

TSUNAMI

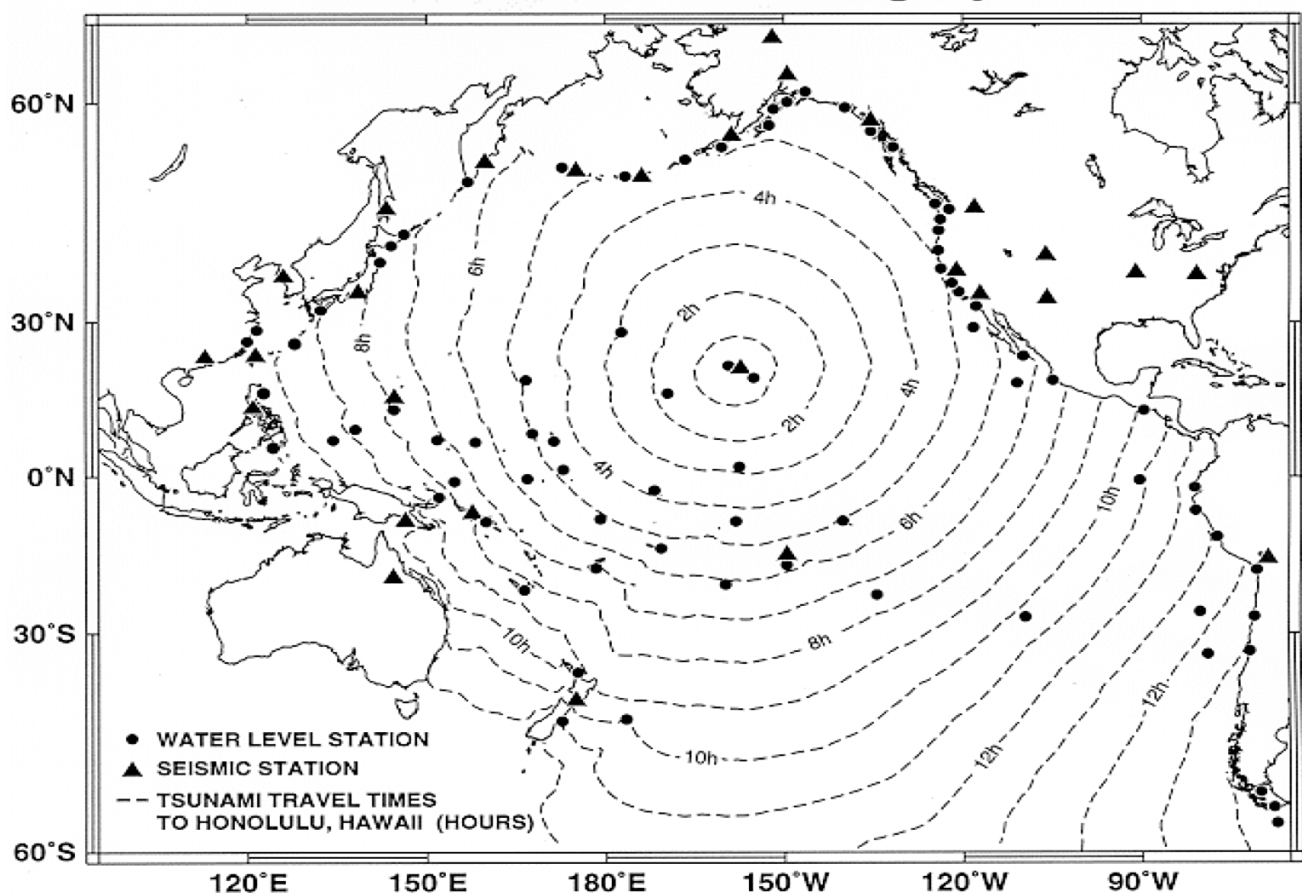


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A. TSUNAMI ALERT SYSTEM

Tsunamis are a series of very dangerous, large, long ocean waves produced by underwater earthquakes or possibly but less likely by underwater landslides or underwater volcanic eruptions. They flood the land like a rushing river or fast rising tide rather than curling or breaking like a regular surfing wave. Tsunami waves may keep coming for hours with waves arriving every 10 minutes to one hour apart. The first wave may not be the largest. Tsunamis travel as fast as a jet airliner, approximately 500 miles per hour, in the deep ocean not visible on the surface until it reaches shallow water.

