



Statement for the Record to the  
Committee on Natural Resources,  
House of Representatives

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# 2018 PACIFIC DISASTERS

## Preliminary Observations on FEMA's Disaster Response and Recovery Efforts

### Accessible Version

Statement for the Record by Chris Currie, Director,  
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# GAO Highlights

Highlights of [GAO-20-614T](#), a statement for the record to the Committee on Natural Resources, House of Representatives

## 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 in the region can be challenging. Title IX of the Additional Supplemental Appropriations for Disaster Relief Act of 2019 included a provision for GAO to review FEMA's response and recovery efforts for 2018 natural disasters, including those in the Pacific region.

This statement is based on ongoing work and provides preliminary GAO observations on (1) the status of FEMA disaster assistance for the CNMI, Guam, and Hawaii as of May 2020; (2) the extent to which officials in the CNMI, Guam, and Hawaii found FEMA's response to the 2018 disasters effective; and (3) the challenges, if any, FEMA experienced implementing recovery assistance programs in these locations.

For this work, GAO analyzed program documents, catastrophic disaster plans, and data on FEMA obligations and expenditures as of May 2020; interviewed federal, state, territorial, and local officials; and visited disaster-damaged areas in Hawaii in February 2020.

GAO incorporated technical comments from FEMA on this statement, as appropriate.

GAO will continue its ongoing work and make recommendations as appropriate in the final report.

View [GAO-20-614T](#). For more information, contact Christopher Currie at (404) 679-1875 or [curriec@gao.gov](mailto:curriec@gao.gov).

July 8, 2020

## 2018 PACIFIC DISASTERS

### Preliminary Observations on FEMA's Disaster Response and Recovery Efforts

## What GAO Found

The Federal Emergency Management Agency (FEMA) obligated about \$788 million in disaster assistance, as of May 2020, to the Commonwealth of the Northern Mariana Islands (CNMI), Guam, and Hawaii for response and recovery efforts following the 2018 disasters—most of which went to the CNMI. About \$541 million (69 percent) of these obligations went to recovery projects in the CNMI, Guam, and Hawaii, such as debris removal and bridge and utility repair. FEMA estimates it will obligate an additional \$94 million in grants to be provided directly to the CNMI and Hawaii through September 2020.

Local officials GAO spoke with considered FEMA's response to the 2018 Pacific disasters to be generally effective, but it is not clear if FEMA's response procedures are well-suited for slow-moving disasters, such as volcanic eruptions. Specifically, FEMA reported taking steps prior to 2018 to improve its response capabilities in the region, such as completing catastrophic disaster plans with the CNMI and Guam and increasing the capacity of its two Pacific area distribution supply centers. Officials also told GAO that FEMA was an effective partner that led a unified, coordinated response effort. However, FEMA procedures may not be well-suited for slow-moving disasters, such as a volcanic eruption in Hawaii, which, according to Hawaii officials, resulted in FEMA starting recovery efforts before response activities were completed.

#### 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-20-614T

GAO's preliminary analysis identified several challenges affecting FEMA's recovery efforts in the CNMI, Guam, and Hawaii. Specifically, CNMI and Hawaii officials noted that disagreements with FEMA over the accuracy of estimates for certain fixed-cost recovery projects have delayed these projects. According to CNMI and Hawaii officials, these disagreements were caused, in part, by FEMA not accounting for higher procurement and shipping costs to the Pacific region. In addition, similar to disaster recoveries in other U.S. island territories, limited disaster workforce capacity and shortages of construction workers hindered the implementation of FEMA-funded projects in the Pacific. Lastly, contracting and construction challenges contributed to delays in the CNMI's implementation of FEMA's Permanent Housing Construction program.

Vice Chairman Sablan, Ranking Member Gonzalez and Members of the Committee:

Thank you for the opportunity to discuss our preliminary observations and ongoing work on the Federal Emergency Management Agency's (FEMA) response and recovery operations in the Commonwealth of the Northern Mariana Islands (CNMI), Guam, and Hawaii.<sup>1</sup>

Hawaii and Pacific-area U.S. territories experienced an unprecedented number of natural disasters in 2018, including catastrophic typhoons, volcanic eruptions, mudslides, and earthquakes.<sup>2</sup> Specifically, in April 2018, the islands of Kauai and Oahu in Hawaii experienced nearly 50 inches of rain in a 24-hour period, causing severe flooding and landslides, and in late August 2018, Hurricane Lane's heavy rain and high winds caused landslides, road closures, and many communication failures across several Hawaii counties. In mid-September, Typhoon Mangkhut passed over Guam and the CNMI, resulting in widespread power outages and other infrastructure damage. Lastly, in late October 2018, Super Typhoon Yutu crossed over the CNMI as the equivalent of a Category 5 hurricane, resulting in catastrophic damage.<sup>3</sup> In addition to these storms, Hawaii's Kilauea Volcano erupted throughout the spring and summer of

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<sup>1</sup>GAO is conducting this work in response to a provision within Title IX of the Additional Supplemental Appropriations for Disaster Relief Act of 2019, which provided GAO with supplemental funding to conduct audits of 2018 disasters declared pursuant to the Stafford Act, to include those occurring in Hawaii and the Pacific Island territories. Pub. L. No. 116-20, 133 Stat. 871, 892 (2019).

<sup>2</sup>There are three U.S. territories located in the Western Pacific Ocean—Guam, the CNMI, 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.

<sup>3</sup>The National Oceanic and Atmospheric Administration (NOAA) measures hurricanes on a scale from 1 to 5, with a Category 1 being the least intense and a Category 5 being the most intense. NOAA defines a Category 5 hurricane as one with winds above 157 miles per hour.

