



EXECUTIVE CHAMBERS
HONOLULU

DAVID Y. IGE
GOVERNOR

June 13, 2018

Mr. Jeffrey Byard
Associate Administrator
Office of Response and Recovery
Federal Emergency Management Agency
500 C Street SW
Washington, D.C. 20472

Through: Robert Fenton
Regional Administrator
FEMA Region IX
1111 Broadway 1200
Oakland, CA 94607-4052

Subject: Request for Individual Assistance Programs for Hawai'i County
FEMA-4366-DR-HI
Kilauea East Rift Zone

Dear Mr. Byard:

Under the provisions of 44 CFR 206.40(b) of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, I request that you approve the full suite of Individual Assistance programs for Hawai'i County within the State of Hawai'i as a result of the ongoing Kilauea East Rift Zone seismic activity and volcanic eruption beginning May 1, 2018. On May 11, 2018, the President declared this event a Major Disaster (DR-4366), authorizing the Public Assistance Grant Program for Hawai'i County and the Hazard Mitigation Grant Program statewide.

This disaster continues to endanger the health, safety, and welfare of the people of the County of Hawai'i. It is of such severity and magnitude that effective response is beyond the capabilities of the state and the affected local governments. I have designated Tom Travis as the State Coordinating Officer for this disaster. He may provide further information or justification on my behalf.

Current Situation

Since the declaration of a major disaster on May 11, 2018, a total of 24 fissures have opened along a 3.8-mile line through Leilani Estates in the Puna District of Hawai'i County. More than 112 million cubic meters of lava has been emitted

from these fissures, covering subdivisions and major roadways, and resulting in the evacuation and effective isolation of much of Lower Puna.

Fissure # 8 remains active and produces a steady stream of lava that has carved a channel to the ocean through communities, farms and infrastructure. All fissures continue to release dangerous gases and some continue to emit steam or remain incandescent, threatening to reactivate. The Hawaiian Volcano Observatory warns that additional fissures and related lava flows could appear at any time along the East Rift Zone.

There is a continued threat of explosive eruptions at Halema'uma'u Crater, which may include ballistic projectiles (rock and debris) and ashfall. Aftershocks continue to produce rockfalls and associated ash clouds above the Halema'uma'u Crater. These ash clouds pose a continuing threat to public health.



Damaged Residences and Concentration of Damage

Lower Puna, which includes Kapoho, Pohoiki, Kahauale'a, Kehena, Lanipuna Gardens and Leilani Estates, has experienced the most direct impacts from this event, through economic and other impacts are being felt more broadly.

The county estimated there are 455 destroyed residential dwellings. They have confirmed that 192 of the destroyed dwellings are primary residences. Additionally, other homes and farms are isolated by twin lava flows extending from the East Rift Zone to the sea. Many homes not damaged by lava are either inaccessible due to the lava, or subject to restricted use or uninhabitable due to the high ash and sulfur dioxide concentrations.

While detailed data is not yet available, a reasonable assumption is that most residents in this area do not have insurance that will cover their losses. Impacted homes were located in Lava Zones 1 and 2, areas where many insurers had stopped writing policies. Two of the three major roadways, Highways 132 and 137, are covered with lava, completely isolating the communities of Kapoho and Vacationland. Other communities are threatened with isolation. Highway 130 remains passable, though its use is restricted due to cracks and steaming near mile marker 14. Should Highway 130 close, only three gravel roads are available for emergency evacuation, each of which adds from one to two hours travel time for residents.

Trauma

Disruption to Normal Community Functions

This disaster has not just disrupted normal community functions, it has permanently changed the way of life for residents in Lower Puna. What were once some of the most beautiful places in Hawai'i are now barren lava fields, with all recognizable landmarks extinguished. Since May 3, 2018, volcanic activity, including lava, earthquakes, ash explosions and toxic gases, have assaulted Lower Puna. These communities have not only been denied relief from these threats, but in many cases, the extent of damage has extinguished any hope of rebuilding or resettling in or near their former homes. In some cases, access to

