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OCTOBER 2014

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Hawaii Flood News

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION



Online Dam and Reservoir Tool

Dams and reservoirs play a critical role in our state, providing such benefits as irrigation and potable water storage, flood control, hydropower, fire protection, recreation, water quality, and ground water recharge upon which our communities and industries depend. The Department of Land and Natural Resources' Engineering Division (Department) administers the Hawaii Dam and Reservoir Safety Program and oversees approximately 135 regulated dams and reservoirs throughout the state. The Department recently completed work on an online database for these regulated dams and reservoirs that is now available for public access, click on the online database button on the right hand menu bar of our website: <http://dlnreng.hawaii.gov/dam/>

This newly released database tool allows users the ability to search for regulated dams and reservoirs three different ways: by a drop down menu on the upper left, search using specific criteria, or by location using a Geographical Information System (GIS) map. Once a facility is located, the database will display the current National Dam Inventory Data as well as a recent aerial and site location photo. The database and the updated data collection have been in progress for several years now, so some of the aerial photos may not reflect the current condition of the structure.

Dam Inventory System
Department of Land and Natural Resources
State of Hawaii

WAILUA RESERVOIR KA-0060

CONTACTS
Name: _____
State of Hawaii, Dept of Land and Natural Resources

GENERAL INFORMATION

National Dam ID:	H00060
State Dam ID:	KA-0060
Dam Name:	WAILUA RESERVOIR
Other Name(s):	
Longitude (dec):	-159.399584
Latitude (dec):	22.063402
County:	Kauai
Island:	Kauai
Type of Dam:	Earthfill
Purpose:	Irrigation
Completed / Last Modified:	1920 /
Nearest Town/City:	WAILUA HOMESTEADS 5 miles
Water Body Type:	State Regulated Dam
Dam Height:	40.0 ft
Dam Length:	1060 ft
Drainage Area:	0.88 sq. miles / 563.2 acres
Primary Spillway Type:	Channel
Maximum Storage:	1223.9 acre-ft / 398.5 MG
TWK(s):	(4) 4-2-001.004, (4) 4-2-001.005, (4) 4-2-001.008

HAZARD POTENTIAL CLASSIFICATION

Hazard Classification: High
Emergency Action Plan: Yes

The GIS map displays the location of regulated dams and reservoirs and differentiates these facilities by their Hazard Potential Classification. A dam or reservoir's hazard potential refers to the possible adverse incremental consequences that result from the release of water due to dam failure or mis-operation. Hazard potential classification does NOT reflect current condition of the dam, including safety, structural integrity, or flood routing capacity. Hazard potential classification does NOT indicate the likelihood of dam failure. The following table identifies the definition of each classification. Some newly identified structures may not have a hazard assessment study completed yet and will be noted as undetermined.

Wai Halana is published quarterly by the Department of Land and Natural Resources (DLNR), Engineering Division. It is supported by the Federal Emergency Management Agency (FEMA) under the Community Assistance Program. The contents of this publications is to increase awareness about the National Flood Insurance Program. The authors and publishers are solely responsible for the accuracy, and do not necessarily reflect the views of DLNR and/or FEMA.

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The current and selected past issues are also available at:
www.hawaiiinfip.org

If you wish to receive the Wai Halana via email or wish to be removed from our mailing list, please contact Kristen Akamine at (808) 587-0281

Upcoming Events



Disaster Day 2014 October 14th

Hawaii Prince Hotel · Maunakea Ballroom

Details attached (includes Lunch Keynote Speaker & mini seminars)



Bernie Wonneberger, Unit Manager and Principal
Wiss Janney Elstner & Associates Inc.
"Pre & Post Disaster Case Study & Discussion"



Carol Tyau-Beam, State of Hawaii's National Flood
Insurance Program (NFIP) Coordinator
"Homeowner Flood Insurance Affordability Act of 2014"



Drew Chamberlain, Hawaii General Manager
BELFOR Property Restoration
"Rebuilding before a Disaster"



**Keynote Speaker,
Justin Cruz**
News and Weather
Anchor KHON2
"Hurricanes and Hawaii"

Building Owners and Managers Association (BOMA) of Hawaii is hosting a series of informative sessions on the "Life Cycle of a Disaster - Pre, During and Post Phases".

