



Tsunami 2019

Communication Drill

March 27, 2019

Ex Plan

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Background

The State of California and NOAA (partners in the National Tsunami Hazard Mitigation Program - NTHMP) are providing the framework for this tsunami exercise document, which is being conducted to assist tsunami preparedness efforts in California.

Recent earthquakes and their associated tsunamis, such as those in Japan-2011, Chile-2015, and Kodiak-2018, attest to the importance of proper planning for tsunami response.

Similar recent exercises in the Pacific held on March 20th in which the state of California did not participate have proven effective in strengthening preparedness levels of emergency management organizations.

This Ex Plan is based on the abridged California-specific version of the PACIFEX19 handbook created by the NTWC to drive the California Tsunami Communication Test on March 27, 2019, beginning at 1335 hours (1:35pm) PDT.

Exercise Overview

On Wednesday, March 27, 2019 at 1:35 pm, the County of Orange and Orange County coastal jurisdictions will conduct a tsunami communication drill to run simultaneously with the state exercise. The primary objective of this drill is to test the established communication processes, protocols and notification lists for a tsunami event. The capability that will be tested is Communications. The processes that will be tested through this drill are:

1. Control One – to test the external communications processes as established in the Operational Area Tsunami Annex. For this drill, the “Red Channel” and EAS broadcast procedures will not be tested. Upon drill completion, Control One will review their results to identify areas of improvement.
2. Operational Area and cities – to test all internal and external notification processes and lists as established in the Operational Area Tsunami Annex. The systems that will be used for this drill are AlertOC, e-mail and telephone.
3. Operational Area and cities – Conduct a Tsunami conference call to discuss and implement protective actions as established in the Operational Area Tsunami Annex.

Planning Assumptions and Artificialities

The following assumptions and artificialities are in effect for this exercise:

- The State, NWS, or NTWC will NOT issue live messages over normal broadcast dissemination channels. The message provided (Bulletin #6) will drive the Orange County Scenario and be hand delivered to Control One to initiate the communication drill.
- The tsunami alert messages created for this exercise cover a 22-hour period, though in an actual event they could continue longer and the event may begin with an area being in a different alert criteria. For this communication drills, Bulletin #6 is the only message being used and will place Orange County directly into a Warning to initiated activities.
- NTWC issues additional graphical and web-based products on its website <http://tsunami.gov/> normally available to Emergency Managers and the public one hour after the earthquake. This product will not be available for this exercise.
- Control One’s notification procedures will not include issuing EAS messages or Red Channel broadcasts for this exercise.

Participating Jurisdictions and Agencies

County of Orange
OCSD Harbor Patrol
OCSD Control One
OCSD Department Commander
City of Dana Point
City of Huntington Beach
City of Laguna Beach
City of Newport Beach
City of San Clemente
City of Seal Beach
OC Community Resources-OC Parks
Emerald Bay Service District
State Parks

Test Exercise Procedures

To ensure this drill is executed in a realistic manner, the following actions should be performed by Control One and Emergency Management Division.

Control One

1. Control One will receive a Tsunami Warning notification inject from the Emergency Management Division.
2. Relay the message to points of contact listed in the Control One – Tsunami Warning Notification List. For this exercise, **DO NOT implement the Red Channel broadcast or EAS procedures.**

OCSD Department Commander

3. OCSD Department Commander will receive the simulated Tsunami Warning notification from Control One.
4. Relay message script provided on pages 5-6 to points of contacts listed in the OCSD Department Commander Notification List.

Emergency Management Division

5. Upon receiving the notification from Control One, implement actions as listed in the Operational Area Tsunami Annex.
 - a. Provide Control One with the tsunami conference call time.
 - b. Send e-mail to the Tsunami Notification Group, using the message script provided on pages 17-22 of this Ex Plan.
 - c. Launch AlertOC message to the Tsunami Notification Group, using the message script provided on page 23 of this Ex Plan.
 - d. Provide to jurisdictions any FASTER information received from the state in real time.
6. Gather information pertaining to:
 - a. ETA of wave arrival
 - b. Projected amplitude
 - c. Tide levels
7. Facilitate conference call using the Conference Call Agenda for Tsunami.

