



Linda Lingle,  
Governor

# Hawaii Flood Management News

Department of Land and Natural Resources  
Engineering Division

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We welcome newsworthy items from the general public. Articles may be sent to the Department of Land and Natural Resources, Engineering Division, P.O. Box 373, Honolulu, Hawaii 96809. Call (808) 587-0267 for more information.

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## Inside This Issue

- 1 • Hawaii's Dams - What are they used for?
- 2 • Hawaii's Dams ... (cont.)  
• Flood Insurance Rate Maps  
• Professional Development
- 3 • Record Rainfall Totals  
• Kauai NFIP Policyholders Eligible for Increased Cost of Compliance Benefits  
• Floods - Sharks, What's the Connection.
- 4 • Preferred Risk Policy  
• Floodplain Management and the I-Codes  
• Around Town - Thoughts from the Editor
- 5 • New Elevation Certificate  
• FHM On the Horizon  
• Spotlight
- 6 • 12th Annual BIA Home & Remodeling Show  
• Announcements

## Hawaii's Dams *What are they used for??*

When one speaks of a "dam", we often think about a structure similar to say, "Hoover Dam". In Hawaii, most of our dams do not resemble a giant concrete wall with elaborate appurtenant works. In fact, over 95% of the dams on Hawaii's Dam Safety Program inventory are earthen dams. According to State Statutes § 179D, a "Dam" is generally defined as an artificial barrier, that is 25 feet or more in height from the natural bed of the stream, or has an impounding capacity at maximum water storage elevation of fifty acre-feet or more. An acre-feet is a volumetric unit that would cover one acre to a depth of one foot.

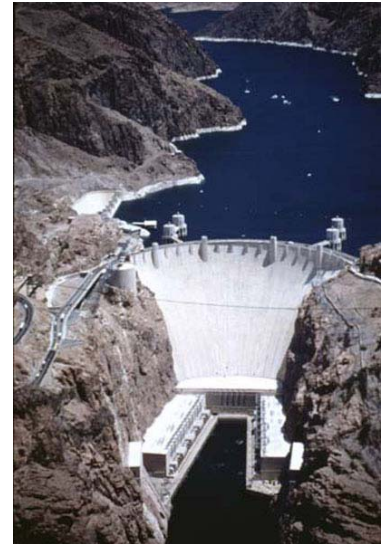


Photo: Hoover Dam

What are the dams for, you wonder? Well there are multiple reasons for the existence of a dam. Historically, the majority of dams in Hawaii were devoted to support the sugar cane industry. Although many of the larger plantation companies have since folded, there are still many smaller farmers that utilize the water from these old reservoirs.

Another purpose of a dam is for flood control. Take for example, Hoomaluhia Botanical Gardens. This picturesque 400 acre park, designed by the U.S. Army Corps of Engineers (ACOE), was built for flood control. Completed in 1981, this flood control structure was constructed to prevent a repeat of the disastrous 1965 and 1969 floods that ripped through the Keapuka Subdivision in Kaneohe.



Officially named, the Kaneohe-Kailua Dam, this structure was the first civil works dam and one of the largest civil works flood control projects constructed by the Pacific Ocean Division.

"Hawaii's Dams ..." continued on page 2

# Flood Insurance Rate Maps



## CORRECTION TO JANUARY 2006 ISSUE:

Current print of the City and County of Honolulu's Flood Insurance Study is September 30, 2004. The most current Flood Insurance Rate Map Index Panel is dated June 2, 2005.

## Need to Check the Status of Map Change Request ??

Visit:

[www.fema.gov/plan/prevent/fhm/st\\_main](http://www.fema.gov/plan/prevent/fhm/st_main)

Select a state for information about ongoing map change activities within the state, including Base Flood Elevation (BFE) Notices. The information is available for map change activities within the past 2 months. For information on older cases, please contact your local community NFIP Coordinator or the Map Assistance Center at 1-877-336-2627 (via email: FEMAMapSpecialist@mapmodteam.com )



## Professional Development

For only the second time ever, the Certified Floodplain Manager's Exam will be offered right here in Honolulu on August 17, 2006 from 1:30 pm - 4:30 pm at Hale Ikena in Fort Shafter.

To be a part of this Nationally Accredited Program and to take the August 17th exam, applicants must apply with the Association of State Floodplain Managers (ASFPM) at:

2809 Fish Hatchery Road

Madison, WI 53713

Phone: 608-274-0123

Fax: 608-274-0696

Email: [asfpm@floods.org](mailto:asfpm@floods.org)

Website: [www.floods.org](http://www.floods.org)

(application forms downloadable)

Exam fees are \$300 for non-ASFPM members and \$100 for members.

