



EXECUTIVE CHAMBERS  
HONOLULU

DAVID Y. IGE  
GOVERNOR

**REQUEST FOR PRESIDENTIAL DISASTER DECLARATION**

May 2, 2018

The Honorable Donald Trump  
President of the United States  
The White House  
Washington, D. C.

Through: Regional Administrator Robert Fenton  
FEMA Region IX  
Oakland, CA 94607-4052

Dear Mr. President:

Under the provisions of Section 401 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act and implemented by 44 CFR § Section 206.36, I request that you declare a Major Disaster for the state of Hawai'i as a result of the severe weather, flooding, and landslides beginning April 13, 2018, through April 16, 2018. I request that this declaration include two counties: the City and County of Honolulu and Kaua'i County. I request that the declaration authorize the Public Assistance Grant Program, the Individual Assistance Program, and the Small Business Administration (SBA) Disaster Assistance program for the two counties. In addition, I request the Hazard Mitigation Grant Program statewide.

This disaster is of such severity and magnitude that effective response is beyond the capabilities of the State and the affected local governments; Federal assistance is necessary.

**Emergency Proclamations**

The Mayor of Kaua'i proclaimed an emergency on April 14, 2018 and signed a Supplementary Emergency Proclamation on April 22, 2018. I took the appropriate action under state law and proclaimed an emergency for the County of Kaua'i on April 15, 2018. The Mayor of the City and County of Honolulu proclaimed an emergency on April 18, 2018. In response, I signed a Supplementary Proclamation on April 18, 2018, to expand the emergency proclamation to include the City and County of Honolulu. Furthermore, I directed the

execution of the *State of Hawai'i Emergency Operations Plan* in accordance with Section 401 of the Stafford Act.

**Description of Event**

Flooding occurred across four counties with the damages focused in the City and County of Honolulu and Kaua'i County. According to the National Weather Service, an upper level low-pressure system produced torrential rainfall over portions of the state from Friday, April 13, 2018, through Monday, April 16, 2018, resulting in severe flooding.

From Hā'ena to Kōloa on Kaua'i and Waimānalo to East Honolulu on O'ahu, homes, businesses and farmlands were flooded and inundated with knee-deep mud. Landslides blocked major thoroughfares, cutting off residents. On O'ahu, over 600 tons of debris covered state and county roads. Kaua'i continues to clear dozens of landslides blocking roads and isolating communities.

**City and County of Honolulu**

The charts below show 48-hour rainfall totals for impacted communities across the City and County of Honolulu and Kaua'i County. Around 8:00 p.m. Hawai'i Standard Time (HST) on Friday, April 13, 2018, the National Weather Service warned that the storm was nearly stationary over East Honolulu, with frequent cloud to ground lightning and winds in excess of 40 miles per hour. Rain totals speak to the severity of the storm, but do not tell the whole story. The five-inches of rain in Waimanalo fell within a one-hour period. Additionally, there are no rain gauges in Hawai'i Kai, the worst hit area in the City and County of Honolulu.

<b>City and County of Honolulu, Community</b>	<b>Rainfall during the 48-hour period ending at 6 PM HST on Sunday April 15, 2018</b>
Manoa Lyon Arboretum	11.96 inches
Niu Valley	5.64 inches
Maunawili	5.58 inches
Waimanalo	5.02 inches

Source: National Weather Service

The flooding closed the only major artery through East Honolulu, the Kalaniana'ole Highway and fast-rising flood waters trapped drivers. The Honolulu Fire Department responded to 42 weather-related emergencies, including 32 water evacuations.

The flooding left behind over 900 tons of debris on the roads as well as inside homes and schools. The photographs below are of a mud-filled home in East Honolulu and of a flooded home in Waimanalo.



(Source: Hawaii News Now)

Over 280 homes were damaged and approximately 180 families received services at the county’s Disaster Recovery Centers (DRCs). With repairs only beginning, the county has already removed 335 tons of additional bulky household waste and over 475 white goods and appliances.

Kaua’i County

Kaua’i County suffered the worst impacts in the state. Multiple landslides isolated communities west of Princeville from the rest of the island; the communities of Hā’ena and Wainiha continue to be isolated. Flooding, landslides, and sinkholes damaged homes, businesses, and roads island-wide.

<b>Kaua’i County, Community</b>	<b>Rainfall during the 48-hour period ending at 6 PM HST on April 15, 2018</b>
Wainiha	32.35 inches
Hanalei	28.41 inches
Mount Waialeale	22.34 inches
Princeville Airport	14.60 inches
Kilohana	13.19 inches
North Wailua Ditch	10.62 inches
Kapahi	10.12 inches
Wailua	8.21 inches
Anahola	3.20 inches

Source: National Weather Service

The peak 24-hour rainfall at Hanalei was 28.15 inches as of 2:00 a.m. HST when the rain gage stopped reporting. A volunteer with the Community Collaborative Rain, Hail, and Snow Network (CoCoRaHS) reported 36.49 inches in Wainiha during the 24-hour period ending at 7 a.m. HST on April 15, 2018. Additionally, a rain gage operated by the Waipia Foundation in Waipia, just west of Hanalei, recorded 49.69 inches of rain during the 24-hour period ending

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at 12:45 p.m. HST on April 15, 2018. This total, pending verification, would be higher than the current national 24-hour record by more than six (6) inches.

Due to ground saturation, the situation rapidly deteriorated: water entered homes; homes collapsed and were washed off their foundations; multiple floods, landslides, and sinkholes made roads impassable. There were also island-wide power and water disruptions.