The tsunami detection system is the National Oceanic and Atmospheric Administration's Pacific Tsunami Warning Center (PTWC). When notified by the PTWC, Department of Emergency Management (DEM) will send advisories, watches and warnings with details about the event and more importantly, the wave arrival time. Sirens will sound statewide at three hours, two hours, one-hour, and 30 minutes before the estimated first wave arrival time. All siren actions will be accompanied by detailed DEM instructions over NOAA weather radio, local news radio, and television. All coastal areas are vulnerable regardless of the direction where the earthquake occurred. The Hotel Command Center will open. The warning system is as follows:



Concentric circles represent one-hour travel time of a Tsunami wave.

TSUNAMI TERMINOLOGY

Tsunami Information Statement –If a Tsunami Information Statement is issued, there is no Tsunami threat

Tsunami Watch –Significant distant underwater earthquake has occurred. Tsunami approach is not confirmed but possible. No siren will sound. Prepare for possible upgrade to a Tsunami Warning.

Tsunami Advisory –Move away from beaches or low lying coastal areas and evacuate harbors and marinas. Expect strong currents and dangerous waves, but significant land flooding is not expected.

Tsunami Warning –Tsunami approach confirmed. Sirens will sound. Monitor radio and television. Distant Tsunami waves arrival could be less than 3 hours. Be prepared to evacuate when advised or ordered by DEM.

Local Earthquake –May cause you to fall or have difficulty standing. A local earthquake is a tsunami warning. Waiting for local authorities to announce a warning may be too late. Initially protect yourself from earthquake effects and when the shaking stops, leave the evacuation zones immediately.

Urgent Tsunami Warning –A possible tsunami generated by a significant earthquake in local waters. The sirens will sound. Turn on the radio. If an urgent tsunami warning for your island is announced, leave the evacuation zones immediately.

Tsunami Evacuation –Sirens will sound. Turn on radio or television. Those who are in tsunami evacuation zones found in the phone book white pages must begin evacuation when the evacuation order is issued by civil defense typically 3 to 4 hours before wave arrival. City buses will leave evacuation zones and police will seal off roads no later than 45 minutes before the anticipated arrival of the first wave. The cell phone network will likely be congested for a significant amount of time after the siren sounds.

Evacuation –Buildings constructed of steel and concrete six or more stories high can consider vertical evacuations to the 4th floor or above. Those choosing a vertical evacuation must remain there until the "All Clear" is announced. Otherwise, leave the zoned area by walking or driving. If driving, anticipate traffic gridlock.

Extreme Tsunami –Very large (Magnitude 9+) earthquake and tsunami.

Extreme Tsunami Evacuation Zone (XTEZ) –New secondary evacuation zone for Extreme Tsunami events only.

Inundation Zone –Inland areas where the tsunami inundation is expected to reach.

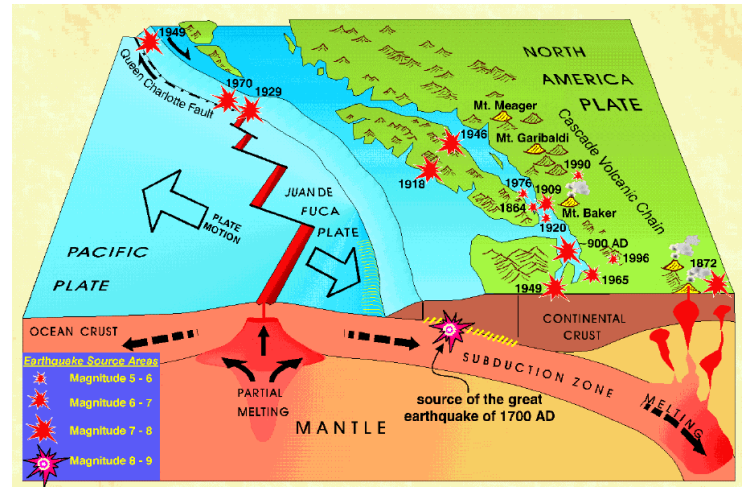
Run up –The vertical extent (from mean sea level) of tsunami inundation.

Evacuation Zone –Inundation zone plus an additional buffer area for safety and evacuation.

Great Aleutian Tsunami (GAT) –An Extreme Tsunami produced by a very large subduction zone earthquake located in the Aleutian Islands.

Subduction Zone –When two tectonic plates meet, one may slide underneath the other, curving down into the mantle. The mantle is the hotter layer under the crust. When this happens, geologists call the boundary between the plates a subduction zone.