To register for this event, download the registration form at:
<http://dlnreng.hawaii.gov/nfip/2014/09/17/disaster-day-2014/>

Continued from Page 1

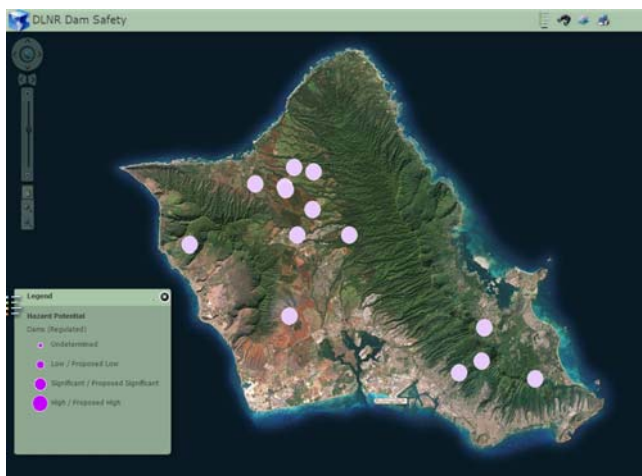
By State Statute, all high and significant hazard potential dam and reservoir owners are required to have an emergency action plan for their facility to help facilitate the evacuation of the downstream population in case an emergency situation develops. The Department is working with Dam Owners and County emergency management agencies to solidify these plans and develop evacuation plans for each of their facilities. Our hope is to incorporate these evacuation plans into our Flood Hazard Assessment Tool's flood hazard report by the end of the year, to help residents and business owners identify if their property is located within one of these evacuation zones.

Here in Hawaii, more than 80% of our dams were constructed before 1940 to support the sugarcane and pineapple plantations that were established on all major islands. Because of the age of many of these facilities, the Department conducts regular inspections to help them identify potential problems and works with dam and reservoir owners on proper methods to maintain and upgrade their facilities. Proper maintenance and improvement will both ensure the safety of the structure and sustain the multiple benefits that these dam and reservoirs provide our community. Please visit our website to learn more on our Hawaii Dam and Reservoir Safety Program.

<http://dlnreng.hawaii.gov/dam/>

HAZARD POTENTIAL CLASSIFICATION DEFINITIONS

Category	Loss of Life	Economic/ Environmental Losses
Low	None expected	Low and generally limited to owner property
Significant	None expected	Yes
High	Probable, one or more expected	Yes (but not necessary for this classification)