To become a member of this elite organization, who's mission is to mitigate the losses, costs and human suffering caused by flooding and to promote the wise use of the natural and beneficial functions of floodplains, call ASFPM at (608) 274-0123 or visit their website for more information.

"Hawaii's Dams ..." continued from page 1

Like most dams, the earthen Kaneohe-Kailua dam was constructed with two outlet structures. At the base of the dam, the outlet carries the normal discharge of inflow runoff into Kamo`oali`i Stream. The wide "channel" to the right of the outlet structure is part of the spillway, which also empties into Kamo`oali`i Stream. As can be appreciated by Keapuka Residents, dams offer many benefits to Hawaii's infrastructure from a recreational, economic and public safety standpoint when properly monitored and maintained by dam owners.



However, according to the National Performance of Dams program, which collects and archives information on dam performance as reported by state and federal regulatory agencies and dam owners, there have been 27 dam failures between 2004 - 2006 (not including the failures of Kaloko and Morita reservoirs on Kauai).

The Association of Dam Safety Officials (ASDSO) recommends one state regulator for every 25 dams. Sadly, the American Society of Civil Engineers 2005 report card found that national statistics average one full time staffer for every 268 dams, in 13 States. In 4 states, 1200 dams were assigned to one state regulator. As these statistics indicate, this is a national problem and not one just isolated to Hawaii.

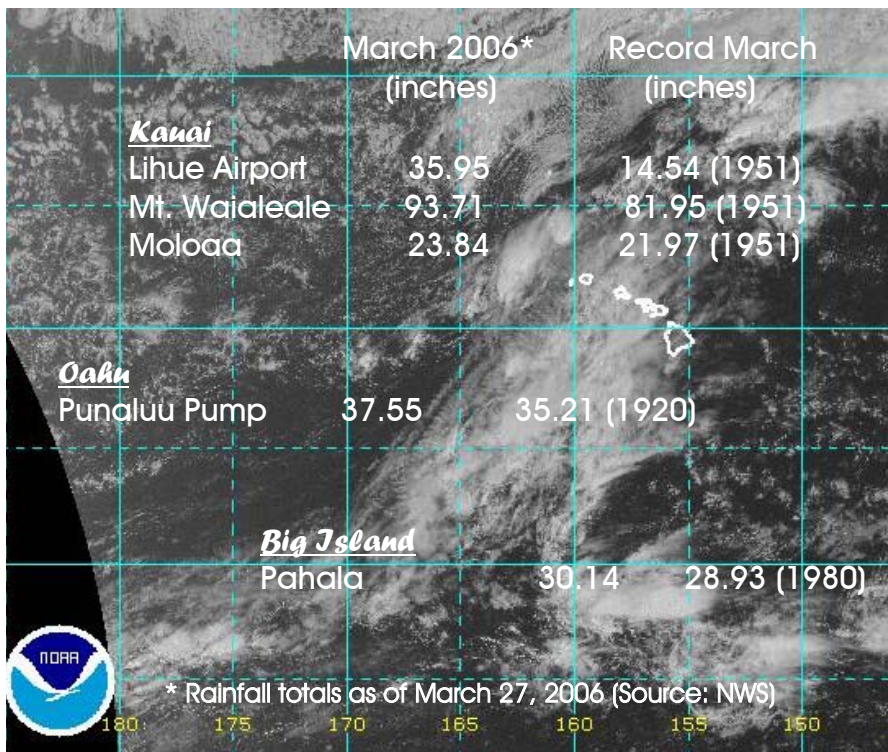
The tragic events at Kaloko Reservoir on Kauai have refueled efforts by Congressional leaders to lobby for much needed funding for our nation's aging dams. On, March 16, 2006, Representatives Randy Kuhl (R-NY), Jim Matheson (D-UT), and Neil Abercrombie (D-HI) introduced legislation to reauthorize the National Dam Safety Program administered by FEMA. The Dam Safety Act of 2006 (H.R. 4981) would provide up to \$12.7 million a year for four years through the National Dam Safety Program to assist states in improving their dam safety programs. Also, on March 16th, Senators Daniel Akaka (D-HI) and Daniel Inouye (D-HI) introduced the Senate companion to H.R. 1105, which would provide funds to states and localities for repair and rehabilitation of publicly owned dams. The Dam Rehabilitation and Repair Act of 2006 (S. 2444) would provide up to \$350 million over four years through the National Dam Safety Program to make repairs to the estimated 2,600 unsafe publicly owned dams in the United States.