Image: Flooding in Hanalei during my first visit to the area

Kūhiō Highway, in the vicinity of Hanalei Bridge, became flooded and impassable early Saturday morning, isolating Hanalei and all towns to the west. All told, there were over a dozen landslides along a 2-mile stretch of Kūhiō Highway.

Kūhiō Highway is the only road into these communities. The road is being cleared of the landslides but there are also at least two portions of the highway which are structurally damaged. Hawai'i Department of Transportation (HDOT) crews are working with HDOT contractors and personnel from the Hawai'i Department of Land and



Image: Partially cleared landslide on Kūhiō Highway  
(Source: Associated Press)

Natural Resources (DLNR) to clear Kūhiō Highway. HDOT does not expect Kūhiō Highway to be open to normal vehicular traffic until late July or early August 2018.

Initially the two (2) communities of Hā'ena and Wainiha were without first responders or access to medical assistance. Off-duty personnel from Kaua'i Fire Department and American Medical Response who live in the isolated areas were initially asked to assist, but had only the supplies from their own homes and the lifeguard towers.

Between April 15 and April 21, 2018 the U.S. Army, Hawai'i National Guard, and county assets airlifted residents and visitors who needed rescue or wanted to evacuate. These air assets have also assisted, and continue to assist with the transport of supplies, emergency vehicles, and work crews into the area. Search and rescue has also been conducted via swift water rescue teams, door-to-door checks, and helicopter. To date, over 475 people have been evacuated via helicopter with an undetermined number by boat.



(Source: U.S. Army photo by Staff Sgt. Keith Anderson, 25th Infantry Division Public Affairs)

U.S. Army helicopter crews delivered approximately 43,000 pounds of food, water, and clothing to distressed areas across the island between April 16 and 17, 2018. The photograph above shows Soldiers loading a law enforcement vehicle laden with water onto a CH-47 Chinook on April 17, 2018.

Supplies, personnel, and equipment were also brought in by state, county, and voluntary organizations. The communities continue to be resupplied by air and sea. Kaua'i County has contracted for the use of a Landing Craft Mechanized (LMZ) barge to continue to supply and move heavy equipment into and out of the isolated areas.

Other communities across the island were impacted as well. On the north shore, the town of Hanalei, just east of the isolated area, was flooded and isolated for approximately 41 hours. Hanalei Elementary School was opened as an emergency shelter.

Reports of flash flooding also occurred on the east and south sides of the island. Flooding in these areas required the use of two (2) additional elementary schools as emergency shelters. Both Ka Loko Reservoir and Kalihiwai Reservoir reached warning levels. Kalihiwai Reservoir was near overtopping and lowering the water level was difficult due to the continuous rain. As a precautionary measure, the residents below the reservoir were evacuated on two (2) separate occasions.

Kaua'i Fire Department (KFD) responded to 15 weather-related emergencies, including 12 swift water rescues. One such rescue occurred in the afternoon of April 15, KFD rescued a 24-year-old woman and a 2-year-old child who were trapped in their vehicle: their truck was in three (3) feet of water, surrounded by class III rapids; and they were only 10-feet from a power line. KFD had to utilize their helicopter with the Billy Pugh net to extract the victims.

The flooding left behind tons of debris on the roads as well as inside homes and schools. Over 350 homes were damaged and an unknown number of businesses were impacted. The photographs below are of two homes destroyed by the flooding and landslides.



(Source: Hawaii News Now)

Response and recovery efforts are on-going.

### **Community Overview**

#### **City and County of Honolulu**

The most impacted communities are in the East Honolulu Census Designated Place (CDP) and Waimanalo CDP. East Honolulu consists of the area directly east of the center of Honolulu, beginning at the Wai'alaie Country Club and extending east to Makapu'u Point. Waimanalo CDP is a small community located near the eastern end of the island. Both impacted areas are largely residential and consist of mostly single-family homes.

East Honolulu CDP is relatively affluent. In contrast, Waimanalo is an area of high-socioeconomic need. The federal Health Resources and Services Administration (HRSA) has designated Waimanalo as an area that is medically underserved. Approximately 22% of the population lives below the federal poverty line.

Jurisdiction	Population <sup>1</sup>	Per Capita Income <sup>2</sup>	Individuals Below the Poverty Line <sup>2</sup>	Native Hawaiian <sup>1</sup>	Unemployment Rate <sup>2</sup>
<b>City and County of Honolulu</b>	<b>953,207</b>	<b>\$ 32,194</b>	<b>9.5%</b>	<b>19%</b>	<b>5.1%</b>
Waimanalo CDP	5,541	\$22,975	22%	50%	3.5%
East Honolulu CDP	49,914	\$50,925	3.7%	12%	2.7%

1: U.S. Census Bureau, 2010 Census

2: U.S. Census Bureau, 2016 American Community Survey Estimates

### Kaua'i County

While the severe weather, flooding, and landslides impacted the entire county of Kaua'i, damages were concentrated in three (3) areas: the north shore, consisting of Hā'ena, Wainiha, and Hanalei CDPs; Anahola CDP located on the east side; and the Kōloa CDP on the south shore.

All of the Kaua'i County communities impacted by the event meet FEMA's definition of small impoverished communities. As illustrated by the chart below, each community: is less than 3,000 people; is economically disadvantaged, with residents having an annual per capita income less than 80% of the national per capita income; and has an unemployment rate that exceeds the national unemployment rate by 1 percentage point or more.