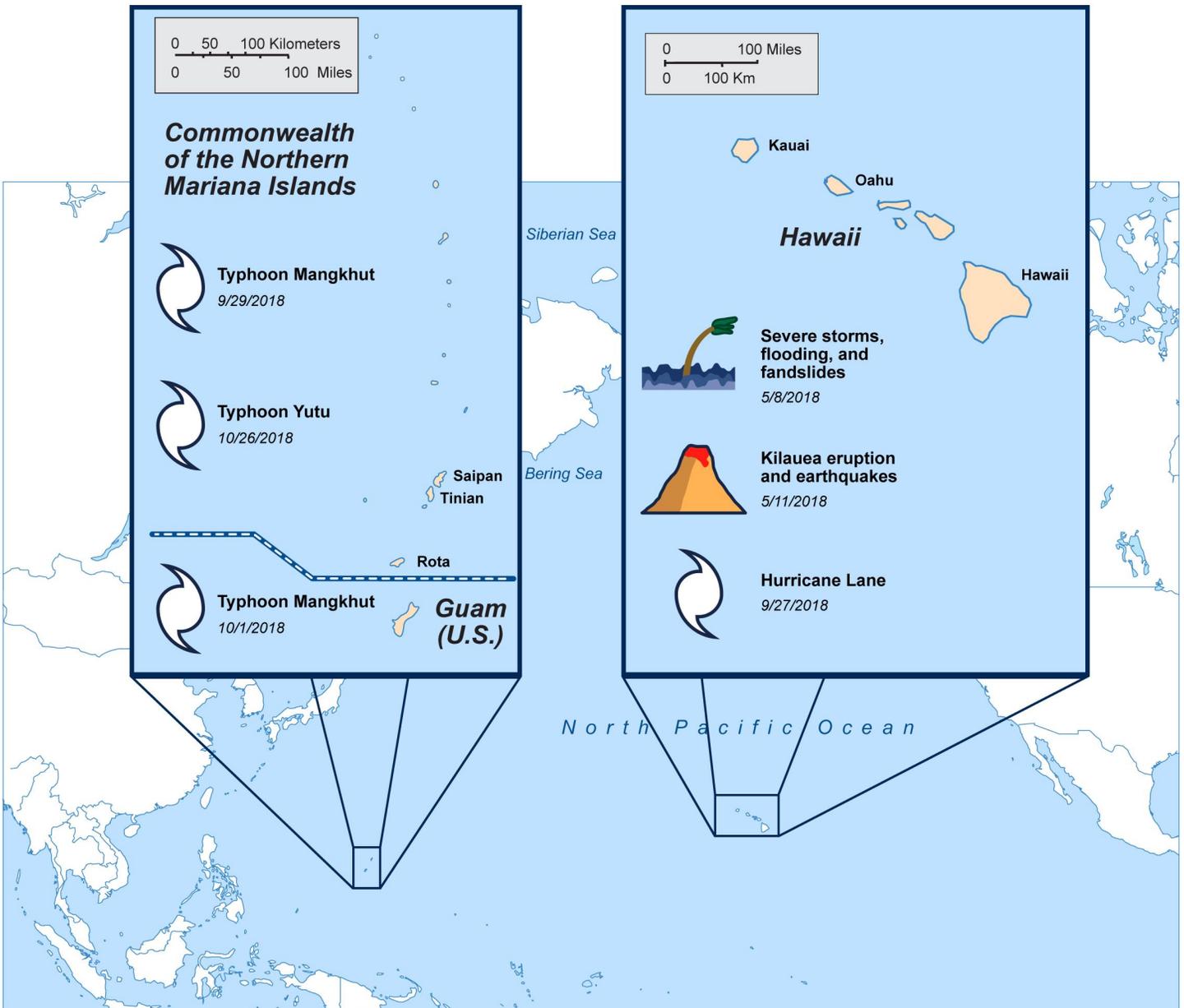
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2018, and the related earthquakes and lava flows destroyed hundreds of homes, roads, and other critical infrastructure (see fig. 1).<sup>4</sup>

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<sup>4</sup>These five disasters resulted in six major disaster declarations under the Robert T. Stafford Relief and Emergency Assistance Act (Stafford Act), as amended, because damage from Typhoon Mangkhut involved separate declarations for Guam and the CNMI. The Stafford Act defines a “major disaster” as any natural, and man-made, catastrophe 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). In accordance with the Stafford Act 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. See 42 U.S.C. § 5170. Major disaster declarations can trigger a variety of federal response and recovery assistance programs for individuals, government, and nongovernmental entities.

Figure 1: 2018 Pacific-Area Major Disaster Declarations



Source: GAO analysis of Federal Emergency Management Agency Information. | GAO-20-614T

Note: Incident period for the Kilauea Volcano eruption event lasted from May 3, 2018, to August 17, 2018.

While the CNMI, Guam, and Hawaii all sustained significant damage from 2018 disasters, the damage to the CNMI was most extensive. In late October 2018, just as the island of Rota within the CNMI was recovering from damage caused by Typhoon Mangkhut one month prior, Typhoon Yutu—the strongest typhoon recorded to impact the CNMI and the second-strongest to strike the United States or its territories—struck the entire island of Tinian and the southern part of Saipan. The storm damaged over 1,000 homes, businesses, and critical infrastructure, including severe impacts to the utility infrastructure of all three CNMI islands.

FEMA, a component of the Department of Homeland Security (DHS), is the lead federal agency responsible for helping prepare for, mitigate, respond to, and recover from natural disasters.<sup>5</sup> FEMA Region IX, headquartered in Oakland, California, is one of ten regional offices and is responsible for coordinating government-wide disaster response efforts and delivery of all of FEMA's recovery programs and activities to Hawaii and the Pacific territories, among other locations.<sup>6</sup> Due to the remote location of Hawaii and Pacific Island territories relative to the contiguous United States, the time required to travel to these locations creates unique challenges to FEMA's response capabilities and recovery programs.<sup>7</sup>

My statement today is based on our ongoing examination of FEMA's efforts to respond to and recover from the 2018 Pacific-area disasters and provides preliminary observations on

1. the status of FEMA disaster response and recovery funding for the CNMI, Guam, and Hawaii, as of May 2020;
2. the extent to which officials in the CNMI, Guam, and Hawaii found FEMA's response to the 2018 disasters effective; and

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<sup>5</sup>See 6 U.S.C. 313.

<sup>6</sup>Specifically, 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.

<sup>7</sup>FEMA Region IX spans eight time zones and covers 399,000 square miles, with a breadth of more than 8,000 miles.

3. the challenges, if any, FEMA has experienced in implementing recovery assistance programs in these locations.

To develop our preliminary observations, we reviewed relevant federal laws and documentation from FEMA, the CNMI, Guam, and Hawaii, including FEMA policy guides for recovery programs, and emergency response plans developed by the CNMI, Guam, and Hawaii. We also obtained and analyzed data on FEMA's Disaster Relief Fund (DRF), which is the primary source of federal disaster assistance for state and local governments.<sup>8</sup> Specifically, we analyzed data on DRF obligations and expenditures for programs related to these disasters for Hawaii and each of the territories as of May 2020—the most recent data available.<sup>9</sup> We obtained these data from FEMA's Integrated Financial Management Information System, which is FEMA's official accounting and financial management system. To assess the reliability of these data, we reviewed the data for obvious errors and interviewed knowledgeable agency officials about processes for collecting and maintaining these data. On the basis of these steps, we found these data sufficiently reliable for the purposes of our reporting objectives. To collect additional information on disaster recovery efforts, we conducted a site visit to Hawaii in February 2020 to observe recovery projects and interview federal, state, and local government and emergency management officials on disaster response and recovery efforts and any associated challenges for the three disasters that impacted Hawaii in 2018. In April and May 2020, we conducted telephone interviews with federal and territorial officials in the CNMI and Guam to discuss disaster response and recovery efforts and

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<sup>8</sup>The DRF is appropriated no-year funding. The 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.