Tsunami Refuge Area –Safe congregation zones identified outside of evacuation zone; these areas have been identified based on location, capacity, and proximity but will not be shelters and may not have support staff.



B. HOTEL NOTIFICATION

The Pacific Tsunami Warning Center (PTWC) notifies the Director of Security & Safety.

- The Director of Security & Safety forwards the PTWC email message to all properties and all company email accounts.
- Security staff at the Hotel Command Center notifies all Managers on Duty by phone starting with the properties inside an inundation area. The Manager on Duty will be instructed to inform hotel staff.
- Property Security Officers will verbally notify all departments and retail tenants.
- The Manager on Duty will notify staff on property and call essential personnel not on property. The Manager on Duty will provide information regarding emergency work schedules, expected road closure, and meals.
- The Director of Security & Safety will forward PTWC email update messages at least every hour until wave arrival time or cancellation.

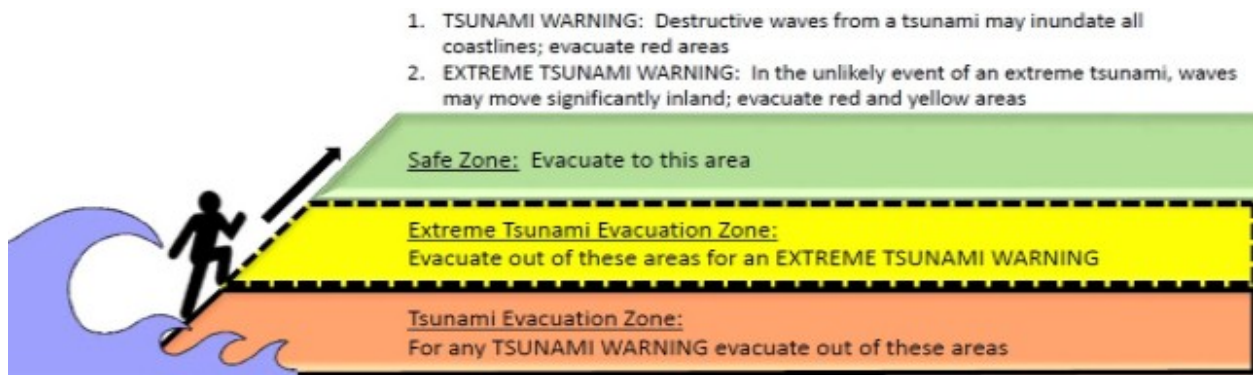
C. GUEST NOTIFICATION

- The first DEM warning siren may sound as far out as five hours before wave arrival to warn the public. Sirens will sound again every hour, and finally a half hour before wave arrival time.
- The Manager on Duty will make a Public Address (PA) announcement explaining the situation immediately following the siren.

- Keep guests informed by passing out fact sheets provided by Security, displaying lobby bulletin boards, broadcast lobby televisions or local radio, and make PA announcement every hour.
- Display the Tsunami inundation (flood) zone map provided by Security.

