generators, and to carry out FEMA mission assignments in the region.²⁴ Further, the USACE Pacific Ocean Division and Honolulu District are prepared to respond to FEMA mission assignments.

In addition to mission assignments, FEMA can also support disaster response by deploying its workforce to provide on-site assistance. For example, FEMA can quickly deploy an Incident Management Assistance Team (IMAT) to a disaster location to determine the required level of federal support, provide situational awareness, and order follow-on resources, among other services.²⁵

In addition to coordinating federal disaster response efforts, FEMA operates several intermediate and long-term disaster recovery programs, including the Individual Assistance (IA), Public Assistance (PA), and hazard mitigation programs.

Individual Assistance

FEMA's IA program provides assistance to individuals and households impacted by disasters, as well as state, local, territorial, or tribal governments to support individual survivors. These resources may

²³DOD is authorized to provide support to civil authorities when requested by another federal agency and approved by the Secretary of Defense, or when directed by the President.

²⁴DOD's activities in the Pacific region—which includes Hawaii, Guam, and the CNMI—are overseen by U.S. Indo-Pacific Command. This command is one of six geographic combatant commands and is in charge of using and integrating Army, Navy, Air Force, and Marine Corps forces within its area of responsibility to achieve U.S. national security objectives while protecting national interests. Its headquarters, as well as the headquarters for the Army Corps of Engineers Pacific Ocean Division, is located near Honolulu, Hawaii. Additionally, within U.S. Indo-Pacific Command is Joint Region Marianas which has bases located in Guam including Naval Base Guam and Andersen Air Force Base.

²⁵IMAT members are referred to as Stafford Act employees. This category of FEMA employee provides support for disaster-related activities and augments FEMA's disaster workforce at facilities, regional offices, and headquarters. Stafford Act employees also include reservists, who work on an intermittent basis and are deployed as needed to fulfill incident management roles within their cadre function. See 42 U.S.C. § 5149(b)(1).

include temporary housing, financial assistance for home repair, mental health counseling, unemployment compensation, and funding for medical expenses. Through FEMA's Individuals and Households Program, the agency provides financial assistance and direct services to eligible individuals and households with uninsured necessary expenses and serious needs as a result of a Presidentially declared disaster. In the Pacific region and limited other locations, FEMA may implement its Permanent Housing Construction (PHC) as a form of assistance within the Individuals and Households Program.²⁶ The PHC program provides direct services to repair disaster-damaged homes, construct new homes, or both in areas where other housing options are not available and Temporary Housing Assistance is not feasible, available, or cost-effective.

Public Assistance

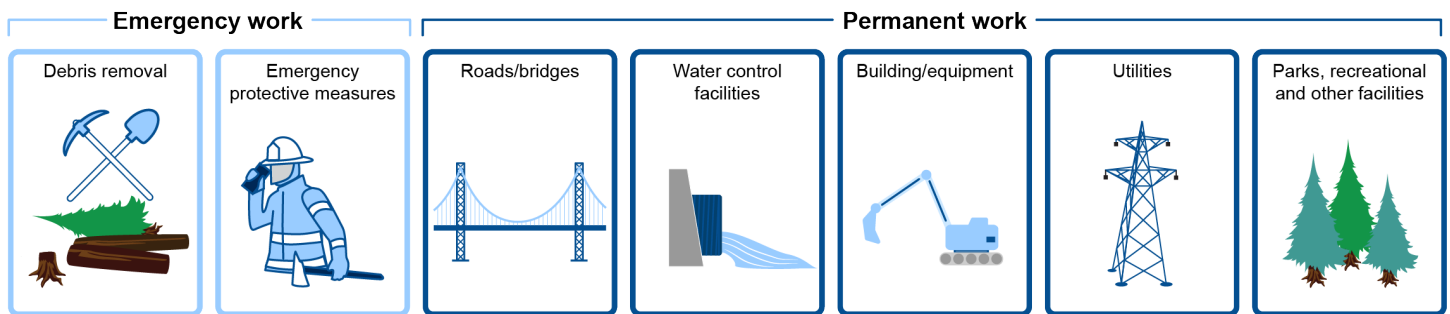
As seen in figure 5, FEMA's PA program provides funding for projects that contribute to disaster response and recovery in two ways: (1) emergency work, which includes activities such as debris removal and search and rescue operations; and (2) permanent work, which includes the repair, replacement, or restoration of disaster-damaged public facilities, such as utilities.²⁷ Within these categories are several sub-categories of project types. In addition, FEMA also provides funding for management costs, which include any indirect cost, any direct administrative cost, and any other administrative expense associated with a specific PA project.²⁸

²⁶FEMA is authorized to provide the PHC program in insular areas outside the continental U.S. and in other locations where no alternative housing resources are available and where types of housing assistance that FEMA normally provides, such as rental assistance or other forms of direct assistance, are unavailable, infeasible, or not cost-effective. See 42 U.S.C. § 5174(c)(4).

²⁷See 42 U.S.C. §§ 5170b, 5172.

²⁸See 42 U.S.C. § 5165b(a).

Figure 5: Categories of Public Assistance Work



Source: Federal Emergency Management Agency. | GAO-21-91

Text of Figure 5: Categories of Public Assistance Work

Emergency Work

- Debris removal
- Emergency protective measures

Permanent work

- Roads/bridges
- Water control facilities
- Building/equipment
- Utilities
- Parks, recreational and other facilities

PA applicants include U.S. states, tribes, territories, local governments, and certain private non-profit organizations. PA funding is provided to state and territorial governments, and sometimes tribal governments, as recipients. Recipients can pass on this funding to certain other entities, such as local government agencies, to implement PA projects. These entities are referred to as subrecipients.²⁹

FEMA has two mechanisms for funding permanent work PA projects. First, under the standard PA program FEMA will fund the actual cost of the project to rebuild a facility damaged by the disaster. Second, under the alternative procedures program FEMA awards funds for permanent

²⁹44 C.F.R. § 206.201(o); 2 C.F.R. §§ 200.86, 200.93.

work on the basis of fixed-cost estimates to provide financial incentives for the timely and cost-effective completion of work. The alternative procedures program allows excess funds to be used for other eligible purposes, such as for additional cost-effective hazard mitigation measures to increase the resiliency of public infrastructure.³⁰ Both mechanisms require award recipients and subrecipients to work with FEMA to agree on a project cost estimate before they can receive funding for the project. Under the standard PA program, FEMA will reimburse additional costs that exceed the initial project cost estimate. In contrast, under the alternative procedures program, the award subrecipient is responsible for any costs that exceed the initial project cost estimate and may also use excess funds for eligible purposes, such as cost-effective hazard mitigation measures. For this reason, the project cost estimate under the alternative procedures program is referred to as a fixed-cost estimate.

Hazard Mitigation

To enhance recovery efforts, FEMA operates programs that provide funding for hazard mitigation projects, which enhance disaster resilience by preventing repeated damage from disasters. These include two programs that provide funding in the aftermath of specific disaster

³⁰The 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 major disaster or emergency declared under the act. 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). This section further authorized FEMA to carry out the alternative procedures as a pilot program until FEMA promulgates regulations to implement this section. 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.

incidents—the Hazard Mitigation Grant Program (HMGP) and the Public Assistance program.³¹

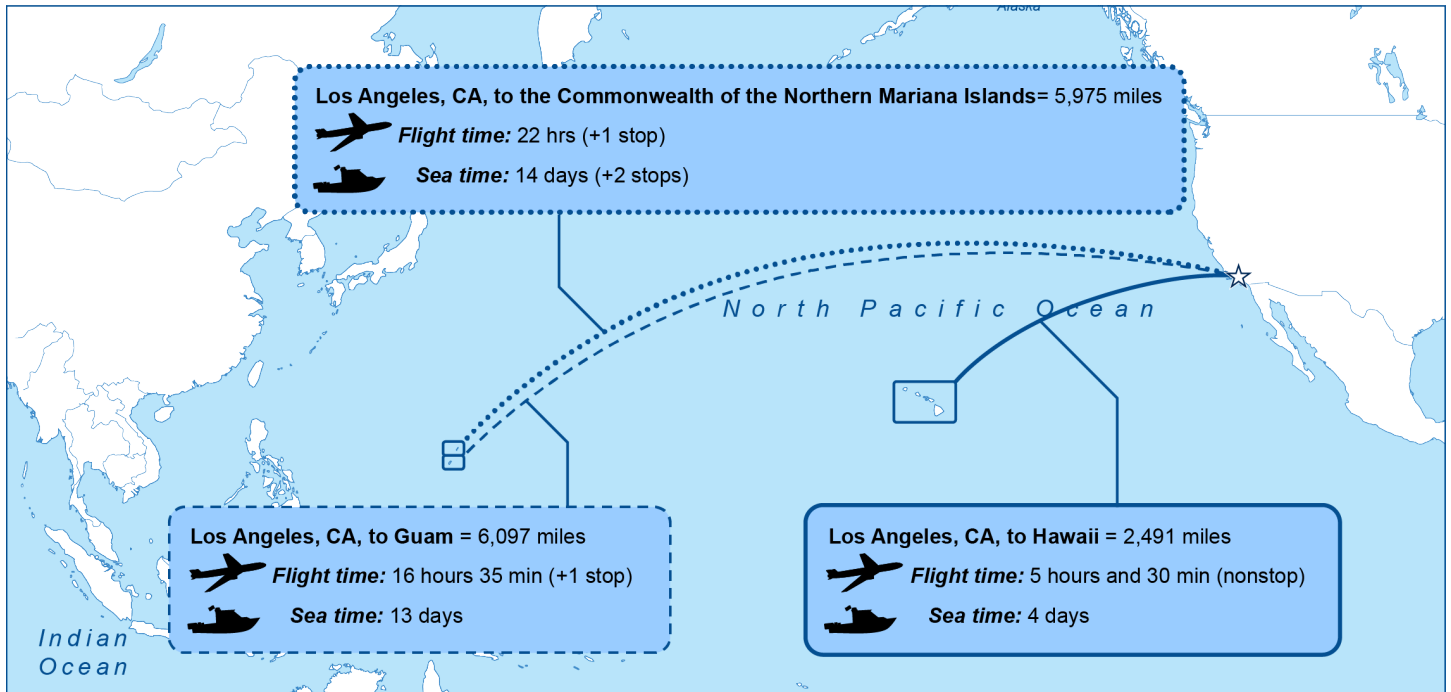
FEMA Took Steps to Address Unique Challenges in the Pacific Region, Which Facilitated the 2018 Federal Response

FEMA Developed Response Plans and Addressed Logistical and Supply Chain Challenges to Enhance Preparedness

FEMA took steps prior to the 2018 disasters to enhance preparedness in the Pacific Region, where time and distance from the continental United States create unique challenges. Unlike disaster response in the continental United States, where personnel and supplies are prepositioned near disaster events to ensure they reach the affected areas quickly, Hawaii and U.S. island territories must rely on their own resources for longer periods of time following any disaster. Responding to a Pacific-area disaster requires extensive travel time from the continental United States to ship the necessary supplies and personnel to the impacted areas. For example, time frames for delivering response supplies by plane or sea transport to Hawaii and the Pacific Island territories can take hours, or even days, by air and possibly weeks by boat (see fig. 6).

³¹FEMA administers two additional hazard mitigation programs—the Flood Mitigation Assistance program and the Building Resilient Infrastructure and Communities program (previously the Pre-Disaster Mitigation program). These programs are excluded from the scope of this review because they are considered non-disaster programs and they provide funding regardless of whether a disaster has recently occurred. We recently reported on all four of FEMA's hazard mitigation programs as implemented across the U.S. *GAO Disaster Resilience: FEMA Should Take Additional Steps to Streamline Hazard Mitigation Grants and Assess Program Effects*, [GAO-21-140](#) (Washington, D.C., Feb. 2, 2021). FEMA 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. Additionally, FEMA may provide funding under the Hazard Mitigation Grant Program for recipients to conduct activities to help reduce the risk of future damage, hardship, loss or suffering in a disaster-affected area under section 404 of the Stafford Act, as amended. See 42 U.S.C. § 5170c. We refer to both types of funding generally as “hazard mitigation funding” for the purposes of this report.

Figure 6: Travel Times by Air or Sea from Los Angeles, California (CA), to the Commonwealth of the Northern Mariana Islands (CNMI), Guam, and Hawaii



Source: For the Commonwealth of the Northern Mariana Islands and Guam, based on Federal Emergency Management Agency; for Hawaii, based on GAO estimate; Map Resources (map). | GAO-21-91

Text of Figure 6: Travel Times by Air or Sea from Los Angeles, California (CA), to the Commonwealth of the Northern Mariana Islands (CNMI), Guam, and Hawaii

- LA to Commonwealth of the Northern Mariana Islands = 5,975 miles; flight time 22 hours with 1 stop; sea time 15 days with 2 stops.
- LA to Guam = 6,097 miles; flight time is 16 hours and 35 min with 1 stop; sea time is 13 days
- LA to Hawaii = 2,491 miles; flight time of 5 hours and 30 min non stop; sea time is 4 days.

FEMA Region IX officials stated that they began catastrophic planning for the Pacific region in 2009 and started identifying preparedness gaps around 2010. Regional officials stated that the 2017 disasters in the Caribbean, particularly the devastation in Puerto Rico from Hurricane Maria, caused them to redouble preparedness efforts in the Pacific area—to enhance federal response capabilities and address identified

challenges.³² As such, Region IX's fiscal year 2018 operating plan identifies unique challenges for the disaster response mission in the Pacific region, including the size of the area of responsibility, unique cultural and geographic characteristics, the variety of languages spoken, specific cultural and political sensitivities of the Pacific jurisdictions, and the range of potential threats and hazards. FEMA Region IX also took steps to work with officials in the CNMI, Guam, and Hawaii to update their catastrophic response plans prior to the 2018 disasters. Specifically, in 2015, FEMA and Hawaii officials updated the state's *Catastrophic Hurricane Plan* to identify a strategy for joint federal and state response to catastrophic damage impacting the state.³³ Furthermore, FEMA worked with officials in the CNMI and Guam to develop their own catastrophic typhoon plans in early 2018, prior to typhoons Mangkhut and Yutu.³⁴

To address supply chain and logistical challenges, in 2017, FEMA began to increase the capacity in its Pacific-area distribution centers, located in Hawaii and Guam, which store commonly-needed disaster resources such as cots, blankets, emergency meals, bottled water, generators, and tarps.³⁵ This effort in particular allowed FEMA to preposition assets in the Pacific region for the larger 2018 disasters—the Kilauea volcanic eruption and Typhoon Yutu (see fig. 7).

³²Hurricanes Irma and Maria impacted Puerto Rico and the U.S. Virgin Islands in September 2017, causing widespread damage, including widespread power outages in Puerto Rico lasting nearly one year.

³³*2015 Hawaii Catastrophic Hurricane Plan/FEMA Region IX Hawaii Catastrophic Hurricane Annex.*

³⁴*2018 CNMI Catastrophic Typhoon Plan: Annex to the FEMA Region IX All-Hazards Plan, February 15, 2018 and 2018 Guam Catastrophic Typhoon Plan: Annex to the FEMA Region IX All-Hazards Plan, February 13, 2018.*

³⁵The logistics supply chain for goods arriving in Hawaii generally transfers goods directly from the port to retail outlets. This practice limits the opportunity for Hawaii to stockpile lifesaving and life sustaining response resources within island warehouses. In the event a natural disaster damages an island's main port, such stockpiles would become critical to residents of Hawaii until shipments of goods could begin arriving once again by sea. FEMA officials in the region added that the Pacific territories also have limited space to warehouse goods.