<sup>9</sup>An obligation is a definite commitment that creates a legal liability of the government for the payment of goods and services ordered or received. For the purposes of this statement, 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 statement, an expenditure represents the actual spending by the CNMI, Guam, or Hawaiian governments of monies obligated by the federal government.

any associated challenges for Typhoons Yutu and Mangkhut.<sup>10</sup> The information from our site visits and interviews are not generalizable but provide important insights into FEMA's assistance with the response to and recovery from the 2018 disasters in the CNMI, Guam, and Hawaii.

We are conducting the work upon which this statement is based in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

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## Background

Federal agencies can become involved in responding to a disaster when the disaster is of such severity and magnitude that effective response is beyond the capabilities of the state or territory and affected local governments. In such cases, in accordance with the Stafford Act, the President may declare a major disaster in response to a request by the governor of a state or territory or by the chief executive of a tribal government.<sup>11</sup> Major disaster declarations can trigger a variety of federal response and recovery programs for government and nongovernmental entities, households, and individuals.

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## FEMA's Role in Disaster Response

Once a major disaster is declared, states, territories, and tribes may obtain federal assistance through the DRF. FEMA has multiple mechanisms by which to help coordinate and deliver the federal government's response to disasters. Among these are mission assignments to other agencies, which are work orders FEMA issues directing another federal agency to utilize its authorities and the resources granted to it under federal law in support of direct assistance to state, local, tribal, and territorial governments. For example, FEMA often

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<sup>10</sup>We initially planned to conduct site visits to the CNMI and Guam to observe recovery projects and interview territorial officials in-person; however, due to government travel restrictions in response to Coronavirus Disease 2019 (COVID-19), we conducted telephone interviews with officials in the CNMI and Guam.

<sup>11</sup>42 U.S.C. § 5170.

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requests medical teams from the Department of Health and Human Services.

In addition to its coordination of disaster response activities with federal partners, FEMA deploys its day-to-day workforce to disaster locations to provide onsite assistance with response activities. In addition, FEMA rapidly deploys Incident Management Assistance Teams (IMAT) to a disaster area to provide leadership in identifying and providing federal assistance and to coordinate and integrate inter-jurisdictional response to support an affected state, tribe, or territory.<sup>12</sup>

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## FEMA's Role in Disaster Recovery

After a disaster strikes, the response phase typically lasts for days or weeks, depending on the impact and complexity of the disaster, and eventually transitions into recovery operations. A number of federal departments and agencies may assist with various forms of disaster recovery assistance to individuals and state, local, tribal, and territorial governments. This statement focuses specifically on two principal FEMA disaster assistance programs—Individual Assistance and Public Assistance.

Individual Assistance (IA). FEMA's IA program provides assistance directly to disaster victims for the necessary expenses and serious needs that cannot be met through insurance or low-interest Small Business Administration loans, such as temporary housing assistance, counseling, unemployment compensation, or medical expenses. With respect to housing assistance, FEMA has unique considerations for delivering IA in remote areas such as the Pacific region, due to the lack of temporary housing available to residents whose homes have been damaged or destroyed. Therefore, FEMA may implement, as part of IA assistance, its

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<sup>12</sup>IMAT teams 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).

Permanent Housing Construction (PHC) program, which provides repair and construction services to residents in the affected area.<sup>13</sup>

Public Assistance (PA). FEMA's PA program provides assistance to state, tribal, territorial, and local governments to assist them in responding to and recovering from major disasters. This assistance can be used for emergency work, including debris removal and emergency protective measures. It can also be used for permanent work, which is the repair, replacement, or restoration of disaster-damaged, publicly owned facilities, such as utilities.<sup>14</sup> There are two types of PA programs for permanent work: (1) the standard program, where FEMA will fund the actual cost of a project through a reimbursement process; and (2) the alternative procedures program, which allows awards for some categories of projects to be made on the basis of fixed-cost estimates to provide financial incentives for the timely and cost-effective completion of work.<sup>15</sup> For both types of projects, state or territorial governments (referred to as recipients) must work with FEMA to reach agreement on project costs before FEMA will obligate money to the state or territory.

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<sup>13</sup>FEMA only offers PHC in insular areas outside the continental United States and in other locations where no alternative housing resources are available and where the types of housing assistance FEMA normally provides, such as rental assistance or other forms of direct assistance, are unavailable, infeasible, or not cost-effective. See 44 C.F.R. § 206.117(b)(4).

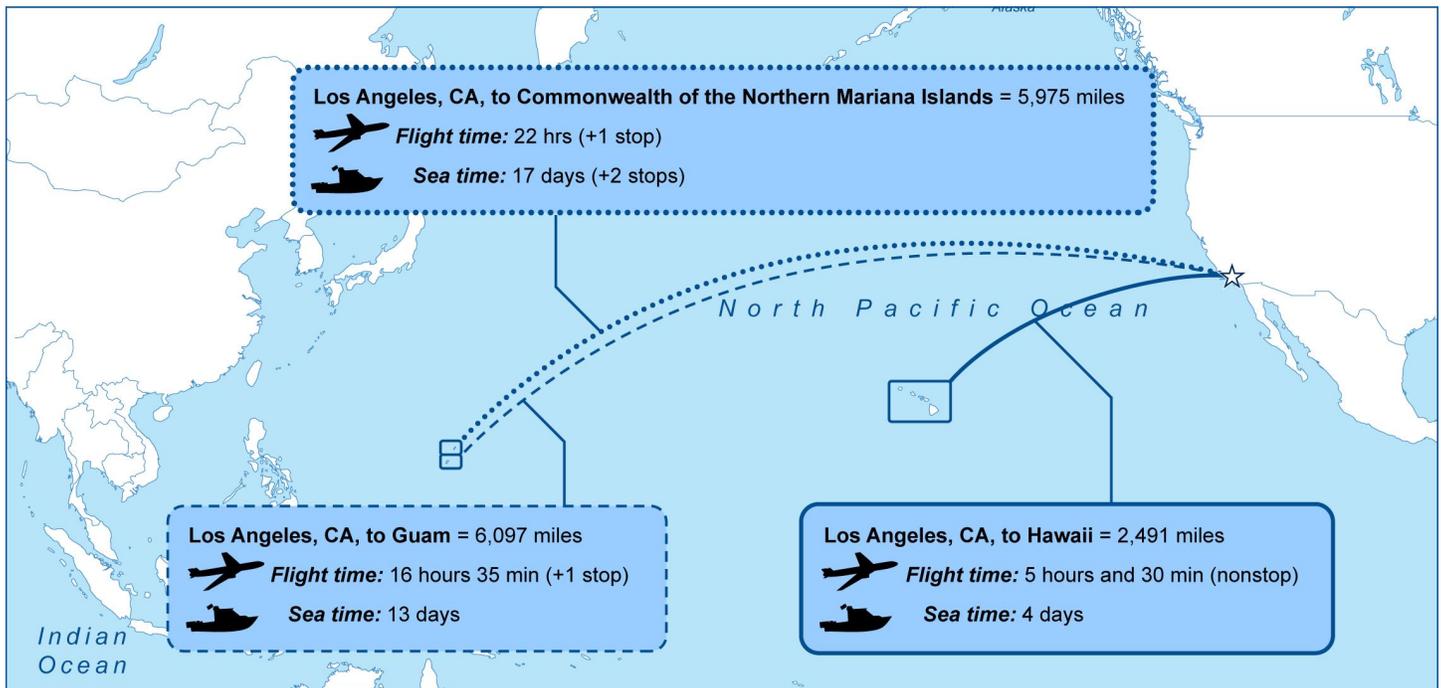
<sup>14</sup>FEMA's emergency work includes debris removal (or Category A) and emergency protective measures (or Category B). FEMA's permanent work includes repairs for roads and bridges (Category C), water control facilities (Category D), building and equipment (Category E), utilities (Category F), and parks and recreation (Category G). In addition to emergency and permanent work, the PA program also includes Category Z, which represents indirect costs, direct administrative costs, and other administrative expenses related to the specific project.

