

2.5 HNL-09307 EARTHQUAKE AND TSUNAMI

Work description: Earthquake and Tsunami		
Scope: Preparation for and response to a report of or event of Tsunami and/or Earthquake		
References: HNL-09007 Emergency Management Plan City and County of Honolulu Department of Emergency Management Hyper Alert, Emergency Notification System Tsunami Emergency Plan – Dept. of Land and Natural Resource State of Hawaii		
PPE and precautions	Competencies or qualifications	Licenses or permits required
N/A	N/A	N/A
Tools and equipment required		
Two-way radio and or cellular telephone if available (for ERT Leaders)		



Warning


Tsunami as series of very dangerous, large, long ocean waves that approach the shore slow down but increase dramatically in height. Tsunamis strike with devastating force and quickly flood all low-lying coastal areas threatening life and property.

Historically, locations in Hawai'i have been flooded with water more than 30 feet deep.

Tsunami Preparedness	<p>HRH has identified which H RTP locations are in which Tsunami Evacuation Zones and established appropriate actions for each location. The City and County of Honolulu Department of Emergency Management identifies 3 such zones.</p> <div style="text-align: center;"> <p>1. TSUNAMI WARNING: Destructive waves from a tsunami may inundate all coastlines; evacuate red areas</p> <p>2. EXTREME TSUNAMI WARNING: In the unlikely event of an extreme tsunami, waves may move significantly inland; evacuate red and yellow areas</p> <p>Safe Zone: Evacuate to this area</p> <p>Extreme Tsunami Evacuation Zone: Evacuate out of these areas for an EXTREME TSUNAMI WARNING</p> <p>Tsunami Evacuation Zone: For any TSUNAMI WARNING evacuate out of these areas</p> </div> <p>The tsunami zone for each location is identified on the Tsunami Inundation Zone Map enclosed within the Location Specific Emergency Action Plan</p>
Tsunami Alert	The Pacific Tsunami Warning Center issues the following Tsunami Alert Levels which are monitored by HRH

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Level All	Tsunami Information Statement	<ul style="list-style-type: none"> If a Tsunami Information Statement is issued, there is no tsunami threat.
	Tsunami Watch	<ul style="list-style-type: none"> If a Tsunami Watch is issued, general advice is that you should prepare and be ready to act because a tsunami may occur.
	Tsunami Advisory	<ul style="list-style-type: none"> If a Tsunami Advisory is issued, general advice is that you should move away from beaches and low-lying coastal areas and evacuate harbors/marinas. You can expect strong currents and dangerous waves in coastal areas and waterways. But significant land flooding is not expected.
	Tsunami Warning	<ul style="list-style-type: none"> If a Tsunami Warning is issued, general advice is that you should quickly leave Red Tsunami Evacuation Zones (outlined in a bold line) to Green Safe Zones as indicated on the Tsunami Evacuation Map.
	Extreme Tsunami Warning	<ul style="list-style-type: none"> If an Extreme Tsunami Warning is issued, general advice is that you should quickly leave Yellow Extreme Tsunami Evacuation Zones (outlined in a dotted line) and Red Tsunami Evacuation Zones (outlined in a bold line) to Green Safe Zones as indicated on the Tsunami Evacuation Map.
		<p>Warning</p> <p><i>A very large magnitude 9+ earthquake may cause an extreme tsunami. There may only be 3.5 hours to evacuate before the first wave arrives.</i></p>
OCC Response to Tsunami Alert	The following steps must be taken by the OCC in response to the different Alert Levels to protect people, assets, and the railway	
Levels OCC	Tsunami Information Statement	<ul style="list-style-type: none"> No action
	Tsunami Watch Tsunami Advisory	<ul style="list-style-type: none"> Prepare for possible Tsunami, Alert all staff of status Monitor for further information
	Tsunami Warning	<ul style="list-style-type: none"> Prepare for possible Tsunami, Instruct all to move to safe green zones Monitor for further information
	Extreme Tsunami Warning	<ul style="list-style-type: none"> Instruct all to move to safe green zones Determine whether to suspend train service and return vehicles to MSF
General Response to Tsunami Alert	The following steps must be taken by employees, contractors, and visitors in response to the different Alert Levels	

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Levels All	Tsunami Information Statement	<ul style="list-style-type: none"> No action
	Tsunami Watch	GET to a place of REFUGE:
	Tsunami Advisory	<ul style="list-style-type: none"> Seek immediate shelter (see the Emergency Map). If you are outside the building, take yourself inside one of the building nearby and seek shelter in the dedicated areas.
	Tsunami Warning	STAY INSIDE:
	Extreme Tsunami Warning	<ul style="list-style-type: none"> Remain sheltered until the HRH ERT Leader provides all clear notification. Follow the directions from authorities and ERT Leaders. STAY TUNED: <ul style="list-style-type: none"> Use available mobile services to stay tuned to Hyper alert messages Attempt to operate your HRH handheld radio. A List of Emergency Broadcast Radio for Honolulu is following listed: KSSK-AM 590 kHz: FM 92.3 MHz KRTR-FM 96.3 MHz KZOO-AM1210 kHz (Japanese) KREA-AM 1540 kHz (Korean) KNDI-AM 1270 kHz (Multi-Cultural Radio: Ilocano, Tagalog, Cantonese, Mandarin, Okinawan, Vietnamese, Laotian, Hispanic, Samoan, Tongan, Marshallese, Chuukese, Pohnpeian and English).
Instructions for	All ERT Leaders and ERT member reached by any Emergency calls / Alert, must follow the following procedure:	
ERT <i>ERT</i>	ERT Leaders	<ul style="list-style-type: none"> Reach the Sheltered Areas and manage the emergency from that point. Maintain the contact with Local Authorities and Sheltered Areas by two-way radio and or cellular telephone if available Refer to location specific Emergency Response Plans for additional information regarding evacuation routes, rendezvous points etc.
	ERT Members	<ul style="list-style-type: none"> Assist all personnel and visitors to reach the designated shelter in place area. Close External Building doors
Earthquakes	Distant Earthquakes OCC	<ul style="list-style-type: none"> For earthquakes that occur around the Pacific Rim, OCC will monitor if there is a tsunami Watch, Advisory, or Warning for Hawaii. Response will be as above

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	Local Earthquakes <i>All</i>	<p>DROP</p> <ul style="list-style-type: none"> Drop down onto your hands and knees so the earthquake doesn't knock you down. <p>COVER</p> <ul style="list-style-type: none"> Cover your head and neck with your arms to protect yourself from falling debris. Stay away from glass and windows. <p>HOLD</p> <ul style="list-style-type: none"> Hold on to any sturdy covering so you can move with it until the shaking stops. Stay where you are until the shaking stops. Do not go outside until the shaking stops. The earthquake may have caused a local tsunami that could arrive in a few minutes. Follow the instructions above for Tsunami. Do not wait for a tsunami warning to be issued.
Reinstatement of Service / Access	If any event should lead to the closing of the location or the guideway, HRH staff will do a complete visual inspection before the area can be placed back in service. This inspection is required every time the area is shutdown, even if the threatening event does not take place.	

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