Figure 7: Medical Supply Deployment Kits (left) and Generators (right) in the Federal Emergency Management Agency's Distribution Center in Hawaii, February 2020



Source: GAO. | GAO-21-91

In responding to the 2018 disasters, FEMA Region IX also identified the need to increase regional workforce capability to respond to disasters through on-site IMAT teams. FEMA officials stated that the agency has made it more common practice to make preemptive decisions about deploying IMAT teams as early as possible—generally 5 days prior to a disaster event in the Pacific Island territories. FEMA and local officials reported having IMAT teams in position in the CNMI, Guam, and Hawaii prior to the disasters in 2018. Appendix II provides additional information on FEMA's response to these disasters, including prepositioned assets and activation of federal partners.

In addition, FEMA said they have leveraged lessons learned following the 2018 disasters to implement changes in its supply chain readiness intended to further improve state and territorial preparedness in the Pacific region and decrease the need for DOD assets when responding to future disasters. For example, in February 2020, FEMA officials said they began identifying transportation options for moving and holding resources and goods in preparation for responding to disasters in the Pacific, and the agency is planning to establish advance contracts for these services. According to FEMA officials, these efforts will allow Hawaii and the Pacific territories to bring in much needed supplies in the immediate aftermath of a disaster rather than having to develop and award contracts during a disaster response.

FEMA and Key Federal Partners Played Various Roles in Response Activities for the 2018 Disasters, which State and Territorial Officials Reported Were Effective

The role that FEMA and its federal partners played in responding to the 2018 disasters in the Pacific region varied depending on the specific event, and state and territorial officials stated that these response efforts were effective. For the Kilauea volcanic eruption in Hawaii and Typhoon Yutu in the CNMI, FEMA played a direct response role and obligated about \$89 million for mission assignments to other federal agencies to aid in the response. In comparison, while FEMA had IMAT teams in all three locations, for the most part, the disaster response to the other events was executed by local entities (see appendix II).

State and local officials in Hawaii reported that the federal response to the Kilauea volcanic eruption was effective. Specifically, a state official said that FEMA had been an effective partner throughout the disaster and had made up for shortfalls in the state's capacity to manage multiple, ongoing disasters. Local officials stated that FEMA provided expertise and response recommendations without prescribing what county officials should do. They added that, as the disaster unfolded, FEMA officials were consistently present during key response-related events and meetings to discuss neighborhood evacuations and disaster recovery centers—FEMA-designated facilities where survivors may go to apply for and obtain information on federal assistance. In addition to FEMA, the U.S. Geological Survey and the Environmental Protection Agency (EPA) performed key roles in response to the volcanic eruption. Specifically, U.S. Geological Survey geologists provided ongoing technical assessments on the status of the volcanic eruption. Furthermore, U.S. Geological Survey officials were co-located with responders at the County of Hawaii Emergency Operations Center to perform fissure and lava flow monitoring and to offer advice on the evacuation of residents from communities in the path of newly erupting lava flows. The EPA conducted ongoing monitoring of the air quality throughout the eruption to help ensure that the concentration of gases from the eruption did not harm the health of island residents.

In the CNMI, DOD and FEMA were key partners in responding to typhoons Yutu and Mangkhut due in part to DOD personnel stationed in nearby Guam. Specifically, DOD provided response assistance by delivering water, restoring the airport, and providing other engineering and construction support. For example, in the immediate aftermath of the

storm, the Island of Rota lacked necessary equipment at the airport to unload pallets of water, generators, and other critical supplies for the response. To help address this problem, FEMA officials said that DOD was able to provide the needed equipment 24 to 48 hours after the first supplies began arriving. In addition, DOD military service personnel stationed in the Pacific region assisted with FEMA's temporary roofing program for residents of the CNMI following typhoons Mangkhut and Yutu. Specifically, DOD reported providing temporary roof repair for 580 structures and installing nearly 1,800 tents for survivors under the Temporary Emergency Tent and Roofing Installation Support program.³⁶ These military grade tents are designed to withstand 50 mile per hour wind gusts and provide about 250 square feet of living space, including portable beds, a toilet kit, a five-gallon solar bag shower, a stove, and cookware.

Officials in Guam and the CNMI commended FEMA personnel deployed following typhoons Mangkhut and Yutu. Specifically, a CNMI official charged with overseeing response activities stated that FEMA's pre-deployment of staff to the islands of Rota and Tinian prior to Typhoon Mangkhut improved response activities because travelling to these islands in the wake of a disaster was difficult. The official added that having FEMA officials stationed throughout the CNMI's islands prior to the disaster made for a more effective response. Further, officials in Guam stated that, during Typhoon Mangkhut, FEMA effectively integrated staff with local officials and led unified coordination efforts. In Guam, officials stated that the integration of FEMA staff and sharing of information was helpful to response efforts.

FEMA Made Progress in Recovery and Mitigation, but Has Not Fully Addressed

³⁶The traditional program FEMA uses—USACE's Operation Blue Roof—was impractical because the contracts USACE has in place for this program did not extend to the Pacific territories and due to the nature of construction in the region. DOD officials stated that they provided additional tents directly to the CNMI government for installation.

Housing Assistance Challenges or Public Assistance Delays in the Pacific Region

FEMA Obligated about \$623 Million for Individual and Public Assistance Programs throughout the Pacific

As of October 2020, FEMA had obligated about \$623 million for assistance programs following the 2018 disasters in the CNMI, Guam, and Hawaii—about \$268 million in IA program funds and about \$355 million for PA projects—representing more than 70 percent of the total obligated from the DRF for the six major disasters. Specifically, in regard to IA program funds, FEMA had expended about 80 percent of the \$268 million obligated funds following the flooding and volcanic eruption in Hawaii and the two typhoons in the CNMI. Additionally, FEMA projects that it will obligate an additional \$65 million for the implementation of multiple IA programs in the CNMI following Typhoon Yutu (see Table 1). IA was not authorized for Hurricane Lane in Hawaii or Typhoon Mangkhut in Guam. Appendix III provides additional details on FEMA’s IA programs.

Table 1: Federal Emergency Management Agency (FEMA) Individual Assistance Programs Offered in the Pacific Region in 2018

Individual Assistance Program	Hawaii		Commonwealth of the Northern Mariana Islands	
	Severe storms, flooding, and landslides	Kilauea eruption and earthquakes	Typhoon Mangkhut	Typhoon Yutu
Crisis Counseling Program	Yes	Yes	Yes	Yes
Direct Housing	No	Yes ^a	No	Yes ^b
Disaster Case Management	No	Yes	No	Yes
Disaster Legal Services	Yes	Yes	Yes	Yes
Disaster Unemployment Assistance	Yes	Yes	Yes	Yes
Individuals and Households Program	Yes	Yes	Yes	Yes
Transportation Assistance	No	Yes	No	Yes
Transitional Sheltering Assistance	No	No	No	Yes
Voluntary Agencies Leading and Organizing Repair (VALOR)	No	No	No	Yes

Source: FEMA. | GAO-21-91

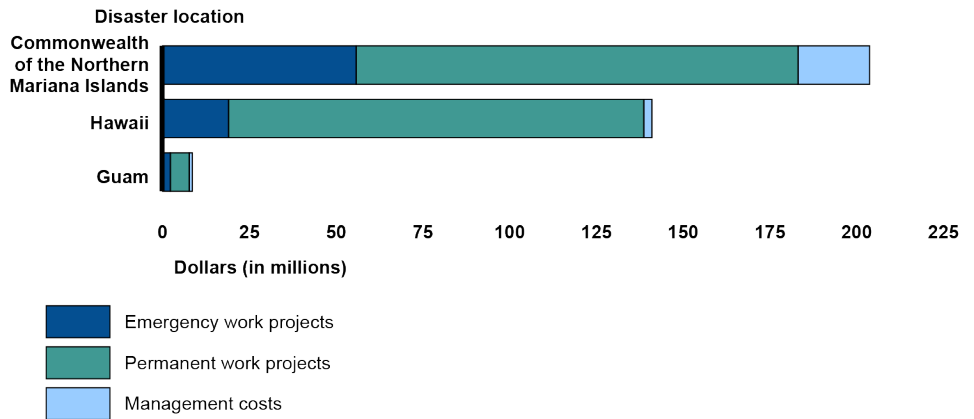
Note: Individual Assistance was not authorized for Hurricane Lane in Hawaii or Typhoon Mangkhut in Guam.

^aIn the form of Direct Lease, where FEMA leases a property to temporarily house survivors.

^bIn the form of Permanent Housing Construction, including both repair and new construction.

In regard to PA, as of October 2020, FEMA had obligated funds for 492 projects to help the CNMI, Guam, and Hawaii respond to and recover from the 2018 disasters. The majority of the approximately \$355 million FEMA obligated was for permanent work projects in the CNMI and Hawaii. As of October 2020, the three locations had expended approximately \$130 million of this funding, or about 37 percent (see fig. 8). As of October 2020, FEMA anticipated obligating an additional \$169 million in PA funding for the 2018 Pacific-area disasters in the scope of this review. Appendix IV provides disaster- and category-specific information on PA funding obligated for these disasters.

Figure 8: Funding Obligated for Public Assistance Projects as of October 2020, by Location and Project Category



Source: GAO Analysis of Federal Emergency Management Agency Data. | GAO-21-91

Data table for Figure 8: Funding Obligated for Public Assistance Projects as of October 2020, by Location and Project Category

	Emergency Work Projects	Permanent Work Projects	Management Costs
CNMI	55.7569	127.36	20.6721
Hawaii	18.9619	119.707	2.33669
Guam	2.19519	5.4245	0.926787

FEMA Has Not Addressed Unique Housing Issues or Long-Standing Challenges with the Permanent Housing Construction Program

FEMA Has Not Fully Addressed Challenges with Proof of Ownership Documentation

The nature of housing in the CNMI and Hawaii complicated FEMA's delivery of direct housing assistance following the 2018 disasters, which created complexities for disaster survivors and FEMA staff and necessitated implementation of disaster-specific policies and procedures. These complicating factors included issues related to land ownership laws and practices, communal living spaces, the structure of homes, and the absence of street addresses. The Kilauea volcanic eruption in Hawaii also presented obstacles when homes were inaccessible or overcome and obscured by lava.

In the CNMI, FEMA funded expanded Disaster Legal Services and modified eligibility requirements to facilitate direct housing assistance.³⁷ Specifically,

- In August 2019 (10 months after Typhoon Yutu impacted the CNMI), FEMA signed an agreement with the CNMI Office of the Attorney General to provide expanded Disaster Legal Services to assist in resolving the unique land ownership issues. Land ownership in the CNMI is limited to persons of Northern Marianas Descent, and often the property is passed down as "generational land" to heirs without formal documentation. As a result, following Typhoon Yutu, residents had difficulty providing the necessary paperwork to apply for FEMA's housing assistance. According to the officials at the CNMI Office of the Attorney General, they assign disaster survivors a private attorney and pay for the services with the funds from this program.³⁸

³⁷FEMA, through an agreement with the American Bar Association, provides free legal help under its Disaster Legal Services to low-income survivors for services such as drawing up wills and help with insurance claims.

³⁸These services were only available for Permanent Housing Construction applicants, and as of October 2020 FEMA anticipated 106 families would complete the program. For eligible survivors who chose not to participate in the Permanent Housing Construction program, FEMA issued funding for eligible home repair or replacement assistance.

- FEMA modified eligibility requirements to account for the nature of home construction in the CNMI. Specifically, homes in the CNMI are often smaller than traditional homes in the continental United States; can include outdoor living and kitchen space; and may not have been built to modern building codes and standards. As such, officials noted that they may fall below the Real Property FEMA Verified Loss threshold of \$17,000 for Direct Housing Assistance.³⁹ To mitigate this issue, FEMA officials stated that they lowered the threshold twice—first in November 2018 to \$13,000 and finally in February 2019 to \$8,000.

Following the volcanic eruption in Hawaii, FEMA issued *Disaster Specific Operating Procedures* to address key housing challenges. FEMA continuously updated these operating procedures, with the first version issued on June 25, 2018—11 days after approval for IA—and the final revision updated in November 2019. Specific housing challenges in Hawaii after the volcanic eruption included:

- FEMA’s disaster-specific procedures outlined documentation applicants could provide to verify residency and ownership, including for non-traditional and owner-occupied Limited Liability Corporation homes. Homeowners and residents of non-traditional and “off the grid” homes, such as huts or lean-to structures, were not able to provide FEMA with proof of ownership or occupancy if the home was not recognized or permitted by Hawaii County. In addition, FEMA officials noted that these homes may include a mix of structural and more temporary elements, such as yurts that may have plumbing or a fixed foundation. They added that, because FEMA inspections typically considered non-traditional homes ineligible for Home Repair or Replacement Assistance, this required FEMA to make determinations on what repairs were eligible for assistance. Ultimately, they said FEMA paid for repairs to damaged structural elements of the homes identified during inspections. The disaster also impacted owner occupants of Limited Liability Corporation homes, such as time-share properties. Under FEMA policy, residents of these homes are considered renters and generally not eligible for home repair or

³⁹The FEMA Verified Loss is the total dollar amount, verified by FEMA, for an applicant’s real or personal property items of average quality, size, and capacity. FEMA monitors cases where the inspection finds over \$17,000 or more in eligible damages for homeowners or renters to determine the number of survivors who may need and be eligible for housing assistance.

replacement assistance.⁴⁰ However, in Hawaii these homes are often occupied by the owner.

- FEMA also provided procedures for using geospatial imagery to confirm the existence and pre-disaster condition of housing structures that were either inaccessible or overcome by lava. The nature of the volcanic eruption disaster presented logistical challenges when lava flows cut off access to communities, hindering the housing inspection process that is a required part of FEMA's delivery of direct housing assistance. Additionally, for homes without a physical address documented in the county records, residents were not able to prove the existence of a structure prior to the volcanic eruption.

FEMA is also in the process of updating some agencywide policies following the 2018 disasters in the Pacific region. Specifically, FEMA officials noted that planned updates to the *Individual Assistance Program and Policy Guide*, scheduled to publish in early 2021, further define non-traditional homes, clarify eligibility for owner-occupants of LLC homes, and change the verified loss threshold calculation. For example, the updated guide narrows the definition of non-traditional housing to “a form of dwelling void of structural floors, structural walls, and structural roof”. Further, in an effort to adjust the verified loss threshold in an equitable way, officials noted that the planned guidance update includes a provision for calculating this threshold based on a \$12 per square foot calculation rather than a flat number to account for homes with smaller square footage. With these modifications to its agencywide policy, FEMA officials stated they will be able to provide more timely and equitable assistance to eligible applicants, including financial and direct housing assistance.