<sup>15</sup>The 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. This section further authorized FEMA to carry out the alternative procedures as a pilot program until FEMA promulgates regulations to implement this section. Pub. L. No. 113-2, div. B, § 1102(2), 127 Stat. 39, amending Pub. L. No. 93-288, tit. IV, § 428 (codified at 42 U.S.C. § 5189f). The stated goals of the alternative procedures are to reduce the costs to the federal government, increase flexibility in the administration of the Public Assistance program, expedite the provision of assistance under the program, and provide financial incentives for recipients of the program for the timely and cost-effective completion of projects.

## Time Frames for Responding to Disasters in the Pacific Region

Unlike disaster response in the continental United States, where supplies are prepositioned near disaster events to ensure they reach the affected areas quickly, Hawaii and Pacific-area U.S. territories must rely on their own resources for a longer period of time following any disaster. This is because 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. 2).

**Figure 2: Travel Times by Air or Sea from Los Angeles, California (CA), to the Commonwealth of the Northern Mariana Islands (CNMI), Guam, and Hawaii**



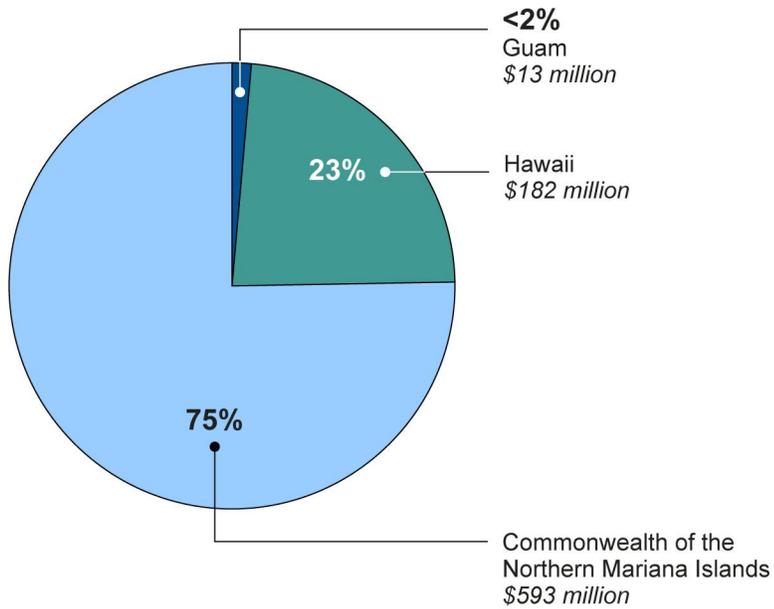
Source: For the Commonwealth of Northern Mariana Islands and Guam, based on Federal Emergency Management Agency; For Hawaii, based on GAO estimate. | GAO-20-614T

## FEMA Obligated about \$788 Million in Disaster Response and Recovery Funding for the CNMI,

## Guam, and Hawaii for 2018 Disasters as of May 2020

As of May 2020, FEMA had obligated about \$788 million from the DRF for disaster assistance for the CNMI, Guam, and Hawaii for 2018 disasters, with the majority of these funds (approximately 75 percent) obligated to the CNMI for recovery projects after Typhoons Yutu and Mangkhut (see fig. 3). In addition, as of May 2020, the CNMI, Guam, and Hawaii had expended about 63 percent of these obligations.

**Figure 3: Total Disaster Relief Fund Obligations to the Commonwealth of the Northern Mariana Islands, Guam, and Hawaii for 2018 Major Disaster Declarations, as of May 1, 2020**



Source: GAO analysis of Federal Emergency Management Agency data. | GAO-20-614T

Note: Numbers do not add up due to rounding.

**Accessible Data for Figure 3: Total Disaster Relief Fund Obligations to the Commonwealth of the Northern Mariana Islands, Guam, and Hawaii for 2018 Major Disaster Declarations, as of May 1, 2020**

GU (dollars)	HI (dollars)	CNMI (dollars)
1.3e+07	1.82458e+08	5.93e+08

Of the \$788 million, FEMA had obligated about \$541 million (69 percent) for IA and PA recovery projects in the CNMI, Guam, and Hawaii following the 2018 disasters, as of May 2020.<sup>1</sup> Furthermore, FEMA plans to obligate an additional \$94 million in IA and PA funds to the CNMI and Hawaii through September 2020. PA funds comprise nearly 60 percent of the current and expected obligations for projects, such as public infrastructure repair in Hawaii (see fig. 4) and power restoration in the CNMI. Additionally, as of May 2020, of the PA funds obligated for recovery projects in the CNMI, Guam, and Hawaii, about \$76 million (24 percent) of PA obligations are for emergency work projects, such as debris removal; about \$227 million (71 percent) are for permanent work projects, such as bridge and utility repair; and \$18 million (6 percent) are for management costs.

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<sup>1</sup>The remaining \$246 million (31 percent) in DRF obligations were for mission assignments, administration, and hazard mitigation projects. Further detail on all categories of DRF obligations for each disaster is presented in app. I.

Figure 4: Public Assistance Project to Repair the Kuliouou Stream Flood Control Channel Damaged During Severe Flooding on the Island of Oahu, Hawaii, in April 2018



Source: GAO. | GAO-20-614T

As of May 2020, the CNMI, Guam, and Hawaii had expended approximately \$308 million (57 percent) of the \$541 million in IA and PA obligations, as discussed below.