Message Scripts

Message scripts have been developed for the following:

1. Tsunami Warning (Bulletin #6) issued by the National Tsunami Warning Center (NTWC)
2. Control One
3. Emergency Management Division

Tsunami Warning Script from NTWC

This is a Drill

WEAK53 PAAQ
TSUAKI

BULLETIN

Public Tsunami Message Number 6
NWS National Tsunami Warning Center Palmer AK
0118 pm PDT Wed Mar 27 2019

UPDATES

- * Updated observations
- * Revised alert areas

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...A TSUNAMI ADVISORY IS NOW IN EFFECT...

...THE TSUNAMI WATCH REMAINS IN EFFECT...

Tsunami Warning in Effect for;

- * CALIFORNIA, The coast from The Cal./Mexico Border to The Oregon/Cal. Border including San Francisco Bay
- * OREGON, The coast from The Oregon/Cal. Border to The Oregon/Wash. Border including the Columbia River estuary coast
- * WASHINGTON, Outer coast from the Oregon/Washington border to Slip Point, Columbia River estuary coast, and the Juan de Fuca Strait coast
- * BRITISH COLUMBIA, the Juan de Fuca Strait coast, the outer west coast of Vancouver Island, the central coast and northeast Vancouver Island, and the north coast and Haida Gwaii
- * SOUTHEAST ALASKA, The inner and outer coast from The BC/Alaska Border to Salisbury Sound, Alaska
- * SOUTH ALASKA AND THE ALASKA PENINSULA, Pacific coasts from Chignik Bay, Alaska to Unimak Pass, Alaska (80 miles NE of Unalaska)

* ALEUTIAN ISLANDS, Unimak Pass, Alaska (80 miles NE of Unalaska) to Attu, Alaska including the Pribilof Islands

Tsunami Advisory in Effect for;

* SOUTHEAST ALASKA, The inner and outer coast from Salisbury Sound, Alaska to Cape Fairweather, Alaska (80 miles SE of Yakutat)

* SOUTH ALASKA AND THE ALASKA PENINSULA, Pacific coasts from Cape Fairweather, Alaska (80 miles SE of Yakutat) to Chignik Bay, Alaska

FORECASTS OF TSUNAMI ACTIVITY

* A tsunami has been generated. The first waves are forecasted to arrive at the following locations and specified times.

* Forecast tsunami duration is the approximate length of time which the tsunami may produce dangerous currents and waves.

* Forecast max tsunami height is the highest expected water level above the tide.

* Forecasts are not provided for sites which have been impacted more than an hour prior to the time of this message.

SITE	FORECAST START OF TSUNAMI	FORECAST TSUNAMI DURATION	FORECAST MAX TSUNAMI HEIGHT
----	-----	-----	-----
* Alaska			
Shemya	1420 AKDT Mar 27	48 hrs	6.2-11.5 ft
Adak	1510 AKDT Mar 27	30 hrs	2.3- 4.3 ft
Unalaska	1615 AKDT Mar 27	20 hrs	1.6- 3.0 ft
Saint Paul	1640 AKDT Mar 27	24 hrs	2.3- 4.2 ft
Sand Point	1700 AKDT Mar 27	20 hrs	1.6- 2.9 ft
Cold Bay	1720 AKDT Mar 27		less than 1ft
Kodiak	1745 AKDT Mar 27	9 hrs	0.7- 1.3 ft
Seward	1750 AKDT Mar 27		less than 1ft
Elfin Cove	1755 AKDT Mar 27		less than 1ft
Sitka	1755 AKDT Mar 27	24 hrs	1.9- 3.6 ft
Yakutat	1755 AKDT Mar 27	9 hrs	0.7- 1.3 ft
Valdez	1805 AKDT Mar 27		less than 1ft
Cordova	1815 AKDT Mar 27		less than 1ft
Homer	1840 AKDT Mar 27		less than 1ft
Craig	1900 AKDT Mar 27		