While FEMA is taking steps to address some unique housing challenges, such as equitable application of the verified loss threshold, FEMA could provide additional guidance to further address challenges associated with proof of residency and proof of ownership requirements in remote locations, such as in insular areas. Current guidance provides flexibilities related to proof of ownership and occupancy documentation for applicants in insular areas, islands, and tribal lands; however, according to officials these are only applicable at the individual direct housing applicant-level and as a last resort. Specifically, FEMA may accept a signed written self-declarative statement from applicants that includes how long they have lived in the disaster-damaged primary residence and

⁴⁰A Hawaii Emergency Management Agency official stated that some entrepreneurs buy land in Hawaii County and create Limited Liability Corporations, allowing residents to live on, but not own, the land.

an explanation of the circumstances that prevent standard documentation. FEMA officials representing the IA program and senior Region IX officials stated that they recognize that verifying occupancy and ownership for disaster survivors continues to be a challenge in insular and other areas where adequate documentation may not exist or standard postal addresses are not commonly used. Additionally, prior FEMA after-action reports related to housing assistance in other remote areas have identified similar challenges and delays related to proof of ownership.⁴¹

FEMA's 2018-2022 *Strategic Plan* includes a strategic goal to reduce the complexity of its assistance programs and processes to, among other things, streamline disaster survivor experiences in dealing with the agency.⁴² FEMA officials stated that, while there are some exceptions, one goal of its agencywide policies is to avoid having to develop disaster-specific policies and procedures, because doing so may delay the overall process for recovery assistance. In September 2020, we reported that frequent changes in housing guidance—including disaster-specific policies and procedures—also created challenges for FEMA staff tasked with assisting housing assistance applicants.⁴³

Developing agencywide guidance to assist direct housing applicants with proof of residency and proof of ownership documentation requirements that can be scaled beyond the individual applicant level would allow FEMA to streamline assistance for disasters in areas where proof of ownership challenges are common. Furthermore, doing so would also help FEMA meet its stated goal to minimize the need for disaster-specific policies and procedures and reduce complexities for both FEMA staff and disaster survivors. Without such guidance, recovery activities for future disasters in the Pacific region and similar remote areas could be protracted due to the volume of applicants that may request individual waivers or modifications, leaving survivors vulnerable, particularly when

⁴¹After-action reports identify lessons learned and areas for improvement and may be completed following a training exercise or real-world event. In May 2020, we reported that FEMA completed only 29 percent of after-action reports for recent disasters, lacks a formal mechanism to track corrective actions, and does not have guidance for sharing after-action reports with key stakeholders. We recommended, among other things, that FEMA determine how to prioritize after-action reviews, develop a mechanism to track lessons learned, and develop guidance for sharing after action reports with stakeholders. GAO, *National Preparedness: Additional Actions Needed to Address Gaps in the Nation's Emergency Management Capabilities*, [GAO-20-297](#) (Washington, D.C., May 4, 2020).

⁴²FEMA, 2018-2022 *Strategic Plan* (Washington, D.C.: March 15, 2018).

⁴³[GAO-20-503](#).

homes are left uninhabitable and people are displaced from their communities.

FEMA Has Not Fully Addressed Long-standing Challenges with Its Permanent Housing Construction Program

In the 11 years since FEMA piloted the PHC program, the agency has taken some steps to address challenges with the program, including the development of guidance documents. However, it has not fully addressed known contracting shortfalls or provided key information to help staff navigate this program and avoid delays. FEMA implemented what officials described as the agency's largest and most complex PHC mission to-date in the CNMI following the damage caused by Typhoon Yutu in October 2018—with over 300 participating households. However, persistent problems with this program, which requires coordination across multiple FEMA stakeholders, have delayed the repair and construction of homes for survivors.

FEMA is authorized under the Stafford Act to provide its PHC program, as part of its Direct Housing Assistance program, in insular and other remote locations where other types of housing assistance such as mobile housing units are unavailable, infeasible, or not cost-effective.⁴⁴ In November 2018, FEMA authorized new construction and repair under its PHC program on the CNMI islands of Saipan and Tinian. In November 2019, FEMA announced the first completed home repair, and according to officials the first new home construction was completed in September 2020. See figure 9 for examples of completed homes.

⁴⁴See 42 U.S.C. § 5174(c)(4).

Figure 9: Completed Housing Repair and New Construction in the Commonwealth of the Northern Mariana Islands



Source: Federal Emergency Management Agency. | GAO-21-91

As of October 2020 (nearly 2 years after Typhoon Yutu), FEMA had completed about 60 percent of home repairs (73 of 121) and provided about 11 percent of new homes (20 of 182)—19 homes in about a 5-week period between mid-September and mid-October 2020. As of October 2020, about 65 percent of eligible applicants had opted out of the program for various reasons including the inability to provide required documentation and construction delays, as shown in table 2. FEMA officials stated that disaster survivors who opted out of the PHC program may have received direct financial Housing Assistance funds for repairs. According to these officials, PHC program participants whose homes have not been repaired, or constructed yet, are either living on their

properties in the tents provided by DOD or other make-shift dwellings; living with friends or relatives; or temporarily leasing another home.

Table 2: Status of Repairs and New Construction in the Commonwealth of the Northern Mariana Islands under the Federal Emergency Management Agency’s (FEMA’s) Permanent Housing Construction Program, as of October 23, 2020

	Number of houses fully repaired/constructed	Number of houses in process	Number of houses not started	Total Number of expected houses	Number of eligible applicants who opted out ^a	Estimated completion of mission
Repair Program	73	15	33	121	329	November 2021
New Construction Program	20	60	102	182	243	May 2022

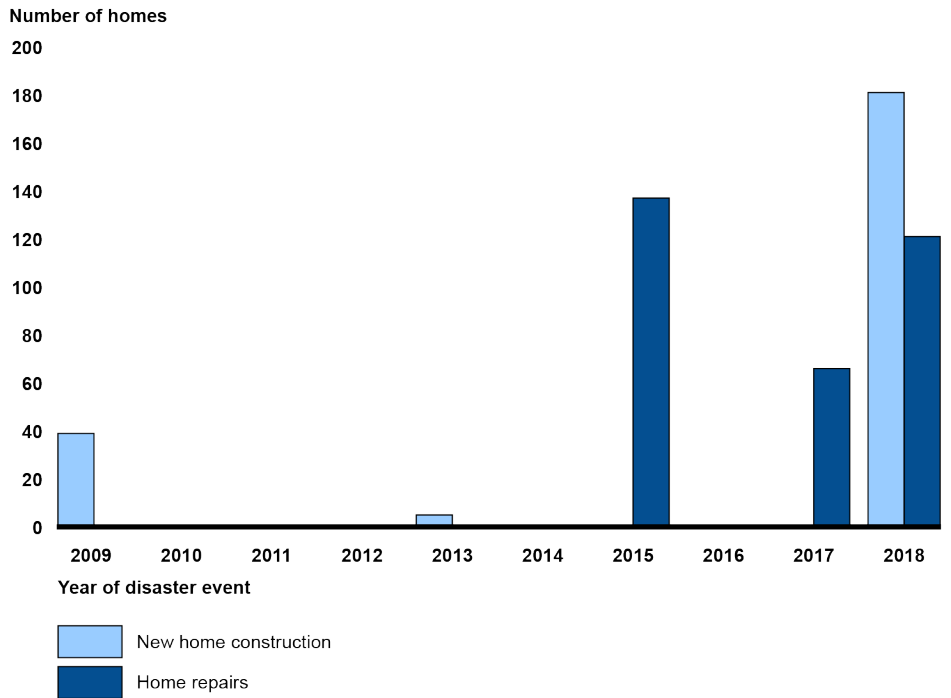
Source: FEMA. | GAO-21-91

^aAccording to FEMA, approximately 41 percent of eligible housing applicants expressed no interest in the program and did not opt in when FEMA offered it; 20 percent of eligible applicants opted out by the end of calendar year 2019 for various reasons, including inability to provide required documentation, family and health issues, and the length of time to complete construction. In calendar year 2020, 3 percent of eligible applicants opted out, mostly due to unfavorable legal outcomes regarding property liens or unresolvable family issues prohibiting legal ownership.

In addition to the housing issues noted previously related to proof of ownership and the verified loss threshold, FEMA officials observed that a lack of specialized staff available to manage the PHC program and contracting shortfalls were additional factors contributing to delays in providing disaster survivors with housing repairs and new home construction. The challenges faced in the CNMI are consistent with prior PHC implementation challenges FEMA and the DHS Office of the Inspector General have previously identified, as discussed below.

Lack of specialized expertise. FEMA officials said it is difficult to maintain a trained and qualified workforce to support direct housing programs because staff may not work on these programs during each deployment. Further, FEMA has more limited experience with the PHC program. Since its pilot in 2009, it has funded this program seven times and only implemented new construction for three disaster events. Four of the seven PHC missions were in response to disasters in 2017 and 2018. FEMA officials noted that the scope of work in the CNMI far surpassed that of prior events, chiefly due to the number of new construction projects which officials noted is particularly complex (see fig. 10).

Figure 10: Past and Ongoing Permanent Housing Construction Projects Managed by the Federal Emergency Management Agency (FEMA)



Source: Federal Emergency Management Agency. | GAO-21-91

Data table for Figure 10: Past and Ongoing Permanent Housing Construction Projects Managed by the Federal Emergency Management Agency (FEMA)

Year	New Home	Home repairs
2009"	39	0
2010"	0	0
2011"	0	0
2012"	0	0
2013"	5	0
2014"	0	0
2015"	0	137
2016"	0	0
2017"	0	66
2018"	181	121

Note: In 2017, FEMA funded Permanent Housing Construction in the U.S. Virgin Islands, Puerto Rico, and Texas. The program in Texas following Hurricane Harvey included 525 home repairs. This was managed by the Texas General Land Office through an intergovernmental agreement with FEMA and

is not included in the figure. In 2015, FEMA also provided 196 Mobile Home Units to the Oglala Sioux Tribe of the Pine Ridge Indian Reservation through Permanent Housing Construction program.

Contracting shortfalls. FEMA does not have pre-existing contracts for architecture and engineering services, which according to FEMA officials caused delays from the program's onset.⁴⁵ FEMA officials stated that, due to the size of the mission in the CNMI, they used one of the agency's national-level advance contracts—that is, a contract established prior to disasters that allows for the quick provision of life-sustaining goods and services in the aftermath of a disaster.⁴⁶ Specifically, FEMA leveraged its Individual Assistance Support Contract for the initial housing repairs and construction.⁴⁷ This contract supports the provision of FEMA's mass care/emergency assistance and temporary and permanent housing services.⁴⁸ While this contract also included the provision of additional resources in support of construction services, such as building plans, it did not specifically address architecture and engineering service needs.

FEMA Recovery officials responsible for managing the PHC program stated that they believed the statement of work included all of the necessary construction services (including the architecture and engineering services), but due to the procedures used in soliciting and awarding the contract, they were unable to

⁴⁵The Federal Acquisition Regulation defines architecture and engineering services, in part, as those that are associated with research, planning, development, design, construction, alteration, or repair of real property and are required to be performed or approved by a person licensed, registered, or certified to provide these services. See FAR § 2.101 (citing 40 U.S.C. § 1102).

⁴⁶The Post-Katrina Emergency Management Reform Act of 2006 required FEMA to establish advance contracts. See 6 U.S.C. § 791. In addition to an advanced contract to conduct construction, FEMA utilized another advanced contract to conduct an independent cost analysis for repairs to damaged houses and construction of 1, 2, and 3 bedroom houses. We have previously reported on FEMA's use of advance contracts. GAO, *2017 Disaster Contracting: Action Needed to Better Ensure More Effective Use and Management of Advance Contracts*, [GAO-19-93](#) (Washington, D.C.: Dec. 6, 2018).

⁴⁷Since construction began, FEMA has awarded two additional contracts—one to a local vendor for ongoing repair and new construction and one contract to a different vendor for new construction. FEMA officials stated that they plan to award an additional contract to a vendor in the Pacific region for the remaining new homes.

⁴⁸The contract included feeding and evacuee services, congregate and non-congregate sheltering services, and construction services. Congregate shelters provide safe, sanitary, and secure places to temporarily shelter large groups of disaster survivors. Non-congregate shelters provide temporary shelter for people in non-group settings, such as hotels or ships.

task the contractor with these services. Specifically, FEMA procurement officials stated that the agency does not typically conduct many major construction programs and does not have the internal expertise to solicit and award construction contracts.⁴⁹ As such, these officials stated that they did not have the internal expertise needed to amend the existing contract or award a new contract for these services. The officials also reported that construction challenges led to errors at 17 of 20 PHC sites and a month-long partial suspension of work on new construction in the CNMI. Officials attributed contractor performance issues, in part, due to varying interpretations of the contract specifications.

To address the lack of architecture and engineering service contract options in implementing the PHC program in the CNMI, FEMA entered into agreements with USACE to provide these services to design the houses and help survey the properties. According to USACE Pacific Ocean Division readiness and engineering officials, it was not clear what work FEMA expected USACE to complete as the work was assigned in a piecemeal manner using a combination of mission assignments and interagency reimbursable agreements. USACE officials described the interagency agreements as more complex, requiring legal and financial reviews, similar to a contract. According to FEMA officials, in September 2019, 11 months after Typhoon Yutu made landfall and following USACE's completion of the necessary house design drawings, FEMA awarded the first task order off of the advance contract for construction services. FEMA officials added that even though there was originally enough lead time to finalize the drawings and plans for new construction, and despite USACE's expediency in providing the drawings, identifying the need for architecture and engineering services and negotiating with USACE in order to provide them required additional time.

In December 2017, FEMA issued *Recovery Standard Operating Procedures* for the PHC program, which described disaster recovery roles for key stakeholders, such as FEMA procurement, logistics, and Individual Assistance officials, and state, tribal, or territorial partners. The PHC procedures also required a business case that outlines resource

⁴⁹Federal Acquisition Regulation requires the evaluation boards for architect-engineer services be composed of members who, collectively, have experience in architecture, engineering, construction, and Government and related acquisition matters. FAR § 36.602-2.

availability and provided some guidance related to eligibility determinations and applicant needs. The procedures outline options for procurement and Individual Assistance officials to consider for carrying out the PHC mission, including local contracts, national contracts, mission assignments, and voluntary organizations. However, the document does not address the long-standing challenges with the program such as the lack of architecture and engineering services in FEMA's suite of advance contracts and states that issuing a mission assignment to USACE should be a last resort.

With limited FEMA personnel who have specialized expertise and experience with this program, prior after-action reports and lessons learned are valuable resources to identify remedial actions and to help develop procedures for future recovery missions. To that point, the DHS Office of the Inspector General reports and after-action reports FEMA previously developed after implementation of the first three PHC missions also identified contracting challenges, a lack of FEMA staff with expertise in construction, and limited guidance and prior lessons learned to help implement the program. For example, in response to a tsunami disaster event that severely impacted American Samoa in 2009, FEMA issued a task order off of a prior advance contract. As occurred in the CNMI during implementation of the PHC program after Typhoon Yutu, FEMA lacked construction expertise, which necessitated a less cost-effective and less efficient approach of entering into a 9-month interagency agreement with USACE for construction project management services in American Samoa.

While some after-action reports addressed early PHC missions, these prior lessons learned were not always communicated to decision makers or incorporated into guidance for future missions. Responsibility for after-action reporting is shared across FEMA's 10 regions, which are responsible for identifying lessons learned and best practices from disasters in their regions and for elevating issues to headquarters when necessary. In May 2020, we reported that FEMA lacked a formal mechanism to document and track lessons learned and corrective actions identified through the agency's after-action reviews.⁵⁰ As of October 2020, FEMA has conducted a total of seven PHC missions across five of its 10

⁵⁰[GAO-20-297](#). In response to our recommendation that FEMA develop a formal mechanism to consistently track best practices, lessons learned, and corrective actions, DHS stated that FEMA implemented an issue elevation and resolution system. However, we found the process FEMA was using as of April 2020 was not a long-term or ideal solution due to its lack of accessibility and ability to be queried. FEMA stated that it was working to identify resources to build an application for this purpose.

regions. To date, three after-action reports have been completed, across three FEMA regions. The lessons learned from these missions may not have been communicated to FEMA's headquarters IA Division, the body responsible for housing policy. In fact, officials in this division were unable to provide us with the completed after-action report from the first PHC mission conducted in American Samoa after the tsunami disaster event that severely impacted the territory in 2009.

