DEPARTMENT OF HOMELAND SECURITY
Federal Emergency Management Agency

REQUEST FOR PRESIDENTIAL DISASTER DECLARATION MAJOR DISASTER OR EMERGENCY

OMB Control Number 1660-0009
Expires 09/30/2019

1. Request Date May 9, 2018

Burden Disclosure Notice

Public reporting burden for this form is estimated to average 9 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and submitting the form. This collection of information is required to obtain a benefit. You are not required to respond to this collection of information unless it displays a valid OMB control number. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing the burden to: Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 500 C Street SW, Washington, DC 20472, Paperwork Reduction Project (1660-0009). **NOTE: Do not send your completed form to this address.**

Completion of this form including applicable attachments satisfies legal requirements for emergency and major disaster declaration requests under 42 U.S.C. §§ 5170 and 5191, respectively, as implemented at 44 C.F.R.. §§ 206.35 and 206.36. Failure to use this form may result in a failure to meet these requirements and/or a delay in processing the request.

2a. Name of State (as defined in Stafford Act 102, 42 U.S.C. § 5122) or Indian tribal government requesting declaration.	2b. Population (as reported by 2010 Census) or estimated population of Indian tribal government's damaged area(s).
State of Hawaii	1,360,301

3. Governor's or Tribal Chief Executive's Name	4. Designation of State or Tribal Coordinating Officer upon declaration (if available) and phone number
Governor David Y. Ige	Thomas Travis, 808-733-4300

5. Designation of Governor's Authorized Representative or Tribal Chief Executive Representative upon declaration (if available) and phone number
Arthur J. Logan, 808-733-4246

6. Declaration Request For: ☒ Major Disaster (Stafford Act Sec. 401) ☐ Emergency (Stafford Act Sec. 501 (a))

7. Incident Period: Beginning Date May 3, 2018 End Date _____ or ☒ Continuing

If requesting a "continuing" incident period, enclose an official statement from a qualified Federal Government agency acknowledged as a national authority in a specific incident field (e.g., United States Geological Survey for seismic incidents, the National Weather Service for flooding).

7b. Type of Incident (Check all that apply)

☐ Drought ☒ Earthquake ☐ Explosion ☐ Fire ☐ Flood ☐ Hurricane ☐ Landslide ☐ Mudslide
☐ Severe Storm (rain, high water, wind-driven, rain, hail, lightning) ☐ Snowstorm (Must include Enclosure D: Historic and Current Snowfall Data) ☐ Straight-Line Winds
☐ Tidal Wave ☐ Tornado ☐ Tropical Depression ☐ Tropical Storm ☐ Tsunami ☒ Volcanic Eruption ☐ Winter Storm
☐ Other (please specify) _____

8. Description of damages (Short description of impacts of disaster on affected area and population). Include additional details in enclosed Governor's or Tribal Chief Executive's cover letter.
Since May 1, 2018 there have been over 100 earthquakes, the largest being a magnitude 6.9 on May 5, 2018; this earthquake generated a small local tsunami. Data from HAZUS estimates structural damages from this earthquake at $4.5 million. Full damage assessments are impossible at this time due to the on-going volcanic eruption. There are currently 14 active volcanic fissures in the Leilani Estates subdivision. Two communities are under mandatory evacuation orders; over 1,700 residents are currently displaced. Over 104 acres of land are covered in lava and 27 homes have been destroyed. New fissures and lava flows could appear at any time. All fissures are releasing hazardous levels of SO2, H2S, HF and H2SO4 gases.

9. Description of the nature and amount of State and local or Indian tribal government resources which have been or will be committed. Include additional details in enclosed Governor's or Tribal Chief Executive's cover letter.
Hawai'i County and the State of Hawai'i have focused significant energy and resources on the public safety of the residents threatened by the lava intrusion and accompanying earthquakes and gas emissions. The Hawai'i National Guard is supporting the county in manning roadblocks, providing security, and assisting with evacuation operations. State and county agencies have provided first responders with specialized personal protection equipment to protect them from the toxic gases in the area. State, county and NGOs are supporting hundreds of displaced residents at two Red Cross managed shelters. State, county, federal and NGO partners are also forward planning for the possibility of additional roads being cut by lava and the necessary large-scale evacuation of the entire Lower Puna District.

10. Joint Preliminary Damage Assessment*

☐ Individual Assistance Dates Performed **Requested** _____ **Start** _____ **End** _____

Individual Assistance Accessibility Problems (Areas that could not be accessed, and why)

☒ Public Assistance Dates Performed **Requested** May 8, 2018 **Start** May 8, 2018 **End** May 8, 2018

Public Assistance Accessibility Problems (Areas that could not be accessed, and why)
Full damage assessments are impossible at this time due to the on-going volcanic eruption.

11. Programs and Areas Requested

Individual Assistance ☒ N/A ☐ Individuals and Households Program ☐ Crisis Counseling Program ☐ Disaster Unemployment Assistance

☐ All ☐ Disaster Case Management ☐ Disaster Legal Services ☐ Small Business Administration (SBA) Disaster Assistance

For the following jurisdictions, specify programs and areas (counties, parishes, independent cities; for Indian tribal government, list tribe(s) and/or tribal area(s)) If additional space is needed, please enclose additional documentation).

For States, identify Federally-recognized Tribes in the requested counties (if applicable).

Please see **Enclosure A: Supplemental Information for Individual Assistance** for additional information in support of this request*.

**Not Required for Emergency Declaration Request*

11. Programs and Areas Requested (Continued)

Public Assistance ☐ N/A ☒ Debris Removal (Category A) ☒ Emergency Protective Measures (Category B) ☒ Permanent Work (Categories C-G)* (not available for Emergency Declaration Requests)

For the following jurisdictions, specify programs and areas (counties, parishes, independent cities; for Indian tribal government, list tribe(s) and/or tribal area(s)). If additional space is needed or your request includes different categories of work for different jurisdictions; please enclose additional documentation.
County of Hawaii: Categories A, B, C-G

For States, identify Federally-recognized Tribes included in the requested counties (if applicable).