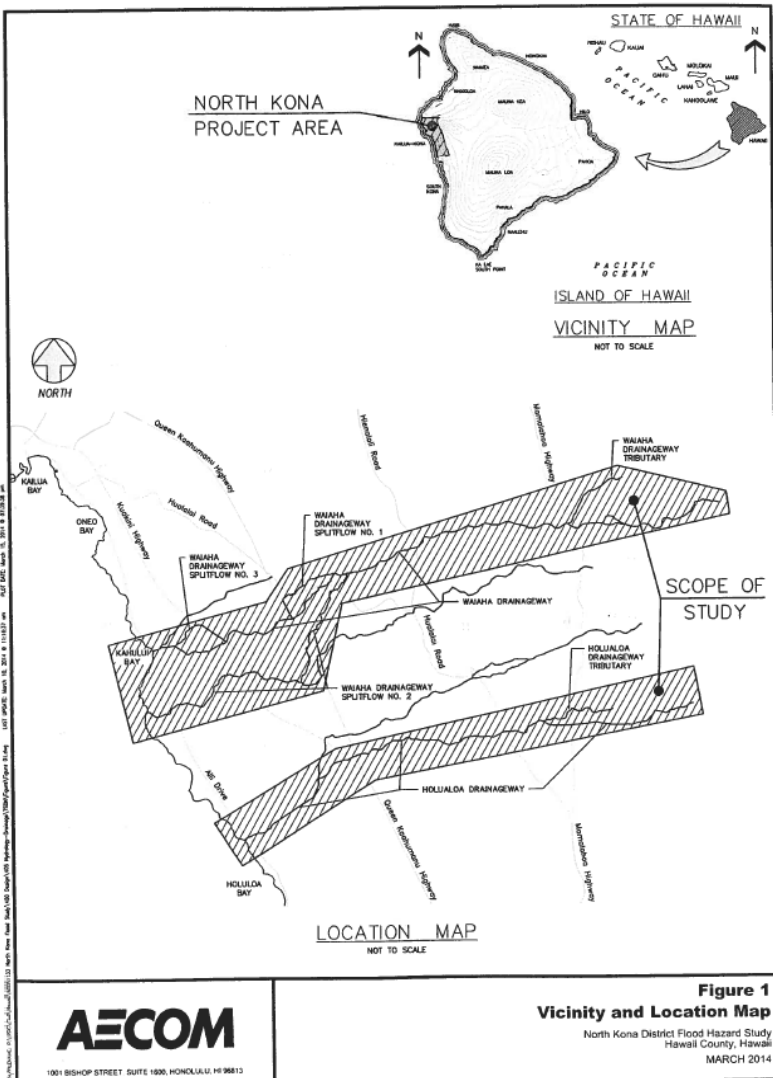
Updated Flood Maps for Holualoa & Waiaha Drainageways

Recognizing that the current Federal Emergency Management Agency's (FEMA) flood maps were produced over three decades ago and are outdated in many areas, the County of Hawai'i has invested valuable County resources to update the outdated flood maps in areas plagued by recurrent flooding.

Holualoa and Waiaha Drainageways in North Kona have recently been restudied by Hawaii County based on updated topography, hydrologic and hydraulic analyses. The stream reaches that were studied in detail were: Waiaha Drainageway; Waiaha Drainageway Splitflow No. 1; Waiaha Drainageway Splitflow No. 2; Waiaha Drainageway Splitflow No. 3; Waiaha Drainageway Splitflow No. 6; Waiaha Drainageway Tributary; Holualoa Drainageway and Holualoa Drainageway Tributary. The Flood Insurance Rate Map (FIRM) panels that will be affected are: 0926E, 0927D, 0713D & 0714C.

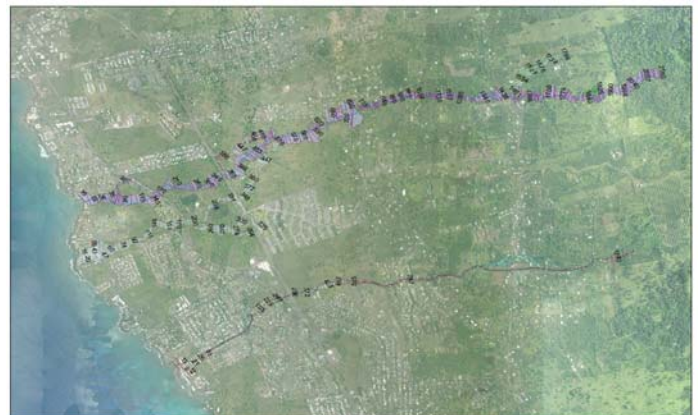


This new criteria for analysis will account for decades of surface erosion and land use changes that have essentially changed the flood flow patterns.