The Post-Katrina Emergency Reform Act of 2006 requires FEMA to analyze real-world events to identify and disseminate lessons learned and best practices and conduct remedial action tracking and long-term trend analysis.⁵¹ Further, FEMA's 2018-2022 Strategic Plan calls for sharing lessons learned from disasters with the whole community to anticipate known challenges during future disasters.

FEMA has the opportunity to learn from recent PHC missions from the 2017 and 2018 disasters as well as incorporate long-standing lessons learned from earlier missions to improve its delivery of PHC in insular and other remote areas. Incorporating these lessons learned in guidance that outlines necessary steps to plan for and implement the program could provide FEMA the critical institutional knowledge to address the staffing challenges of limited specialized expertise and experience with the PHC program.

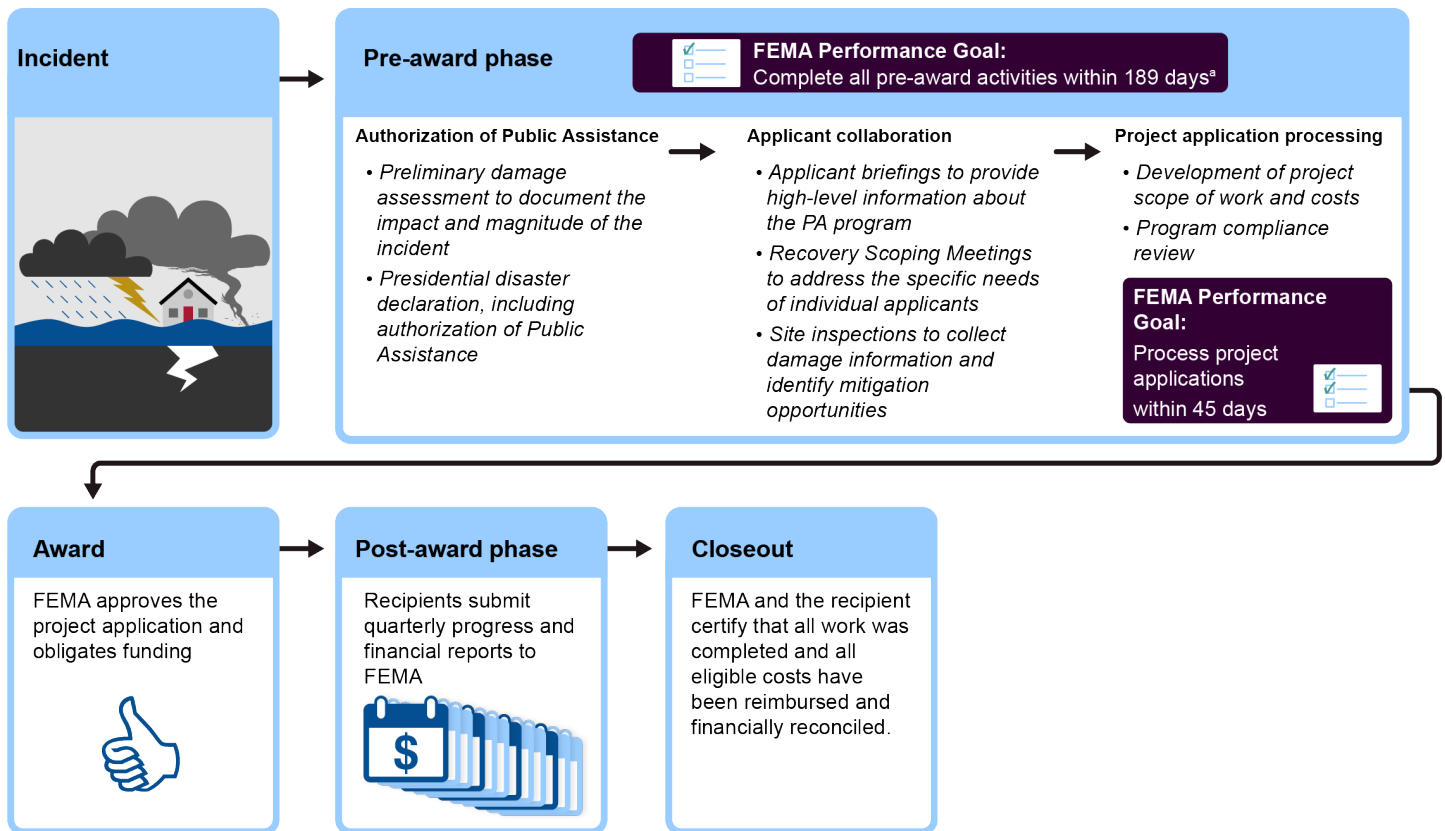
FEMA Has Not Met Pre-Award Phase Timeliness Goals and Does Not Use Data to Identify the Cause of Public Assistance Delays

The length of time between a disaster incident and when FEMA obligates PA funding—referred to as the pre-award phase of the PA program— influences how quickly locations are able to recover from disasters. As such, DHS's *Fiscal Year 2019-2021 Annual Performance Report* states that the speed at which FEMA obligates funding for PA projects is a priority for advancing the recovery process and delivering results to populations affected by a disaster. The pre-award phase of the PA program is complex, involving multiple steps and actors internal and external to FEMA. FEMA has two national-level performance goals relating to the pre-award phase: (1) completing the pre-award phase for PA projects within 189 days, and (2) within this 189-day period, completing the PA application processing within 45 days after receipt at a

⁵¹See 6 U.S.C. § 750.

FEMA Consolidated Resource Center (CRC)—entities created in 2016 to centralize and standardize the PA grant application process. Application processing includes the development of scope of work and cost estimation, among other things (see fig. 11).

Figure 11: Key Phases of the Public Assistance Grant Program and Related Performance Goals



Source: GAO analysis of Federal Emergency Management Agency Policy. | GAO-21-91

Text of Figure 11: Key Phases of the Public Assistance Grant Program and Related Performance Goals

- 1) Incident
- 2) Pre-award phase (FEMA Performance Goal: Complete all pre-award activities within 189 days)
 - a) Authorization of Public Assistance

- i) Preliminary damage assessment to document the impact and magnitude of the incident
- ii) Presidential disaster declaration, including authorization of Public Assistance
- b) Applicant application
 - i) Applicant briefings to provide high-level information about the PA program
 - ii) Recovery Scoping Meetings to address the specific needs of individual applicants
 - iii) Site inspections to collect damage information and identify mitigation opportunities
- c) Project application processing (FEMA Performance Goal: Process applications within 45 days)
- 3) Award – FEMA approves the project application and obligates funding
- 4) Post Award Phase - Recipients submit quarterly progress and financial reports to FEMA
- 5) Closeout - FEMA and the recipient certify that all work was completed and all eligible costs have been reimbursed and financially reconciled.

^aThese are national-level goals, and FEMA aims to achieve the above performance goals for 90 percent of all Public Assistance projects.

FEMA data indicate that the agency did not meet its two pre-award performance goals for the majority of PA projects awarded to the CNMI, Guam, and Hawaii after the 2018 disasters. Specifically, of the 532 PA applications across the six major disasters, FEMA had completed the pre-award process and obligated funds for 492 as of October 2020.⁵² FEMA completed the pre-award process within 189 days for 14 percent or 70 of the 492 projects. With respect to its goal for the application processing, FEMA met the 45-day goal for about 41 percent or 220 of the 532 PA project applications. Consistent with our findings for these disasters, DHS's *Fiscal Year 2019-21 Annual Performance Report* found that, in

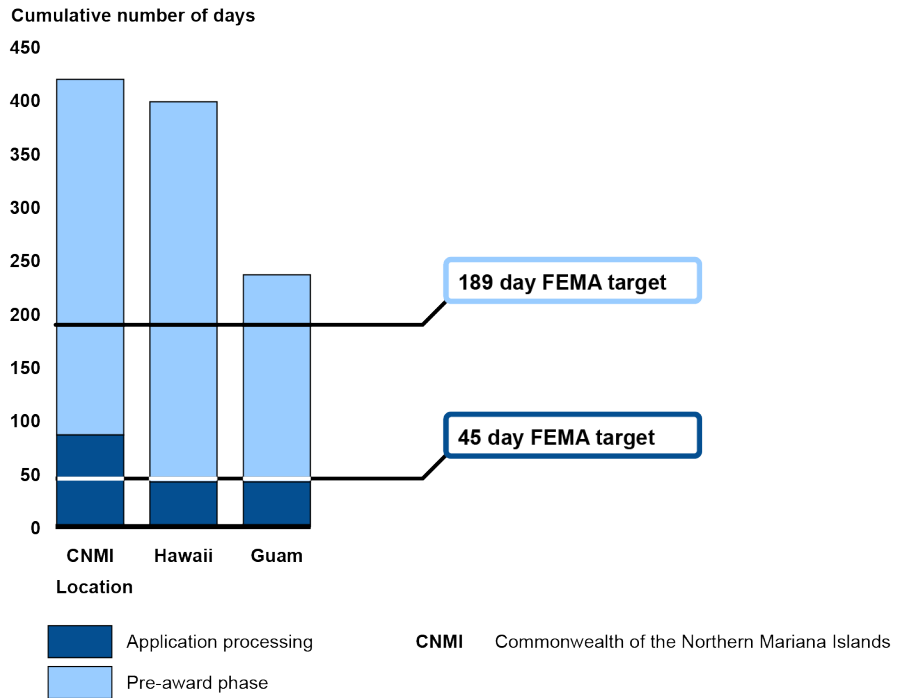
⁵²As of October 2020, FEMA had completed the application process for 40 projects but had not obligated funding yet.

fiscal year 2019, FEMA obligated only 28 percent of all PA projects within targeted time frames, far short of its 68 percent target.⁵³ FEMA officials stated that the process has taken longer than expected at the national level and noted additional complications with the disasters in the CNMI due to the need to differentiate new damage from that caused by prior disasters.⁵⁴ Based on our analysis, for projects in the Pacific that have been awarded funding, on average the pre-award phase took nearly 13 months for PA projects after the 2018 disasters, which includes an average of about 2 months for processing project applications (see fig. 12).

⁵³DHS began tracking this performance measure for fiscal year 2019, using different targets for four general categories of work: 180 days for large emergency work projects; 365 days for large permanent work projects; 120 days for small emergency work projects; and 210 days for small permanent work projects. FEMA officials stated that moving forward all projects will move to the 189-day target, regardless of category or size. The target for fiscal year 2020 is 72 percent, but the fiscal year 2020 results had not been released as of October 2020.

⁵⁴Typhoons Mangkhut and Yutu impacted some of the same structures and facilities that are still in the process of recovering from the 2015 Typhoon Soudelor disaster.

Figure 12: Average Number of Days in Which Key Public Assistance Phases Were Completed and Federal Emergency Management Agency (FEMA) Goals, by Location as of October 2020



Source: GAO analysis of Federal Emergency Management Agency data. | GAO-21-91

Data table for Figure 12: Average Number of Days in Which Key Public Assistance Phases Were Completed and Federal Emergency Management Agency (FEMA) Goals, by Location as of October 2020

	Application Processing	Pre-award phase	Total
CNMI	86	333	(419)
Hawaii	42	356	(398)
Guam	42	194	(236)

Although FEMA did not meet its national timeliness metrics in fiscal year 2019, FEMA officials noted that these national-level goals may not be appropriate for measuring performance for operations in insular areas or for larger catastrophic disasters, as these missions tend to be more difficult and complex and may require prioritization of activities beyond the provision of PA. A senior FEMA official added that the agency’s national-level goals are primarily based on time frames for administering PA alone regardless of other post-disaster activities and are therefore better-suited

to disasters that are recovery-focused. For example, after Typhoon Yutu, FEMA officials noted they had limited capacity on the islands to address all of the response needs. Therefore, they prioritized the provision of sheltering and temporary roofing assistance to meet immediate survivor needs before focusing more fully on longer-term recovery missions using PA.

Further exacerbating the time required to develop and implement recovery missions in the Pacific region, FEMA officials also noted that applicants in these areas may not have the experience or capacity to manage the FEMA grant process. Therefore, it may take even longer to collect and provide the necessary documentation compared to the national timeliness metrics currently in place for the pre-award phase. In our prior work on federal disaster response and recovery efforts led by FEMA in Puerto Rico and the U.S. Virgin Islands following hurricanes Irma and Maria in 2017, we found similar delays in developing PA projects.⁵⁵ Specifically, in February 2020, we reported that 19 of Puerto Rico's 9,344 damaged sites had approved fixed cost estimates 2 years after the hurricanes hit.⁵⁶ In November 2019, we also reported on delays with the PA program in the U.S. Virgin Islands due to challenges related to the limited capacity locally to manage recovery programs.⁵⁷

Federal internal control standards state that management should define objectives clearly to enable the identification of risks, define risk tolerances, and determine whether performance measures are appropriate for evaluating the entity's performance in achieving those objectives. While FEMA set timeliness goals broadly for its PA program, they may not be appropriate for all recovery missions based on the location and nature of the event. FEMA officials stated that, despite this, the agency has not developed specific performance measures for different types of disasters, such as for large-scale catastrophic disasters in U.S. insular and other remote areas. Such timeliness metrics specific to these types of disasters could help FEMA manage expectations of PA applicants. Further, developing goals that consider the unique challenges recovery missions face in insular and remote areas could better position

⁵⁵See GAO, *U.S. Virgin Islands Recovery: Additional Actions Could Strengthen FEMA's Key Disaster Recovery Efforts*, [GAO-20-54](#) (Washington, D.C.: Nov. 19, 2019); and *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).

⁵⁶[GAO-20-221](#).

⁵⁷[GAO-20-54](#).

FEMA to accurately monitor and manage its internal time frames for obligating PA funding, enabling affected localities to recover more quickly from disasters.

FEMA collects data on the timeliness of completing individual steps in the pre-award phase of the PA program; however, it has not established a process to comprehensively analyze and use these data to provide insight into any inefficiencies causing the delays in obligating funding for disaster-affected locations. Additionally, FEMA has not used the data to determine the extent to which these inefficiencies may be more pronounced for larger catastrophic disasters in insular areas. In reports FEMA provides to headquarters, regional, and field staff, FEMA tracks time frames for each step in the pre-award process and identified three steps as drivers of delays—the time applicants take to provide eligibility documentation; insurance reviews; and the time needed to review projects. However, these reports only identify the steps that take longer, not the root cause of those delays.

Absent a more detailed analysis of the root causes of delays in the pre-award phase of the process, officials we met with offered examples of potential reasons that funding may have been delayed for PA projects in the Pacific region after the 2018 disasters:

- **Cost Estimation:** FEMA, state, and territorial officials said some FEMA staff lacked knowledge about certain costs that are higher in the Pacific region compared to the continental U.S., including costs for shipping, materials, and labor. According to these officials, this lack of knowledge sometimes necessitated prolonged communications between PA applicants and FEMA personnel about the accuracy of project cost estimates. In addition, they added that some applicants were unable to provide FEMA explanations behind the cost estimates they submitted, often because they hired contractors to conduct the analysis. Cost estimation challenges are discussed in more detail later in this report.
- **Insurance and Environmental and Historic Preservation Reviews:** FEMA officials said PA applicants sometimes did not submit required documentation relating to insurance deductions and environmental and historic preservation in a timely manner. In addition, officials from Hawaii and Guam stated that environmental and historic preservation reviews, a requirement for PA applications with hazard mitigation funding, took a long time to process—an average of 8 months and up to 21 months, according to one Hawaii official.