* British Columbia			
Langara	1830 AKDT Mar 27		less than 1ft
Tofino	1950 AKDT Mar 27	24 hrs	2.1- 3.9 ft

* California

Horse Mountain	2045	PDT Mar 27	40 hrs	3.5- 5.8 ft
Fort Bragg	2045	PDT Mar 27	24 hrs	2.4- 3.6 ft
Crescent City	2100	PDT Mar 27	48 hrs	4.0- 6.3 ft
Monterey	2105	PDT Mar 27	24 hrs	2.0- 3.7 ft
Port San Luis	2120	PDT Mar 27	40 hrs	3.3- 6.1 ft
San Francisco	2130	PDT Mar 27	24 hrs	2.2- 4.2 ft
Santa Barbara	2135	PDT Mar 27	30 hrs	2.5- 3.9 ft
Los Angeles Harb	2150	PDT Mar 27	24 hrs	2.0- 3.5 ft
Newport Beach	2155	PDT Mar 27	24 hrs	2.2- 4.3 ft
Oceanside	2200	PDT Mar 27	18 hrs	1.8- 3.2 ft
La Jolla	2200	PDT Mar 27	18 hrs	1.6- 3.0 ft

* Oregon

Port Orford	2045	PDT Mar 27	48 hrs	5.6-10.3 ft
Charleston	2055	PDT Mar 27	24 hrs	2.2- 4.1 ft
Brookings	2100	PDT Mar 27	48 hrs	4.2- 7.9 ft
Newport	2105	PDT Mar 27		
Seaside	2110	PDT Mar 27		

* Washington

Neah Bay	2100	PDT Mar 27	15 hrs	1.3- 2.4 ft
Long Beach	2100	PDT Mar 27	36 hrs	3.0- 5.5 ft
Moclips	2105	PDT Mar 27	30 hrs	2.3- 4.3 ft
Westport	2110	PDT Mar 27	15 hrs	1.0- 1.8 ft
Port Angeles	2135	PDT Mar 27	20 hrs	1.8- 3.3 ft
Port Townsend	2205	PDT Mar 27		less than 1ft

OBSERVATIONS OF TSUNAMI ACTIVITY

* No tsunami observations are available to report.

PRELIMINARY EARTHQUAKE PARAMETERS

- * Magnitude 8.8
- * Origin Time 0915 AKDT Mar 27 2019
1015 PDT Mar 27 2019
1715 UTC Mar 27 2019
- * Coordinates 22.7 North 144.4 East
- * Depth 12 miles
- * Location in the Volcano Islands, Japan region

RECOMMENDED ACTIONS - UPDATED

Actions to protect human life and property will

vary within tsunami warning areas and within tsunami

advisory areas.

If you are in a tsunami warning area;

- * Evacuate inland or to higher ground above and beyond designated tsunami hazard zones or move to an upper floor of a multi-story building depending on your situation.

If you are in a tsunami warning or advisory area;

- * Move out of the water, off the beach, and away from harbors, marinas, breakwaters, bays and inlets.
- * Be alert to and follow instructions from your local emergency officials because they may have more detailed or specific information for your location.
- * If you feel a strong earthquake or extended ground rolling take immediate protective actions such as moving inland and/or uphill preferably by foot.
- * Boat operators,
 - * Where time and conditions permit, move your boat out to sea to a depth of at least 180 feet.
 - * If at sea avoid entering shallow water, harbors, marinas, bays, and inlets to avoid floating and submerged debris and strong currents.
- * Do not go to the shore to observe the tsunami.
- * Do not return to the coast until local emergency officials indicate it is safe to do so.

If you are in a tsunami watch area;

- * Prepare to take action and stay alert for further information.

IMPACTS

Impacts will vary at different locations in the warning and in the advisory areas.