The process by which the Holualoa and Waiaha Drainageway floodplains will be updated on FEMA's flood maps will be through a Letter of Map Revision (LOMR). Hawaii County has initiated this process and the LOMR request is currently under review by FEMA. Because the proposed map change has potential flood insurance and floodplain management consequences for affected property owners, the County has taken advance outreach efforts to notify the community of the proposed LOMR.

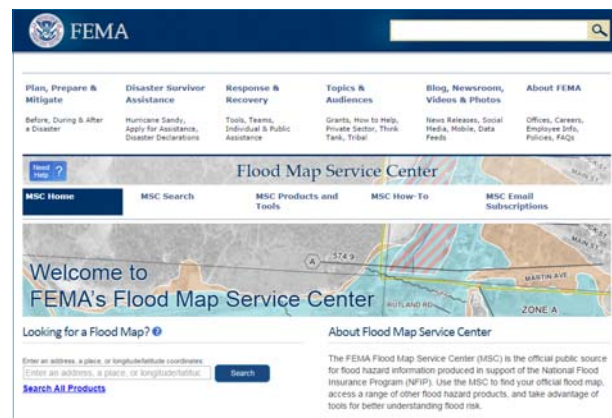
This preliminary North Kona Flood Study and related flood maps are not yet available on the County's website, but are made available by contacting Hawaii County's Floodplain Manager, Mr. Frank DeMarco at fdemarco@co.hawaii.hi.us or visiting the Public Works' Offices in Hilo at 101 Pauahi Street Suite 7 or in Kailua-Kona at 74-5044 Ane Keohokalole Highway. Office hours are weekdays, excluding holidays 7:45 AM - 4:30 PM.



New FEMA Map Service Center Portal

The FEMA Risk MAP team announced the newly redesigned FEMA Flood Map Service Center, the authoritative online public source for flood hazard information produced under the National Flood Insurance Program. In addition to a streamlined and intuitive user interface, the upgraded MSC provides a number of benefits to the public:

- All products free - All products and services are now completely online and free of charge, reducing costs to the public and costs to FEMA associated with processing payments, shipping physical media, and maintaining parallel systems for paying and fee-exempt customers;
- Quick and easy downloads - An enhanced map search allows the public to download their flood map, and any revisions or amendments to it, in a matter of seconds;
- Everything in one place - An integrated product search allows users to locate every flood hazard product available for their area of interest in just a few clicks;
- Free subscriptions - Free customized email subscriptions make it possible for floodplain managers, location officials, and others to know immediately when new information comes out for their community;
- Direct Data Service Features - Products-as-a-service enables access to hosted flood hazard information without ever having to navigate through the actual site, thanks to a standardized product URL format; and
- Enhanced help features - Tailored help text and responses to Frequently Asked Questions quickly guide first-time and novice users of the site to the information they need.



A factsheet summarizing the new and enhanced features may be found in the FEMA Library.

The MSC is one of the many tools used by FEMA to support partners, communities, and individuals as they work together to improve our capability to prepare for, protect against, and mitigate all hazards.

Source: www.msc.fema.gov



FEMA Broadens Scope of HMA Programs

Dam and levee construction/mitigation projects are now eligible for FEMA Mitigation Grant and Pre-Disaster Mitigation programs. [The Eligibility of Flood Risk Reduction Measures Under the Hazard Mitigation Assistance \(HMA\) Programs](#) policy describes a change in HMA program guidance concerning which physical flood risk reduction projects FEMA may consider for funding under its HMA programs.

FEMA is revising the HMA program guidance to allow for the construction, demolition, or mitigation of dams, dikes, levees, floodwalls, seawalls, groins, jetties, breakwaters and erosion projects related to beach nourishment or re-nourishment under the HMGP and PDM programs. [Click here](#) to read more about the eligibility of flood risk reduction measures on FEMA's Hazard Mitigation Assistance Policy page.

Source: ASFPM Chapter Newsletter, August 2014



Using FEMA DFIRM Shapefiles in Autocad



FEMA's Digital Flood Insurance Rate Maps (DFIRM) is delivered as an Environmental Systems Research Institute (Esri) Shapefile (SHP) format. The GIS database comprises a collection of FIRM database tables that blueprint the DFIRM maps.