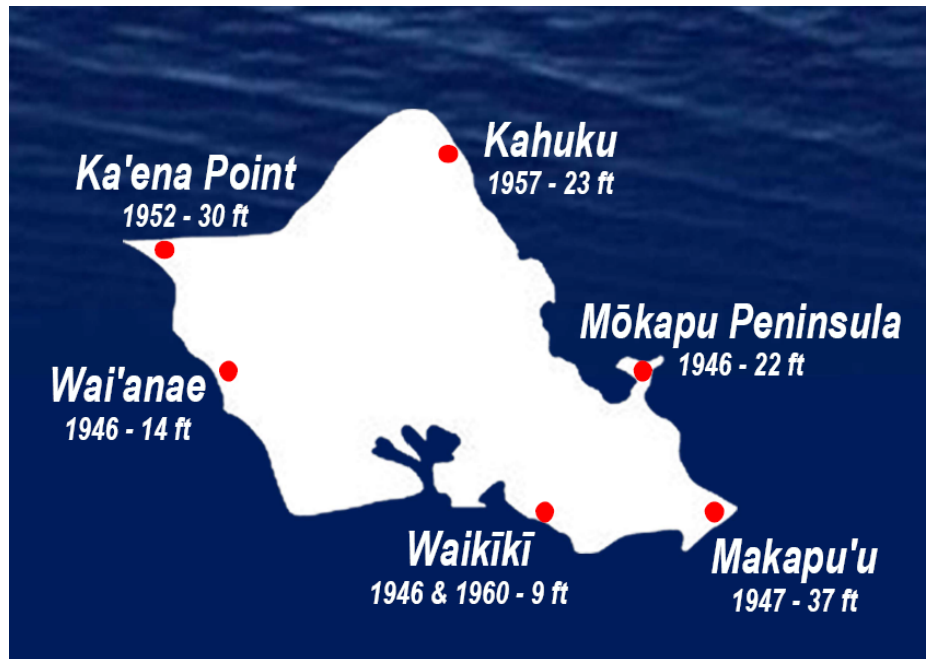
D. TSUNAMI INUNDATION/EVACUATION MAP ZONES

- Orange area is the normal Tsunami Evacuation area
- Yellow is the Extreme Tsunami Evacuation area (Magnitude 9+)

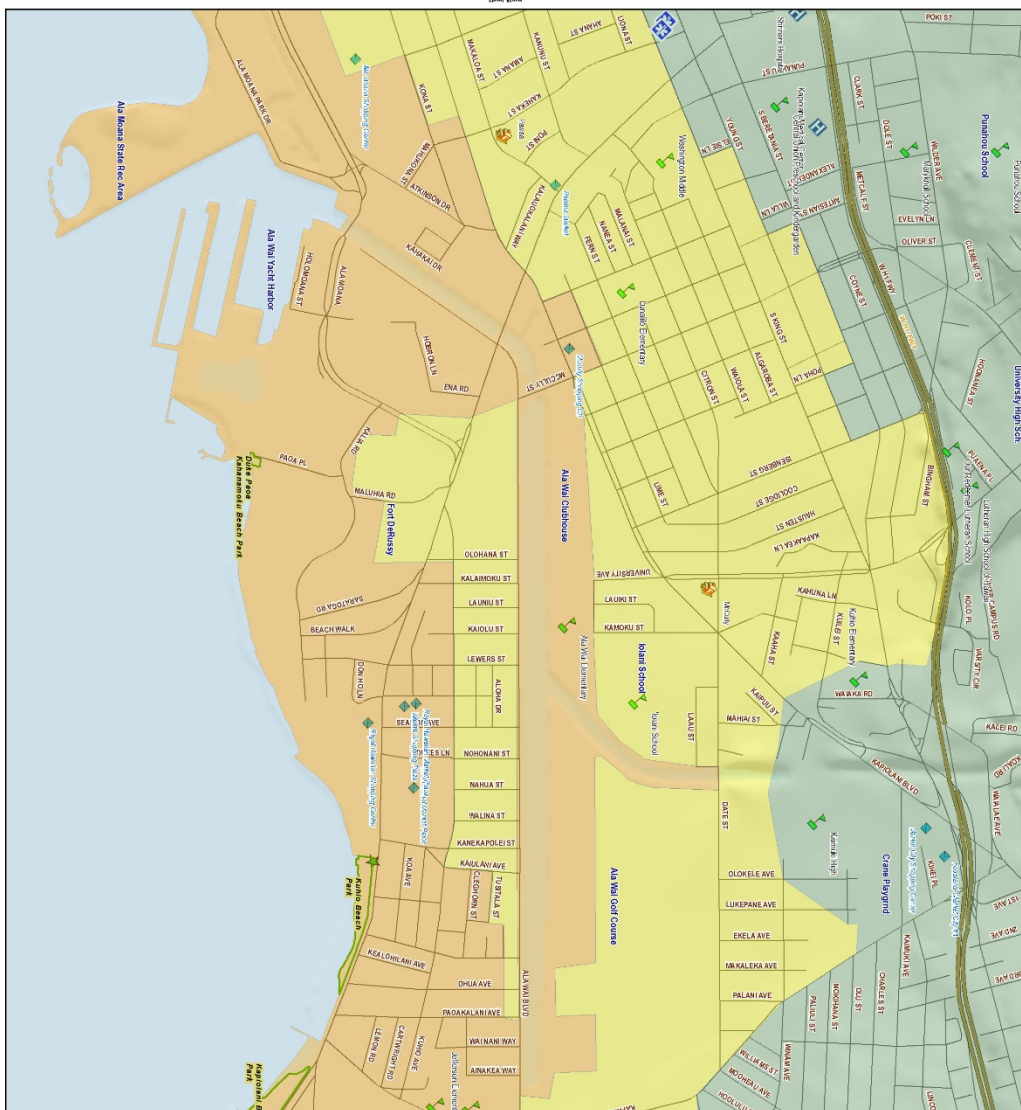


Recommended minimum refuge elevation is the maximum anticipated tsunami run-up elevation, plus 30%, plus 10 feet.