If you are in a tsunami warning area;

- * A tsunami with damaging waves and powerful currents is possible.
- * Repeated coastal flooding is possible as waves arrive onshore, move inland, and drain back into the ocean.
- * Strong and unusual waves, currents and inland flooding can drown or injure people and weaken or destroy structures

on land and in water.

- * Water filled with floating or submerged debris that can injure or kill people and weaken or destroy buildings and bridges is possible.
- * Strong and unusual currents and waves in harbors, marinas, bays, and inlets may be especially destructive.

If you are in a tsunami advisory area;

- * A tsunami with strong waves and currents is possible.
- * Waves and currents can drown or injure people who are in the water.
- * Currents at beaches and in harbors, marinas, bays, and inlets may be especially dangerous.

If you are in a tsunami warning or advisory area;

- * Some impacts may continue for many hours to days after arrival of the first wave.
- * The first wave may not be the largest so later waves may be larger.
- * Each wave may last 5 to 45 minutes as a wave encroaches and recedes.
- * Coasts facing all directions are threatened because the waves can wrap around islands and headlands and into bays.
- * Strong shaking or rolling of the ground indicates an earthquake has occurred and a tsunami may be imminent.
- * A rapidly receding or receded shoreline, unusual waves and sounds, and strong currents are signs of a tsunami.
- * The tsunami may appear as water moving rapidly out to sea, a gentle rising tide like flood with no breaking wave, as a series of breaking waves, or a frothy wall of water.

ADDITIONAL INFORMATION AND NEXT UPDATE

- * Refer to the internet site tsunami.gov for more information.
- * Pacific coastal residents outside California, Oregon, Washington, British Columbia and Alaska should refer to the Pacific Tsunami Warning Center messages at tsunami.gov.
- * This message will be updated within 30 minutes.

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Control One-Tsunami Warning Checklist

Control One

NOTE: CONTROL ONE IS RESPONSIBLE TO PROVIDE AN INITIAL ALERT TO ALL AFFECTED JURISDICTIONS AND AGENCIES.

Tsunami Warning - A tsunami warning is issued when a tsunami with the potential to generate widespread inundation is imminent, expected, or occurring. Warnings alert the public that dangerous coastal flooding accompanied by powerful currents is possible and may continue for several hours after initial arrival. Warnings alert emergency management officials to take action for the entire tsunami hazard zone. Appropriate actions to be taken by local officials may include the evacuation of low-lying coastal areas, and the repositioning of ships to deep waters when there is time to safely do so. Warnings may be updated, adjusted geographically, downgraded, or canceled based on updated information and analysis.

(Use Control One Tsunami Warning Notification List)

- Control One will notify the County and OA Emergency Manager and brief on the Tsunami Warning Received and request a conference call time.
- Control One Supervisor will conduct roll call on DSP – DSP to the following agencies: (Stations: 10, 18, 41, 42, 43, 45, 54, OC Parks, OCFA and Metro Net) to ensure they have received the message.
 - Provide the Tsunami Warning information received from the National Tsunami Warning Center ~~use the Tsunami Red Channel Broadcast for Warning script~~, along with the conference call information and remind them to notify their Emergency Manager of the event and conference call.

Conference Call Time: _____

Conference Call Phone Number: 1-877-336-1828

Participant Code: 5180323

- Control One will brief the Department Commander and provide time of the conference call.
 - Remind Department Commander there is a notification checklist in the call out rolodex.
- Perform General Broadcast(s) in accordance to attached matrix using the Tsunami Warning information received from the National Tsunami Warning Center. ~~Use the Tsunami Red Channel Broadcast for Warning script.~~
- Send Tsunami Warning information received from the National Tsunami Warning Center out by teletype using ZALL/SNNB.
- ~~Activate the EAS, if directed by the OA EOC, using the EAS Message for Tsunami Warning script.~~
- Monitor situation and acknowledge CalWAS as needed, passing on updated information to the County and OA Emergency Manager.

Control One – Tsunami Warning Notification List

When notified of Tsunami **Warning**, Control One will immediately broadcast the information as outlined below.