Please see **Enclosure B: Supplemental Information for Public Assistance** for additional information in support of this request*.

Indemnification for Debris Removal Activity

☐ I do not anticipate the need for debris removal.

☒ I anticipate the need for debris removal, which poses an immediate threat to lives, public health and safety. Pursuant to Sections 403 and 407 of the Stafford Act, 42 U.S.C. §§ 5170b & 5173, the State or Indian tribal government agrees to indemnify and hold harmless the United States of America for any claims arising from the removal of debris or wreckage for this disaster. The State or Indian tribal government agrees that debris removal from public and private property will not occur until the landowner signs an unconditional authorization for the removal of debris.

Request for Direct Federal Assistance

☐ I do not request direct Federal assistance at this time.

☒ I request direct Federal assistance for work and services to save lives and protect property, and:

a. I request the following type(s) of assistance:
Potential assistance with evacuation and support for mass care and long-term housing.

b. List of reasons why State and local or Indian tribal government cannot perform, or contract for, required work and services.
The state does not have the air assets within the state to conduct evacuations by air. There is insufficient emergency shelter space and housing inventory within the county and state to address mass care and long-term housing needs that may result from this disaster.

c. In accordance with 44 C.F.R. § 206.208, the State or Indian tribal government agrees that it will, with respect to direct Federal assistance: (1) Provide without cost to the United States all lands, easements, and rights-of-ways necessary to accomplish the approved work; (2) Hold and save the United States free from damages due to the requested work, and shall indemnify the Federal Government against any claims arising from such work; (3) Provide reimbursement to FEMA for the non-Federal share of the cost of such work in accordance with the provisions of the FEMA-State or FEMA-Tribe Agreement ; and (4) Assist the performing Federal agency in all support and local jurisdictional matters.

Request for Snow Assistance

☒ N/A ☐ I request snow assistance.

Snow assistance for the following jurisdictions (Specify counties, independent cities or tribes and/or tribal areas).

Please see **Enclosure D: Historic and Current Snowfall Data** for additional information in support of this request*.

*Not Required for Emergency Declaration Request

11. Programs and Areas Requested (Continued)

Hazard Mitigation* ☒ Statewide **OR**

For the following specific counties, parishes, independent cities or tribes and/or tribal areas.

12. Mitigation Plan Information*

a. Mitigation Plan Expiration Date October 3, 2018 b. Type of Plan ☐ Enhanced ☒ Standard

13. Other Federal Agency Programs

☒ I do not anticipate requirements from Other Federal Agencies ☐ I do anticipate requirements from Other Federal Agencies

Please see **Enclosure C:** Requirements for Other Federal Agency Programs for additional information in support of this request*.

14. Findings and Certifications

☒ I certify the following:

a. I have determined that this incident is of such severity and magnitude that effective response is beyond the capabilities of the State and the affected local government or Indian tribal government and that supplementary federal assistance is necessary.

b. In response to this incident, I have taken appropriate action under State or tribal law and have directed the execution of the State or Tribal Emergency Plan on May 3, 2018 in accordance with the Stafford Act.

c. The State and local governments, or Indian tribal government will assume all applicable non-Federal share of costs required by the Stafford Act.

15. List of Enclosures and Supporting Documentation

☒ Cover Letter ☐ Enclosure A (Individual Assistance)* ☒ Enclosure B (Public Assistance)*

☐ Enclosure C (Requirements for Other Federal Agency Programs) ☐ Enclosure D (Historic and Current Snowfall Data)

☒ Additional Supporting Documentation Maps, Photo Chronology

Governor's or Tribal Chief Executive's Signature

May 9, 2018
Date

If anyone except the Governor or Tribal Chief Executive signs this document, please provide the documentation that establishes that this individual has the legal authority to act on behalf of the Governor or Tribal Chief Executive.