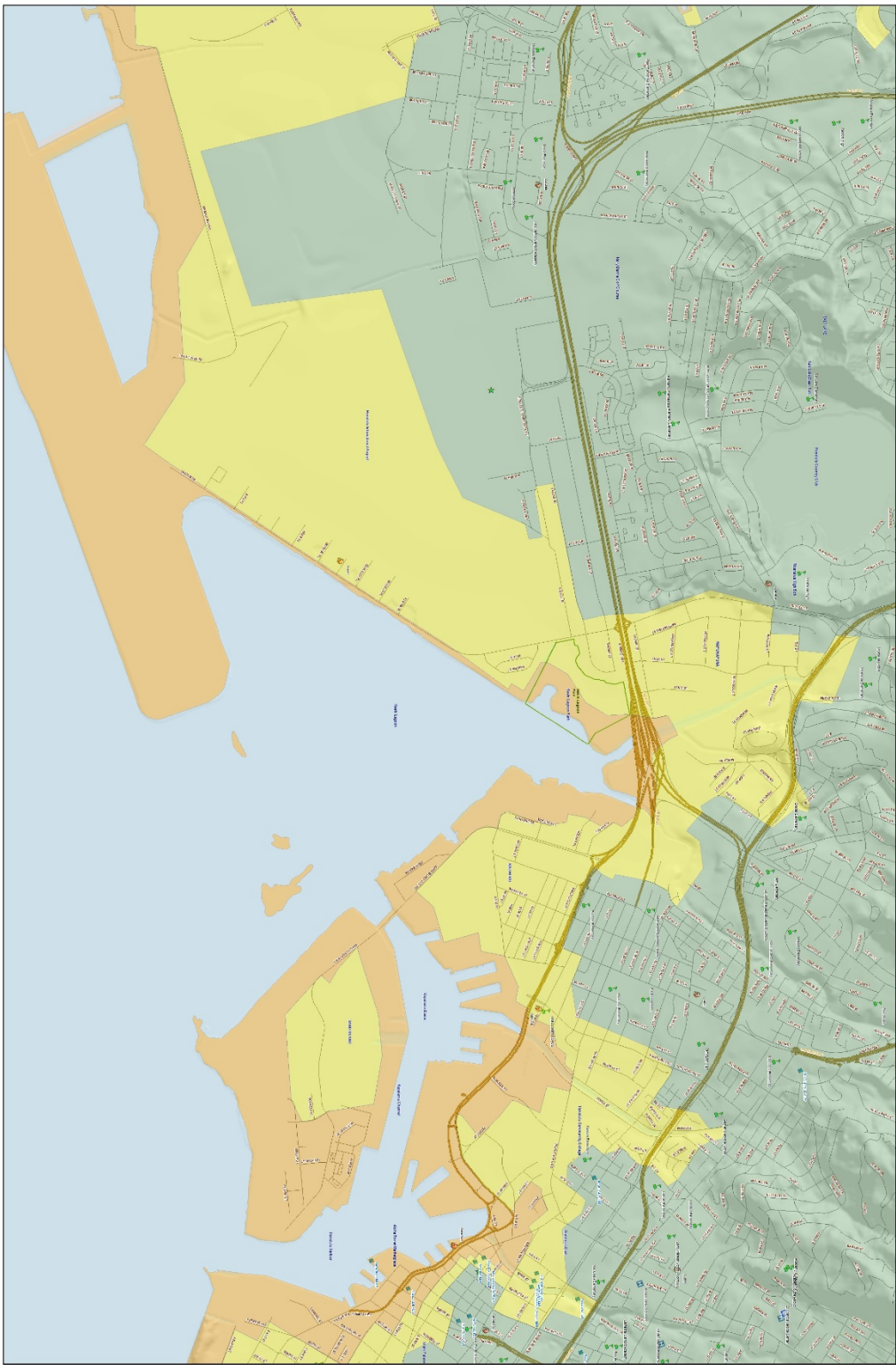
E. TSUNAMI



INUNDATION/EVACUATION MAP (Waikiki)



TSUNAMI INUNDATION/EVACUATION MAP (Airport to Waikiki)



F. PUBLIC ADDRESS SYSTEM ANNOUNCEMENTS

Sample Announcement: PROPERTIES **INSIDE** INUNDATION (FLOOD ZONE) AREA

The Pacific Tsunami Warning Center has issued a Tsunami WARNING for the State of Hawaii. The WARNING is based on an earthquake that occurred off the coast of (Location)

The estimated time of wave arrival is approximately (Time) today.