TYPE	CHANNEL(S)	CODE	ASSIGNED TO
County and OA Emergency Manager	Refer to Emergency Management Division Contact Listing		
Sheriff's Department Commander	Phone / Face-to-Face		
Roll Call on DSP-DSP To ensure these agencies copied the message (see Control One Checklist)	Station 10, Station 18, Station 41, Station 42, Station 43, Station 45, Station 92 (West Comm), Station 54, Orange County Fire, Metro Net		
General Radio Broadcast	OAccess-Admin/ RED / DSP-DSP / OA-1 / OA-2 / WEROC / MED-9 / SILVER-1-OCTA / SILVER-1 COM/ SILVER-1 IWM / SILVER-1 OCA / SILVER-1 OCE / SILVER-1-PFR / SILVER-1-PRK / SILVER-2-PFR / SILVER-5 FAC / SILVER-6 TRP / SILVER-7-PDSD / SILVER-1&2-EMS	Use Incident Button -or- 20946 (Quick Call)	
General Radio Broadcast (Lifeguard Departments & other agencies)	AQUA-1-HTB / AQUA-1-LAB AQUA-1-NPB / AQUA-1-SCL AQUA-1-SLB / AQUA-1-OC	Use #3 Alert Tone and press and hold for at least 5 seconds	
Teletype	CLETS	ZALL / SNNB	
Hospitals	Voice: HEAR – A Text: ReddiNet	Heargram page button -or- 1444 (Reddinet)	
WEROC	Primary- Kelly Hubbard Work cell-714-715-0283 Work-714-593-5010 Alternate-Karl Seckel Work cell-714-423-3361 Work-714-593-5024		
Emergency Alert System	Upon direction of the County and OA EOC Notify LP-1 (Control One will only broadcast the message using the EAS Encoder if the LP-1 is unable to do so)		

Remember, time is of the essence! Information MUST be released in a TIMELY manner in order to be effective.

OCSD Department Commander-Tsunami Warning Checklist

OCSD Department Commander

NOTE: CONTROL ONE IS RESPONSIBLE TO PROVIDE AN INITIAL ALERT TO ALL AFFECTED JURISDICTION AND AGENCIES.

NOTE: INDIVIDUAL JURISDICTIONS RETAIN AUTHORITY TO EVACUATE THEIR AREAS.

Tsunami Warning

A tsunami warning is issued when a potential tsunami with significant widespread inundation is imminent or expected. Warnings alert the public that widespread, dangerous coastal flooding accompanied by powerful currents is possible and may continue for several hours after arrival of the initial wave. Warnings also alert emergency management officials to take action for the entire tsunami hazard zone. **Appropriate actions to be taken by local officials may include the evacuation of low-lying coastal areas, and the repositioning of ships to deep waters when there is time to safely do so.** Warnings may be updated, adjusted geographically, downgraded, or canceled. To provide the earliest possible alert, initial warnings are normally based only on seismic information.

Upon the receipt of a Tsunami Warning from Control One, the OCSD Department Commander will perform the following:

- Using the notification sheet in the Department Commander callout rolodex (attached to the wall) contact the agencies listed in the order on the sheet. (*utilizing the Department Commander Tsunami Notification Checklist*)
 - Provide the Tsunami Warning information received from the National Tsunami Warning Center along with the conference call information.

Conference Call Time: _____

Conference Call Phone Number: 1-877-336-1828

Participant Code: 5180323
- Have the Yellow 1 and Yellow 4 dispatchers broadcast the Tsunami Warning information received from the National Tsunami Warning Center and contact the following by phone to verify they copied Control One's broadcast:
 - Dana Point Patrol Sgt. (sam34)
 - North County Patrol Sgt. (sam10)
 - San Clemente Sgt. (sam70)
 - Harbor Patrol Dispatch Center (Station 54)
- Determine the actions to be performed by OCSD patrol units.
- Participate in the Tsunami Conference Call.
- Keep in contact with Control One Supervisor to monitor any changing events.
- Keep in contact with the County and OA Emergency Manager and provide updates to the activities of the Department.