Jurisdiction	Population <sup>1</sup>	Per Capita Income <sup>2</sup>	Unemployment Rate <sup>2</sup>
<i>National</i>	<i>308,745,538</i>	<i>\$29,829</i>	<i>4.1%</i>
Kaua'i County	67,091	\$28,791	5.1%
Hā'ena CDP	431	\$21,280	7.5%
Wainiha CDP	318	\$12,844	unknown
Halalei CDP	450	\$19,203	14.3%
Anahola CDP	2,223	\$22,395	5.5%
Kōloa CDP	2,144	\$22,793	8.2%

1: U.S. Census Bureau, 2010 Census

2: U.S. Census Bureau, 2016 American Community Survey Estimates

Wainiha has the highest poverty rate at 40%. Over 37% of all households in the county are housing insecure, meaning they spend more than 30% of their income on housing. In Hanalei, almost 75% of households are housing insecure. In the isolated communities of Hā'ena and Wainiha, housing insecurity is upwards of 79% for renters and 63% for all households. Many lack the necessary capital to recover from the social and economic impact of this disaster.

Jurisdiction	Population <sup>1</sup>	Individuals Below the Poverty Line <sup>2</sup>	Owner Occupied Housing Units <sup>2</sup>	Housing Insecure <sup>3</sup> Households <sup>2</sup>	Housing Insecure <sup>3</sup> Renters <sup>2</sup>
<i>National</i>	<i>308,745,538</i>	<i>15%</i>	<i>63%</i>	<i>32.4%</i>	<i>41.2%</i>
<b>Kaua'i County</b>	<b>67,091</b>	<b>8%</b>	<b>63%</b>	<b>37.8%</b>	<b>42.6%</b>
Hā'ena CDP	431	19%	66%	62.9%	66.7%
Wainiha CDP	318	40%	66%	49.1%	78.6%
Halalei CDP	450	20%	82%	74.4%	66.7%
Anahola CDP	2,223	16%	79%	32.4%	41.2%
Kōloa CDP	2,144	14%	33%	35.4%	41.3%

1: U.S. Census Bureau, 2010 Census

2: U.S. Census Bureau, 2016 American Community Survey Estimates

3: Households spending more than 30% of their income on rent or mortgage

## **Damages and Community Impact**

### Concentration of Damage

The concentration of damages within these small communities and the geographical realities of volcanic, mountainous islands means the affected individuals and households cannot be simply absorbed into larger adjacent areas.

The impacts of the damages were concentrated in small communities. The Waimanalo and Kaua'i communities are extremely tight-knit; the disappearance of families will not only affect those leaving but those staying as well. Their potential relocation out of the area threatens both the fabric of these communities and their long-term economic health.

### Housing Shortage Impacts

The Joint Preliminary Damage Assessment (JDPA) found 516 primary residences that sustained damage. Housing and labor shortages will pose challenges to the ability of these households to make repairs and/or find long-term accommodations to relocate to. The rental housing market in Hawai'i was severely constrained even before this event. As of 2015, the rental vacancy rate in Hawai'i was approximately 1%. State, county, and community resources will be stretched thin trying to absorb the influx of newly "homeless" families into the existing local housing stock.



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The demand for qualified and licensed contractors will likely exceed the supply, prolonging the duration of displacement and recovery. Additionally, construction cost are approximately \$760 per square foot for single family homes, which is nearly double any other U.S. city.

Without federal support, families may be forced to leave the area and/or become homeless. There are no additional state or county housing programs or financing available for individuals. Homelessness in Hawai'i is a real and constant threat for our families. According to a 2014 Hawai'i Appleseed Center for Law and Economic Justice report, 15% of all households reported that if they were forced to move out of their current housing situation, they would have nowhere else to turn.

### Trauma

Due to the unprecedented levels of rainfall over such a short-period, county officials did not have sufficient time or resources to implement evacuation protocols. After the event, over 475 people were evacuated by helicopter and an untold number were evacuated by boat.

The flooding and landslides have also caused disruptions to most normal community functions in Hā'ena and Waihina. There is no post office, school, hospital, grocery store, or gas station in the isolated communities. Mail delivery has ceased and the U.S. Postal Service has no plans for resuming mail delivery until Kūhiō Highway is reopened.

In addition to their homes, some have lost their vehicles and many of their possessions, including heirlooms and vital records (birth and death certificates, passports, driver licenses, etc.). Families have also reported losing pets, drowned in the flood waters. Particularly for children, quickly resuming normal pre-disaster routines is extremely important to their mental and emotional well-being. Children in the isolated communities on Kaua'i have been prevented from doing so as they are unable to attend their normal schools or participate in extra-curricular activities.

The signs of Post-Traumatic Stress Disorder are becoming evident. DOH deployed a mental health worker to the isolated communities of Hā'ena and Wainiha after several reports of unmet mental health needs.

### Public Health

Flooding of this magnitude poses public health risks. Increased demand for the full breadth of public health and mental health services is anticipated.

Health care access is a particular challenge for the communities that are isolated by the landslides. The State of Hawai'i Department of Health (HDOH) and Hawai'i Healthcare

Emergency Management Coalition (HHEM) deployed a medical response team to the isolated community that included a physician, registered nurse, paramedic, pharmacist, and mental health professional. The team opened a one-room clinic, staffed for 12-hours a day with personnel on-call afterhours. A paramedic from the county EMS agency is visiting homebound residents.

The team is providing health care for acute flood-related needs such as injuries, infections, gastroenteritis, respiratory illness, and tetanus immunization. HDOH is working with local pharmacies to provide prescription medications for acute needs and refills of chronic prescription medications. In support of the clinic, local hospitals and pharmacies have provided medication and medical supplies. To date over 260 individuals have been treated at the clinic.

Mold growth is inevitable after extensive flooding. This growth is exacerbated in our humid climate, with growth beginning within the first 24 hours after flooding. Exposure to mold can cause severe respiratory illness and allergies. Mold poses acute and long-term health risks, especially vulnerable are children and the elderly. Additionally, mold is extremely challenging to remove, often requiring professional services. The HDOH clinic has treated several patients for allergy issues likely related to mold exposure. Two (2) cases were so advanced that the patient and their families were evacuated out of the isolated area.