- **Guidance to PA Applicants:** A FEMA official with responsibility for overseeing FEMA staff that process PA project applications said that, based on his experience, some field-based FEMA personnel tasked with providing guidance to PA applicants may not have received sufficient training prior to the 2018 Pacific-area disasters. This resulted in several applicants submitting application materials with costs that are unallowable under PA program regulations. According to this official, this required additional time to follow up with applicants to request additional information.

The Project Management Institute states that managers should monitor programs' progress and performance results to ensure the goals of the program are met.⁵⁸ Further, federal internal control standards state that management should use quality information to achieve its objectives and use quality information to make informed decisions and evaluate the entity's performance in achieving key objectives.⁵⁹

Though FEMA had not used available data to conduct comprehensive analysis on the timeliness of obligating PA funding, which could support the agency's objective of obligating funding in a timely manner, at the time of our review, the agency was developing metrics that could be used for this purpose. According to FEMA officials, these metrics—called key performance indicators (KPIs)—will help the agency identify inefficiencies in the pre-award process of the PA program that may be leading to delays, among other things.⁶⁰ For example, one of these draft KPIs would track the accuracy of FEMA's fixed-cost estimates for alternative procedures projects. As previously mentioned, officials stated that disagreements about the accuracy of these cost estimates contributed to delays in obligating funds for some Pacific-area PA projects after the 2018 disasters. Another draft KPI would track the timeliness with which applicants submit various application-related documents. FEMA plans to finalize the first operational version of these KPIs by January 2021. If FEMA used these KPIs, or other tools, to collect and use data relating to

⁵⁸Project Management Institute, Inc. *A Guide to the Project Management Body of Knowledge (PMBOK®)*, 6th ed. (Newtown Square, PA: 2017).

⁵⁹[GAO-14-704G](#).

⁶⁰FEMA began developing KPIs in part in response to a November 2017 GAO recommendation to develop performance measures and objectives related to FEMA's new delivery model for its PA program. See GAO, *Disaster Assistance: Opportunities to Enhance Implementation of the Redesigned Public Assistance Grant Program*, [GAO-18-30](#) (Washington, D.C. Nov. 8, 2017). By drafting the KPIs, FEMA implemented this recommendation through the development of these metrics, though they have not yet been implemented.

the timeliness of completing the various steps within the pre-award phase of the PA program, the agency could better identify inefficiencies occurring during this phase of the program and design targeted solutions to address root causes.

FEMA Took Steps to Account for the Higher Cost of Implementing Public Assistance Projects in the Pacific Region

FEMA addressed cost estimation challenges that FEMA, state, and territorial officials attributed to delays in obligating funding for some Pacific-area PA projects. Specifically, officials noted that staff in one of FEMA's Consolidated Resource Centers—entities created in 2016 to centralize and standardize the PA grant application process—sometimes lacked knowledge about the cost of shipping items to the Pacific Islands and the higher cost of labor and building materials compared to the continental United States.⁶¹ Territorial officials said the higher cost of labor in the Pacific region is partially due to a shortage of construction workers in the CNMI and Guam. We reported on the construction worker shortage in the CNMI in February 2019 and February 2020.⁶²

Half of the 12 PA subrecipients we interviewed said disagreements about project cost estimates contributed to delays in FEMA obligating funding. Five of these subrecipients said these disagreements related to alternative procedures PA projects, whose costs are based on fixed estimates that cannot be adjusted after FEMA obligates funding, unlike standard PA projects. FEMA data indicate that it took an average of 490 days from the disaster declaration dates to obligate funds for Pacific-area alternative procedures projects, while it took an average of 380 days to

⁶¹FEMA's first CRC became operational in 2016 and the agency started using CRCs to process PA project applications for all disaster events in September 2017. FEMA currently operates four CRCs across the United States. These CRCs are located in California, Texas, Virginia, and Puerto Rico.

⁶²In February 2019, we reported on CNMI officials' concern about the limited number of construction workers in the CNMI due to federal immigration laws and the removal of the Philippines from the list of countries eligible for the H-2B, temporary non-agricultural work visa program. GAO, *Commonwealth of the Northern Mariana Islands: DHS Implementation of U.S. Immigration Laws*, [GAO-19-376T](#) (Washington, D.C., Feb. 27, 2019). In February 2020, we reported that CNMI officials identified the limited number of construction workers as a challenge for typhoon recovery. See [GAO-20-305](#).

obligate funds for standard PA projects.⁶³ In November 2019 and February 2020, we reported that officials in the U.S. Virgin Islands and Puerto Rico said they experienced similar delays relating to receiving funding for alternative procedures projects after disasters that occurred in those locations in 2017.⁶⁴

FEMA officials acknowledged challenges with cost estimates for Pacific-area PA projects after the 2018 disasters and added that the agency has since taken steps to improve the process for estimating project costs in the region. For example, in December 2019, FEMA transferred responsibility for processing all Pacific-area PA project applications from its CRC in Denton, Texas, to a newly established CRC in California, referred to as CRC West. This transfer applied to all project applications for disasters that were declared after December 2019, plus any new applications relating to the Typhoon Yutu disaster event in the CNMI. According to FEMA officials, the proximity of CRC West to the Pacific region facilitates communication with applicants and travel to project sites, which enhances the accuracy of project cost estimates. In addition, FEMA established cost factors in August 2019 for PA projects in the CNMI to more accurately calculate project costs.⁶⁵

FEMA Took Some Steps to Support Increased Mitigation Funding for Future Disasters

FEMA has begun to implement changes to its hazard mitigation program to better identify opportunities for mitigation funding. As of October 2020, FEMA obligated about \$31 million in hazard mitigation funding to the CNMI, Guam, and Hawaii for the 2018 disasters. This represents about 3 percent of total FEMA funding for these disasters. Specifically, FEMA

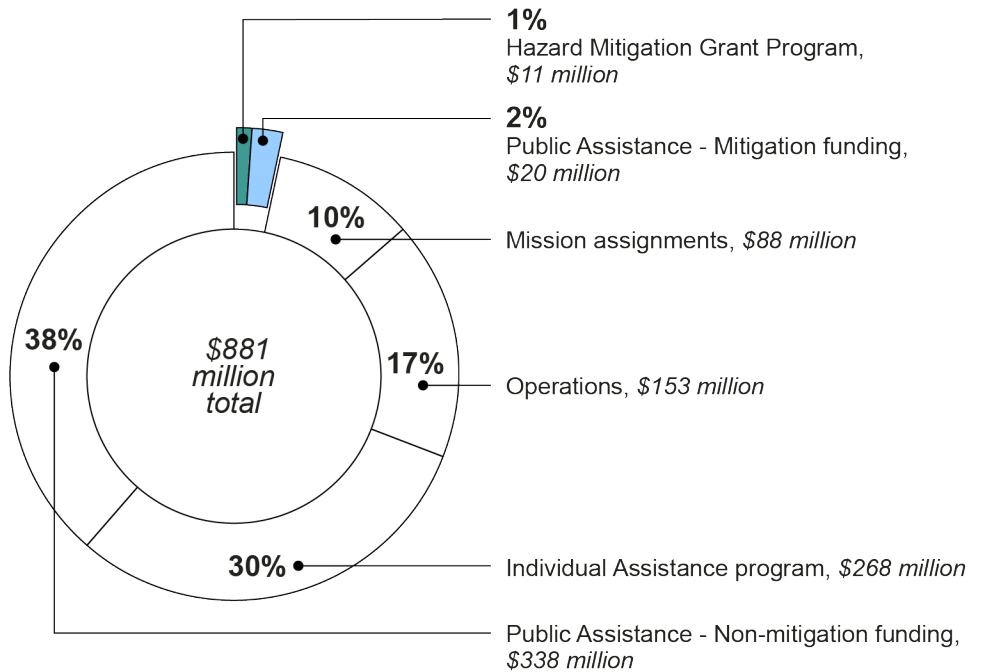
⁶³As of October 2020, approximately \$115 million (31 percent) of the total funding obligated for PA projects for the 2018 Pacific-area disasters was for alternative procedures projects, though less than 4 percent (22 of 492) of the total number of PA projects were alternative procedures projects. Most of this funding—approximately \$91 million—was for two projects associated with the Kilauea volcanic eruption disaster event in Hawaii.

⁶⁴[GAO-20-54](#) and [GAO-20-221](#).

⁶⁵According to FEMA officials, the term “cost factor” indicates: 1) a flat dollar amount that is added to the base cost of a Public Assistance project, or 2) a number that, when multiplied by the initial Public Assistance project cost estimate, produces a location-specific project cost estimate. FEMA’s procedures for estimating costs for Public Assistance projects are outlined in its Cost Estimating Format for Large Projects Instructional Guide V2.1, (September, 2009).

obligated about \$20 million in hazard mitigation funding through the PA program and \$11 million through the Hazard Mitigation Grant Program (HMGP), as shown in figure 13.⁶⁶

Figure 13: Hazard Mitigation Funding as a Portion of Total Disaster Relief Fund Obligations for 2018 Disasters in the Pacific Region, as of October 2020



Source: GAO analysis of Federal Emergency Management Data. | GAO-21-91

Data table for Figure 13: Hazard Mitigation Funding as a Portion of Total Disaster Relief Fund Obligations for 2018 Disasters in the Pacific Region, as of October 2020

Hazard Mitigation Grant Program	Public Assistance program - Mitigation funding	Mission Assignments
10.92	20.73	88.8

⁶⁶In addition to the HMGP and PA programs, FEMA may obligate funding for hazard mitigation projects through its two competitive, non-disaster mitigation programs: 1) Flood Mitigation Assistance, and 2) the Building Resilient Infrastructure and Communities program, which replaced the Pre-Disaster Mitigation program in 2020. Data for FY 2019 and FY 2020 obligations made through these two programs for the locations included in the scope of this audit were not available as of September 2020.

Administration	Individual Assistance program	Public Assistance program - Non-mitigation funding
153.35	268.36	338.855

Hazard mitigation funding, particularly for HMGP grants, is often obligated later in the post-disaster process. For example, the deadline to apply for HMGP funding occurs one year after the disaster declaration. As of October 2020, FEMA anticipated obligating an additional \$126 million in mitigation funding for the CNMI, Guam, and Hawaii through the HMGP grant program. Appendix I provides more information on FEMA funding for the 2018 disasters in the Pacific region, including mitigation funding obligated for each disaster event.

The CNMI, Guam, and Hawaii are to use this mitigation funding for a wide variety of projects, including an underground power distribution system in the CNMI, a housing buyout program in Hawaii, and the installation of concrete poles for power transmission lines in the CNMI, which are designed to withstand stronger winds than wooden poles (see fig. 14).

Figure 14: Concrete Utility Poles Installed in the Commonwealth of the Northern Mariana Islands as a Hazard Mitigation Initiative



Source: Federal Emergency Management Agency. | GAO-21-91

As part of disaster recovery efforts, FEMA may deploy a team of hazard mitigation specialists to help PA applicants identify opportunities to incorporate hazard mitigation proposals into PA project applications. However, officials in Hawaii and the CNMI said these specialists sometimes did not fulfill this duty because FEMA did not always

effectively integrate the mitigation specialists into the PA application process. For example, a CNMI official said FEMA deployed mitigation specialists after the PA site inspections occurred, and CNMI's PA staff did not have time to accompany these specialists on a second round of site inspections. Similarly, a Hawaii official said no mitigation specialists participated in the site inspection for a building that was damaged by rain, and consequently, the site inspectors did not identify opportunities for measures that could have mitigated future damage to the building's roof.

FEMA officials said FEMA usually aims to deploy mitigation specialists in time to participate in the PA site inspections, but this did not occur after the 2018 disasters in the Pacific, for various reasons. FEMA officials attributed the delays in deploying mitigation specialists to Hawaii and the CNMI to staffing shortages in 2018, and the distance between the CNMI and the continental U.S. In addition, FEMA officials noted that travelling to the CNMI may require travelling through a foreign country, which can cause delays due to DHS requirements regarding taking government equipment through foreign countries.

Acknowledging these past delays, FEMA took some steps in August 2019 in an effort to support an increase in the number of mitigation funding proposals considered and possibly incorporated into PA project applications for future disasters in the Pacific region. For example, FEMA now allows three additional position types within CRCs to contribute to writing mitigation proposals, when appropriate. Previously, only hazard mitigation specialists could write these proposals. FEMA officials said this limitation sometimes caused delays, in part because these mitigation specialists often lacked expertise in cost estimation. FEMA officials stated that, because the CRC officials have cost-estimation expertise, they will be able to more efficiently complete the portions of mitigation proposals requiring cost estimations. According to FEMA officials, this enables the mitigation specialists more time to work with PA applicants to identify and develop proposals for potential mitigation projects. In February 2021, we recommended that FEMA assess its hazard mitigation grant processes—including the PA and HMGP programs, to identify and implement steps to reduce the complexity of and time required for grant applications.⁶⁷ It is too soon to tell the extent to which steps FEMA has already taken, such as the addition of personnel with specialized cost estimation expertise or

⁶⁷[GAO-21-140](#).

the steps it plans to take in response to our recent recommendation, will provide more opportunities to fund hazard mitigation projects.

Conclusions

The Pacific region of the United States faces unique challenges with disaster response and recovery, as the 2018 natural disasters demonstrated. FEMA's response to these disasters was effective, and the agency has taken steps to enhance preparedness for and effective response to future disasters in the region. With total obligations related to these disasters and related hazard mitigation efforts expected to exceed \$1 billion, it is vital that FEMA continue to address challenges related to its recovery efforts. Specifically, FEMA experienced delays in providing housing assistance in the CNMI and Hawaii, which is essential to ensuring the health and safety of disaster survivors. Developing guidance to address difficulties with documentation of proof of residency and ownership could streamline the provision of housing assistance to disaster survivors residing in our nation's most remote areas, where these challenges are common. Further, lessons learned from prior PHC missions could have predicted the challenges FEMA faced in implementing this program in the CNMI after Typhoon Yutu, such as the lack of construction expertise. Additionally, this program—designed to address needs specific to hard-to-reach areas—has been utilized more for disasters in the last 3 years than in the first 9 years it was offered. Given the increased use of this program to address post-disaster housing needs, FEMA would benefit from additional guidance that leverages lessons learned to better plan for and implement this program.

FEMA's PA grant program—which, among other purposes, provides funds for the repair of critical public infrastructure, such as power grid and road repair—is a key element in helping communities rebuild and recover after a major disaster. Developing appropriate timeliness measures for the PA program that take into consideration the unique challenges following large-scale disasters in U.S. insular and similar remote areas, could better inform FEMA's monitoring and management of recovery efforts in these areas, as well as in communication with applicants. Further, using data on the timeliness and performance of the PA application process would help to identify inefficiencies and root causes of delays and provide FEMA and its local partners the information needed to address them.