A cooperative agreement between the U.S. Army Corps of Engineers and the Department of Land and Natural Resources (DLNR), has allowed for the inspections of all 133 regulated dams (Oahu-16, Kauai-53, Maui-51, Big Island-13) on the State inventory. The inspection teams were comprised of various dam safety experts from around the country. The inspections conducted were visual observations and cannot detect all possible problems with each dam. However, these assessments will serve as a baseline for further actions on obvious concerns in addition to guiding dam owners and dam safety officials on critical issues and mitigative measures that should be implemented to ensure public safety. In addition to the recent inspections, DLNR is assisting dam owners in preparing and/or updating their emergency action plans. DLNR has submitted a request for emergency appropriations of \$5 million dollars to conduct more detailed hazard and condition assessments this legislative session.



# Record Rainfall Totals

Wondering just how much rain Hawaii has received lately? According to the National Weather Service in Honolulu, rainfall totals for the month of March have already surpassed historic events in various locations throughout our State.



## Kauai NFIP Policyholders Eligible for Increased Cost of Compliance Benefits

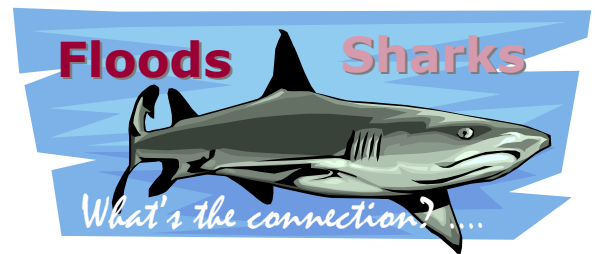
National Flood Insurance Program's (NFIP) Increased Cost of Compliance (ICC) coverage is part of all standard flood insurance policies. The coverage enables eligible NFIP policyholders who reside in special flood hazard areas to receive up to \$30,000 to help with the cost of bringing their homes or businesses into compliance with local floodplain ordinances.

ICC funds may be available under two conditions. In the first instance, the home is substantially damaged, meaning it had damages totaling 50 percent or more of the home's pre-disaster market value. The second is when there is a "repetitive loss", meaning two or more flood insurance claims, totaling 25 percent or more of the property's value, paid out in the past 10 years. However, before the ICC funds are available to policyholders, the community must first adopt the "repetitive loss" language in their local flood ordinance.

Kauai is the only community in the State of Hawaii that is eligible for this added benefit. On September 9, 2005, the County of Kauai adopted Floodplain Management Ordinance 831 which added the "repetitive loss" definition and regulatory requirements.

To learn more about how the Increased Cost of Compliance works, visit:

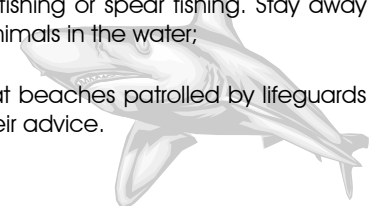
[www.fema.gov/nfip/icc.shtm](http://www.fema.gov/nfip/icc.shtm)



With the recent rains, we had to deal with all sorts of problems from flooding and mudslides, to sewer spills, and leptospirosis. But who would have thought we would have problems with ocean safety. The DLNR Division of Aquatic Resources, advises ocean users to be mindful when entering the ocean, especially near stream mouths, after heavy rains as murky waters have been known to attract sharks.

DLNR's Shark Task Force has prepared a list of safety tips to reduce the risk of encounter with sharks. These tips include the following:

- Swim, surf or dive with other people, and don't move too far away from assistance;
- Stay out of the water at dawn, dusk and night, when some species of sharks may move in-shore to feed;
- Do not enter the water if you have open wounds or are bleeding in any way. Sharks can detect blood and body fluids in extremely small concentrations;
- Avoid murky waters, harbor entrances and areas near stream mouths (especially after heavy rains), channels or steep drop-offs. These types of waters are known to be frequented by sharks;
- Do not wear high-contrast clothing or shiny jewelry. Sharks see contrast very well;
- Refrain from excessive splashing; keep pets, which swim erratically, out of the water. Sharks are known to be attracted to such activity;
- Do not enter the water if sharks are known to be present. Leave the water quickly and calmly if one is sighted. Do not provoke or harass a shark, even a small one;
- If fish or turtles start to behave erratically, leave the water. Avoid swimming near dolphins, as they are prey for some large sharks;
- Remove speared fish from the water or tow them a safe distance behind you. Do not swim near people fishing or spear fishing. Stay away from dead animals in the water;
- Swim or surf at beaches patrolled by lifeguards and follow their advice.