Outdoor warning sirens sounded to alert residents and visitors to evacuate coastal areas to higher ground or the 4th floor or higher until the warning is cleared.

Guests should plan to leave the Waikiki area and head inland before the (Time) road closures or plan to relocate to the 4th floor or higher by that time and stay there until officials announce an all-clear condition.

- Sample Announcement: PROPERTIES **OUTSIDE** INUNDATION (FLOOD ZONE) AREA

The Pacific Tsunami Warning Center has issued a Tsunami WARNING for the State of Hawaii. The WARNING is based on an earthquake that occurred off the coast of (Location)

The estimated time of wave arrival is approximately (Time) today.

Outdoor warning sirens sounded to alert residents and visitors to evacuate coastal areas to higher ground or the 4th floor or higher until the warning is cleared.

This hotel is NOT inside a flood zone area, but guests will be asked to stay off the streets and in their rooms before wave arrival time. Guests should plan to remain inside their hotel room or leave the Waikiki area and head inland before the (Time) road closures.

JAPANESE GUEST PA NOTIFICATION

The Pacific Tsunami Warning Center has issued a Tsunami WARNING for the state of Hawaii. The WARNING is based on an earthquake that occurred off the coast of (Location).

パシフィック津波警報センターはハワイ州に対して津波警報を発令しました。この警報は（場所）からの地震により発生しました。

Pacific Tsunami Keihou Center wa Hawaii shu ni taishite tsunami keihou o hatsurei shimashita. Kono keihou wa (place) karano jishin ni yori hassei shimashita.

The estimated time of wave arrival is approximately (Time) today.

津波到達予定時刻は（時間）です。

Tsunami Toutatsu Yotei Jikoku wa (time) desu.

Outdoor warning sirens sounded to alert residents and visitors to evacuate coastal areas to higher ground or the 4th floor or higher until the warning is cleared.

外のサイレンは沿岸地域の島民ならびに旅行客の皆様に避難を促しています。避難警報が解除されるまで、高台または4階以上のビルの高さまで移動してください。

Soto no Siren wa engan chiiki no toumin narabini ryokou kyaku no minasama ni hinan o unagashite imasu. Hinan keihou ga kaijyo sarerumade takadai matawa yonkai ijyo no biru no takasamade ido shitekudasai.

G. ACTION STEPS

When an evacuation is necessary, sirens will sound. Expect significant and widespread land flooding.

Check Hawai'i radio and TV stations, HNL.info or NOAA Weather Radio for emergency information. (National news stations may not have information about Hawai'i)

If the hotel is a high-rise building, vertical evacuation maybe an option. The building must be at least ten stories of reinforced concrete, and you must move to the 4th floor or higher for safety

The Manager on Duty: Initiate the “**Vertical Evacuation Plan.**”

- The Manager on Duty: Contact the Engineering Foreman or Lead Engineer to initiate the “**Tsunami Flood Secure Procedure**” listed below.
- All staff members will make every effort to assist guests in the evacuation process and notify concessions and contractors on the property.
- Senior hotel staff will decide to evacuate or relocate guests from one property to other properties.
- Senior hotel staff, in consultation with the Chief Operating Officer, will determine what aid or assets the property might provide to the community.
- Everyone should consider where they will be during wave arrival time and expect to have to stay at that location for several hours afterward.
- Distribute **Tsunami Fact Sheet** to guests.

H. VERTICAL EVACUATION PLAN:

PROPERTIES **INSIDE** INUNDATION (Flood Zone) AREA

- Local Tsunami: Considering wave arrival could be within minutes make a Public Address (PA) announcement indicating the possibility of an approaching Tsunami and calmly proceed to the 4th floor or higher. Time permitting, have Security sweep the lower floors for people not yet evacuating.