**Not Required for Emergency Declaration Request*

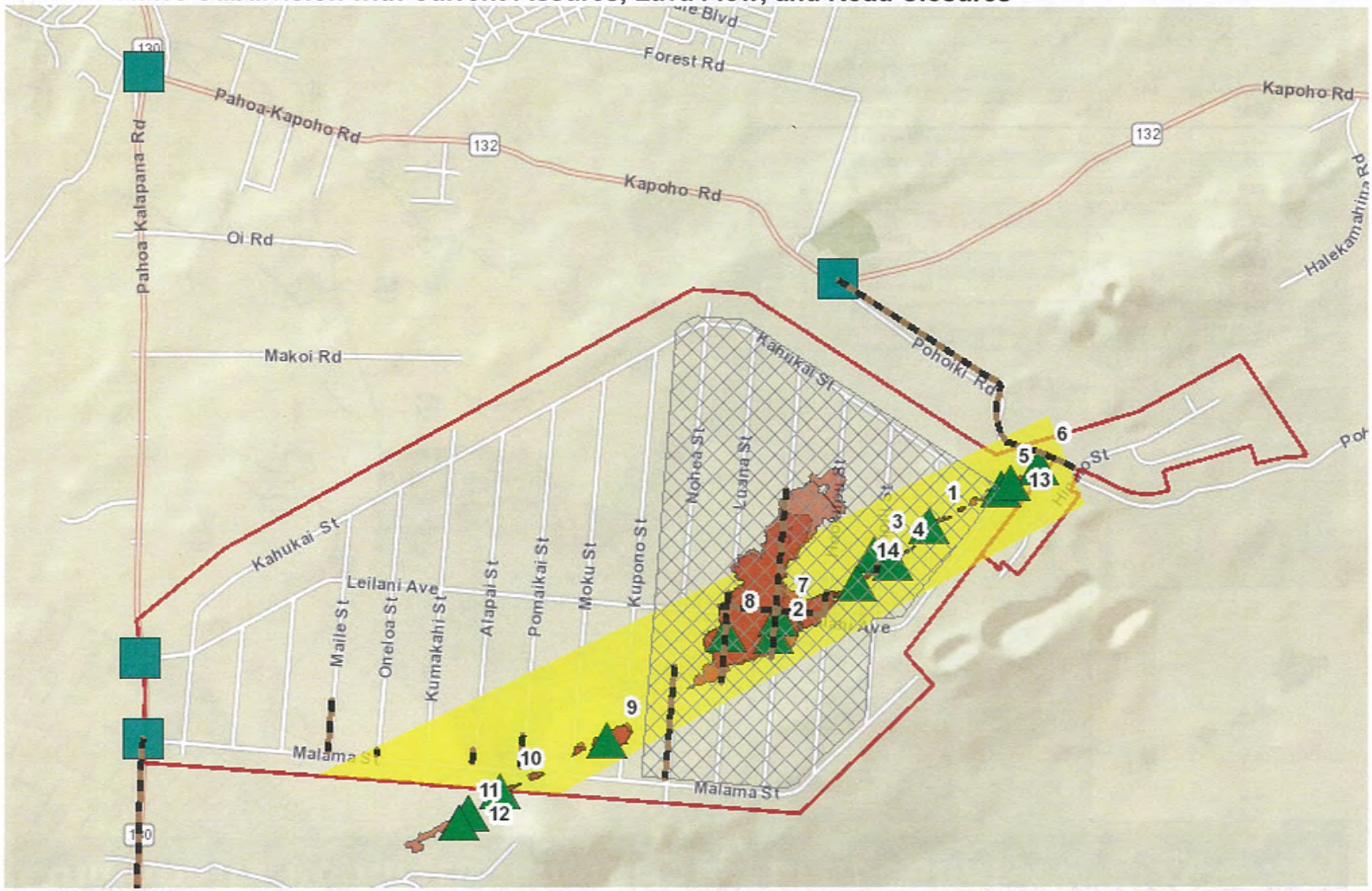
Exhibit B: Cost Estimate Summary Spreadsheet, Public Assistance Grant Program

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	POPULATION
Hawai'i County:										
Hawai'i County Civil Defense Agency		$200,000						$200,000	$1.08	185,079
Department of Parks and Recreation		$150,000						$150,000	$.81	185,079
Department of Public Works		$1,600,000	$1,408,000					$3,008,000	$16.25	185,079
Hawai'i County Department of Water		$100,000		$100,000				$200,000	$1.08	185,079
Hawai'i County Department Fire		$200,000						$200,000	$1.08	185,079
Hawai'i County Police Department		$200,000						$200,000	$1.08	185,079
State Agencies:										
Department of Defense – Hawai'i National Guard		$500,000						$1,000,000	$5.40	185,079
Department of Defense – Hawai'i Emergency Management Agency		$5,000						$5,000	$.03	185,079
Department of Land and Natural Resources		$300,000						$300,000	$1.62	185,079
Hawai'i Department of Health		$120,000						$120,000	$.65	185,079
Hawai'i Department of Transportation		$5,000						$5,000	$.03	185,079
TOTALS		**$3,380,000**	**$1,408,000**	**$100,000**				**$4,888,000**		

U.S. Bureau of Census 2010 State or Tribe population:
Statewide/Tribal Per Capita Impact indicator: $1.46
Countywide Per Capita Impact indicator: $3.68