Recommendations for Executive Action

We are making a total of four recommendations to FEMA. Specifically:

The FEMA administrator should develop guidance to streamline the process to assist direct housing applicants with proof of residency and proof of ownership requirements in those locations, such as in insular areas, where the nature of housing may otherwise result in processing delays due to the volume of required waivers or modifications to these requirements. (Recommendation 1)

The FEMA administrator should incorporate lessons learned from earlier Permanent Housing Construction missions and address long-standing issues, such as the lack of architecture and engineering services in its existing contracts, in guidance that outlines necessary steps to better plan for and implement the Permanent Housing Construction program in insular and other remote areas. (Recommendation 2)

The FEMA administrator should consider the unique challenges of recovery missions for large-scale disasters in U.S. insular and other remote areas to establish appropriate timeliness goals for the pre-award phase of the Public Assistance program specific to these types of disasters. (Recommendation 3)

The FEMA administrator should use data relating to the timeliness of completing various steps within the pre-award phase of the Public Assistance program to help identify and address any inefficiencies occurring during this phase of the program. (Recommendation 4)

Agency Comments and our Evaluation

We provided a draft of this report to DHS, FEMA, and DOD for their review and comment. DHS provided written comments, which are reproduced in appendix V. In its comments, DHS concurred with our recommendations and described actions under way or planned to address them. DOD did not provide comments on the draft report. FEMA provided technical comments, which we incorporated as appropriate.

With regard to our first recommendation, that FEMA develop guidance to streamline the process to assist direct housing applicants with proof of residency and proof of ownership requirements in those locations, such

as insular areas, where the nature of housing may otherwise result in processing delays due to the volume of required waivers or modifications to these requirements, DHS concurred and stated, among other things, that while FEMA cannot commit to establishing a separate set of ownership and residency requirements for Direct Housing Assistance, the agency will assess whether previous disaster-specific processes can be formalized in policy. We will monitor FEMA's efforts in this area to assess the extent to which they address the intent of our recommendation.

With regard to our second recommendation, that FEMA incorporate lessons learned from prior Permanent Housing Construction (PHC) missions and address long-standing issues, such as the lack of architecture and engineering services in its existing contracts, in guidance that outlines necessary steps to better plan for and implement the PHC program in insular and other remote areas, DHS concurred and stated that FEMA's planned Direct Housing Guide will include lessons learned and best practices for PHC. As part of the steps taken to finalize this guide, DHS stated that FEMA has completed a project plan, secured contract support, and held working group sessions, among other things. DHS estimated that FEMA's Direct Housing Guide will be finalized by June 30, 2021. At that time, we will assess the agency's actions to determine the extent to which they address the intent of our recommendation.

With regard to our third recommendation, that FEMA consider the unique challenges of recovery missions for large-scale disasters in the U.S. insular and other remote areas to establish appropriate timeliness goals for the pre-award phase of the Public Assistance program specific to these types of disasters, DHS concurred and stated that FEMA will establish a process to set event-specific targets at the start of disaster operations. FEMA agreed that establishing more specific goals for the unique challenges in the U.S. insular and other remote areas would be beneficial, but noted that it may not be effective to establish blanket targets for all events in these areas. As such, FEMA's Public Assistance Division plans to document a process, and establish corresponding controls for each disaster operation, to set event-specific targets for timeliness and other performance goals. These actions, if fully implemented, should address the intent of our recommendation.

With regard to our fourth recommendation, that FEMA use data relating to the timeliness of completing various steps within the pre-award phase of the Public Assistance program to help identify and address any inefficiencies occurring during this phase of the program, DHS concurred

and stated that FEMA was in the process of using timeliness data to identify bottlenecks during project development. In our report, we recognized FEMA's data collection efforts but noted that FEMA had not established a process to use the data to identify the root causes of delays. Through the roll-out of its Key Performance Indicators, FEMA plans to establish a live dashboard on its intranet for all FEMA personnel to use to manage performance at the national, regional, and disaster level. DHS estimated that FEMA's efforts would be completed by February 26, 2021. At that time, we will assess the agency's actions to determine the extent to which they address the intent of our recommendation.

We are sending copies of this report to the secretaries of Defense and Homeland Security, the FEMA Administrator, and appropriate congressional committees. If you or your staff have any questions about this report, please contact me at (404) 679-1875 or curriec@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Other key contributors to this report are listed in appendix VI. In addition, the report will be available at no charge on the GAO website at <https://www.gao.gov>.



Chris P. Currie
Director
Homeland Security and Justice

Appendix I: Disaster Relief Fund Obligations for the 2018 Disasters in the Commonwealth of the Northern Mariana Islands (CNMI), Guam, and Hawaii

The Disaster Relief Fund (DRF)—managed by the Federal Emergency Management Agency (FEMA)—is the primary source of federal disaster assistance for state and local governments when a major disaster or emergency is declared. The Stafford Act establishes a process by which the governor of the affected state or territory may request a presidential major disaster declaration, which can trigger a variety of federal response and recovery assistance programs.¹

The majority of DRF spending is associated with major disaster declarations. For the 2018 disasters in the Pacific region, assistance programs authorized by the six major disaster declarations in the scope of our review include:

- (1) **Individual Assistance:** Programs that provide financial assistance directly to disaster survivors for the necessary expenses and serious needs that cannot be met through insurance or low-interest Small Business Administration loans, such as temporary and/or permanent housing assistance, counseling, unemployment compensation, or medical expenses. FEMA may also provide assistance to state, local, territorial, or tribal governments to support individual survivors.
- (2) **Operations:** Direct federal assistance in the form of mission assignments, which are work orders FEMA issues that direct another federal agency to assist disaster-affected locations.
- (3) **Public Assistance:** A program that provides financial assistance to state, tribal, territorial, and local governments for activities including debris removal; emergency protective measures; and

¹See 42 U.S.C. § 5170.

**Appendix I: Disaster Relief Fund Obligations
for the 2018 Disasters in the Commonwealth of
the Northern Mariana Islands (CNMI), Guam,
and Hawaii**

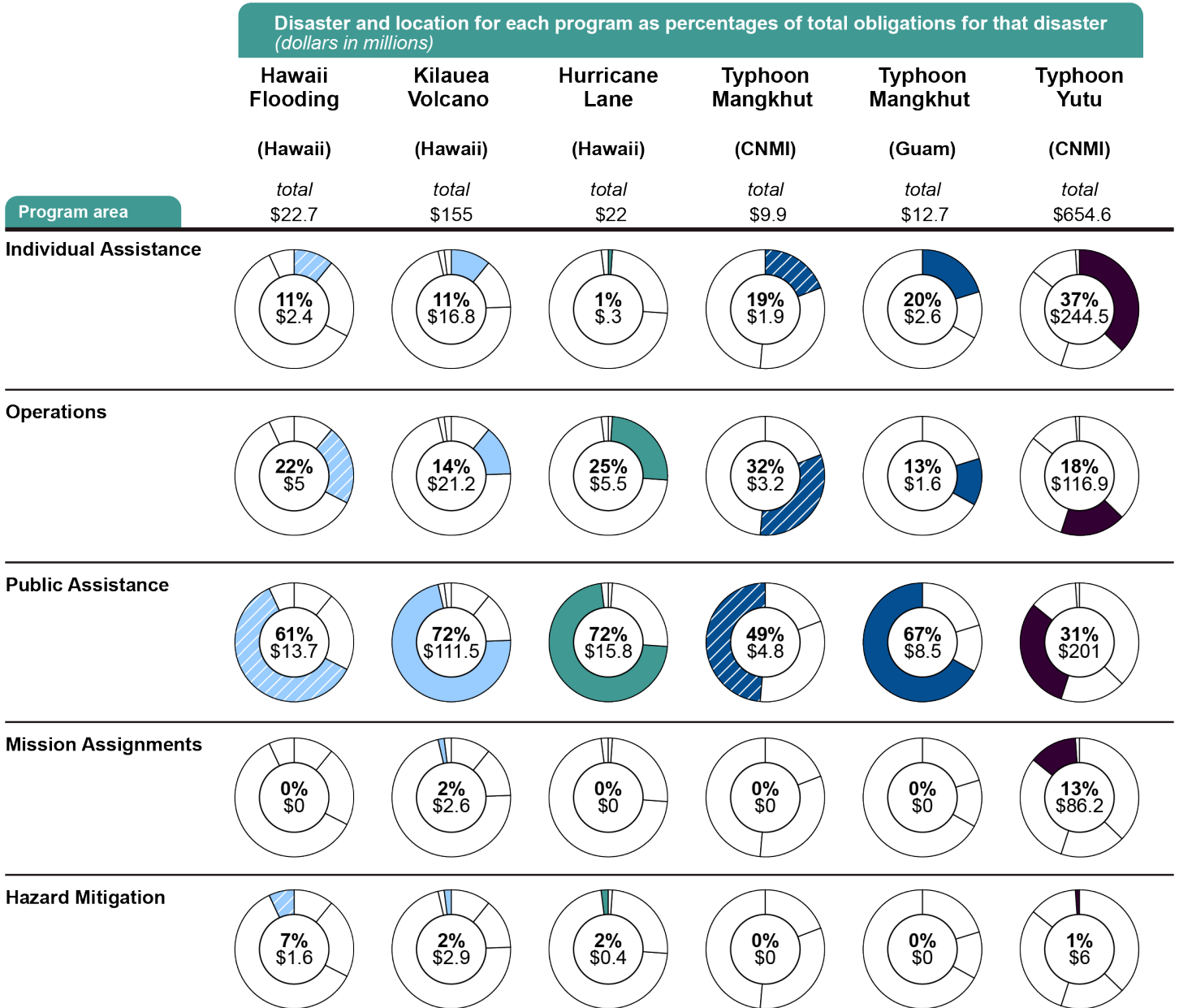
the repair, replacement, or restoration of disaster-damaged, publicly-owned facilities.

- (4) **Mission Assignment:** Work orders FEMA assigns to other federal agencies to utilize their authorities and the resources granted to them under federal law in support of state, local, tribal, and territorial governments.
- (5) **Hazard Mitigation:** The Hazard Mitigation Grant Program, which provides funds to state, tribal, territorial, and local governments, among other entities, to assist communities in implementing long-term measures to help reduce the potential risk of future damages to facilities.

As shown in figure 15, FEMA had obligated about \$877 million from the DRF for disaster assistance in the CNMI, Guam, and Hawaii as of October 2020. FEMA, state, and territorial governments had expended approximately \$549 million of this funding, according to FEMA data. As of October 2020, FEMA projected that the agency will obligate an additional \$372 million in DRF funding for these disaster events. The majority of these additional funds—about \$235 million—will be obligated through the Individual Assistance and Public Assistance programs, according to FEMA data.

Appendix I: Disaster Relief Fund Obligations for the 2018 Disasters in the Commonwealth of the Northern Mariana Islands (CNMI), Guam, and Hawaii

Figure 15: Disaster Relief Fund Obligations for the 2018 Disasters in Hawaii, the Commonwealth of the Northern Mariana Islands (CNMI), and Guam, as of October 2020



Source: GAO analysis of Federal Emergency Management Agency data. | GAO-21-91

**Appendix I: Disaster Relief Fund Obligations
for the 2018 Disasters in the Commonwealth of
the Northern Mariana Islands (CNMI), Guam,
and Hawaii**

Data table for Figure 15: Disaster Relief Fund Obligations for the 2018 Disasters in Hawaii, the Commonwealth of the Northern Mariana Islands (CNMI), and Guam, as of October 2020 (amounts in millions)

	Hawaii flooding (hawaii)	Kilauea volcano (hawaii)	Hurricane lane (hawaii)	Typhoon Mangkhut (CNMI)	Typhoon Mangkhut (Guam)	Typhoon Yutu (CNMI)
Individual assistance	\$2.4 (11%)	\$16.8 (11%)	\$3 (1%)	\$1.9 (19%)	\$2.6 (20%)	\$244.5 (37%)
Operations	\$5 (22%)	\$21.2 (14%)	\$5.5 (25%)	\$3.2 (32%)	\$1.6 (13%)	\$116.9 (18%)
Public Assistance	\$13.7 (61%)	\$111.5 (72%)	\$15.8 (72%)	\$4.8 (49%)	\$8.5 (67%)	\$201 (31%)
Mission Assignments	0	\$2.6 (2%)	0	0	0	\$86.2 (13%)
Hazard Mitigation	\$1.6 (7%)	\$2.9 (2%)	\$0.4 (2%)	0	0	\$6 (1%)
Total	\$22.7	\$155	\$22	\$9.9	\$12.7	\$654.6

Note: Percentages may not add to 100 due to rounding.

Appendix II: Federal Response to the 2018 Disasters in the Commonwealth of the Northern Mariana Islands (CNMI), Guam, and Hawaii

FEMA leveraged prepositioned assets, such as supplies of food and water and staging of personnel, to assist Hawaii and the CNMI in responding to the Kilauea volcanic eruption and Typhoon Yutu, and activated at least one Emergency Support Function (ESF) for four of the six major disasters.¹ According to FEMA, the response to the flooding events and Hurricane Lane in Hawaii and Typhoon Mangkhut in the CNMI and Guam was addressed at the local, state, and territory level. See table 3.

¹The National Response Framework (NRF) states that the Secretary of Homeland Security is to ensure that preparedness actions are coordinated to prevent gaps in the federal government's efforts to respond to all hazards. Further, the NRF identifies Emergency Support Functions (ESF) that serve as the federal government's primary coordinating structure for building, sustaining, and delivering response capabilities. There are 15 ESFs, each defining specific functional areas—such as communication, transportation, and energy—for the most frequently needed capabilities during an emergency to help coordinate the provision of assets and services by departments and agencies.

**Appendix II: Federal Response to the 2018
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Hawaii**

Table 3: Federal Emergency Management Agency (FEMA) and Emergency Support Function (ESF) Response to 2018 Disasters in Hawaii, the Commonwealth of the Northern Mariana Islands, and Guam

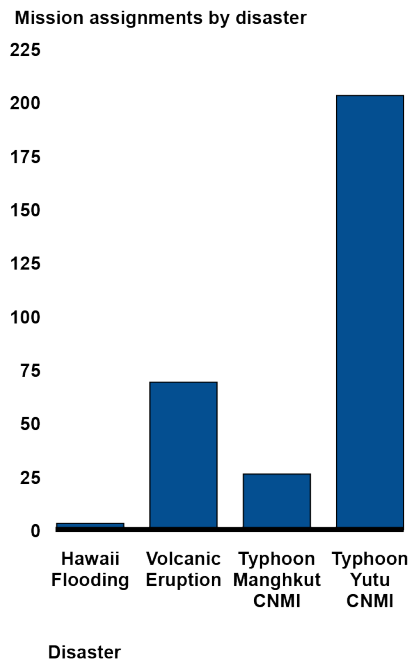
	Disaster event	Response	Number of ESFs Activated	Prepositioned assets
<i>Hawaii</i>	Severe storms, flooding, landslides and mudslides	Response addressed by state and locality	1	None
	Kilauea volcanic eruption and earthquakes	FEMA provided support for assessing all staffing and physical resource requirements; coordinating resource movement; conducting evacuation and mass care to residents displaced by lava flows and earthquakes; conducting survivor intake and registration; and transitioning response to recover	11	Water: 301,519 liters Meals: 434,266 Humanitarian daily rations: 239,620 Cots: 6,301 Generators; 84 Roofing tarp rolls: 3,708 Tarps: 2,035 Tents: 532 Infant Kits: 4 Joint Field Office set-up kits: 3 FEMA Staff Federal Staging Area: 14
	Hurricane Lane	Response addressed by state and locality	0	None
<i>Commonwealth of the Northern Mariana Islands</i>	Typhoon Mangkhut	Response addressed by territory and federal Partners	7	None
	Typhoon Yutu	FEMA provided support for emergency power, communications, evacuations, providing life-sustaining resources (mass care, temporary housing, and water), conducting survivor intake and registration; and transitioning response to recovery.	12	Generators: 8 Cots: 217 Tents: 322 Hygiene kits: 3,836 Tarps: 1,918
<i>Guam</i>	Typhoon Mangkhut	Response addressed by territory and locality	0	None

Source: GAO analysis of FEMA data. | GAO-21-91

There were 203 mission assignments—that is, an order FEMA issues to other federal agencies for a specific task—for four of the six 2018 disasters in the Pacific in our review. All six disasters we selected were declared major disasters—requiring Emergency Support Function support that serve as the federal government’s primary coordinating structure for building, sustaining, and delivering response capabilities, through mission assignments. However, the unique nature of the disasters and needs of the CNMI, Guam, and Hawaii is evident in the types of mission assignments. There were no mission assignments in response to Hurricane Lane in Hawaii, and about two-thirds of the mission assignments were in response to Typhoon Yutu, as shown in figure 16.