- Pacific-wide Tsunami: Notify staff, concessions, guests, and patrons of the Tsunami Watch or Warning and indicating estimated wave arrival time and safe zones, 4th floor or higher or outside the Tsunami inundation (flood) zone. During a Tsunami Warning, Security will sweep the lower floors for people not yet evacuating.
- Monitor traffic conditions before advising guests to drive vehicles out of Waikiki. Valet will relocate remaining vehicles from basement parking to above ground parking structures.
- If a wave is confirmed and time permits, begin flood secure procedure:

PROPERTIES **OUTSIDE** INUNDATION (Flood Zone) AREA

- Properties outside the Tsunami inundation (flood) zone are not required to vertically evacuate as high as the 4th floor. It is recommended to evacuate everyone above street level. Guests will be advised to remain inside their room or to another location above street level during the event.
- Senior hotel staff, in consultation with the Hotel Command Center, will decide whether to implement the Tsunami Flood Secure Procedures for properties outside the flood zone.

I. **TSUNAMI FLOOD SECURE PROCEDURE**

ENGINEERING

- Engineering staff will shut off systems possibly affected by an incoming rush of water such as electricity, gas, water, sewage, and fuel lines.
- Prepare emergency generator for a flood.
- Move all flammables and hazardous materials to a safe place designed for such storage.
- Block off lower floor openings into the hotel with sandbags or flood shields.
- Check emergency lighting and flashlights.
- Duct tape the door jamb to any electrical rooms in flood zones.

MANAGER ON DUTY

- Post a Sonifi message indicating the current Tsunami Warning and clear all non-emergency messages.

The Pacific Tsunami Warning Center has issued a Tsunami WARNING for the State of Hawaii. The estimated time for wave arrival is about (TIME) today. Please come to the lobby for more information.

- Post guest advisories or make PA announcements every half hour depending on time available regarding tsunami arrival time with relevant warnings and instructions.

- Stop taking reservations until the all clear is announced.
- Provide Hotel Command Center with a current disabled guest list.

GENERAL MANAGER

- Prepare a space for operations and front desk on the 4th floor or above if the property is inside the inundation (flood Zone) area. Prepare to secure money and important documents.
- Prepare a rotating work schedule for an event expected to last longer than a typical shift. Notify employees coming to work, "E" stickers will get them past roadblocks one hour before wave arrival time. Note: Between one hour before and until the "All Clear" announcement, which can be at least five hours after wave arrival time, nobody will be permitted through roadblocks
- Establish a safe area for restaurant and concession employees that stayed behind to serve guests. Also be prepared to accept public/non-guests seeking shelter on higher floors.
- Provide at least one vacant room as the designated restroom for guests sheltering in hallways.
- Make every effort to have a hotel employee stationed on that floor used as a temporary shelter and equipped with a two-way radio.

BELL STAFF

- Inform guests arriving or returning to the hotel of the current situation and direct them to the bulletin boards and front desk for more information.
- Secure the elevators on the 4th floor or higher 30 minutes before wave arrival time.
- Relocate vehicles and portable equipment on the 4th floor or higher.

FRONT DESK

- Check emergency communication equipment.
- Back up reports.
- Provide a hospitality room (if possible) for displaced guests.
- Provide guests with activities such as board games, books, cards, etc.
- Suggest to guests to print hard copies of flight reservations and tickets.
- Provide the Hotel Command Center current disabled/special needs guest list.

SECURITY

- Ensure retail spaces are aware of the emergency. Inform tenants that stay behind to serve guests of area location designated for their evacuation at the appropriate time.
- Secure the building. Take “before” photos of the property.

ALL

- Prepare for public/non-guests seeking shelter on higher floors... **Do not turn away**, send to the designated area established by General Manager.

J. LOCALLY GENERATED TSUNAMI PROCEDURE

Local Earthquake –May cause you to fall or have difficulty standing. **A local earthquake is a tsunami warning.** Waiting for local authorities to announce a warning may be too late. Initially protect yourself from earthquake effects and when the shaking stops, leave the evacuation zones immediately.

ALL

- Look for natural warning signs that a tsunami is imminent. You may not hear about the tsunami beforehand in some cases.
- The most apparent natural warning sign is an earthquake in a coastal area. When in the ocean or on the beach or nearby areas when an earthquake strikes, immediately move to higher ground and tune into local broadcasts to find out if a tsunami was generated.
- When a tsunami is about to reach a coastal area, the sea will recede, and water near the shoreline will become shallower or back up altogether. If a sudden movement of water away from shore happens, it is important to get away from the low-lying coastal area immediately. The tsunami may arrive any moment.