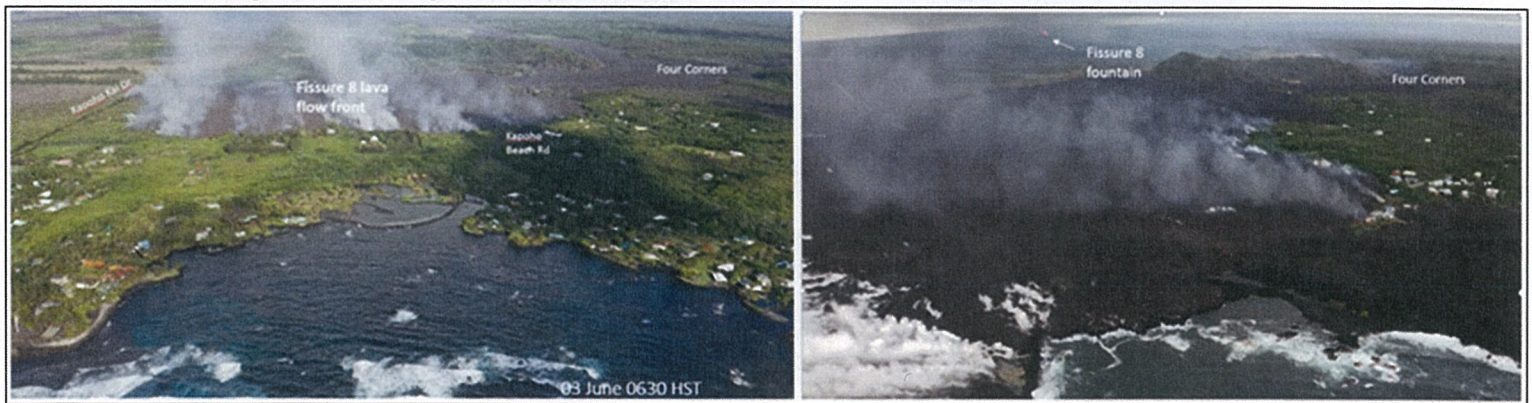


Figure 1: Kapoho Bay has completely filled with lava. A 250-acre delta has been created at this ocean entry point.

an area to determine survival of a family home has taken three or four days. The protracted nature of this event has made the community's transition to recovery difficult, leaving residents and responders in an emergency mode marked by stress and uncertainty. Emergency shelters first opened on May 3, 2018 and more than 400 people remain at two shelters. As of June 6, 2018, there had been 5,417 overnight stays in emergency shelters. Other residents remain under threat of evacuation as the entirety of the Lower Puna District is under some type of evacuation order.

Evacuation Status	Community	Population ¹	Remarks
Directed	Leilani Estates	1,560	Lava inundation
	Lanipuna Gardens	300	Lava inundation
Mandatory	Kapoho, Vacationland	540	Lava inundation
	Highway 130 vicinity of Alaili Road and Kamaili Road	200	Ground cracks and SO ₂ emissions
	Highway 132	50	Lava inundation
	Noni Farms Road and Hale Kamahina Road	50	Lava inundation
Voluntary	Waa Waa	100	Impending lava flows within 1 mile
TOTAL		2,800	

Disruption to Community Services

Lava flows have disrupted basic services, such as power and communications, as flows have isolated or destroyed critical infrastructure. Currently, more than 930 homes are without power in the affected area. Hawai'i Electric Light Company (HELCO) has no plans to attempt power restoration to 800 of those customers until conditions are deemed safe (i.e., the volcanic activity stops). One municipal water well was inundated with lava. Many residents rely on catchment systems for water. Three continuous weeks of ash and Pele's hair (volcanic spun glass particles) emitted into the air have required families to disconnect their individual home water catchment systems to prevent contamination of water for drinking and domestic use.

Public Health

Though serious injuries have been limited to one person whose leg shattered when hit by a "lava bomb," the event has caused serious and continuing health and mental health concerns.

¹ U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates, B010003 Total Population. These figures do not include the large numbers of unlawful tenants and unofficial residents living in the area.

All 24 fissures continue to release hazardous levels of sulfur dioxide (SO₂), hydrogen sulfide (H₂S), hydrogen fluoride (HF), and sulfuric acid (H₂SO₄) gases. At times, levels of SO₂ have reached triple the normal levels, resulting in extremely hazardous conditions for responders and residents. These conditions are particularly damaging to the health of the most vulnerable populations, particularly seniors, children and those with pre-existing respiratory illnesses. The most recent respiratory concern is “laze” — or lava haze — when hot lava mixes with cold seawater to produce a plume of steam laced with hydrochloric acid and glass particles.

Air quality monitors installed by the state and federal partners to provide critical real-time data on emissions have been compromised by loss of cell towers or power to cell towers. There is an ongoing concern about chronic health exposure to volcanic gas.

Mental-behavioral health needs remain elevated and are expected to rise in affected areas. The Hawai'i Department of Health (HDOH) has been reporting numbers of people experiencing acute mental health effects of fear, anxiety and stress. HDOH has activated the Crisis Line of Hawai'i and the Parent Line to provide additional counseling services 24/7 to individuals and families experiencing acute mental health impacts and to those with chronic illnesses exacerbated by the eruption. Call volumes remain elevated at around 3 percent. As of June 6, 2018, the American Red Cross reported 2,237 mental health contacts with the affected population.