What if you're designing your site and you want to know where the floodplain is in relation to your development? In the good ole' days before DFIRMs, designers would overlay their site plan or topo on the FIRM maps and trace the floodplain onto the construction drawings. Those days are in the past. AutoCAD and GIS have long since replaced the art of manual drafting. However, many have asked "*How do we use FEMA's DFIRMs in our AutoCAD drawings?*". Well your questions have been answered in two useful FEMA Factsheets:

GIS to CAD Conversion*

http://www.bakeraecom.com/wp-content/uploads/2010/03/Conversion_Guide_GIS_to_CAD_01312011.pdf

CAD to GIS Conversion*

http://www.bakeraecom.com/wp-content/uploads/2010/03/Conversion_Guide_CAD_to_GIS_01312011.pdf

*Note: These factsheets were created in 2011. Minor differences due to software updates may exist, but the overall principles are the same.

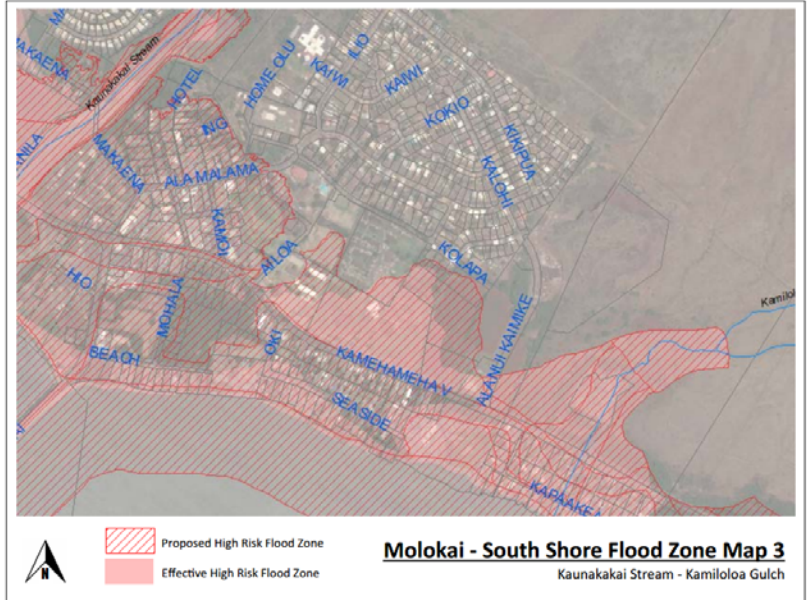




New Preliminary DFIRMs Released for Maui County

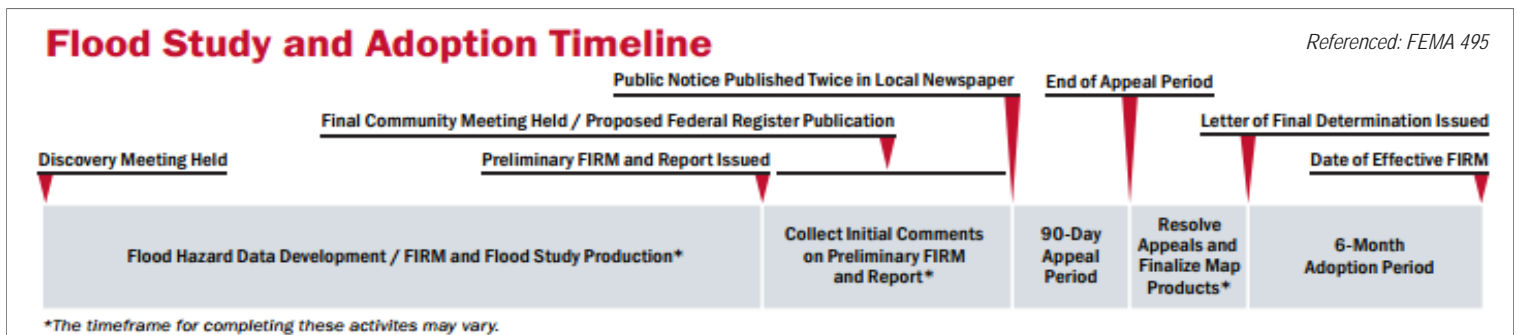
On August 8, 2014, FEMA released Preliminary Flood Insurance Rate Maps (FIRM) for Maui County. These preliminary maps proposes to modify the Base (1-percent chance) Flood Elevations (BFEs) and update the Special Flood Hazard Areas (SFHA) along the south shores of Molokai and areas along Waikapu Stream, Kihei Gulch 1, Keokea Gulch, and Waimahaihai Gulch on the island of Maui.