MANAGER ON DUTY

- If the opportunity exists within the first 15 minutes of the earthquake, make the following PA announcement:
- “Attention, attention, attention, ladies and gentlemen, we just experienced a local earthquake and this hotel is located in a Tsunami flood zone. Anyone below the 4th floor, please proceed up the stairway to a hallway above the 4th floor immediately. Do not use the elevators.”

BELL

- Prop open street-level exit door and proceed to the 4th floor or higher.

SECURITY

- Evacuate anyone in the immediate area to the fire exit stairways and instruct people to the 4th floor or higher.

K. POST TSUNAMI FLOOD PROCEDURE

A tsunami may have been destructive or non-destructive. If the tsunami was non-destructive, an “all clear” allowing the return to coastal areas may be issued. The “all clear” may not include the return to the water. The water currents may be dangerous for hours to days afterward.

If the tsunami was destructive, emergency search and rescue operations will immediately start on land and at sea. An “all clear” to return to impacted areas may not be issued for hours or days.

RESPONSE/RECOVERY

In the aftermath of a destructive Tsunami, workers may be involved in a variety of response and recovery operations. The following are general guidelines that may apply to workers involved in assessing and cleaning up the damage to their worksite. However, some activities, such as utility restoration, cleaning up spills of hazardous materials, and search and rescue, should only be conducted by workers who have the proper training, equipment, and experience.

POTENTIAL HAZARDS

Response and recovery work in Tsunami-impacted areas presents safety and health hazards that should be properly identified, evaluated, and controlled in a systematic manner to reduce or eliminate occupational safety and health risks to response and recovery workers. Some of the specific hazards associated with working in the aftermath of Tsunamis include:

- Hazardous driving conditions due to slippery and blocked roadways.
- Slips and falls due to slippery walkways.
- Falling and flying objects such as tree limbs and utility poles.
- Sharp objects including nails and broken glass.
- Electrical hazards from downed power lines or downed objects in contact with power lines.
- Burns from fires caused by energized line contact or equipment failure.
- Exhaustion from working extended shifts.
- Heat and dehydration.

GENERAL PRECAUTIONS

In the case of an evacuation of a specific area or entire building, no one will return to the property until an all clear is given by the proper authorities.

- The evacuation order will remain in effect long after the first wave arrival time—typically about five hours after. A series of waves may follow the first and increase in size and force.
- No one will re-enter the property or proceed down from a vertical evacuation until the proper authorities give an all clear.
- Continue to monitor your local radio or television stations for emergency information and the potential of additional waves. Be aware of possible structural, electrical, or gas-leak hazards.
- After identifying any such hazards, report them to the proper local authorities and utility companies.
- Do not touch downed power lines or objects in contact with downed power lines.
- Wear proper clothing when walking on or near debris, including boots and gloves.
- Be careful around sharp objects, including nails and broken glass.
- Use the proper safety precautions when operating generators, chainsaws, or other power tools.
- Take steps to prevent heat illnesses and dehydration.
- Elevators will remain secured until the all clear is announced.
- Remind guests considering relocating to the airport that the airport will not shelter people and risk being turned away if they do not have a confirmed flight.

SECURITY

- When the all clear is announced, ensure management and other occupants have received notice of the all-clear announcement.
- If a destructive wave is generated, help trapped and injured people, but be aware of subsequent waves to follow.

ENGINEERING

- After an all clear is announced, conduct damage assessment before allowing personnel to return to flood-damaged areas. Begin a search for safety hazards:
 - Live electrical wires or electrical damage.
 - Leaking flammables.
 - Toxic hazardous wastes.
 - Damage to building foundation, water lines, and sewer lines.

- Restore the Fire Protection System.
- When necessary, test and analyze silt and standing water so that the proper health and cleaning protocols can be employed.
- Have an industrial hygienist inspect any area where mold growth is found, typically around baseboards, ceiling tiles, light fixtures, upholstery and porous surfaces such as paper documents.

ALL

- Photograph flood damage.
- Open windows and doors to help dry building.
- The media will not be allowed to tour the property without specific permission from the executive office—see handling the “Crisis Communication” section of the Emergency Manual.
- Segregate waste types (e.g., vegetative, construction and demolition (C&D), Appliances, household hazardous waste, electronic waste, animal carcasses, sand, and mud, etc.), if possible.