OCSD Department Commander-Tsunami Notification List

Tsunami Advisory, Watch or Warning Conference Call Notification Checklist

Control One notifies the Department Commander of a Tsunami Watch, Advisory, Warning or Local Near-Shore Earthquake/Immediate and provides a hardcopy of the notification

Department Commander will contact the following personnel, in the order listed, to relay the Tsunami notification and conference call instructions

Conference Call Bridge Access Information:

Phone number: 1-877-336-1828

Participant Code: 5180323

For the Dana Point and San Clemente Contact the Primary Listed, if unable to reach the primary contact the 1st Alternate listed, if unable to reach the 1st Alternate contact the 2nd Alternate listed.

Position/Name	Work #	Cell #	Home #
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City of Dana Point

Primary-Dir. of Disaster Preparedness: Robert Sedita	(949) 248-3535	(714) 336-9470	n/a
Primary Alternate-Mike Killebrew	(949) 248-3523	(562) 400-6869	n/a
1st Alternate-City Lieutenant	(949) 248-3550	Use Sheriff's Internal Contact Listings	

City of San Clemente

Primary-Emergency Planning Officer: Stephen Foster	(949) 361-6109	City Cell (949) 391-8102	Personal Cell (760) 668-0450
1st Alternate-City Lieutenant	(949) 361-8230	Use Sheriff's Internal Contact Listings	
2nd Alternate-City Manager: James Makshanoff	(949) 361-8321	City Cell (949) 272-6115	Personal Cell (714) 671-5881

Orange County Sheriff's Department-Unincorporated Contact all listed below

Harbor Patrol Lieutenant	(949) 673-1025	Use Sheriff's Internal Contact Listings	
North Patrol Lieutenant	(714) 647-4094	Use Sheriff's Internal Contact Listings	
North Operations Captain	(714) 647-4559	Use Sheriff's Internal Contact Listings	

Orange County Sheriff's Department Contact all listed below

Assistant Sheriff: Jeff Hallock	(714) 647-1839	Use Sheriff's Internal Contact Listings	
Commander: Ken Burmood	(714) 647-1833	Use Sheriff's Internal Contact Listings	
Media Relations: Carrie Braun	(714) 647-7042	Use Sheriff's Internal Contact Listings	

Department Commander ensures Radio Dispatchers contact the following to verify they copies Control One's broadcast

	Harbor Patrol Dispatch Center – Station 54
	Dana Point Sergeant – Sam 34
	San Clemente Sergeant – Sam 70
	North Patrol Sergeant – Sam 10

The tsunami warning system in the United States is a function of the National Weather Service (NWS). The National Tsunami Warning Center (NTWC) is responsible for warning California

Notification Types with definitions starting with the lowest level to the highest level of warning:

Tsunami Information Statement - a tsunami information statement is issued to inform emergency management officials and the public that an earthquake has occurred, or that a tsunami warning, watch or advisory has been issued for another section of the ocean. **In most cases, information statements are issued to indicate there is no threat of a destructive tsunami and to prevent unnecessary evacuations as the earthquake may have been felt in coastal areas.** An information statement may, in appropriate situations, caution about the possibility of destructive local tsunamis. Information statements may be re-issued with additional information, though normally these messages are not updated. However, a watch, advisory or warning may be issued for the area, if necessary, after analysis and/or updated information becomes available.

Tsunami Watch - a tsunami watch is issued to alert emergency management officials and the public of an event which may later impact the watch area. The watch area may be upgraded to a warning or advisory - or cancelled - based on updated information and analysis. Therefore, **emergency management officials and the public should prepare to take action. Watches are normally issued based on seismic information without confirmation that a destructive tsunami is underway.**

Tsunami Advisory - a tsunami advisory is issued due to the threat of a potential tsunami which may produce strong currents or waves dangerous to those in or near the water. Coastal regions historically prone to damage due to strong currents induced by tsunamis are at the greatest risk. The threat may continue for several hours after the arrival of the initial wave, but significant widespread inundation is not expected for areas under an advisory. **Appropriate actions to be taken by local officials may include closing beaches, evacuating harbors and marinas, and the repositioning of ships to deep waters when there is time to safely do so.** Advisories are normally updated to continue the advisory, expand/contract affected areas, upgrade to a warning, or cancel the advisory.