The process by which FEMA will revise the 45 affected FIRM panels is call a “Physical Map Revision” (PMR). A PMR is an action whereby one or more map panels are physically revised and republished. A PMR is used to change flood risk zones, floodplain and/or floodway delineations, flood elevations, and/or planimetric features. To ensure that those affected by the PMR have the opportunity to provide input, a PMR has procedures that include a community comment period and a 6-month compliance period to update ordinances while the new maps are printed and distributed. In an effort to notify affected property owners and gather input, Maui County hosted two public informational meetings on August 11th and 12th in Molokai and Kihei.



There are several options to viewing the preliminary DFIRMs. Download, a “HOW TO” guide on viewing the maps at: <http://dlnreng.hawaii.gov/nfip/wp-content/uploads/sites/11/2014/09/HOW-CAN-I-VIEW-THE-MAUI-FIRMS.pdf>

September 2015 is when these proposed maps are anticipated to become effective. However, prior to adoption of the new maps certain procedures must be taken in an orderly process which includes a “90-day Appeal Period”.



Although the appeals period has not officially begun, Maui County officials are encouraging individuals who plan on submitting an appeal to turn in their appeals and/or other comments as soon as possible and not wait for the formal “90-day Appeal Period” to begin. All correspondence should be submitted to Maui County Floodplain Manager, Ms. Carolyn Cortez at: Department of Planning, One Main Plaza, 2200 Main Street, Suite 335, Wailuku, Hawaii 96793. For further information, call Ms. Cortez at: (808) 270-7253.

Useful Resources:

Appeals, Revisions, and Amendments to National Flood Insurance Program Maps: A Guide for Community Officials (December 2009)

<http://www.fema.gov/media-library/assets/documents/17930>

Criteria for Appeals of Flood Insurance Rate Maps (November 11, 2011)

[http://www.fema.gov/media-library-data/5270aa93d5b892c8420248bc8f40a1ee/FIRM+Appeals+\(EAP\)+Criteria.pdf](http://www.fema.gov/media-library-data/5270aa93d5b892c8420248bc8f40a1ee/FIRM+Appeals+(EAP)+Criteria.pdf)

FLOOD MAPS Updates

Are you currently doing work in the Counties listed here? If so, please take note that FEMA has approved the following Letter of Map Changes (LOMCs) to the flood hazard information shown on the effective Flood Insurance Rate Maps.



City and County of Honolulu

Type: LOMR-FW
FIRM Panel 0386G
Revision Date: April 22, 2014
FEMA Case Number: 14-09-1812A
Flooding Source: Wailupe Stream

On-line readers can view LOMC [here](#)

Type: LOMA
FIRM Panel 0391G
Revision Date: May 24, 2014
FEMA Case Number: 14-09-2425A
Flooding Source:
Kuapa Pond; Pacific Ocean

On-line readers can view LOMC [here](#)

Type: LOMA
FIRM Panel 0353G
Revision Date: May 29, 2014
FEMA Case Number: 14-09-3120A
Flooding Source: Kalihi Stream