Appendix II: Federal Response to the 2018 Disasters in the Commonwealth of the Northern Mariana Islands (CNMI), Guam, and Hawaii

Figure 16: Number of Mission Assignments by 2018 Disaster



CNMI Commonwealth of the Northern Mariana Islands

Source: GAO analysis of Federal Emergency Management Agency's Web-based Emergency Operations Center (WebEOC). | GAO-21-91

Data table for Figure 16: Number of Mission Assignments by 2018 Disaster

Mission Assignments by disaster	
Hawaii Flooding	3
Volcanic Eruption	69
Typhoon Manghkut CNMI	26
Typhoon Yutu CNMI	203

Note: There were no mission assignments in response to Hurricane Lane in Hawaii.

More than two dozen federal agencies provided support to FEMA and Hawaii and the Pacific territories affected by the six disasters; but for all events, the Department of Defense (DOD), the U.S. Army Corps of Engineers (USACE), and Environmental Protection Agency (EPA) were leading partners executing mission assignments from FEMA to support response activities. Specifically, FEMA assigned 65 mission assignments to DOD, 55 mission assignments to USACE, and 29 mission assignment

**Appendix II: Federal Response to the 2018
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to EPA to support the response activities in the 2018 disasters.² Figures 17 and 18 provide additional details on mission assignments by Emergency Support Function.

²Data for 17 of the mission assignments did not identify the federal agency that fulfilled the request.

**Appendix II: Federal Response to the 2018
Disasters in the Commonwealth of the
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Figure 17: Number of Mission Assignments Received by Emergency Support Functions (ESF) 1 through 6 in Response to the 2018 Pacific Disasters and Selected Examples of Support, as of June 2020

ESF 1: Transportation Coordinator: <i>Department of Transportation</i>		Following the Kilauea Volcanic Eruption and Earthquakes, the Federal Emergency Management Agency (FEMA) activated the Department of Transportation to the Hawaii County Civil Defense emergency operations center to support response operations.					
Kauai Flooding and Mudslides	0	Kilauea Volcano Eruption	1	Typhoon Mangkhut (CNMI)	0	Typhoon Yutu	9
ESF 2: Communications Coordinator: <i>DHS/National Communications System</i>		In response to the Kilauea Volcanic eruption, FEMA activated the Federal Communications Commission to support response operations.					
Kauai Flooding and Mudslides	0	Kilauea Volcano Eruption	3	Typhoon Mangkhut (CNMI)	0	Typhoon Yutu	2
ESF 3: Public Works and Engineering Coordinator: <i>U.S. Army Corps of Engineers</i>		In response to Typhoon Yutu, FEMA mission assigned the U.S. Army Corps of Engineers to provide architectural and engineering drawings for the Permanent Housing Construction mission.					
Kauai Flooding and Mudslides	0	Kilauea Volcano Eruption	5	Typhoon Mangkhut (CNMI)	2	Typhoon Yutu	50
ESF 4: Firefighting Coordinator: <i>U.S. Forest Service</i>		Following Typhoon Yutu, FEMA mission assigned the U.S. Forest Service to provide emergency road clearing resources.					
Kauai Flooding and Mudslides	0	Kilauea Volcano Eruption	0	Typhoon Mangkhut (CNMI)	0	Typhoon Yutu	6
ESF 5: Information and Planning Coordinator: <i>FEMA</i>		Following the Kilauea volcanic eruption, FEMA mission assigned the U.S. Geological Survey to monitor the lava flows and support hazard assessments.					
Kauai Flooding and Mudslides	0	Kilauea Volcano Eruption	14	Typhoon Mangkhut (CNMI)	0	Typhoon Yutu	3
ESF 6: Mass Care Coordinator: <i>FEMA</i>		Following Typhoon Yutu, FEMA mission assigned the U.S. Department of Housing and Urban Development to provide specialized expertise and guidance to the Housing Task Force.					
Kauai Flooding and Mudslides	0	Kilauea Volcano Eruption	8	Typhoon Mangkhut (CNMI)	1	Typhoon Yutu	3

CNMI Commonwealth of the Northern Mariana Islands

Source: GAO analysis of the Federal Emergency Management Agency Web-based Emergency Operations Center system. | GAO-21-91

**Appendix II: Federal Response to the 2018
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Figure 18: Number of Mission Assignments Received by Emergency Support Functions (ESF) 7 through 13 in Response to the 2018 Pacific Disasters and Selected Examples of Support, as of June 2020

ESF 7: Logistics Coordinator: <i>General Services Administration and FEMA</i>		In response to Typhoon Yutu, FEMA mission assigned the Defense Logistics Agency to provide fuel and fuel trucks to support the temporary power mission.					
Kauai Flooding and Mudslides	0	Kilauea Volcano Eruption	6	Typhoon Mangkhut (CNMI)	6	Typhoon Yutu	33
ESF 8: Public Health and Medical Services Coordinator: <i>Department of Health and Human Services</i>		In response to Typhoon Yutu in the CNMI, FEMA mission assigned the Department of Health and Human Services to activate the Emergency Prescription Assistance Program.					
Kauai Flooding and Mudslides	0	Kilauea Volcano Eruption	2	Typhoon Mangkhut (CNMI)	1	Typhoon Yutu	9
ESF 10: Oil and Hazardous Materials Response Coordinator: <i>Environmental Protection Agency</i>		Following the Kilauea volcanic eruption, FEMA mission assigned the Environmental Protection Agency to provide monitoring and analysis and identify potential public health threats.					
Kauai Flooding and Mudslides	0	Kilauea Volcano Eruption	8	Typhoon Mangkhut (CNMI)	2	Typhoon Yutu	20
ESF 11: Agriculture and Natural Resources Coordinator: <i>U.S. Department of Agriculture</i>		Following Typhoon Yutu, FEMA mission assigned the U.S. Department of Agriculture to provide Food and Nutritional Service support and assistance.					
Kauai Flooding and Mudslides	0	Kilauea Volcano Eruption	2	Typhoon Mangkhut (CNMI)	0	Typhoon Yutu	10
ESF 12: Energy Coordinator: <i>Department of Energy</i>		Following the Kilauea volcanic eruption, FEMA mission assigned the Department of Energy to provide energy sector support.					
Kauai Flooding and Mudslides	0	Kilauea Volcano Eruption	3	Typhoon Mangkhut (CNMI)	1	Typhoon Yutu	5
ESF 13: Public Safety and Security Coordinator: <i>Department of Justice</i>		In response to Typhoon Yutu, FEMA mission assigned the Federal Protective Service to provide armed protective security officers on the islands of Rota, Tinian, and Saipan.					
Kauai Flooding and Mudslides	3	Kilauea Volcano Eruption	2	Typhoon Mangkhut (CNMI)	1	Typhoon Yutu	6

CNMI Commonwealth of the Northern Mariana Islands

Source: GAO analysis of the Federal Emergency Management Agency Web-based Emergency Operations Center system. | GAO-21-91

Note: There were no mission assignments under ESF 9, Search and Rescue.

Appendix III: Federal Emergency Management Agency's Individual Assistance Program

The Federal Emergency Management's (FEMA) Individual Assistance (IA) Program provides financial assistance and direct services to disaster survivors for expenses and needs that cannot be met through other means, such as insurance. When states or tribal entities request disaster declarations, they may request assistance under any or all of the programs described below. Likewise, when the President makes a disaster declaration, the declaration may authorize IA which may also include any or all of the IA programs.

1. **Individuals and Households Program** provides financial and direct assistance to eligible disaster survivors with necessary expenses and serious needs which they are unable to meet through other means, such as insurance.
2. **Crisis Counseling Assistance and Training Program** provides additional funding to assist disaster-impacted individuals and communities in recovering from major disasters through community-based outreach and psycho-educational services.
3. **Disaster Legal Services** provide legal aid to survivors affected by a major disaster. These services are available to survivors who qualify as low-income and are limited to cases that would not normally incur legal fees. This assistance is provided through an agreement with the Young Lawyers Division of the American Bar Association for free legal help to survivors who are unable to secure legal services adequate to meet their disaster-related needs.
4. **Disaster Case Management Program** involves a partnership between a FEMA disaster case manager and a survivor to develop and carry out a disaster recovery plan, which includes resources, decision-making priorities, and tools to assist disaster survivors.
5. **Disaster Unemployment Assistance** provides unemployment benefits and reemployment services to individuals who have become unemployed as a result of a major disaster and who are not eligible for regular state unemployment insurance. Benefits are usually paid for up to 26 weeks post the disaster declaration. This assistance is

only available to those survivors who are not eligible for regular state unemployment insurance.

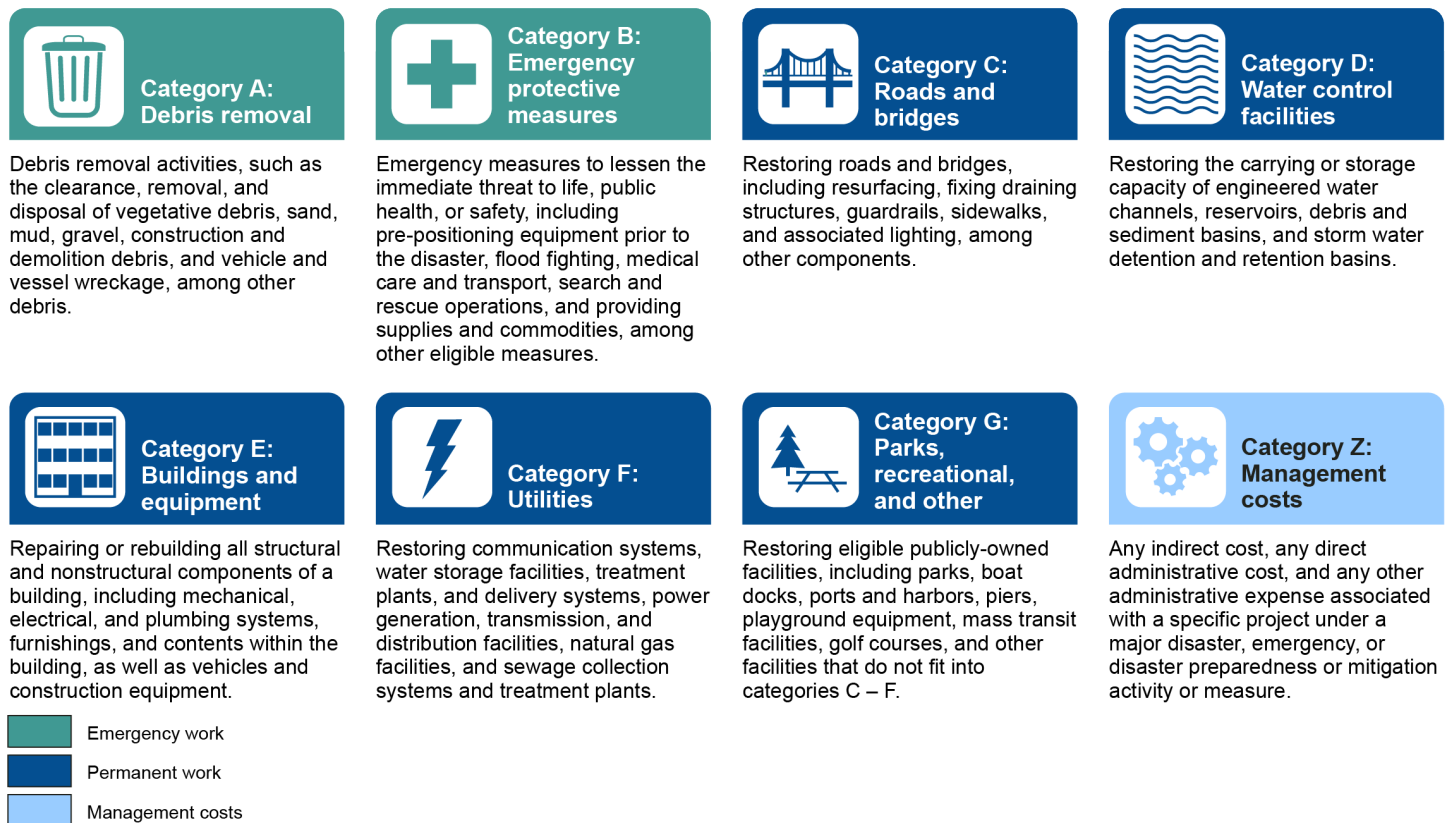
6. **Mass Care and Emergency Assistance Services** are provided immediately before a potential incident and during the immediate response to an incident. Services offered include: sheltering; feeding; distribution of emergency supplies; support for individuals with disabilities and access or functional needs; reunification services for adults and children; support for household pets, service animals, and assistance animals; and mass evacuee support.
7. **Voluntary Agencies** in the community begin providing services prior to a disaster and continue throughout the long-term recovery period. FEMA's Voluntary Agency Liaisons provide technical assistance, coordination and subject matter expertise to partners who are addressing gaps in resources and providing financial and other support to survivors.
8. **Transportation Assistance** may be provided to relocate individuals displaced from their pre-disaster primary residences as a result of a major disaster or emergency to and from alternative locations for short or long-term accommodation or to return to an individual or household to their pre-disaster primary residence or alternative location.
9. **Transitional Sheltering Assistance** is a short-term non-congregate sheltering form of assistance for displaced disaster survivors taking refuge in emergency shelter locations other than their pre-disaster primary residence. The intent of this assistance is to provide temporary sheltering for survivors as they transition from emergency shelters to temporary or permanent housing solutions.
10. **Voluntary Agencies Leading and Organizing Repair Program (VALOR)** provides operational support to voluntary agencies performing work and services essential to sustaining life and protecting health, safety, and property. Voluntary agencies perform minor emergency repairs to homes that enable residents to return or remain in their homes for shelter while permanent repairs are completed. FEMA pays for the materials and supplies.

Appendix IV: Public Assistance Funding for the Commonwealth of Northern Mariana Islands (CNMI), Guam, and Hawaii for the 2018 Disasters

FEMA's Public Assistance (PA) program provides funding to state, territorial, local, and tribal governments, as well as certain types of private nonprofit organizations, to assist with the repair or replacement of disaster-damaged public infrastructure. As shown in Figure 19, PA funds are categorized broadly as "emergency work," "permanent work," and "management costs." Within these categories are subcategories of work, such as debris removal and utility restoration. Under the PA program's permanent work categories, FEMA 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.