Tsunami Warning - a tsunami warning is issued when a potential tsunami with significant widespread inundation is imminent or expected. Warnings alert the public that widespread, dangerous coastal flooding accompanied by powerful currents is possible and may continue for several hours after arrival of the initial wave. Warnings also alert emergency management officials to take action for the entire tsunami hazard zone. **Appropriate actions to be taken by local officials may include the evacuation of low-lying coastal areas, and the repositioning of ships to deep waters when there is time to safely do so.** Warnings may be updated, adjusted geographically, downgraded, or canceled. To provide the earliest possible alert, initial warnings are normally based only on seismic information.

County and OA EOC Manager-Tsunami Warning Checklist

County/OA EOC Manager

A tsunami warning is issued when a potential tsunami with significant widespread inundation is imminent or expected. Warnings alert the public that widespread, dangerous coastal flooding accompanied by powerful currents is possible and may continue for several hours after arrival of the initial wave. Warnings also alert emergency management officials to take action for the entire tsunami hazard zone. **Appropriate actions to be taken by local officials may include the evacuation of low-lying coastal areas, and the repositioning of ships to deep waters when there is time to safely do so.** Warnings may be updated, adjusted geographically, downgraded, or canceled. To provide the earliest possible alert, initial warnings are normally based only on seismic information.

Upon the receipt of a **TSUNAMI WARNING** from Control One, the County/OA Emergency Manager will perform the following:

- Provide Control One will Conference Call time (conference call should occur within 30 – 45 minutes of this notification).
- Send E-mail to the Tsunami Notification Group located in the EOC Contacts to include NTWC notification information and conference call time.
- Launch AlertOC message to the Tsunami Notification Group to include NTWC notification and conference call time.
- Gather information pertaining to
 - ETA of wave arrival
 - projected amplitude
 - tide levels (quick information website is <http://wavecast.net/tideall.shtml>)
- Facilitate Conference call and recommendations in accordance with the Tsunami Warning Flow Chart. Upon concurrence initiate the following actions:
 - Ensure County/OA EOC Section Chiefs are in attendance for the Conference Call:
 - Operations Section Chief
 - Planning and Intelligence Section Chief
 - Logistics Section Chief
 - Finance and Administration Section Chief
 - Reminder to request all participants on the Conference Call to place their phones on mute.**
 - ~~Request EAS activation through Control One~~
 - Supplemental Press Release for evacuations
 - AlertOC for County coastal unincorporated
- Establish Conference Call occurrence schedule.
 - Ensure subsequent Conference Call date and time information is sent out to the Tsunami Notification Group, via:
 - Email
 - AlertOC
- Continue to monitor situation and information from NTWC and NWS.
- Refer to OA EOC Manager position checklist located under the Operational Area tab of your position guide for additional action items.

Tsunami Warning Email Script for Emergency Management:

Subject Line: This is a Drill - OC Tsunami Warning Conference Call 2:45 pm, March 27, 2019. This is a Drill

Attach: the Tsunami Conference Call Agenda to the email

Message Body: This is a Drill - The Orange County Coast is currently under a Tsunami Warning. The OC Tsunami Notification Procedure states a conference call will be conducted.