**Flood facts**

- Homeowners insurance doesn't cover floods
- Renters insurance doesn't cover floods
- Only flood insurance covers floods
- Floods are the most common, and costly, natural disaster
- They can happen anywhere, even in areas no one believes to be high risk
- Heavy rains, a blocked creek, or inadequate drainage can all lead to floods. And you're left with damaged walls and floors, drenched rugs and furniture, mud, and debris.
- 25% - 30% of all flood insurance claims are paid to people in low -to moderate-risk flood zones. Are you willing to gamble your home, your possessions, and your financial well-being on a flood?

**LOWER COST FLOOD PROTECTION - The Preferred Risk Policy (PRP)**

The National Flood Insurance Program's Preferred Risk Policy (PRP) offers lower-cost protection for homes and apartments in areas of low-to moderate-flood risk. These areas outside of known floodplains are shown as B, C, or X zones on a Flood Insurance Rate Map.

**For Homeowners – Protecting Your Home and Its Contents**

Most single-family homes, townhomes, and apartments in these areas are eligible for the lower PRP rates, as long as the building does not have a significant history of flooding. Most multi-unit condominium buildings do not qualify, though insurance for them is available at standard rates.

Several combinations of building and contents protection are available. You can buy \$20,000 building coverage and \$8,000 contents coverage for as little as \$112 per year. Higher coverage combinations of up to \$250,000/\$100,000 are available.

**For Building Owners – Building and Contents Coverage**

Most businesses, farm buildings, churches, and schools in these areas are eligible for the lower PRP rates, as long as the building does not have a significant history of flooding.

Building and contents protection is available at approximately 30% savings compared to a standard policy. You can buy \$50,000 building coverage and \$50,000 contents coverage for as little as \$500 per year. Higher coverage combinations of up to \$500,000/\$500,000 are also available.

Source: FEMA

# Floodplain Management And the I-Codes™

Many states and communities adopt and enforce building codes. The purpose of building codes is to safeguard the public health, safety and general welfare through sound building practices. Model building codes have always included some requirements to reduce damage to buildings due to weather and natural hazards. New buildings are to be designed and constructed to withstand most anticipated conditions without causing structural collapse or major damage.

The International Codes® (International Building Code®, International Residential Code™, and the International Existing Building Code™, ) includes requirements related to high winds, seismic activity, poor soils, and flood hazards. FEMA has determined that the I-Codes™ and the NFPA (National Fire Protection Association) 5000 include provisions that are consistent with the National Flood Insurance Program. FEMA has produced a publication entitled "Reducing Flood Losses through the International Codes® Meeting the Requirements of the National Flood Insurance Program". This publication is designed to help communities decide how to coordinate the I-Codes™ with their floodplain management ordinance.

Source: FEMA



But they told me "I wasn't in a flood zone"

By: Carol Tyau-Beam, State NFIP Coordinator

*" Recently I participated in the Disaster Recovery & Assistance Centers at Kualoa Ranch on Oahu and at the Kilauea and Kalaheo Community Centers on Kauai to provide information about the National Flood Insurance Program. Of the approximately 4 dozen families I spoke with, only a handful had flood insurance. The ones that did have flood insurance, only had the specialized coverage because it was a condition of their mortgage. To add insult to injury, only two of these "flood insured" families, had contents coverage. Needless to say, these policyholders were devastated to learn that their content losses would not be covered and they were basically on their own to "dry out". One couple said they assumed their contents were covered under the flood policy they maintained all these years and that their insurance agent never offered them the optional content coverage not required by lenders. I hope that this couple's dilemma is not representative of all flood insured policyholders and encourage insurance agents to at least offer contents coverage, especially if these properties are located in a special flood hazard area and required, by their lender, to obtain flood insurance for the structure.*

*Another disturbing complaint from property owners, that seemed to be echoed repeatedly, was that they didn't know they could buy flood insurance because their agents told them "they couldn't" or "they didn't need it" because they were not located in a "flood zone". I should caution anyone making this claim, as this is not altogether true. Although a structure may be located in an area outside of the 100-year floodplain (X, B, or C zones), it still has the potential to be flooded. In fact, FEMA sees approximately 25% of flood insurance claims come from properties located in an X zone. A lot of flood victims from the 2004 Manoa Floods, were located in an X zone.*