- CNMI: FEMA obligated about \$182 million in PA grants and \$202 million in IA grants to the CNMI, \$376 million (98 percent) of which was for Typhoon Yutu-related damages. Of these obligations, the CNMI has expended approximately \$280 million (73 percent). Of the obligated PA grants, about \$56 million (30 percent) were for emergency work projects, and about \$115 million (62 percent)

were for permanent work projects.<sup>2</sup> FEMA estimates obligating an additional \$37.5 million in PA funding and \$33.1 million in IA funding to the CNMI through September 2020.

- Guam: FEMA obligated about \$8.5 million in PA grants and \$2.6 million in IA grants to Guam for damages related to Typhoon Mangkhut. Of these obligations, Guam has expended approximately \$2.9 million (26 percent). Of the obligated PA grants, about \$2 million (26 percent) were for emergency work projects, and about \$5 million (64 percent) were for permanent work projects.<sup>3</sup> FEMA estimates obligating just over \$22 thousand in additional PA funding to Guam through September 2020.
- Hawaii: FEMA obligated about \$126 million in PA grants and \$19.5 million in IA grants to the state of Hawaii for the 2018 disasters. Of these obligations, Hawaii has expended approximately \$25 million (17 percent). Of the obligated PA grants, about \$19 million (15 percent) were for emergency work projects, and about \$107 million (84 percent) were for permanent work projects.<sup>4</sup> In addition, FEMA estimates obligating an additional \$23 million in PA funding to Hawaii through September 2020.

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## Officials Reported That FEMA's Response to the 2018 Disasters Was Generally Effective, but FEMA May Face Challenges Responding to Prolonged Disasters

Our preliminary analysis indicates that FEMA's response to the 2018 Pacific-area disasters was generally effective, according to state and territorial officials we interviewed. However, officials in Hawaii noted that

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<sup>2</sup>As of May 2020, about \$15 million (8 percent) of PA funding obligated to the CNMI is for management costs, including indirect costs, direct administrative costs, and other administrative expenses.

<sup>3</sup>As of May 2020, about \$904 thousand (11 percent) of PA funding obligated to Guam is for management costs, including indirect costs, direct administrative costs, and other administrative expenses.

<sup>4</sup>As of May 2020, about \$2 million (2 percent) of PA funding obligated to Hawaii is for management costs, including indirect costs, direct administrative costs, and other administrative expenses.

FEMA's response procedures may not be well-suited for slow-moving disasters, such as volcanic eruptions. According to FEMA officials, prior to the 2018 disasters, the agency had undertaken numerous activities and initiatives to address logistical challenges involved in responding to disasters in the Pacific area, and these activities helped improve its response to the 2018 disasters. For example, in 2015, FEMA and Hawaii updated the state's 2009 Catastrophic Hurricane Plan to identify a strategy for joint federal and state response to catastrophic damage impacting the state.<sup>5</sup> FEMA also completed work developing Catastrophic Typhoon Plans for both the CNMI and Guam in early 2018, prior to Typhoons Mangkhut and Yutu.<sup>6</sup> Furthermore, following an active storm season in 2017, FEMA began working to increase 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.<sup>7</sup> Specifically, FEMA officials reported investing in more facility space and improving practices for storing materials to increase inventories of goods. Officials said that distribution centers aim to streamline the logistics required to ship supplies to affected locations. This allows FEMA to focus on mobilizing teams and accelerates the response process overall. See figure 5 for examples of disaster resources and equipment stored at the FEMA distribution center located in Hawaii.

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<sup>5</sup>See Federal Emergency Management Agency, *2015 Hawaii Catastrophic Hurricane Plan/FEMA RIX Hawaii Catastrophic Annex* (Washington, D.C.: 2015).

<sup>6</sup>See Federal Emergency Management Agency, *2018 CNMI Catastrophic Typhoon Plan* (Washington, D.C.: Feb. 15, 2018); and *2018 Guam Catastrophic Typhoon Plan* (Washington, D.C.: Feb. 13, 2018).

<sup>7</sup>There are eight distribution centers in total. In addition to the facilities in Hawaii and Guam, there are five additional centers located throughout the continental United States.

Figure 5: Medical Supply Deployment Kits (left) and Generators (right) in the Federal Emergency Management Agency's (FEMA) Distribution Center in Hawaii, February 2020



Source: GAO. | GAO-20-614T

With respect to mobilizing FEMA IMAT teams for response, FEMA officials reported recent practices of making more preemptive decisions about deploying IMAT teams as early as possible—generally 5 days prior to a disaster event in the Pacific Island territories—to ensure personnel are on-island prior to the disaster event. As a result of these activities, FEMA officials stated the response they provided to the 2018 Pacific-area disasters was both formal (in that it followed procedures in recently completed plans) and aggressive (meaning that FEMA teams were in place before the disaster events occurred).

State and territorial officials we spoke with during our ongoing review who collaborated with FEMA on response activities during the 2018 disasters described FEMA as an effective partner. For example, officials from one Hawaii county praised FEMA for its efficient predeployment efforts, stating that tens of thousands of liters of water and food were predeployed and stored at the local airport in advance of Hurricane Lane. Officials from another Hawaii county told us that FEMA provided expertise and recommendations on response without dictating what the county officials should do. They also said that FEMA representatives were consistently present during key response-related events—like community meetings to discuss evacuations that were taking place throughout the Kilauea Volcano eruption and FEMA's assistance with setting up disaster

recovery centers—as the disaster unfolded.<sup>8</sup> County officials said FEMA’s presence enhanced the public’s trust in the initial response and later recovery efforts. Similarly, officials we met with in the CNMI also commended FEMA’s response. One local official charged with overseeing response activities for the CNMI praised FEMA’s decision to predeploy personnel to the CNMI before both Typhoons Mangkhut and Yutu. She stated she appreciated the ability to make in-person strategic response plans and decisions with FEMA personnel deployed to the territory during the response phase. CNMI officials also commended FEMA’s predeployment of staff to the CNMI islands of Rota and Tinian prior to Typhoon Mangkhut because travelling to these islands in the wake of a disaster was difficult and it was helpful to have FEMA personnel onsite. Lastly, an official in Guam said that during Typhoon Mangkhut, FEMA effectively integrated their staff with local officials, led unified coordination efforts, and shared situational awareness information in a helpful way.