On-line readers can view LOMC [here](#)

Type: LOMA
FIRM Panel 0353G
Revision Date: May 29, 2014
FEMA Case Number: 14-09-1401A
Flooding Source: Kalihi Stream

On-line readers can view LOMC [here](#)

Type: LOMA
FIRM Panel 0368G
Revision Date: June 3, 2014
FEMA Case Number: 14-09-2492A
Flooding Source: Ala Wai Canal

On-line readers can view LOMC [here](#)

Type: LOMA
FIRM Panel 0354G
Revision Date: June 10, 2014
FEMA Case Number: 14-09-2647A
Flooding Source: Waolani Stream

On-line readers can view LOMC [here](#)

City and County of Honolulu (cont)

Type: LOMR-F
FIRM Panel 0354G
Revision Date: June 12, 2014
FEMA Case Number: 14-09-2610A
Flooding Source: Nuuanu Stream

On-line readers can view LOMC [here](#)

Type: LOMA
FIRM Panel 0020F
Revision Date: June 26, 2014
FEMA Case Number: 14-09-3208A
Flooding Source: Pacific Ocean

On-line readers can view LOMC [here](#)

Type: LOMR-FW
FIRM Panel 0270H
Revision Date: July 8, 2014
FEMA Case Number: 14-09-3180A
Flooding Source: Kawa Stream

On-line readers can view LOMC [here](#)

Type: LOMA
FIRM Panel 0290G
Revision Date: August 12, 2014
FEMA Case Number: 14-09-3659A
Flooding Source: Pacific Ocean

On-line readers can view LOMC [here](#)

Hawaii County

Type: LOMA-OAS
FIRM Panel 1156C
Revision Date: June 19, 2014
FEMA Case Number: 14-09-2749A
Flooding Source: Watercourse No. 8

On-line readers can view LOMC [here](#)

Type: LOMA
FIRM Panel 0880C
Revision Date: July 17, 2014
FEMA Case Number: 14-09-2089A
Flooding Source: Palai Stream

On-line readers can view LOMC [here](#)

Hawaii County (cont)

Type: LOMR
FIRM Panel 0870C, 0890C
Revision Date: September 22, 2014
FEMA Case Number: 13-09-2726P
Flooding Source:
Four Mile Creek Tributary No. 1

On-line readers can view LOMC [here](#)

Maui County

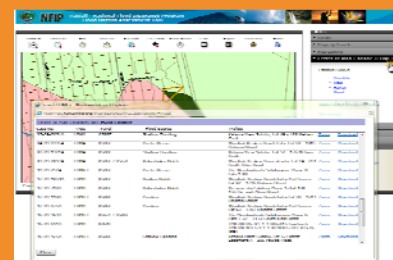
Type: LOMA
FIRM Panel 0567F, 0586F
Revision Date: March 4, 2014
FEMA Case Number: 14-09-0525A
Flooding Source:
Waipulani Gulch, Pacific Ocean

On-line readers can view LOMC [here](#)

Type: LOMR-F
FIRM Panel 0586F
Revision Date: April 17, 2014
FEMA Case Number: 14-09-1759A
Flooding Source: Pacific Ocean

On-line readers can view LOMC [here](#)

For a complete list of Hawaii LOMCs,
visit the Hawaii Flood Hazard
Assessment Tool at:
www.hawaiiinfip.org



Levee Certification vs. Accreditation

What is a Levee Certification?