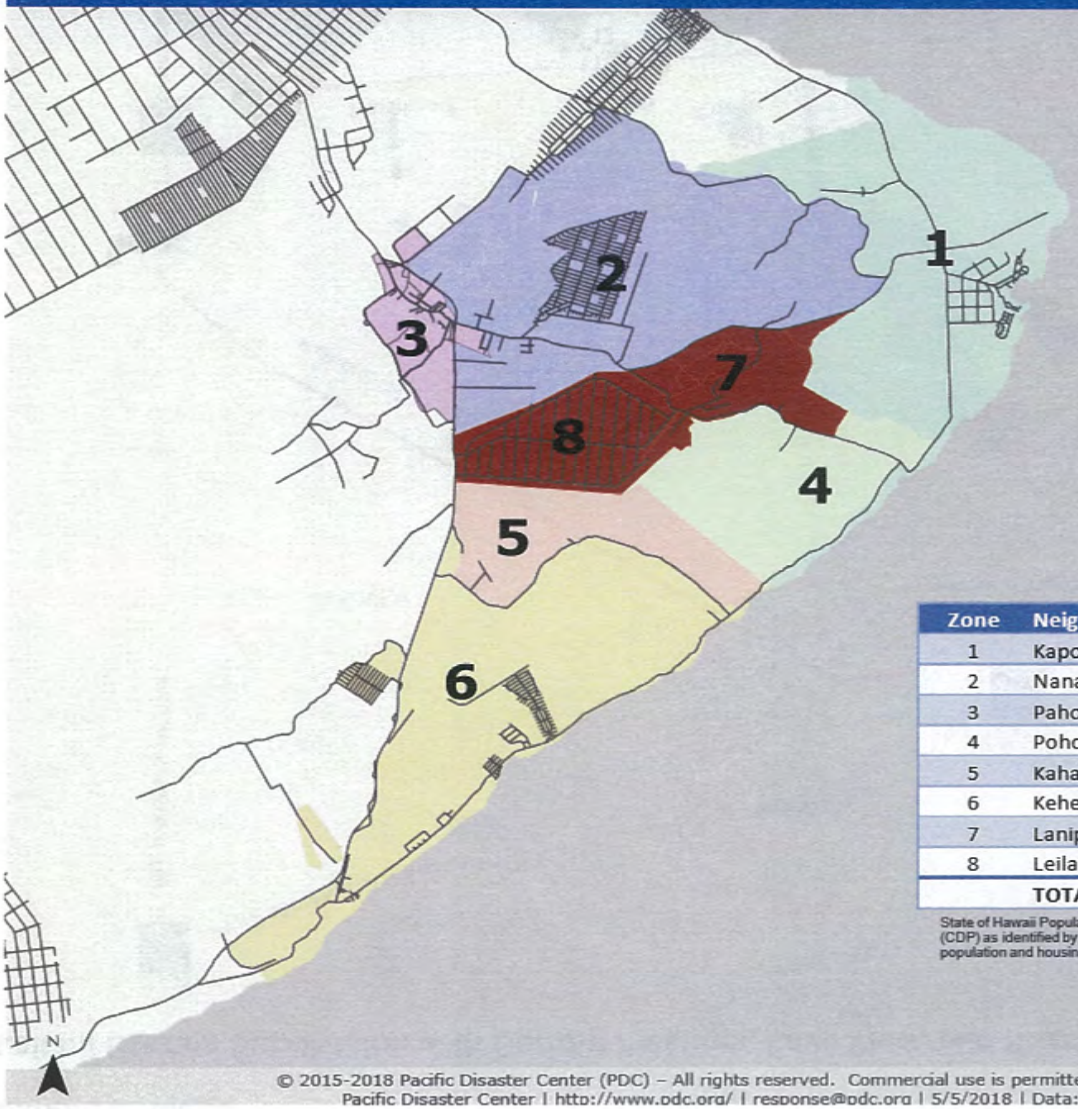
Exhibit E: Maps

Leilani Estates Subdivision with Current Fissures, Lava Flow, and Road Closures



Community Population and Household Counts

PDC | GLOBAL



Roads

Zone	Neighborhood	Population Estimate	Housing Units
1	Kapoho	548	287
2	Nanawale	1384	675
3	Pahoa	865	337
4	Pohoiki	52	18
5	Kahaualea	91	42
6	Kehena	1374	674
7	Lanipuna Gardens	124	60
8	Leilani Estates	1653	775
	TOTAL	**6091**	**2868**

State of Hawaii Populated Areas. The data set is based on the 2010 Census Designated Places (CDP) as identified by the U.S. Census Bureau. Data include the 2012 American Community Survey population and housing estimates

0 1.25 2.5 5 Miles

0 1.5 3 6 Kilometers

Pacific Disaster Center | http://www.pdc.org/ | response@pdc.org | 5/5/2018 | Data: PDC, USGS, Hi-EMA, HAZUS

Exhibit F: Photo Chronology

Credit: U.S. Geological Survey

May 9, 2018

Short-lived explosion at Halema'uma'u crater, 8:27 a.m. HST

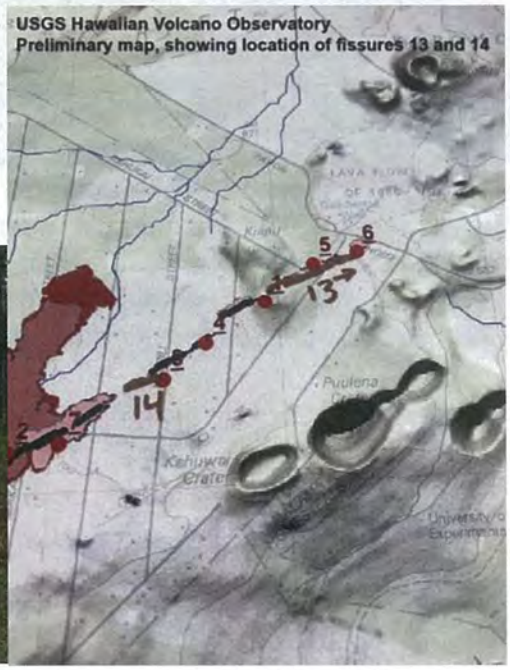
Ash column rises from the overlook crater at the summit of Kīlauea Volcano. HVO's interpretation is that the explosion was triggered by a rockfall from the steep walls of overlook crater. The photograph was taken at 8:29 a.m. HST from the Jaggar Museum overlook. The

explosion was short-lived. Geologists examining the ash deposits on the rim of Halema'uma'u crater found fresh lava fragments hurled from the lava lake. This explosion was not caused by the interaction of the lava lake with the water table. When the ash cleared from the crater about an hour after the explosion, geologists were able to observe the lava lake surface, which is still above the water table.

Left: At 9:53 a.m. HST, severe ground cracks associated with fissure 14 in Leilani Estates. **Right**: Yellow street lines show the offset of cracks on Leilani Street, Leilani Estates.

Cracks and fissures in lower East Rift Zone

Left: This morning HVO geologists examined existing ground cracks on and near Highway 130. One crack on Highway 130 widened about 4 cm (1.6 in) in the past 24 hours. This crack located on Ala'ili Road. **Right:** HVO geologist examines a part of the inactive fissure 10 in Leilani Estates. Incandescence in the fissure was observed at a depth of about 1 m (yd).



Left: At 2:47 p.m. HST, a new fissure (13) erupted across Leilani Street. View is toward the southwest on Leilani Street near the intersection with Pohoiki Road. Fissure 13 is located between fissures 1 and 6. **Right:** Preliminary map showing location of fissures 13 and 14, prepared by geologists on site in Leilani Estates. Both fissures were briefly active this afternoon. Geologists reported fissure 13 activity had diminished by about 5:00 p.m. HST.