Special Populations

Low Income Residents

Puna has the second-highest poverty rate in the state with nearly half of its residents living at or below 130 percent of the federal poverty level. Many residents were drawn to Puna due to affordable housing prices; their recovery is complicated by the higher cost of housing in other areas of the county. Low property and sheltering costs coupled with a combination of undeveloped infrastructure, areas of available unused land and limited economic opportunity have supported a growing population with entrenched poverty.

All communities impacted by this event meet FEMA's definition of small impoverished communities. Each community: consists of fewer 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. Additionally, the area has not fully recovered from the two presidentially declared disasters in 2014: Tropical Storm Iselle (DR-4194) and the Pu'u 'Ō'ō lava flow (DR-4201).

Native Hawaiian Population

An estimated 32 percent, or 14,500, of Puna residents, are native Hawaiian. They are also disproportionately below the poverty level.

Summary Data of Special Populations

Category	State of Hawai'i	Hawai'i County	Kalapana-Kapoho Census Track 211.01	Leilani Estates CDP
Resident Population	1,413,673	193,680	3,101	1,629
Median Household Income	\$71,977	\$53,936	\$27,736	\$31,923
Individuals Below the Poverty Line	10.8%	18.7%	28.8%	30.0%
Civilian Unemployment Rate	5.5%	7.4%	14.4%	12.1%
Median Value for Owner-Occupied Housing Unit	\$538,400	\$306,000	\$227,300	\$219,400

Source: U.S. Census Bureau, 2012-2016 ACS (American Community Survey) 5-Year Estimates

NOTE: Leilani Estates CDP is within the Kalapana-Kapoho Census Track 211.01.

Population under 18 years old		12.3%
Population over 65 years old		28.4%
People with disabilities		19.3%
Households Receiving Food Stamps (SNAP)	All Households	26.7%
	Households with one or more persons over 60 years old	44.9%
	Households with children under 18	23.6%
	Households with one or more persons with a disability	35.3%
Population Below Poverty Level	All people	28.8%
	Children under 18 years old	52.4%
	Adults 65 years and over	20.5%
	Native Hawaiian or other Pacific Islander	52.1%

Source: Kalapana-Kapoho Census Track 211.01., U.S. Census Bureau, 2012-2016 ACS (American Community Survey) 5-Year Estimates

Housing Shortage Impacts

This disaster is creating a housing crisis in a rental market that was already severely constrained. The evacuation of more than 1,400 homes and rental units will result in higher costs, overcrowding and an increase in homelessness.

FEMA did an analysis of available rentals at 100% and 250% of the Fair Market Rents (FMR) set by the federal Department of Housing and Urban Development (HUD). The FMR for a two-bedroom apartment in Hawai'i County is \$1,189 per month. FEMA's

analysis found a total of 62 units available spread across the entire island: 30 properties at 100% HUD FMR and 32 properties at 250% HUD FMR. Only a portion were within the normal commuting distance of the affected communities. Given that many residents resided in the affected area because of its affordability. Families that can locate rental units may find the price out of reach.

Economic Impacts

The losses created by this disaster are not limited to homes and possessions, or to the directly affected communities. Jobs and businesses are also being threatened as key industries are experiencing significant impacts.

Visitor Industry Impacts

The visitor industry is the economic engine of the state and single largest employer across all counties. Tourism provides 30 percent of the private sector jobs on the Big Island.

The Hawai'i Volcanoes National Park, the single largest tourist attraction on the island, has been closed to visitors since May 11, 2018. The park receives about 2 million tourists annually, but is now closed indefinitely. The eruption has deterred would-be visitors and shuttered the island's largest tourist attraction. Tour companies alone report \$1,011,604 in economic losses.

The National Park Service has calculated the closure could cost the local economy about \$455,000 per day, or \$17.3 million lost over the past 38 days. Annually, the park generates about \$166 million in direct tourist spending for hotels, restaurants, grocery stores, rental cars, etc. The lost revenue rises to \$222 million when some 2,000 jobs indirectly impacted by park tourists are included, according to a park service report.

Norwegian Cruise Lines has on occasion suspended its weekly port calls in both Hilo and Kailua-Kona due to "...uncertainties associated with the ongoing volcano activity." Cruise ship passenger spending in Kailua-Kona, from car rentals, to restaurants, coffee farms, stores and sightseeing tours, is estimated at \$750,000 each day the ship spends in port.