*Keep in mind that the Flood Insurance Rate Maps (FIRMs) were developed to identify the 1% chance storm event (aka 100 year event) for the purpose of rating flood insurance premiums. Other flood hazards may exist, but not necessarily identified on the FIRMs.*

# New Elevation Certificate

FEMA's new Elevation Certificate (EC) was approved for use, effective February 13, 2006, through February 28, 2009. The new form has been revised and now requires the certifier to provide the square footage of the enclosed area below the elevated floor and at least two photographs of the building, if the EC is being used to obtain flood insurance.

The new EC will be phased in on a voluntary basis until December 31, 2006. An electronic version of the form and instructions is available on the FEMA website. Although the old version of the form is no longer available for distribution, existing copies may be used until the end of 2006. Elevations certified on or after January 1, 2007, must be submitted on the new form and must include photographs.

## What's New?

- The format of the EC has been modified slightly to include all building description related items in Section A, dedicating Section C to building elevation information.
- The instructions of the new form have been modified to reflect the changes and to provide better guidance for completing the form.
- Two pages have been added for attaching two or more color photographs of the building. Photographs must be a minimum of 3" x 5" and may be digital or analog.
- Elevation Certificate (includes 8 building type diagrams for determining reference levels)

The EC form and instruction packet are available from the FEMA Distribution Center at 800-480-2520 (ask for FEMA Form 81-31) or on-line at:

<http://www.fema.gov/pdf/nfip/elvcert.pdf>

It will also be reproduced in the May 1, 2006 NFIP Flood Insurance Manual.

Source: FEMA



## On the Horizon ...

FEMA Region IX plans to undertake a Hurricane Flood Insurance Risk Study for the State of Hawaii.

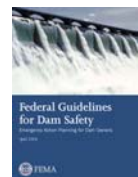
Using improved methodology and modeling techniques, FEMA hopes to improve and update the coastal flood hazard information for our Southern shorelines.



## Spotlight

Spotlight, features informative publications which are available to the public free of charge. This quarter's selection is:

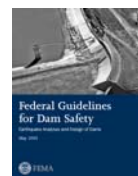
### Federal Guidelines for Dam Safety



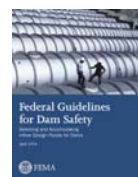
Emergency Action Planning for Dam Owners (April 2004)



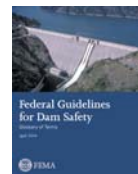
Federal Guidelines for Dam Safety (April 2004)



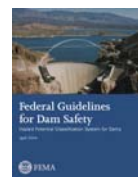
Earthquake Analysis and Design of Dams (May 2005)



Selecting and Accommodating Inflow Design Floods for Dams (April 2004)



Glossary of Terms (April 2004)



Hazard Potential Classification System for Dams (April 2004)

These valuable Dam Safety publications and more are available on-line at: [www.fema.gov/plan/prevent/damfailure/publications](http://www.fema.gov/plan/prevent/damfailure/publications)

NOTE: We offer this publication information for reference only. We do not endorse any product or company. Please note website links may have changed



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Hawaii Flood Management News

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The 12th Annual Building Industry Association of Hawaii's Home and Building Remodeling Show was held at the Neil Blasidell exhibition hall on February 2 - 5, 2006.

During the four day event we were able to service event visitors with valuable information about the National Flood Insurance Program and the potential flood risk to their properties.

Many were amazed by the destructive forces of Mother Nature. Even Senator Norman Sakamoto (pictured below) was surprised to see his District "under water".



## Announcements

The Department of Land and Natural Resources, Engineering Division is pleased to announce two new additions to the Flood Control / Dam Safety Section.

Engineer, Ms. Denise Manuel has stepped into her new role as the head of the Dam Safety Unit. Ms. Manuel will hit the ground running with her new responsibilities of Dam Safety Inspections and other programmatic issues.

Mr. Imiloa Sakai-Giddens is the newest member to the Land Maintenance Crew. Mr. Sakai-Giddens arrival is a much needed addition to an already busy team. The month of March was extremely demanding for the Land Maintenance personnel, who responded to countless emergencies from the recent floods, rock-falls and mudslides.

**WELCOME ABOARD Denise and Imiloa !!**