Kīlauea East Rift Zone Eruption–Day 5

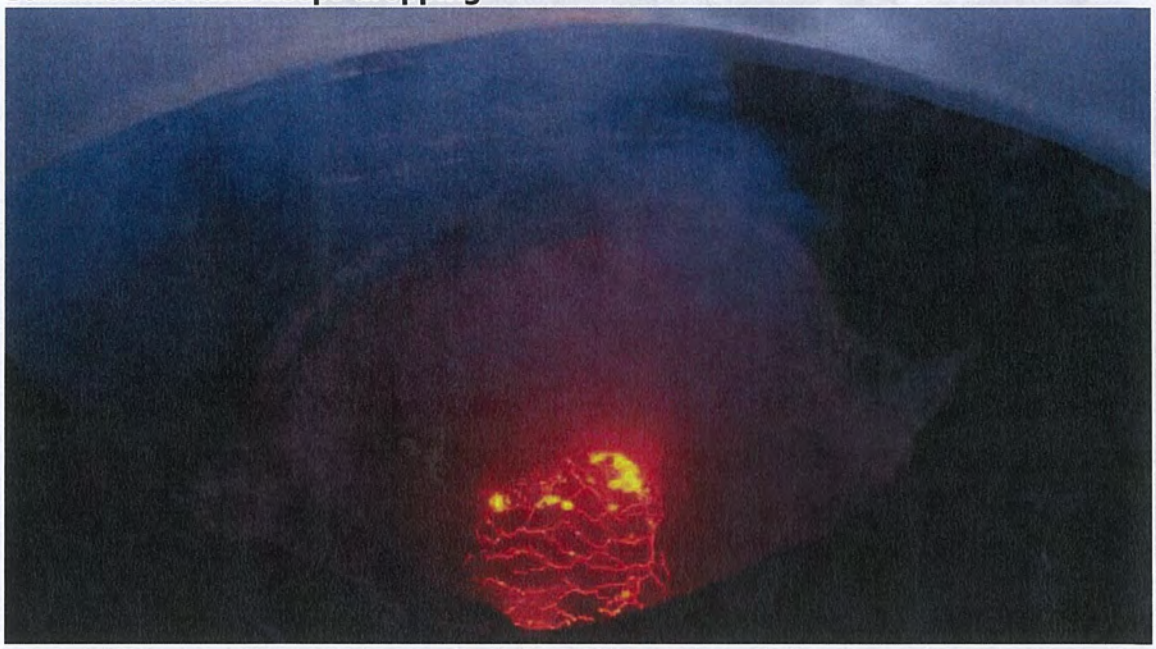
Left: At 7:00 a.m. HST, ground cracking extended across Highway 130. USGS-HVO scientists measured the width of the cracks and used a thermal camera to look for heat within the cracks (shown here), but no significant temperature difference was noted. The cracks spanned a 1.1 km stretch of the highway, which was closed to traffic. **Right:** Cracks in Highway 130 at 9:30 a.m. HST. Orange paint was used to outline the cracks. The road remained closed for much of the day.

At 10:00 a.m. HST, steam rose from fissure 9 on Moku Street in the Leilani Estates subdivision. HVO scientists on the scene reported hearing rumbling noises in the area.

Left: At 12:20 p.m. HST, fissure 12 (shown here) opened shortly after fissure 11 became inactive. Fissure 12 opened in the forest south of Malama Street in Leilani Estates.

May 6, 2018

Summit lava lake keeps dropping



The summit lava lake has dropped significantly over the past few days, and this evening was roughly 220 m below the crater rim. This very wide-angle camera view captures the entire north portion of the overlook crater.

An overflight video from Leilani Estates this afternoon (May 6) showed lava erupting from fissure 8 formed an ʻaʻā flow, which advanced northward about 0.9 km (0.6 miles) by 10:30 a.m. HST. This fissure eruption diminished around 4:00 p.m. HST, but the lava flow continued to advance slowly for several hours (last report at about 7:00 p.m. HST).

At 1:24 p.m. HST, May 6, 2018, USGS scientists monitoring the eruption in Leilani Estates walk past spatter that erupted from fissures 5 and 6 on Leilani Avenue.

Left: A lava flow moves on Makamae Street in Leilani Estates at 9:32 a.m. HST on May 6. **Right:** As part of their monitoring work, HVO geologists collect samples of spatter for laboratory analysis. Information gained from these samples shed light on what's happening inside Kīlauea Volcano. This photo, taken at 10:35 a.m. HST today, shows fissure 10 near the intersection of Malama and Pomaikai Streets in Leilani Estates.