The County of Hawai'i mayor issued a directive to suspend all vacation rentals in the Lower Puna district, due to public safety concerns. The single largest provider of overnight accommodations, the Kalani Retreat Center, which represents \$28 million annually in county revenue, had to close its doors to its 200 guests and staff. There have been 39 reports of lost vacation rentals, which reflects an estimated \$37,611,435 in damages.

Agricultural Sector Impacts

A significant portion of the more than 5,940 acres covered in lava were previously in active agricultural production. To date, the county has received 28 reports from farmers reporting complete loss of operations (facilities, production, acreage, stock and crops) totaling \$14,181,872. It is estimated that 50% of the state's cut flower industry and up to 80% of the county's papaya farms have been lost. In addition to job loss, many farm workers resided in employee housing on the farms and are now homeless. Further downwind and downslope of the Kilauea Crater to the northwest, air quality continues to be hazardous preventing the harvest of major cash crops such as coffee beans and macadamia nuts. In terms of revenue generated, Hawai'i's top five agricultural products are greenhouse and nursery products (including flowers), pineapples, cane for sugar, macadamia nuts, and coffee.

Energy Sector Impacts

Portions of the Puna Geothermal Venture (PGV) facility and at least three geothermal wells have been covered by lava. This eruption has forced shutdown and closure and of the PGV facility. It remains off-line and restoration may not be possible. In 2017, PGV accounted for an aggregate of approximately \$11 million of net income and employed 30 people. The plant provided up to 29% of Hawai'i Island's power in 2017.

Requested Individual Assistance Programs

Assistance to date has been provided by the county government, state agencies, and a large network of non-profit organizations. The Salvation Army has conducted daily feeding operations and multiple agencies have supported distribution of supplies. The shelters have been provided by the County of Hawai'i and staffed by the American Red Cross and volunteers.

The state has no individual assistance program. I request the full suite of Individual Assistance Programs. The following information is provided for planning purposes:

Individuals and Households Program (IHP):

There are small programs run by various Non-Governmental Organizations (NGOs), as outlined above; however, these programs will not address the breadth of needs survivors have. The Individuals and Households program is necessary to help survivors get back on their feet.

Transitional Sheltering Assistance (TSA):

There is an ongoing need for short-term sheltering due to evacuation orders, isolation due to lava impaired roadways and destroyed homes. More than 455 residential dwellings have been destroyed, 192 of which are primary residences. The emergency shelter population remains above 400 people and shelters have been open for approximately six weeks.

Crisis Counseling Assistance and Training Program (CCP):

With the noted increase in mental and behavioral health issues being reported across a range of services and the limited availability of local resources available to meet anticipated needs, assistance is needed to hire additional outreach staff and/or contractors to be stationed in the affected area to support critical mental health and safety needs. While Hawaii Department of Health (HDOH) and various NGOs, including the Red Cross, have mental health counselors at shelters, these agencies do not have the staff to sustain the long-term support required.

Available resources to provide the necessary care are limited on a routine day-to-day basis, much less for any prolonged period. Currently there are only four mental-behavioral health service providers located in proximity of the affected area. A significant number of chronically ill adults with pre-existing mental health conditions are reported in the affected area. The HDOH Adult Mental Health Division and Children and Adolescent Mental Health Division counselors are required to address the needs of their existing core court-ordered mental-behavioral health patients, and are now additionally balancing those needs with the need to provide crisis counseling to members of the public affected by the eruption.

Disaster Unemployment Assistance (DUA):

Given the economic impacts to key industries described above, it is anticipated there will be significant disaster related unemployment.

Disaster Case Management:

NGOs in the area continue to collaborate to do intake, address immediate needs, and make referrals. To date, NGOs have collected 862 intake forms. However, the scale of follow-on services required to help families make individualized recovery plans and provide sustained, coordinated case management exceeds the collective capabilities of local agencies.

Disaster Legal Services:

Approximately 29 percent of the population has income below the poverty line. Therefore, we anticipate many families will be eligible for this program. We anticipate residents will need assistance primarily with insurance claims, recovery/reproduction of legal documents, and advice on problems with landlords. The Hawai'i State Bar Association is currently assisting survivors. This program will allow for the establishment of a hotline and other necessary support to continue this pro bono work.

