



DEPARTMENT OF DEFENSE
Hawai'i Emergency Management Agency

DAVID Y. IGE
GOVERNOR

MAJOR GENERAL KENNETH S. HARA
DIRECTOR OF EMERGENCY
MANAGEMENT

LUKE P. MEYERS
ADMINISTRATOR OF EMERGENCY MANAGEMENT

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2011 Hawaii Tsunami 10 Year Anniversary

On March 11, 2011, at 14:46 Japan local time, a M9.0 earthquake occurred off the northeastern coast of Honshu, Japan, that generated a devastating tsunami. Total damage was estimated at USD \$220 billion, making it the most expensive disaster in history. It was the largest magnitude earthquake ever in Japan and is the 4th largest in the world since 1900. In many coastal towns, waves flooded to at least the 3rd or 4th floor of buildings. 500,000 houses were completely or partial destroyed, and about 500,000 people displaced. Over 18,000 persons lost their lives - nearly all from the relentless tsunami waves.

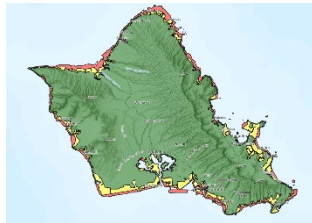




The earthquake generated a Pacific-wide tsunami, reaching the State of Hawai'i, and causing extensive damage to private and public property in the counties of Honolulu, Maui, and Hawaii. Over 200 waves were recorded in varying heights. The counties sustained damage of approximately \$7.5 million, equating to over \$8.725 million today. President Obama declared this a Major Disaster for the State of Hawaii on April 8th 2011.

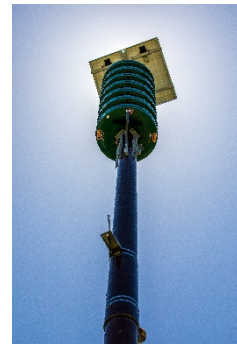
Since this incident, the Hawai'i Emergency Management Agency (HI-EMA), in coordination with our County partners, the University of Hawai'i system, the Federal Emergency Management Agency (FEMA), and the United States Coast Guard (USCG) have taken major steps to mitigate impacts to the state, enhance communications networks, improve awareness, and prepare for whenever the next tsunami may occur.

Hawaii has become the first jurisdiction in the United States to implement tsunami evacuation maps for emergency response operations. The 2011 Tohoku tsunami prompted the development of extreme



inundation scenarios beyond what can be inferred from historical records, and county emergency management augmented the evacuation maps with a second hazard zone delineated by modeled tsunamis from potential Mw 9.3 and 9.6 earthquakes. These can be located in the front pages of your local telephone book, as well as on-line (<https://dod.hawaii.gov/hiema/public-resources/tsunami-evacuation-zone/>).

Hawai'i has created the largest outdoor warning siren system in the United States. 410 sirens are installed across the islands, with 76 state-of-the-art sirens to be added, increasing coverage state-wide. The new, standardized, electronic sirens are battery powered with a photovoltaic solar charging system and have redundant cellular/satellite communications. Additionally, 73 existing legacy sirens are to be upgraded.



A wide-ranging data compendium in support of emergency management for the nine state harbors has been developed to facilitate delineation of offshore refuge areas, where vessels are evacuated to during a tsunami warning. Of equal importance to the maritime community is the occurrence of more frequent tsunami advisories, when hazardous nearshore currents are expected. The "Hawai'i

Boater's Hurricane and Tsunami Safety Manual" can be found on-line (https://dlnr.hawaii.gov/dobor/files/2013/04/web-final_hurricaneboatersmanual_7-01-13.pdf).

The HI-EMA Public Assistance Branch facilitated over \$6.4 million in federal dollars for repair projects across the state resulting from the 2011 tsunami. In such time, all reparations have been completed and 3 projects remain to be approved and closed by FEMA.

From the newly expanded Continuity of Operations location nestled in Diamond Head Crater, seismic activity is constantly monitored with the continuous vigilance of the State Warning Point (SWP) Team.



Revised and updated Tsunami Response Checklists, for Local and Distant Earthquake events that produce a tsunami, have been developed and practiced. Emergency lines of communication between SWP and the four counties' early warning centers are routinely tested, and additional communications systems have been installed in case the primary and secondary systems are ever



interrupted. Also, the agency has upgraded its FEMA authorized software for use of the Intergraded Public Alert & Warning for Emergency Alert System and Wireless Emergency Alerts (WEA) notifications over TV, Cable, Radio, & WEA enabled/compatible cellular devices. The agencies internal mass notification system for situational awareness and staff recall was also upgraded.

The HI-EMA encourages every resident to take steps now to prepare for any emergency and protect your ohana.

Pack a 14-day 'Go-To-Kit' for your family

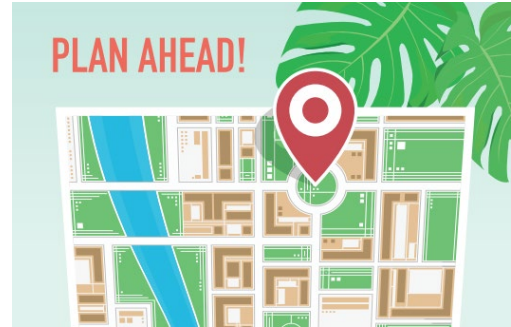
- Change of clothes and sturdy shoes
- 1 gallon of water per person per day
- Non-perishable foods
- Masks, gloves, and sanitizer
- First aid kit
- Battery powered or crank powered radio
- Flashlight
- Batteries
- Manual can opener
- Hygiene supplies
- Whistle
- Important documents



Make a plan

- Plan escape routes – ensure all family members know where to go and how to get out

- Meeting place – choose a physical location to meet if communication between family members is down
- Family communication – identify a family member who lives out-of-state who everyone can notify when they are safe



After a strong or long earthquake, a tsunami may follow.

If you feel the ground shake

- Drop, cover and hold on
- Evacuate quickly on foot to high ground or far inland
- Wait for local officials to advise on cautionary re-entry

Sign up for Emergency Notifications

- Please visit <https://dod.hawaii.gov/hiema/get-ready/> for links to each County website for free text-based notifications for the latest updates on natural disasters and man-made emergencies

We cannot go back in time and change history, nor can we control the dynamics of our planet. Yet we can and must learn from the past, prepare for whatever the future may bring, and work to limit tsunami impacts to our state and people.

For more information please visit ready.hawaii.gov

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Contact:

Douglas Carroll
 Public Information Officer (TA)
douglas.m.carroll@hawaii.gov
 808-285-1516

For the latest information from the Hawai'i Emergency Management Agency (HIEMA) please go to:

<http://www.ready.hawaii.gov>
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HawaiiEMA@hawaii.gov