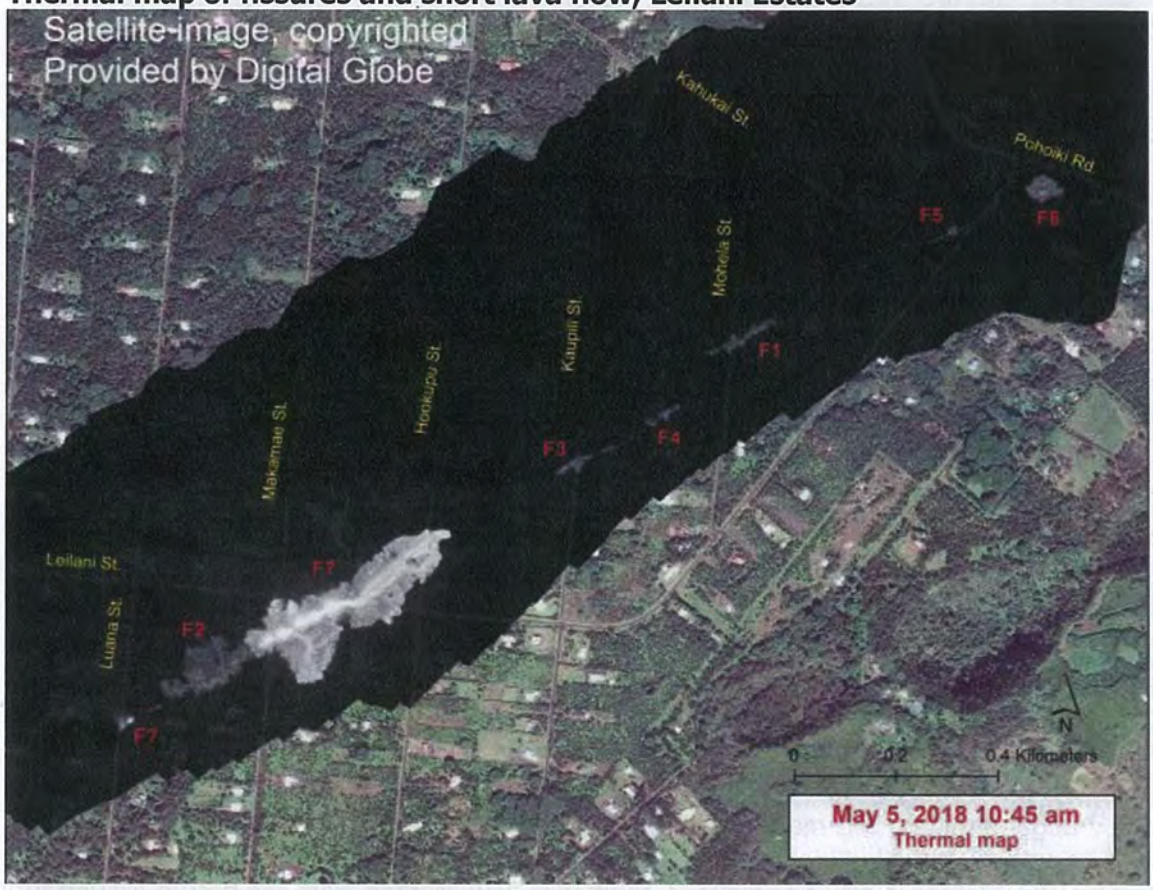
May 5, 2018

View of new fissure from Luana Street near fissure 2 and 7, Leilani Estates

A new fissure erupted this evening near fissures 2 and 7, beginning with small lava spattering at about 8:44 p.m. HST. By 9:00 p.m. HST, lava fountains as high as about 70 m (230 ft) were erupting from the fissure.

Fissure 7 began erupting this morning around dawn and was active for several hours. At the peak of its activity, large bubble bursts occurred at one spot (lower left) in the fissure while spattering was present in other portions. A short lava flow erupted from the fissure around 8:00 a.m. HST, moving northeast and crossing Hookupu Street.

Thermal map of fissures and short lava flow, Leilani Estates



This map overlays a georegistered mosaic of thermal images collected during a helicopter overflight of the fissures in Leilani Estates, Island of Hawai'i, at 10:45 a.m. HST on May 5. The base is a copyrighted satellite image (used with permission) provided by Digital Globe. Temperature in the thermal image is displayed as gray-scale values, with the brightest pixels indicating the hottest areas (white shows active breakouts). During the overflight, fissure 7 stands out as the first fissure to produce a small lava flow. When the thermal images were collected, the flow was about 260 m (853 ft) long. The thermal map was constructed by stitching many overlapping oblique thermal images collected by a handheld thermal camera during a helicopter overflight of the flow field.

Kīlauea Volcano lower East Rift Zone eruption

Left: At 7:45 a.m. HST, today, lava from fissure 7 slowly advanced to the northeast on Hookupu Street in Leilani Estates subdivision on Kīlauea Volcano's lower East Rift Zone. **Right:** At 12:26 p.m. HST today, a crack opened on Pohoiki Road just east of Leilani Street in the Leilani Estates subdivision.

A panoramic view of fissure 7 from the intersection of Leilani and Makamae Streets in the Leilani Estates subdivision. This photo was taken at 6:01 a.m. HST today.

New lava fissure on Makamae and Leilani Streets in Leilani Estates subdivision

Left: A new lava fissure 2 commenced around 1:00 a.m. HST on Kīlauea Volcano's lower East Rift Zone on Makamae and Leilani Streets in the Leilani Estates subdivision. Spatter was being thrown roughly 30 m (about 100 ft) high at the time of this photo. Copious amounts of sulfur dioxide gas, which should be avoided, is emitted from active fissures. The eruption is dynamic and changes could occur with little warning. **Right:** Steaming cracks at 5:57 a.m. HST in Leilani Estates subdivision, moments before fissure 3 opened up on Kaupili Street.

Left: Fissure 2 opened around 1:00 a.m. HST on Friday, May 4, with a small area of spattering in a residential driveway. Within an hour the spattering was more vigorous, with spatter reaching about 30 m (100 ft). This spatter was thrown over the power lines and landed on Makamae Street. **Right:** Fissure 3 opened around 6:00 a.m. HST on Friday, May 4, with weak fuming from a crack on Kaupili Street. This fuming increased, as did rumbling sounds. Eventually spatter was ejected and accumulated around the fissure. Large, loud bubble bursts were common at this fissure.

Fissure 3 at Leilani and Kaupili Streets in Leilani Estates subdivision at 8:07 a.m. HST today. Lava on the road was approximately 2 m (about 2 yd) thick.

Left: Fissure 4 opened in a forest area around 10:39 a.m. HST between Kaupili and Mohala Streets. **Right:** Steaming cracks on Leilani Street--view is looking uprift. Crack in foreground opened during the 12:33 p.m. HST magnitude-6.9 south flank of Kīlauea earthquake.

Left: Fissure 5 opened shortly before 12:00 p.m. HST in Leilani Estates subdivision--Leilani Street runs left to right at the bottom of the photo; Kahukai Street is the cross street. **Right:** Lava from fissure 5 at 12:11 p.m. HST, taken from a similar vantage point as the photo on the left.