Although Hawaiian officials were generally pleased with FEMA’s response capabilities, officials also stated that FEMA may not have adjusted the delivery of its assistance to better respond to the slowly unfolding disaster precipitated by the Kilauea Volcano eruption. Specifically, the Kilauea Volcano eruption and the associated response unfolded over 107 days, beginning in early May 2018 and continuing through mid-August 2018. Hawaii County officials said that FEMA’s response procedures are intended for fast-moving events, such as hurricanes or floods, and that FEMA’s response procedures do not sufficiently address response activities for a volcanic eruption. County officials we interviewed said FEMA was flexible in executing its response mission to the needs of the Kilauea Volcano event. For example, during the response phase, county officials reported that FEMA quickly approved Hawaii County’s request to pave a new road to be used as an alternative evacuation route by the residents of a neighborhood who could not access the main road due to an unexpected flow of lava.

However, another county official said that FEMA’s lack of response procedures for a slowly unfolding disaster sometimes created difficulties. For example, the official said that, soon after the disaster declaration for the Kilauea eruption in early May 2018, FEMA began sending personnel who were to assist the county in starting its recovery planning process. The official said that, at that time, county officials were busy managing the

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<sup>8</sup>FEMA Disaster Recovery Centers are accessible facilities and mobile offices set up after a disaster so residents affected by disasters may learn more about FEMA disaster and recovery assistance and apply for assistance, among other things.

local response to the disaster, such as determining which neighborhoods still needed to be evacuated. She added that county officials quickly grew frustrated with the FEMA personnel who were prematurely focusing on the recovery phase of the disaster event, when the actual disaster event was still ongoing. FEMA officials stated that they create all-hazard response plans that can be used to respond to many different types of disasters, including volcanos, and that their response activities for the Kilauea Volcano eruption were consistent with identified local needs. As part of our ongoing work, we are continuing to review FEMA's response policies and procedures to understand how FEMA accounts for different kinds of disasters in its time frames for deploying personnel during a response.

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## Cost Estimate Disagreements, Workforce Shortages, and Contracting and Construction Challenges Have Hindered Recovery Efforts in the Pacific Region

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### Disagreements over Project Cost Estimates Have Delayed Some PA Projects in the CNMI and Hawaii

Our preliminary analysis indicates that disagreements between FEMA and CNMI and Hawaii officials over the accuracy of estimates for certain fixed-cost PA projects using FEMA's alternative procedures have delayed the implementation of some PA projects in these locations. For example, Hawaii officials stated they submitted a grant application in November 2018 for road repair using FEMA's alternative procedures for PA projects. These officials stated that they had protracted discussions with FEMA officials about the cost estimates for this project that continued over a period of months before both parties reached agreement on the fixed-cost estimate in February 2020. In addition, CNMI officials described similar extended disagreements over fixed-cost estimates with FEMA regarding a PA alternative procedures project to repair 10 buildings on a college campus. The officials said they began discussing this project with FEMA officials in November 2018 and, as of May 2020, had not yet reached agreement with FEMA on a fixed-cost estimate.

CNMI and Hawaii officials said these disagreements over cost estimates occurred, in part, because FEMA officials did not account for the higher costs associated with procuring and shipping materials to the Pacific region. Our prior work on recovery efforts in other U.S. territories identified similar challenges with determining appropriate fixed costs for alternative procedures PA projects in island environments.<sup>9</sup> We reported in November 2019 and February 2020 that FEMA was taking steps to address this issue in Puerto Rico and the U.S. Virgin Islands (USVI) by establishing location-specific cost factors to account for the limited availability of local resources and the need to import construction materials and labor.<sup>10</sup> According to FEMA officials, FEMA established a cost factor in July 2019 for the CNMI for similar reasons, after observing that FEMA staff processing the CNMI's grant applications were not accustomed to factoring in the higher costs associated with implementing PA projects in the Pacific region.<sup>11</sup> We are continuing to review the extent to which these cost factors have helped resolve disagreements about project cost estimates; we will report on the results of our review later this year.

Our preliminary analysis also indicates that some FEMA field staff who advise grant applicants on PA projects applications, including developing fixed-cost estimates, may lack sufficient experience and training on FEMA's policies, and this could also be contributing to disagreements about project costs. Specifically, one FEMA official overseeing the PA grant application review process stated that FEMA personnel working onsite with grant applicants in the CNMI and Hawaii sometimes provided incorrect information on what costs are allowable for permanent work under the PA program. FEMA officials attributed these mistakes to insufficient experience and training for FEMA field staff, who are responsible for advising local officials on PA program requirements. Specifically, the FEMA official said that FEMA's PA program engaged in a massive hiring effort in 2018, adding more than 1,200 people to their rosters, and FEMA had limited capacity to provide field mentoring for

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<sup>9</sup>See 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).

<sup>10</sup>[GAO-20-221](#), [GAO-20-54](#).

<sup>11</sup>In our prior reporting, we used the term "cost factor" to indicate a number that, when multiplied by the initial project cost estimate, produces a location-specific project cost estimate.

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these new hires. According to this official, field mentoring is the primary way that FEMA employees gain appropriate experience to perform their jobs. FEMA officials identified other factors that may have delayed agreement over project cost estimates, including CNMI officials' failure to provide sufficient detail and historical documentation to justify proposed cost estimates. We reported in May 2020 that FEMA field leadership and managers identified issues with FEMA field staff—including PA program staff—who lack the necessary skills and knowledge to perform their positions, partially due to shortcomings in FEMA's ability to ensure staff development.<sup>12</sup> We made three recommendations to FEMA to help address these and other workforce issues. FEMA has actions underway to address our recommendations, which we will continue to assess. In addition, we will continue to review the underlying causes of any delays in implementing PA projects in Hawaii and the CNMI as part of our ongoing review and will report later this year on the results of our work.

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### A Shortage of Personnel in the CNMI's Public Assistance Office and Construction Workers in the CNMI and Guam May Have Slowed Recovery Projects

Our preliminary analysis indicates that workforce shortages of staff with grants management expertise and construction workers may also have hindered the implementation of FEMA-funded recovery projects in the CNMI and Guam. Specifically, officials in the CNMI said the limited number of staff in their local PA office, which is staffed by territory officials, contributed to issues such as misunderstandings about program eligibility and missed opportunities to apply for hazard mitigation funding. Also, all three CNMI applicants we spoke with stated they did not communicate directly with FEMA officials who were processing their grant applications and had to channel communications through the local PA office, where there were not enough staff to move projects forward expeditiously. Some applicants felt that the application process would have moved faster if they had been able to communicate directly with FEMA's grant processing office. In addition, officials in the CNMI and Guam said a shortage of construction workers in their respective locations may also impede recovery from Typhoons Mangkhut and Yutu and could also increase the cost of completing recovery-related work. In February 2019, we reported that worker shortages in the Pacific territories

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<sup>12</sup>GAO, *FEMA Disaster Workforce: Actions Needed to Address Deployment and Staff Development Challenges*, [GAO-20-360](#) (Washington, D.C.: May 4, 2020).

due to DHS's removal of the Philippines from the list of countries eligible for the H-2B visa program may impact CNMI's ability to hire sufficient construction workers for typhoon recovery efforts.<sup>13</sup>

To help expand the CNMI's grants management capacity, the U.S. Department of the Interior's Office of Insular Affairs awarded \$2 million to the CNMI's Office of Grants Management in December 2019.<sup>14</sup> However, based on our preliminary observations, this grant may have a limited impact on local officials' capacity to manage FEMA's recovery program funding, for the following reasons: (1) the grant supports disaster recovery efforts funded by any federal agency, not just FEMA; (2) the grant provides funding for only a 2-year period; and, (3) as of May 2020—over a year and a half since Typhoons Mangkhut and Yutu made landfall in the CNMI—only three of the 10 positions funded through this grant had been filled. We are continuing to review the extent to which the grant has expanded local capacity to manage FEMA funding.