Standing flood water and coastal storm water runoff contain hazards from overflowing cesspools, sewers, pesticides, animal fecal matter, dead animals, pathogens, chemicals, and associated flood debris. While the public is warned to stay out of flood and storm waters, the recovery effort necessitates that many people cannot avoid exposure. "Brown water advisories" indicating contaminated coastal waters remain in effect for many island beaches. Beaches around the island require ongoing inspection and testing to provide accurate water quality information to residents and visitors.

Exposure to contaminated water and debris poses heightened risk of injury and infection. Wound infections, including with highly pathogenic bacteria, can cause life- or limb-threatening illness. Tetanus may occur in individuals who experience wounds and are not up to date with their vaccinations. Leptospirosis is endemic and the risk of exposure and illness is heightened by the flooding.

Gastrointestinal illness can also occur as a result of accidental ingestion of contaminated water or by consumption of contaminated or spoiled food. Food safety was threatened by power outages and water service disruptions. Additionally, the great majority of affected communities rely on private septic tanks or cesspools. Appropriate clean-up and repair or replacement of these systems requires the close involvement of wastewater experts. The HDOH clinic has treated several patients for acute diarrhea.

Vector control becomes increasingly critical as water and debris collect. Standing water attracts mosquitoes and cause “mosquito blooms.” Mosquitoes carry the risk of diseases such as dengue, Zika, and chikungunya. Similarly, rodents are attracted to and thrive in accumulations of organic waste and pose threats to human health including leptospirosis, murine typhus, and rat lungworm disease.

Special Populations

Jurisdiction	Population <sup>1</sup>	Native Hawaiian <sup>1</sup>	Individuals Below the Poverty Line <sup>2</sup>	Children under 5 <sup>2</sup>	Over 65 <sup>2</sup>	Disabled <sup>2</sup>
<b>City and County of Honolulu</b>	<b>953,207</b>	<b>19%</b>	<b>9.5%</b>	<b>7%</b>	<b>16%</b>	<b>11%</b>
Waimanalo CDP	5,541	50%	22%	6%	15%	9%
East Honolulu CDP	49,914	12%	3.7%	5%	24%	9%
<b>Kaua‘i County</b>	<b>67,091</b>	<b>24%</b>	<b>8%</b>	<b>7%</b>	<b>17%</b>	<b>10%</b>
Hā‘ena CDP	431	22%	19%	7%	10%	7%
Wainiha CDP	318	25%	40%	15%	22%	8%
Halalei CDP	450	17%	20%	8%	36%	21%
Anahola CDP	2,223	70%	16%	5%	13%	13%
Koloa CDP	2,144	25%	14%	10%	14%	12%

1: U.S. Census Bureau, 2010 Census

2: U.S. Census Bureau, 2016 American Community Survey Estimates

*Native Hawaiians*

Native Hawaiians are among the most socioeconomically disadvantaged ethnic groups. Native Hawaiian mean family income is approximately 16% lower than other ethnic groups in Hawai‘i. Based on the 2000 census, Native Hawaiians had the highest percentage of individuals living below the poverty line. Native Hawaiians face significant socioeconomic hurdles, with below average income, health, and educational attainment.

Almost 18% of Native Hawaiian households within the City and County of Honolulu are female headed with no husband present and 3% of all Native Hawaiian adults are the primary caregiver for their grandchildren. The unemployment rate for Native Hawaiians within the

City and County of Honolulu is 6.4%, substantially higher than the county rate of 5.1%. Unfortunately the Census Bureau has not published similar numbers for Kaua'i but one can assume they are similar.

Substance use represents a significant health disparity among minority populations. Native Hawaiian youth tend to be early substance users and have higher use rates relative to their non-Hawaiian peers. One symptom of trauma is substance abuse and as discussed above substance abuse is increasing in the flood affected communities.

### *Poverty and Income*

Poverty affects all aspects of a person's life and the concentration of poverty in neighborhoods creates a vicious circle of negative externalities. Hawai'i has the ninth highest rate of poverty in the country, with over 17% of residents struggling in poverty. Additionally, nearly 33% of households in Hawai'i are considered asset poor, meaning they do not have sufficient liquid assets to cover the cost of rebuilding, a break in employment, or a medical emergency.

On April 1, 2018 the federal Department of Housing and Urban Development (HUD) updated its income limits that determine eligibility for HUD's assisted housing programs. HUD income limits in Hawai'i have increased substantially in recent years. While more people are qualifying for HUD assistance there has not been an increase in available housing units.

### *Children*

Children are an inherently vulnerable group. Children are more vulnerable to malnutrition, disease, and abuse than adults, and are over-represented among the poor. This abuse is often directed at women and children. According to a recent University of Hawai'i study, youth between the ages of 12 and 17 are at a higher risk than adults of becoming homeless. Many youth are homeless because of abusive home environments. Children are also more susceptible to disaster related trauma than adults, as previously discussed.

<b>Jurisdiction</b>	<b>Children under 5<sup>2</sup></b>	<b>Children under 18<sup>2</sup></b>	<b>Children Living in Households Below the Poverty Line<sup>2</sup></b>
<b>City and County of Honolulu</b>	7%	6.3%	15.4%
<b>Kaua'i County</b>	7%	23.4%	9.6%

2: U.S. Census Bureau, 2016 American Community Survey Estimates

## Economic Impacts

### Agriculture

The storm caused major to total crop losses on at least four (4) farms within the City and County of Honolulu. Nalo Farms, located in Waimanalo, reported that the torrential rains put their farm entire 12-acre farm under four (4) feet of water destroying their entire crop. Nalo Farms is an important supplier of locally grown produce, servicing over 80 restaurants and stores.