Eruptive area showing recent fissures in Leilani Estates subdivision when photo was taken at 12:07 p.m. HST. Fissure 5 is shown in the forefront.

Another look at fissure 5. Photo taken at 12:28 p.m. HST. Note the small finger that crossed Leilani Street (bottom right corner).

At 12:46 p.m. HST, a column of robust, reddish-brown ash plume occurred after a magnitude-6.9 south flank of Kīlauea earthquake shook the Island of Hawai'i.

May 3, 2018

Eruption begins on Kīlauea Volcano's lower East Rift Zone

Left: An eruption has commenced in the Leilani Estates subdivision in the lower East Rift Zone of Kīlauea Volcano. White, hot vapor and blue fume emanated from an area of cracking in the eastern part of the subdivision. Spatter began erupting shortly before 5:00 p.m. HST. Lava was confirmed at the surface in the eastern end of the subdivision, in the areas of Mohala and Leilani Streets. According to the Hawai'i County Civil Defense update at 5:40 p.m. HST, all

residents in Leilani Estates and Lanipuna Gardens subdivisions are required to evacuate. **Right:** The opening phases of fissure eruptions are dynamic. Additional vents and new lava outbreaks may occur. The fissure in Leilani Estates (as of 6:00 p.m. HST) was about 150 m (164 yd) long.

This photo shows the small fissure that opened in the Leilani Estates subdivision today around 5:00 p.m. HST. The fissure was active until about 6:30 p.m. HST.

Areas downslope of the erupting vent are at risk of lava inundation. At this time, the general area of the Leilani Estates subdivision appears at greatest risk. Hawai'i County Civil Defense is on scene and coordinating needed responses, including evacuation of the Leilani Estates and Lanipuna Gardens subdivisions.

Residents of the lower Puna District should remain alert, review individual, family, and business emergency plans, and watch for further information about the status of the volcano. Hawai'i County Civil Defense messages may be found at http://www.hawaiicounty.gov/active-alerts/.

Deep collapsed crater at Pu'u 'Ō'ō; Episode 61g flow field is inactive

After a long period of rain and low clouds, improved weather and high clouds today allowed good airborne observations of the collapsed crater in Pu'u 'Ō'ō. This photo shows the deep collapsed crater formed on Monday, April 30, when magma beneath Pu'u 'Ō'ō drained. For scale, the crater is about 250 m (820 ft) wide.

Left: This wide shot of the northeast, and shows the fissure that formed on the west flank of the Pu'u 'Ō'ō cone (line of white steam). The fissure extends roughly 1.5 km (0.9 mi) west of Pu'u 'Ō'ō Crater, and nearly reaches the bottom of the photograph. **Right:** Another wide view, from the east, showing the dust-rich plume and coating of reddish ash to the south of Pu'u 'Ō'ō.

Left: A view of Pu'u 'Ō'ō from the east, shortly after a small collapse. The coating of red ash on the south side of the cone (left side of photo) is evident. **Right:** At 10:31 a.m. HST, while HVO geologists were working on Pu'u 'Ō'ō, a magnitude-5.0 earthquake shook the ground around the cone. Moments later, a collapse occurred in the crater of Pu'u 'Ō'ō, creating a robust, reddish-brown ash plume.

Ash plume rises above Pu'u 'Ō'ō

At 10:30 a.m. HST, ground shaking from a preliminary magnitude-5.0 earthquake south of Pu'u 'Ō'ō caused rockfalls and possibly additional collapse into the Pu'u 'Ō'ō Crater on Kīlauea Volcano's East Rift Zone. A short-lived plume of ash produced by this event lofted skyward and dissipated as it drifted southwest from Pu'u 'Ō'ō. Downwind areas may have experienced a dusting of ash from this plume. At this time, the 10:30 a.m. HST earthquake has caused no other changes at Kīlauea Volcano. HVO will continue to closely monitor data for any changes. This image was captured from an HVO overflight carrying HVO scientists to the East Rift Zone for field work today. USGS photo by Kevan Kamibayashi.

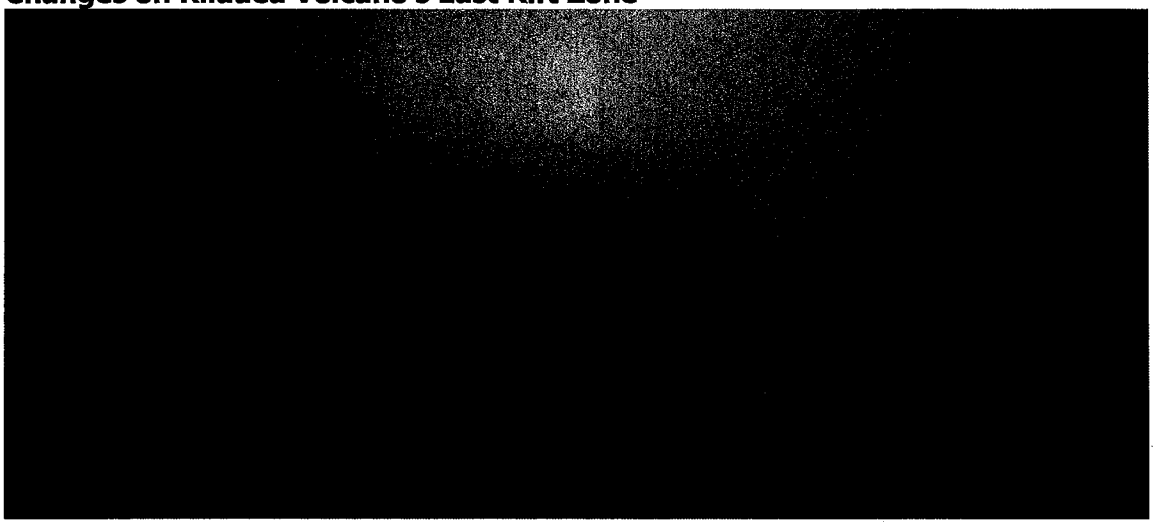
May 2, 2018

Several sets of new, small ground cracks observed on roads around Leilani Estates subdivision