Jeffrey Byard
June 13, 2018
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With warmest regards,

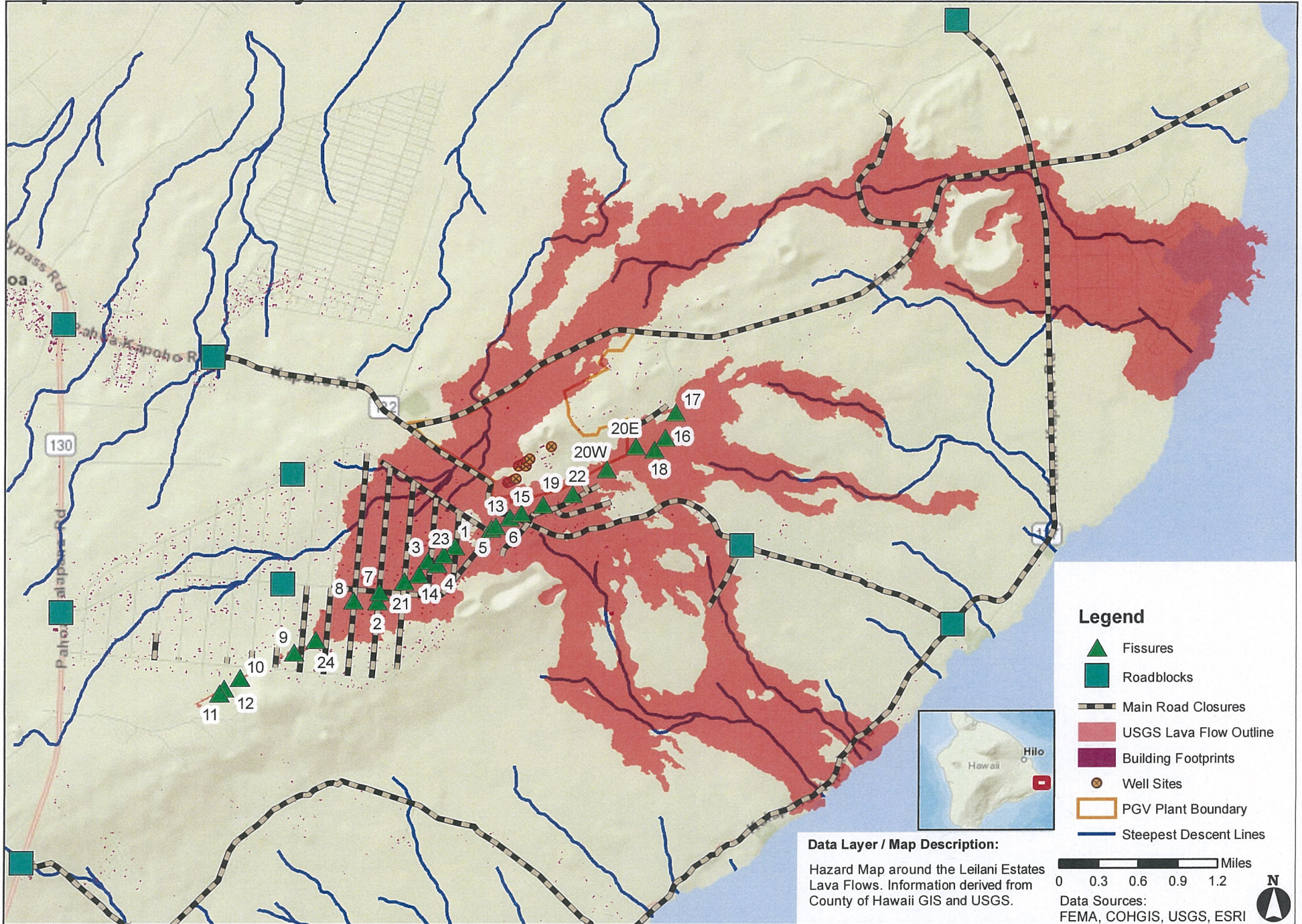
A handwritten signature in black ink, reading "David Y. Ige". The signature is fluid and cursive, with a large, sweeping flourish at the end of the name.

David Y. Ige
Governor, State of Hawai'i

Enclosure E: Map of Hawai'i County with Lava Flow

c: Mr. Willie G. Nunn, Federal Coordinating Officer, FEM-4366-DR-HI

ENCLOSURE E: Map of Hawai'i County with Lava Flow - 06/12/2018



- Legend**
- ▲ Fissures
 - Roadblocks
 - Main Road Closures
 - USGS Lava Flow Outline
 - Building Footprints
 - Well Sites
 - PGV Plant Boundary
 - Steepest Descent Lines

Data Layer / Map Description:
Hazard Map around the Leilani Estates Lava Flows. Information derived from County of Hawaii GIS and USGS.

0 0.3 0.6 0.9 1.2 Miles

Data Sources:
FEMA, COHGIS, USGS, ESRI