On Kaua'i, farms continue to feel the effects of crop losses, damaged irrigation infrastructure, and broken fences. The 917-acre Hanalei River Valley is a verdant valley with crops including rice and taro. Bison from the Hanalei Buffalo Ranch were washed down to the beach. Many local residents and paniolo (cowboys) helped roundup the animals.



Image: Hanalei Valley Farms, pre-event  
(Source: Wikipedia)

We are currently conducting our agricultural damage assessments. We are working closely with the Hawai'i Farm Bureau and the Hawai'i Farmers' Union to collect damage information from affected farms. I have instructed the Hawai'i Department of Agriculture to: prioritize low-interest loans to help get damaged farms back into production; defer loan payments until production is restarted; and provide technical assistance to farmers.

### Tourism

Tourism is a major economic driver for the state. Tourism directly supports approximately 200,000 jobs statewide and generates a large portion of our tax revenue. The effects to tourism from this disaster are widespread, with many hotels and tour operators reporting cancelations even outside of the impacted areas.

In Kaua'i, the average daily visitor population in 2017 was 26,275; about 25% of everyone on Kaua'i's is a visitor. According to the Hawai'i Tourism Authority, tourists spend on average

\$206 per person per day. Tourism is particularly important on the north shore of Kaua'i where nearly 80% of the business in the area serve tourists. A recent needs assessment by Hale Halawai, found that 85% of affected households have experienced loss of work or income since the flooding.

June and July are the busiest months for visitors to Kaua'i. The continued closure of Kūhiō Highway through the end of July will have impacts for the economic health of the north shore in general and the communities of Hā'ena and Wainiha in particular.

Over 85 vacation rentals in Hā'ena, Wainiha, and Hanalei are unable to accommodate their current bookings due to the flooding and landslides. The Hanalei Dolphin Restaurant, Fish Market and Sushi House is the single largest employer in Hanalei. The restaurant is closed due to flood damage. The owners do not anticipate re-opening until July 1, 2018. They currently employ 110 people, all of whom will be without work for at least two (2) more months.

Two (2) important tourist destinations on the north shore remain closed: Limahuli Gardens and the Nāpali Coast State Wilderness Park. The Kalalau Trail is in Nāpali Coast State Wilderness Park. This trail is a major destination for hikers; for many it is the main reason they come to Kaua'i.

The disaster has impacted small business providing water-based and other recreational activities to tourists. The closure of Weke Road and the road to Black Pot Beach has cut off the main access point to Halanlei Bay and Hanalei Pier, preventing businesses from resuming operations in these areas. On the east side of the island, many small businesses canceled popular hiking and kayak tours along the Wailua River.

### **Environmental Impacts**

#### **Aquatic Resources**

Although long-term reef monitoring sites on Kaua'i have not been visited to assess the extent of damage to coral reefs by the recent floods, we suspect that sediment, debris, and other land-based sources of pollution may have impacted the reef through smothering and abrasion. In addition, large pieces of debris deposited into the ocean may have also damaged reefs adjacent to river mouths. A large amount of debris was also deposited on beaches which may pose a risk of being washed back onto the reef during high tides. Streams suffered a large amount of erosion during the event and will need considerable re-vegetation and bank stabilization to repair the damage.

Coastal water quality remains in flux from on-going rains, flood water run-off, and recovery efforts. Regular monitoring and public information are required to protect public safety.

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### Seabirds

There was significant damage to some of the known breeding areas of federally threatened Newell's Shearwaters and endangered Hawaiian Petrels due to landslides in Kaua'i. An area particularly badly affected was Upper Manoa valley (O'ahu), with lots of landslides there, as well as the lower reaches of Upper Limahuli (Kaua'i). There were multiple landslides in Lumahai valley (O'ahu) as well. Department of Land and Natural Resources staff is checking all of the montane seabird monitored colonies, a process that will several weeks. So far we know at least one Hawaiian Petrel burrow was destroyed by the flooding and landslides.

### **Preliminary Damage Assessment Results**

#### Individual Assistance

A Joint Preliminary Damage Assessment (JPDA) was performed in by state, county, SBA, and FEMA representatives from Sunday, April 22, 2018 to Friday April 27, 2018. The JPDA team validated 532 homes impacted by the flooding and landslides, only five (5) of which are second homes. A table of their findings is in Enclosure A.

Of the 348 homes in Kaua'i County identified as impacted by the JPDA, the team only collected insurance data on 98. Of these, 38% have no insurance at all and only 17% have flood insurance. Assuming this is a representative sample, we can anticipate that over 132 of the damaged properties have no insurance coverage at all. Of those properties that are insured, we anticipate a large number with over 40% uninsured loss.

#### Public Assistance

A Joint Preliminary Damage Assessment was performed by state, county, and FEMA representatives from Monday, April 23, 2018 to Thursday, April 26, 2018. The total verified costs from the JDPA was over \$19 million. A table of their findings is in Enclosure B. Again, these numbers do not capture the extent of the damages. Many costs were not included in the JPDA because the responsible agency could not provide a cost estimate in the timeframe required of the JPDA team.

### **State and Local Response**

State and local response actions began on April 13, 2018. There have been no state or federal disaster declarations within the past 12-months.

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Voluntary agencies have been supporting the impacted communities in a variety of ways. They have done everything from: providing food and water; transporting supplies via zodiac to the isolated communities; and assisting individual families clean flooded homes. This support is invaluable; however, the needs of our state from this disaster far exceeds the combined efforts of the counties, the state, and voluntary organizations.