Levee certification is the process that deals specifically with the design and physical condition of the levee, and is the responsibility of the levee owner or community in charge of the levee's operations and maintenance. Certification must be completed for the levee to be eligible for accreditation by the Federal Emergency Management Agency (FEMA). Certification consists of documentation, signed and sealed by a registered Professional Engineer, as defined in Chapter 44 of the Code of Federal Regulations (44 CFR), Section 65.2. This documentation must state the following:

- The levee meets the requirements of 44 CFR, Section 65.10
- The data is accurate to the best of the certifier's knowledge
- The analyses are performed correctly and in accordance with sound engineering practices

This documentation is provided to FEMA to demonstrate that a registered Professional Engineer certified the levee, and meets the specific criteria and standards to provide risk reduction from at least the one-percent-annual-chance flood. Once the levee meets the other requirements of 44 CFR 65.10, FEMA can accredit the levee and show the area behind it as being a moderate-risk area on a Flood Insurance Rate Map (FIRM). If a community or levee owner wants the area behind a levee to be shown as reducing risk from the one-percent-annual-chance flood, they must first complete the process for having the levee certified.

How is a Levee Certified?

To certify a levee, the community or levee owner must work with a licensed engineer or a Federal agency responsible for levee design to develop and certify documentation that the levee meets design construction standards for at least the one-percent-annual-chance flood. Levee certification does not warrant or guarantee performance, and it is the responsibility of the levee owner to ensure the levee is being maintained and operated properly.

What is Accreditation?

A levee cannot be accredited until the certification process is completed. FEMA accredits a levee as providing adequate risk reduction on the FIRM if the certification and adopted operation and maintenance plan provided by the levee owner are confirmed to be adequate. An operations and maintenance plan specifies key operating parameters and limits, maintenance procedures and schedules, and documentation methods. FEMA's accreditation is not a health and safety standard – it only affects insurance and building requirements.

An area impacted by an accredited levee is shown as a moderate-risk area, and is labeled Zone X (shaded) on a FIRM. In this case, the National Flood Insurance Program (NFIP) floodplain management regulations do not have a mandatory flood insurance purchase requirement. However, FEMA recommends the purchase of flood insurance due to the risk of flooding from potential levee failure or overtopping.

If the levee is not accredited, the area will be mapped as a high-risk area, known as a Special Flood Hazard Area, or SFHA. In this case, the NFIP floodplain management regulations must be enforced and the federal mandatory purchase of flood insurance applies.

FEMA's Role

FEMA does not own, operate, maintain, inspect, or certify levees. FEMA's role is limited to identifying and mapping the level of flood risk associated with levees and only accredits them where data showing compliance with 44 CFR 65.10 is provided by the community, levee owner, or other interested parties. FEMA has a responsibility to the public to identify the risks associated with levees that are either not certified or no longer compliant with 44 CFR 65.10. Areas behind non-accredited levees will be shown on FIRMs as a high-risk floodplain.



Kaunakakai Levee, Molokai

RiskMAP
Increasing Resilience Together



Dept of Land & Natural Resources

Engineering Division

P.O. Box 373

Honolulu, HI 96809



Board of Land & Natural Resources

William J. Aila, Chairperson

James Gomes

Tommy Oi

Vernon Char

Ulalia Woodside

Christopher Yuen

Stanley Roehrig

Make Hawaii a Great Place to Live !!



Conference Theme “Planning for the Rising Tide” Attracts Record Attendance



The 10th Annual Hawaii Floodplain Manager's Conference was held on August 13th and 14th in Honolulu. The conference theme primarily focused on the subject of Climate Change and Sea Level Rise. Expert speakers were on hand to share their knowledge on the subject and discuss initiatives being implemented at the State and local levels.



Increased awareness of Floodplain Management in Hawaii has steadily grown over the past decade and with the increasing concern of climate change, conference participation hit a record high this year with 90 attendees.

The number of Certified Floodplain Managers (CFMs) in Hawaii has also increased dramatically over the past 10 years. Hawaii now has 28 CFMs. Congratulations to our newest CFMs:

Christina Gamayo (Lyon Associates)
Christopher Chin (Lyon Associates)

Jim Lyon (Lyon Associates)
Michael A. Miller (Oceanit)

For more information on ASFP and the CFM Program, visit: www.floods.org