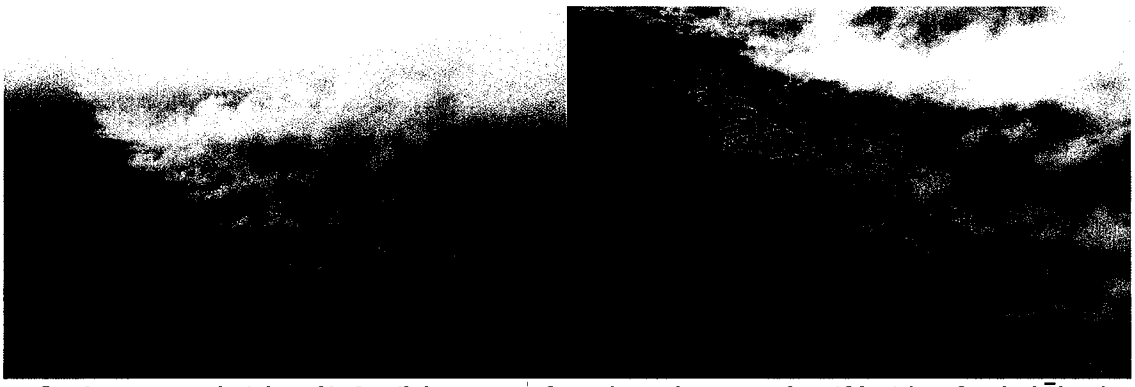
Puna residents reported the recent appearance of ground cracks on roads in and around Leilani Estates to HVO geologists. No steaming was observed and heat was not originating from the cracks.The cracks are currently still small (no more than several inches across). These cracks result from deformation of the ground surface due to the underlying intrusion of magma. Earthquake activity remains elevated in this area due to the ongoing intrusion.

May 1, 2018

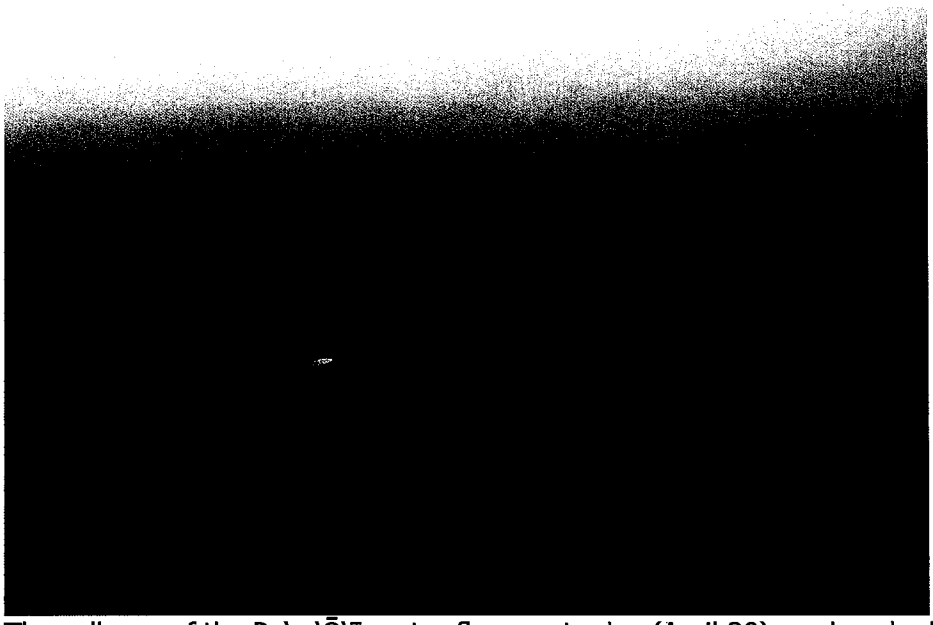
Changes on Kīlauea Volcano's East Rift Zone



Starting at about 2:00 p.m. HST on Monday, April 30, increases in seismicity and ground deformation indicated that a change was underway at Pu'u 'Ō'ō on Kīlauea Volcano's East Rift Zone. Visibility was nearly obscured due to poor weather conditions, but a brief clearing allowed HVO's webcam (POcam) to capture this image of the crater within Pu'u 'Ō'ō shortly before the crater floor began collapsing. Unfortunately, due to ongoing poor weather, a clear view of the collapsed crater floor has not yet been possible. The Pu'u 'Ō'ō crater floor continued to collapse for several hours yesterday; smaller drops in the crater floor have likely continued through today (May 1) based on thermal images.



Left: A new crack 1 km (0.6 mi) long was found on the west (uprift) side of Pu'u 'Ō'ō during HVO's overflight today. The cracking appeared to be nearly continuous en echelon structures that were heavily steaming. A small amount of lava apparently erupted from the crack, based on the presence of nearby tiny pads of lava and spatter, but it was no longer active when HVO geologists saw it during the overflight. This photo of the east, with Pu'u 'Ō'ō obscured by low clouds in the upper left corner. **Right:** Telephoto view of a small lava flow (lighter in color) and spatter (blue-gray) that erupted from a section of the crack on the west flank of Pu'u 'Ō'ō.



The collapse of the Pu'u 'Ō'ō crater floor yesterday (April 30) produced a large amount of red ash that was deposited around Pu'u 'Ō'ō, as well as blown farther downwind, with a thin dusting of ash reaching uprift as far as Mauna Ulu. This photo, taken between 1-2 km (0.6-1.2 miles) from the 61g vent, shows a layer of red ash on top of active 61g lava flow surface breakouts.