Enclosure E provides information on the nature and amount of state and county government resources that have been used to alleviate the conditions of this disaster.

Sincerely,

A handwritten signature in black ink that reads "David Ige". The signature is fluid and cursive, with the first name "David" and the last name "Ige" clearly distinguishable.

DAVID IGE  
Governor, State of Hawaii

Enclosure:

FEMA Form 010-0-13

Enclosure A: Individual Assistance Joint Preliminary Damage Assessment

Enclosure B: Public Assistance Joint Preliminary Damage Assessment

Enclosure E: State and Local Response



**Enclosure A: Individual Assistance Joint Preliminary Damage Assessment**

<b>Homes:</b>					
Date: April 22-27, 2018					
	<b>Destroyed</b>	<b>Major</b>	<b>Minor</b>	<b>Affected</b>	<b>Not Primary</b>
City and County of Honolulu	0	45	94	45	0
Kaua'i County	7	65	119	152	5
<b>Category Totals:</b>	<b>7</b>	<b>110</b>	<b>213</b>	<b>197</b>	<b>5</b>
<b>Total Verified:</b>	<b>532</b>				

**Enclosure B: Public Assistance Joint Preliminary Damage Assessment**

CATEGORY APPLICANT OR COUNTY	A DEBRIS	B EMERGENCY PROTECTIVE MEASURES	C ROADS AND BRIDGES	D WATER CONTROL FACILITIES	E PUBLIC BUILDINGS	F UTILITIES	G PARKS, RECREATION OR OTHER	TOTAL	Per Capita by County	County population
County of Kauai (Kauai)		\$6,000						\$6,000	\$0.08	72,159
KCCC (Kauai)					\$39,300			\$39,300	\$0.54	72,159
DLNR-State Parks (Kauai)			\$25,000					\$25,000	\$0.35	72,159
DOD (Kauai)		\$423,482						\$423,482	\$5.87	72,159
C&C Honolulu				\$4,174,099				\$4,174,099	\$4.38	953,207
DLNR-DOFAW (Kauai)			\$743,042					\$787,042	\$10.91	72,159
DLNR-DOBOR (Kauai)							\$44,000	\$1,450,000	\$20.09	72,159
DLNR-Engineering								\$1,405,318	\$19.48	72,159
Dept. of Parks and Rec. (Kauai)	\$620,000	\$30,000			\$1,360,000			\$3,200,000	\$44.35	72,159
Dept. of Public Works (Kauai)	\$6,100,000		\$1,122,706		\$8,200			\$7,230,906	\$100.21	72,159
Hawaiian Homelands (Kauai)	\$650,000							\$650,000	\$9.01	72,159
Dept. of Water (Kauai)						\$275,000		\$275,000	\$3.81	72,159
KIUC (Kauai)						\$126,724		\$126,724	\$1.76	72,159
<b>TOTALS</b>	<b>\$7,370,000</b>	<b>\$459,482</b>	<b>\$1,890,748</b>	<b>\$4,174,099</b>	<b>\$1,407,500</b>	<b>\$401,724</b>	<b>\$4,089,318</b>	<b>\$19,792,871</b>		
<b>Percentage of Total</b>	<b>37.24%</b>	<b>2.32%</b>	<b>9.55%</b>	<b>21.09%</b>	<b>7.11%</b>	<b>2.03%</b>	<b>20.66%</b>			

U.S. Bureau of Census 2010 State or Tribe population: 1,427,538

Statewide/Tribal Per Capita Impact indicator: \$1.46

Countywide Per Capita Impact indicator: \$3.68

## **Enclosure E: State and Local Response**

### **Hawai'i Emergency Management Agency (HI-EMA)**

- Implemented the Hawai'i Emergency Operations Plan (HI-EOP), activating the State Emergency Operations Center (SEOC) to Level III
- The following State Emergency Support Functions were activated:
  - SESF #1: Transportation
  - SESF #2: Communications
  - SESF #3: Public Works & Engineering
  - SESF #5: Information & Planning
  - SESF #6: Mass Care, Emergency Assistance, Housing & Human Services
  - SESF #7: Logistics Management & Resource Support
  - SESF #8: Public Health & Medical Services
  - SESF #10: Oil and HAZMAT Response
  - SESF #12: Energy
  - SESF #13: Public Safety and Security
  - SESF #15: External Affairs
  - SESF #16: Finance
  - SESF #20: Military Support
- Over 36 HI-EMA employees staffed the SEOC on 12-hour shifts 24-hours a day
- Deployed eight (8) HI-EMA staff to support the Kaua'i Emergency Management Agency to coordinate response and facilitate information sharing
- Coordinated SESF #6 Mass Care
- Worked with the DAGS, HDOH, and HDOT in support of debris management issues
- Facilitated Hawai'i Voluntary Organizations Active in Disasters (HVOAD) coordination calls to identify self-activated community based organizations, unmet needs for early and long-term recovery planning
- Staffed private sector requests for information and offers of assistance.
- Supported long-term re-supply and logistics planning into the isolated communities
- Produced public information, news releases, and briefings; monitored social media and put out social media messaging
- Staffed the City and County of Honolulu Disaster Recovery Centers (DRCs)
- Conducted Individual Assistance and Public Assistance Joint Preliminary Damage Assessments in conjunction with the City and County of Honolulu, Kaua'i County, DAGS, DHS, FEMA, and SBA

### **Attorney General**

- Provided legal support to the SEOC and counties
- Provided Law Enforcement Officers under SESF #13 to support Kaua'i Count