**Appendix IV: Public Assistance Funding for
the Commonwealth of Northern Mariana
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Figure 19: Federal Emergency Management Agency’s Public Assistance Program Categories of Work



Source: Federal Emergency Management Agency. | GAO-21-91

Text for Figure 19: Federal Emergency Management Agency’s Public Assistance Program Categories of Work

- 1) Emergency Work
 - a) Category A: Debris removal
 - i) 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.
 - b) Category B: Emergency protective measures
 - i) 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.

2) Permanent Work

a) Category C: Roads and Bridges

- i) Restoring roads and bridges, including resurfacing, fixing draining structures, guardrails, sidewalks, and associated lighting, among other components.

b) Category D: Water control facilities

- i) Restoring the carrying or storage capacity of engineered water channels, reservoirs, debris and sediment basins, and storm water detention and retention basins.

c) Category E: Buildings and equipment

- i) Repairing or rebuilding all structural and nonstructural components of a building, including mechanical, electrical, and plumbing systems, furnishings, and contents within the building, as well as vehicles and construction equipment.

d) Category F: Utilities

- i) 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.

e) Category G: Parks, recreational and other

- i) 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.

3) Management Costs

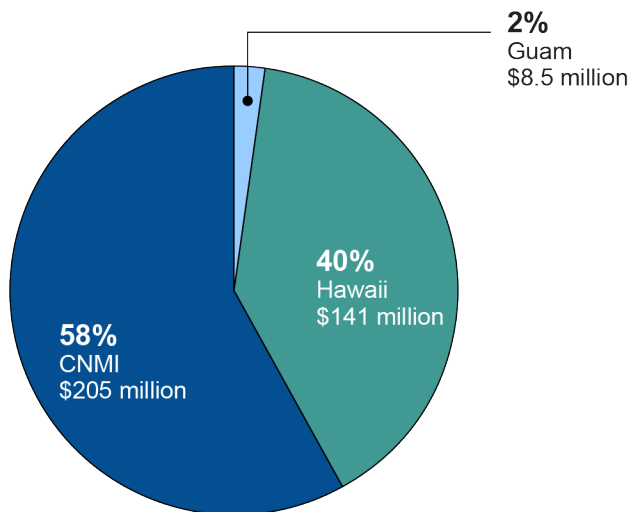
a) Category Z: Management costs

- i) Any indirect cost, any direct administrative cost, and any other administrative expense associated with a specific project under a major disaster, emergency, or disaster preparedness or mitigation activity or measure.

Appendix IV: Public Assistance Funding for the Commonwealth of Northern Mariana Islands (CNMI), Guam, and Hawaii for the 2018 Disasters

As seen in Figure 20, the majority of PA funding obligated for the 2018 disasters in the Pacific region was for disasters that occurred in the CNMI. As of October 2020, FEMA anticipated obligating up to an additional \$169 million in PA funding to these three locations.

Figure 20: Total Public Assistance Obligations for the Commonwealth of the Northern Mariana Islands (CNMI), Guam, and Hawaii, as of October 2020



Source: GAO analysis of Federal Emergency Management Agency data. | GAO-21-91

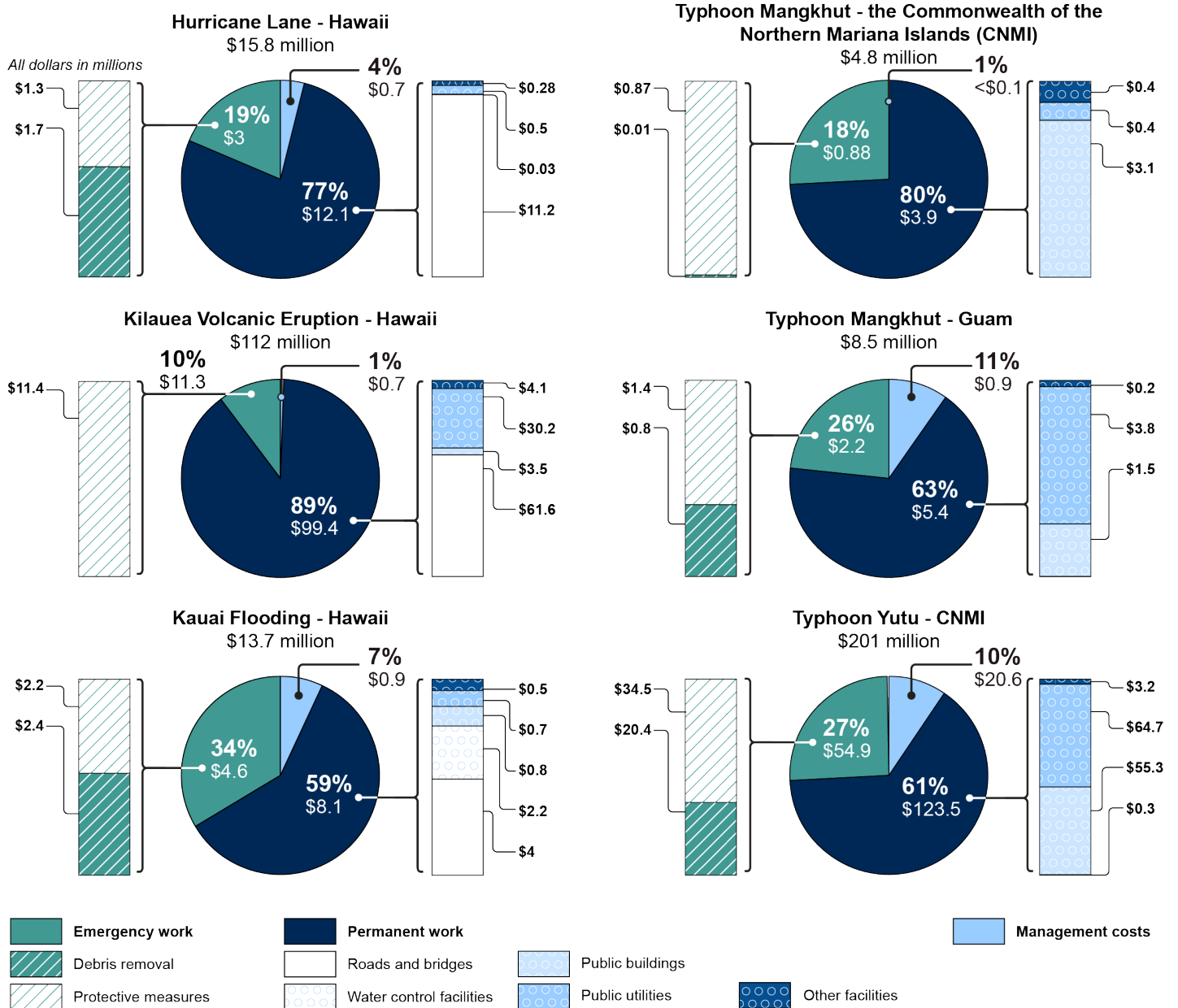
Data table for Figure 20: Total Public Assistance Obligations for the Commonwealth of the Northern Mariana Islands (CNMI), Guam, and Hawaii, as of October 2020

- Hawaii: \$141,006,067.96
- Guam: \$8,546,476.99
- The CNMI: \$205,790,994.91

The proportions of PA funding awarded under different program categories varied by disaster event, as seen in Figure 21. For example, 59 percent of PA funding for the Kauai flooding disaster was for permanent work, compared to 89 percent for the Kilauea volcanic eruption.

Appendix IV: Public Assistance Funding for the Commonwealth of Northern Mariana Islands (CNMI), Guam, and Hawaii for the 2018 Disasters

Figure 21: Public Assistance Obligations by Disaster and Program Category, as of October 2020



Source: Federal Emergency Management Agency data. | GAO-21-91

Appendix V: Comments from the Department of Homeland Security

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



**Homeland
Security**

January 19, 2021

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

Re: Management Response Letter to Draft Report GAO-21-91, "2018 PACIFIC ISLAND DISASTERS: Federal Actions Helped Facilitate the Response, but FEMA Needs to Address Longer-term Recovery Challenges"

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 steps the Federal Emergency Management Agency (FEMA) took prior to the 2018 disasters in the Commonwealth of the Northern Mariana Islands (CNMI), Guam, and Hawaii to facilitate response in the region. For instance, FEMA increased the capacity of two Pacific area supply distribution centers and helped develop area-specific disaster response plans. Additionally, in 2015, FEMA and Hawaii officials updated the state's Catastrophic Hurricane Plan to identify a strategy for joint federal and state response to catastrophic damage impacting the state.

It is important to note that during 2019, FEMA also identified policy improvements to address concerns prevalent in the Pacific area, and the Individual Assistance Program and Policy Guide Version 1.1 (IAPPG 1.1) currently under development will provide clarity on several important issues GAO addressed in its audit. For example, the definition of non-traditional homes in IAPPG 1.1 allows FEMA to more readily provide financial and direct assistance via the Individuals and Households Program (IHP) to residents of homes that would have previously been defined as non-traditional. The document also clarifies IHP eligibility for owner-occupants of Limited Liability Company homes. IAPPG 1.1 is currently in the final stages of the agency's concurrence process and is scheduled for publication in early 2021.

**Appendix V: Comments from the Department
of Homeland Security**

FEMA remains committed to providing disaster survivors with adequate, timely, and accessible assistance, as well as fulfilling its responsibility to be a good steward of taxpayer funds while furthering FEMA's mission of helping people before, during, and after disasters.

The draft report contained four recommendations with which the Department concurs. Attached find our detailed response to each recommendation. DHS previously submitted technical comments addressing several accuracy, contextual, and other issues under 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,

JIM H CRUMPACKER Digitally signed by JIM H
CRUMPACKER
Date: 2021.01.19 13:00:43 -05'00'

JIM H. CRUMPACKER, CIA, CFE
Director
Departmental GAO-OIG Liaison Office

Attachment

Attachment: Management Response to Recommendations Contained in GAO-21-91

GAO recommended that the Administrator of FEMA:

Recommendation 1: Develop guidance to streamline the process to assist direct housing applicants with proof of residency and proof of ownership requirements in those locations, such as insular areas, where the nature of housing may otherwise result in processing delays due to the volume of required waivers or modifications to these requirements.

Response: Concur. FEMA’s Individual Assistance (IA) Division continually works to streamline the disaster recovery process and address ongoing challenges with applicant-centric solutions. When responding to disasters in insular areas, FEMA proactively works with state and local governments to identify populations that will likely be unable to prove property and land ownership through public records or official documentation. The current version of the IAPPG, dated March 1, 2019, also allows applicants living in insular areas, islands, and tribal lands to submit a written, self-declarative statement of ownership as a last resort when they are unable to prove ownership through FEMA’s standard list of accepted documentation. However, FEMA’s ownership and occupancy requirements must be consistent for financial and direct forms of IHP Housing Assistance; as such, FEMA cannot commit to establishing a separate set of ownership and residency requirements specific to Direct Housing Assistance. As part of FEMA’s policy evaluation for the next version of the IAPPG (version 2.0), the FEMA’s IA Division will assess whether previously utilized disaster-specific ownership and occupancy processes can be formalized in policy.

Interim Milestones:	Estimated Completion Date (ECD):
Identify major policy topics including ownership and occupancy requirements for IAPPG 2.0	September 30, 2021
Update draft IAPPG 2.0 and submit to leadership review	June 30, 2022
Conduct agency review and adjudication of public comment	September 30, 2022

Overall ECD: December 30, 2022.

Recommendation 2: Incorporate lessons learned from earlier Permanent Housing Construction missions and address longstanding issues, such as the lack of architecture and engineering services in its existing contracts, in guidance that outlines necessary

Appendix V: Comments from the Department of Homeland Security

steps to better plan for and implement the Permanent Housing Construction program in insular and other remote areas.

Response: Concur. FEMA is taking necessary steps to finalize the Direct Housing Guide by June 30, 2021, which will include lessons learned and best practices for Permanent Housing Construction. FEMA’s IA Division: 1) framed and scoped actions; 2) completed a project plan; 3) secured contract support; 4) completed working group sessions; and 5) is currently facilitating collaborative targeted stakeholder engagements to develop the final version of the guide.

Interim Milestones:	ECD:
Completed Project working group kick-off	April 30, 2020 (Actual)
Targeted Stakeholder Engagement	January 29, 2021
Submit draft Guide for review and concurrence	March 31, 2021

Overall ECD: June 30, 2021.

Recommendation 3: Consider the unique challenges of recovery missions for large-scale disasters in U.S. insular and other remote areas to establish appropriate timeliness goals for the pre-award phase of the Public Assistance [PA] Program specific to these types of disasters.

Response: Concur. As the GAO noted, FEMA’s PA Division was already working to implement Key Performance Indicators (KPI) at the time of the audit, and expects to finalize those goals in early 2021 following an extensive data collection and analysis effort over the prior two years. These initial efforts provide goals for the national Public Assistance program. Further FEMA agrees it would be beneficial to establish more specific goals for the unique challenges in U.S. insular and other remote areas.

However, FEMA believes it would be overly complex and operationally ineffective to establish blanket targets for all events that could potentially impact insular and other remote areas. To accomplish the intent of the recommendation but ensure unique disaster-specific circumstances are accounted for, FEMA will establish a process whereby, at the start of disaster operations, field offices and regions set event-specific targets on FEMA's national KPIs. As part of this effort, FEMA’s PA Division will document a process, and establish corresponding controls for each disaster operation, to set event-specific targets for timeliness and other performance goals. ECD: January 31, 2022.

Recommendation 4: Use data relating to the timeliness of completing various steps within the pre-award phase of the Public Assistance Program to help identify and address any inefficiencies occurring during this phase of the program.

**Appendix V: Comments from the Department
of Homeland Security**

Response: Concur. FEMA has already begun to use data associated with timeliness to identify bottlenecks throughout the project development process. FEMA's Recovery Analytics and Public Assistance Divisions will formalize this effort through the KPI roll-out by publishing a live performance dashboard on FEMA's intranet, including timeliness metrics. The dashboard will be accessible to all FEMA personnel and will be used to manage performance at the national, regional, and disaster level. ECD: February 26, 2021.

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

Page 1

January 19, 2021

Chris P. Currie

Director, Homeland Security and Justice

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

Washington, DC 20548

Re: Management Response Letter to Draft Report GAO-21-91, “2018 PACIFIC ISLAND DISASTERS: Federal Actions Helped Facilitate the Response, but FEMA Needs to Address Longer-term Recovery Challenges”

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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the definition of non-traditional homes in IAPPG 1.1 allows FEMA to more readily provide financial and direct assistance via the Individuals and Households Program (IHP) to residents of homes that would have previously been defined as non-traditional. The document also clarifies IHP eligibility for owner-occupants of Limited Liability Company homes. IAPPG 1.1 is currently in the final stages of the agency's concurrence process and is scheduled for publication in early 2021.

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JIM H. CRUMPACKER, CIA, CFE

Director

Departmental GAO-OIG Liaison Office

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Page 3

[Attachment: Management Response to Recommendations Contained in GAO-21-91](#)

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Page 4

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Page 5

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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, key contributors to this report were Hugh C. Paquette (Assistant Director), Caryn E. Kuebler (Analyst-in-Charge), Mona Nichols Blake, Elizabeth A. Poulsen, and John S. Tamariz. In addition, Nasreen I. Badat, Ben Crossley, Emil E. Friberg, Jr., Cynthia Grant, Susan Hsu, Suzanne Kaasa, Ronald La Due Lake, Janet L. McKelvey, Heidi Nielson, and Meghan C. Perez made significant contributions to this report.

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