Our prior work on disaster recovery in U.S. island territories indicates that disaster-related workforce limitations are not unique to the Pacific region.<sup>15</sup> In November 2019, we reported that a significant challenge following the 2017 hurricanes in USVI was the limited number of local personnel with the knowledge and expertise necessary to staff recovery-related positions.<sup>16</sup> We reported in February 2020 that FEMA and Puerto Rico officials discussed similar challenges, citing varying levels of local capacity to manage FEMA grant funds.<sup>17</sup> USVI and FEMA officials also discussed a lack of sufficient construction workers to complete the recovery work following the 2017 hurricanes. These officials explained that, unlike in the contiguous United States, USVI does not have neighboring states that can easily send construction crews to augment local crews. USVI could not rely on Puerto Rico to supplement their capacity since Puerto Rico was undergoing its own recovery efforts. An

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<sup>13</sup>GAO, *Commonwealth of the Northern Mariana Islands: DHS Implementation of U.S. Immigration Laws*, [GAO-19-376T](#) (Washington, D.C.: Feb. 27, 2019).

<sup>14</sup>The Department of the Interior, through its Office of Insular Affairs, provides financial assistance to insular area governments. Some of this assistance is awarded as grants to insular areas for capital improvement projects, operations and maintenance improvement projects, technical assistance, and other purposes, to increase the self-sufficiency of the insular areas.

<sup>15</sup>[GAO-20-54](#), [GAO-20-221](#).

<sup>16</sup>[GAO-20-54](#).

<sup>17</sup>[GAO-20-221](#).

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official we interviewed in the CNMI expressed a similar concern, stating that the CNMI could not rely on Guam for help if a future storm were to impact both territories. We are continuing to review the extent to which a shortage of PA program staff and/or construction workers poses a challenge to recovery efforts in the Pacific region and any actions that could be taken to improve this situation. We will report out later this year.

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### Contracting and Construction Challenges with FEMA's Permanent Housing Construction Program in the CNMI Have Delayed Program Implementation, Leading Applicants to Withdraw

Our preliminary analysis indicates that the CNMI's implementation of FEMA's PHC program has experienced significant delays, largely due to contracting and construction challenges. FEMA determined it would offer the PHC program, to provide both home repair and new construction services to CNMI residents impacted by Typhoon Yutu, in November 2018. At the program's onset, progress was delayed because the underlying contract did not include a provision for architecture and engineering services. According to a FEMA official, once the problem was identified, FEMA, through a mission assignment, had the U.S. Army Corps of Engineers design the houses and help survey the property.<sup>18</sup> The official said this delayed PHC program implementation by at least 2 months.

Moreover, FEMA contracting officials reported that construction challenges led to errors at 17 of 20 PHC sites, which may necessitate tearing down portions of this new construction and further delaying the program. FEMA officials said that around 65 percent of the nearly 900 program applicants have since opted out of the program; a CNMI official explained that applicants opted out largely because they needed suitable housing sooner than FEMA could provide it. FEMA officials said 125 applicants remain in the repair component of the PHC program—as of May 2020, contractors had completed repairs on 38 of 125 houses and

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<sup>18</sup>Mission assignments are work orders FEMA issues that direct another federal agency to utilize its authorities and the resources granted to it under federal law in support of direct assistance to state, local, tribal, and territorial governments. The National Response Framework identifies Emergency Support Functions—such as communication, transportation, and energy—for the most frequently needed capabilities during an emergency and assigns FEMA responsibility for coordinating disaster response through mission assignments. The U.S. Army Corps of Engineers is the coordinator for the Emergency Support Function for Public Works and Engineering.

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started repairs on an additional 20 houses. FEMA reported that another 175 program applicants remain in the new construction component of the program, with contractors having started work at 20 of the 175 sites. We are continuing to review the PHC program in the CNMI, including examining FEMA's relevant contracting and procurement procedures, to better understand the underlying causes of the program's delays and any actions that could mitigate these delays if FEMA uses the program for future recovery efforts.

Thank you, Vice Chairman Sablan, Ranking Member Gonzalez and Members of the Committee. This concludes my statement for the record. I would be happy to respond to any questions you have at this time.

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## GAO Contact and Staff Acknowledgments

If you or your staff has any questions concerning this statement, please contact Christopher P. Currie at (404) 679-1875 or [curriec@gao.gov](mailto:curriec@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this statement. Key contributors to this statement were Hugh C. Paquette (Assistant Director), Mona Nichols Blake (Analyst-in-Charge), Caryn E. Kuebler, Elizabeth A. Poulsen, and John S. Tamariz. In addition, Ben Crossley, Emil E. Friberg, Jr., Susan Hsu, Ronald La Due Lake, and Heidi Nielson made contributions to this statement.

# Appendix I: Disaster Relief Fund Obligations for 2018 Pacific Island Disasters

The Disaster Relief Fund (DRF) is the primary source of funding for the federal government's domestic general disaster relief program and funds the Federal Emergency Management Agency's (FEMA) recovery programs. This funding includes the following subcategories:

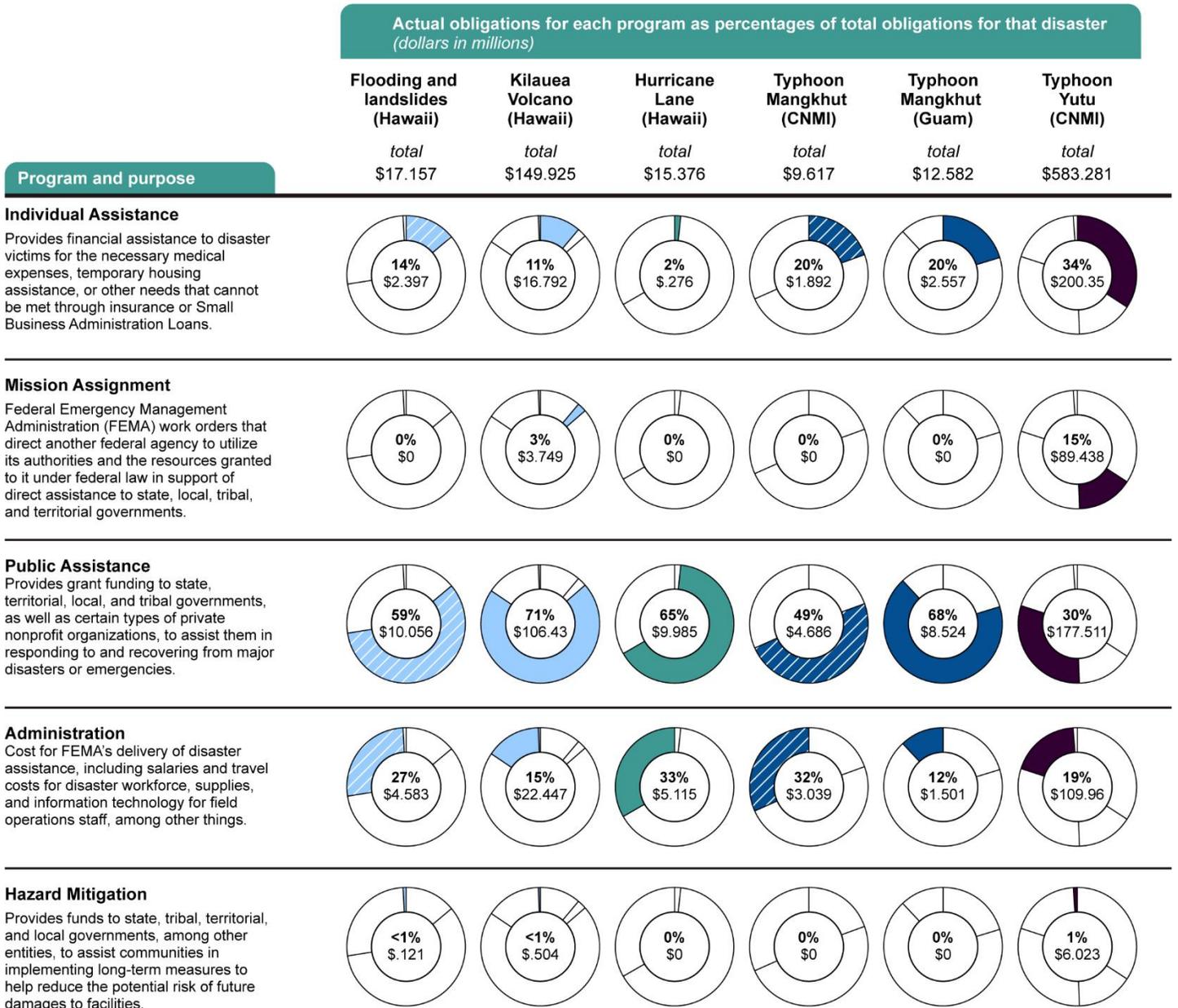
1. **Individual Assistance:** The Individual Assistance program provides financial assistance directly to disaster victims for the necessary expenses and serious needs that cannot be met through insurance or low-interest Small Business Administration loans, such as temporary housing assistance, counseling, unemployment compensation, or medical expenses.
2. **Mission Assignment:** Work orders FEMA issues that direct another federal agency to utilize its authorities and the resources granted to it under federal law in support of state, local, tribal, and territorial governments.
3. **Public Assistance:** The Public Assistance program provides financial assistance to state, tribal, territorial, and local governments for activities including debris removal; emergency protective measures; and the repair, replacement, or restoration of disaster-damaged, publicly owned facilities.
4. **Administration:** Costs for FEMA's delivery of disaster assistance, including the salary and travel costs for the disaster workforce; rent and security expenses associated with field operation locations; and supplies and information technology for field operation staff, among other things.
5. **Hazard Mitigation:** The Hazard Mitigation program 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 of May 2020, FEMA had obligated about \$788 million from the DRF for disaster assistance to the Commonwealth of the Northern Mariana Islands (CNMI), Guam, and Hawaii. See figure 6 for the DRF obligations

**Appendix I: Disaster Relief Fund Obligations for 2018 Pacific Island Disasters**

from each of the above subcategories for the six disasters that occurred in 2018 in the CNMI, Guam, and Hawaii.

**Figure 6: Actual Disaster Relief Fund Obligations for the 2018 Disasters in the Commonwealth of the Northern Mariana Islands (CNMI), Guam, and Hawaii**



Source: GAO analysis of Federal Emergency Management Agency data. | GAO-20-614T

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**Appendix I: Disaster Relief Fund Obligations  
for 2018 Pacific Island Disasters**

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Note: FEMA estimates an additional \$122 million in DRF funding to be obligated for the disasters that impacted the CNMI, Guam, and Hawaii in 2018. The majority of these additional funds, or about \$94 million, will be obligated to Individual Assistance and Public Assistance activities in the Pacific Islands. Additionally, the cost figures above reflect obligations incurred as of March 1, 2020, and obligations projected through September 30, 2020.

**Appendix I: Disaster Relief Fund Obligations  
for 2018 Pacific Island Disasters**

**Accessible Data for Figure 6: Actual Disaster Relief Fund Obligations for the 2018 Disasters in the Commonwealth of the Northern Mariana Islands (CNMI), Guam, and Hawaii**

**Flooding**

IA (dollars)	OPS (dollars)	PA (dollars)	ADMIN (dollars)	HM (dollars)
2.39664e+06	0	1.0056e+07	4.58305e+06	120971

**Kilauea**

IA (dollars)	OPS (dollars)	PA (dollars)	ADMIN (dollars)	HM (dollars)
1.6792e+07	3.74878e+06	1.06434e+08	2.24467e+07	504299

**Lane**

IA (dollars)	OPS (dollars)	PA (dollars)	ADMIN (dollars)	HM (dollars)
275795	0	9.98489e+06	5.11545e+06	0

**Mangkhut CNMI**

IA (dollars)	OPS (dollars)	PA (dollars)	ADMIN (dollars)	HM (dollars)
1.89188e+06	0	4.68559e+06	3.03926e+06	0

**Mangkhut Guam**

IA (dollars)	OPS (dollars)	PA (dollars)	ADMIN (dollars)	HM (dollars)
2.5567e+06	0	8.52411e+06	1.50143e+06	0

**Yutu**

IA (dollars)	OPS (dollars)	PA (dollars)	ADMIN (dollars)	HM (dollars)
2.00353e+08	8.94382e+07	1.77511e+08	1.09956e+08	6.02276e+06

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