### **Department of Accounting and General Services (DAGS)**

- Provided staff to support the SEOC for SESF #3
- Assisted with cleaning and repaired the Hanalei Elementary School after it was damaged in the flood, in conjunction with DOE
- Ordered and delivered sandbags to mitigate potential additional flood damage at the

#### Hanalei Elementary School

- Five (5) staff conducted Public Assistance Joint Preliminary Damage Assessments in conjunction with the City and County of Honolulu, Kauaʻi County, HI-EMA, and FEMA

#### Department of Business, Economic Development, and Tourism (DBEDT)

- Provided staff to the SEOC for SESF #12
- Maintained situational awareness of energy supplies, including fuel, gas, and electricity
- Worked with private vendors to ensure adequate fuel supply availability throughout Kauaʻi County
- Supported electricity restoration efforts
- Coordinated with Kauaʻi County Department of Water (DOW) to assess potential fuel needs for backup generator at the municipal Wainiha water well

#### Department of Commerce and Consumer Affairs (DCCA)

- Staffed the City and County of Honolulu's DRCs
- Provided guidance to the public on how to file insurance claims and answer general insurance questions

#### Department of Education (HDOE)

- Provided three (3) schools as Emergency Shelters
- Opened three (3) satellite classrooms for 51 students (K-12) in Hāʻena and Wainiha
- Cleaned and repaired the Hanalei Elementary School after it was damaged in the flood, in conjunction with DAGS
- Social/Emotional and mental health service will be provided by a school psychologist once a week for the remainder of the School Year or when Kuhio Highway is opened again

#### Department of Hawaiian Homelands (DHHL)

- Staffed the City and County of Honolulu's DRCs
- Supported the Joint Preliminary Damage Assessment teams with information on damages to DHHL lands

#### Department of Human Services (DHS)

- Provided staff to the SEOC for SESF #6
- Supported the Individual Assistance Joint Preliminary Damage Assessments with four (4) staff

#### Department of Land and Natural Resources (DLNR)

- Provided support to the SEOC for SESF #1, #3, and #13
- Provided over 35 staff to assist with debris removal and site security
- Provided Law Enforcement Officers under SESF #13 to support Kauaʻi County
- Provided heavy equipment, including a dozer, excavator, and tandem dump truck to assist with debris removal
- Provided three (3) personnel to Princeville Airport to assist with helicopter operations
- Provided one (1) LNO to the Kauaʻi EOC
- Supported the Individual Assistance Joint Preliminary Damage Assessments with flood

insurance information

- Published information on flood insurance on the DLNR website
- Staffed the City and County of Honolulu's DRCs

#### Department of Public Safety

- Provided Law Enforcement Officers under SESF #13 to support Kaua'i County

#### Department of Taxation

- Extended the tax filing deadline for residents of Kaua'i County
- Staffed the City and County of Honolulu's DRCs
- Provided tax related information to affected residents and businesses at the DRCs and on their website

#### Hawai'i Department of Agriculture

- Staffed the City and County of Honolulu's DRCs
- Provided information on agricultural loans and other assistance
- Providing low-interest agricultural loans
- Deferring loan payments for impacted farms until production is restarted
- Providing technical assistance to impacted farms and farmers

#### Hawai'i Department of Defense – National Guard

- Provided staff to the SEOC for SESF #20
- The Joint Operations Center (JOC) increased its activation level to "Tier I plus" operating 24-hours a day; 28 staff worked in the JOC and Joint Staff
- Deployed over 80 National Guard personnel to Kaua'i to support response and recovery efforts
- Provided site security to two Landing Zones in Kaua'i
- Deployed two (2) HING UH-60 helicopters to airlift evacuees, supplies, emergency vehicles, and work crews into the isolated area

#### Hawai'i Department of Health (HDOH)

- Provided staff to the SEOC for SESF #8, #10 and #15
- Provided one (1) LNO to the Kaua'i EOC, to include serving as the group supervisor for the health and community concerns branch
- Deployed a state disaster medical assistant team to the isolated area to ensure access to medical services; to date this team has treated over 250 residents
- Monitored water quality island-wide by collecting samples and conducting laboratory testing
- Department of Health vector control staff conducted mosquito abatement activities, including surveillance and treatment
- Environmental health sanitarians ensured that commercial food facilities resumed service only when it was safe to do so
- Published Brown Water Advisories, vector control information, personal hygiene, and other public health advisories
- Provided messaging about flood water safety, mosquito control, drinking water and other

public health issues

- Providing ongoing mental health services including access to counseling services in-person and by telephone; door-to-door outreach is being initiated for the most severely affected communities; a mental health counselor was deployed with the medical team
- Provided consultation on home septic and cesspool issues
- Implemented active surveillance for flood-related illnesses and injuries
- Continue to participate in public outreach meetings to discuss health-related issues associated with the flood response as well as information on services HDOH can provide
- Processing additional vital record requests as a result of people losing government issued IDs and other records
- HDOH-contracted EMS provider for Kauai County, American Medical Response, supported 24/7 response in the isolated area by equipping a paramedic with advanced life support equipment including a cardiac monitor and advanced airway equipment including intubation equipment and having that paramedic doing wellness checks throughout the community daily

#### Hawai'i Department of Transportation (HDOT)

- Inspected bridges in the flood-affected areas on Kaua'i
- Worked with City and County of Honolulu and Kaua'i County on extensive debris clearance operations
- Over 23 HDOT staff and 20 contractors working to clear Kūhiō Highway and other sites on Kaua'i

#### University of Hawai'i at Manoa

- Staffed the City and County of Honolulu's DRCs

#### **Local and Mutual Aid Activities**

##### City and County of Honolulu

- Honolulu Fire Department responded to over 42 weather related emergency calls the night of April 13, 2018, including 32 water evacuations
- City and County of Honolulu Department of Facility Maintenance (DFM) and HDOT conducted extensive debris clearance operations for county roads and state highways respectively immediately after flood waters receded
- As of April 25, 2018, DFM collected approximately 451 tons of mud and sediments from roads as well as residences
- DFM anticipated collecting an additional 160 tons of mud and debris from county roads
- The City and County of Honolulu Department of Environmental Services (ENV) collected approximately 335 tons of additional bulky waste from area residents and businesses as a result of the flooding
- ENV collected approximately 475 units of white goods and appliances from the affected areas
- Established two (2) Disaster Recovery Centers (DRCs)
- DRCs staffed by the following county agencies: Department of Emergency Management, Budget and Fiscal Services Department, and Department of Planning and Permitting, and

Department of Community Services.

- The DRCs were also staffed by the following state and non-governmental agencies/organizations: State Department of Land and Natural Resources, State Department of Commerce and Consumer Affairs, State Department of Taxation, Hawai'i Department of Health, Hawai'i Emergency Management Agency, Hawai'i Department of Agriculture, Department of Hawaiian Homelands, University of Hawai'i at Manoa, American Red Cross, Building Industry Association of Hawai'i, Hawai'i Voluntary Organizations Active in Disasters, Hawai'i Small Business Development Center, and others.
- The county is offering both low interest disaster rehabilitation loans and expedited disaster related building permit and fee waivers. The county is offering real property tax remission for homeowners who sustained damages
- Although Honolulu was affected by the incident, they assisted Kaua'i Emergency Management Agency with over 30 incident management team (IMT) members to work in the Kaua'i County EOC

#### Kaua'i County

- County EOC at full activation
- Coordinated with county, state, federal, and non-governmental partners for response and recovery efforts
- Opened five (5) emergency shelters, in conjunction with the Red Cross
- Conducted extensive debris clearance operations for county roads and parks
- County of Kaua'i employees and American Red Cross volunteers went door-to-door conducting wellness checks and documenting damages
- Kaua'i Police Department (KPD)
  - Inserted personnel to continuously provide immediate security 24/7 in the isolated communities
  - Provided security and assistance at the landing zones as well as the Camp Naue Point of Distribution
  - Managing the roadblock at Waikoko to prevent unauthorized vehicles or people from traveling on the highway into the isolated communities
- Kaua'i Fire Department (KFD)
  - Responded to 15 weather-related emergencies, including 12 swift water rescues between April 14 and April 15
  - Performed search and rescue in the isolated communities
  - Provided helicopter assets to airlift evacuees, response personnel, and supplies into the isolated communities
  - Provided personnel to assist with the air operations in the EOC and at the Princeville Airport and three (3) landing zones in the isolated communities
  - Provided multiple LNOs to Kauai EOC, including positions in the Incident Management Team
  - Providing personnel in the isolated communities for emergency and medical response 24/7
- Transportation Agency
  - Provided free bus shuttle to over 120 evacuees from the Hanalei Elementary School shelter to Princeville

- Department of Water (DOW)
  - Repaired the damaged main line along Weke Road in Hanalei
  - Activated its generator at the Wainiha Pump Station
  - Airlifted staff and supplies into the isolated communities to repair and maintain the Wainiha Pump Station
  - Provided a trailer-mounted water tank with potable water for residents and visitors who were out of water
- Department of Public Works
  - Increased curbside refuse and bulky item collection;
  - Extended the hours of the Princeville refuse transfer station
  - Provided additional refuse bins in other affected areas of the island
  - Conducted household waste collection in the isolated communities
  - Coordinated for an emergency access road for residents affected by the Kahiliholo Road closure
- Office of Economic Development supported Donations Management operations
- Director of the Planning Department deployed to the isolated communities as the face of the county
- Kauai Humane Society is providing free veterinary services daily in the isolated communities

#### Maui County

- Assisted Kaua'i Emergency Management Agency with two (2) staff to work in the county EOC
- Deployed technical assistance to Kaua'i County to develop and oversee Kaua'i's Initial Damage Assessment process

#### **Federal Support**

##### Federal Aviation Agency (FAA)

- The FAA issued a Temporary Flight Restriction for areas in the Hanalei and Wainiha area, particularly restricting all aircraft and UAS (drones)

##### Federal Emergency Management Agency

- Deployed an LNO to the SEOC
- Deployed technical assistance to Kaua'i County to support logistics planning and voluntary agency coordination
- Conducted Individual Assistance and Public Assistance Joint Preliminary Damage Assessments in conjunction with the City and County of Honolulu, Kaua'i County, DAGS, DHS, HI-EMA, and SBA

##### Federal Highways Administration (FHWA)

- Supporting HDOH on debris clearance and road repairs

##### Small Business Administration

- Conducted Individual Assistance Joint Preliminary Damage Assessments in conjunction with the City and County of Honolulu, Kaua'i County, DHS, HI-EMA, and FEMA



#### The National Aeronautics and Space Administration (NASA)

- Provided the SEOC imagery, landslide susceptibility data, and rainfall totals

#### The National Weather Service (NWS)

- Provided a daily weather update to the governor, SEOC, and counties

#### U.S. Coast Guard

- MH-65 Dolphin helicopter aircrews and a Coast Guard cutter supported search and rescue operations
- Assisted with command and control, and air space deconfliction

#### U.S. Department of Agriculture

- Supporting the Hawai'i Department of Agriculture provide assistance to farmers

#### U.S. Military

- U.S. Army helicopters and crews: evacuated tourists and residents; delivered food, water, equipment, and work crews
- LMZ landing barge is a U.S. Navy vessel; assisted with permission to move through controlled waters