The Conference Call will be held at today, Wednesday, March 27, 2019

Conference Call Time: 2:45 pm

Conference Call Phone Number: 1-877-336-1828

Access Code: 5180323

This is a Drill

Orange County Operational Area Manager

Orange County EOC

714-628-7060

FROM: cswcdiallogic@oes.ca.gov

SENT: Wednesday, March 27, 2019 1:35 pm

SUBJECT: Tsunami Warning Notification This is a Drill

This is a Drill

WEAK53 PAAQ

TSUAKI

BULLETIN

Public Tsunami Message Number 6

NWS National Tsunami Warning Center Palmer AK

0118 pm PDT Wed Mar 27 2019

UPDATES

* Updated observations

* Revised alert areas

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...A TSUNAMI ADVISORY IS NOW IN EFFECT...

...THE TSUNAMI WATCH REMAINS IN EFFECT...

Tsunami Warning in Effect for;

* CALIFORNIA, The coast from The Cal./Mexico Border to
The Oregon/Cal. Border including San Francisco Bay

* OREGON, The coast from The Oregon/Cal. Border to The

Oregon/Wash. Border including the Columbia River estuary coast

* WASHINGTON, Outer coast from the Oregon/Washington border to Slip Point, Columbia River estuary coast, and the Juan de Fuca Strait coast

* BRITISH COLUMBIA, the Juan de Fuca Strait coast, the outer west coast of Vancouver Island, the central coast and northeast Vancouver Island, and the north coast and Haida Gwaii

* SOUTHEAST ALASKA, The inner and outer coast from The BC/Alaska Border to Salisbury Sound, Alaska

* SOUTH ALASKA AND THE ALASKA PENINSULA, Pacific coasts from Chignik Bay, Alaska to Unimak Pass, Alaska (80 miles NE of Unalaska)

* ALEUTIAN ISLANDS, Unimak Pass, Alaska (80 miles NE of Unalaska) to Attu, Alaska including the Pribilof Islands

Tsunami Advisory in Effect for;

* SOUTHEAST ALASKA, The inner and outer coast from Salisbury Sound, Alaska to Cape Fairweather, Alaska (80 miles SE of Yakutat)

* SOUTH ALASKA AND THE ALASKA PENINSULA, Pacific coasts from Cape Fairweather, Alaska (80 miles SE of Yakutat) to Chignik Bay, Alaska

FORECASTS OF TSUNAMI ACTIVITY

* A tsunami has been generated. The first waves are forecasted to arrive at the following locations and specified times.

* Forecast tsunami duration is the approximate length of time which the tsunami may produce dangerous currents and waves.

* Forecast max tsunami height is the highest expected water level above the tide.

* Forecasts are not provided for sites which have been impacted more than an hour prior to the time of this message.

SITE	FORECAST START OF TSUNAMI	FORECAST TSUNAMI DURATION	FORECAST MAX TSUNAMI HEIGHT
----	-----	-----	-----
* Alaska			
Shemya	1420 AKDT Mar 27	48 hrs	6.2-11.5 ft
Adak	1510 AKDT Mar 27	30 hrs	2.3- 4.3 ft
Unalaska	1615 AKDT Mar 27	20 hrs	1.6- 3.0 ft
Saint Paul	1640 AKDT Mar 27	24 hrs	2.3- 4.2 ft
Sand Point	1700 AKDT Mar 27	20 hrs	1.6- 2.9 ft
Cold Bay	1720 AKDT Mar 27		less than 1ft
Kodiak	1745 AKDT Mar 27	9 hrs	0.7- 1.3 ft
Seward	1750 AKDT Mar 27		less than 1ft
Elfin Cove	1755 AKDT Mar 27		less than 1ft
Sitka	1755 AKDT Mar 27	24 hrs	1.9- 3.6 ft
Yakutat	1755 AKDT Mar 27	9 hrs	0.7- 1.3 ft
Valdez	1805 AKDT Mar 27		less than 1ft
Cordova	1815 AKDT Mar 27		less than 1ft
Homer	1840 AKDT Mar 27		less than 1ft
Craig	1900 AKDT Mar 27		
* British Columbia			
Langara	1830 AKDT Mar 27		less than 1ft
Tofino	1950 AKDT Mar 27	24 hrs	2.1- 3.9 ft
* California			
Horse Mountain	2045 PDT Mar 27	40 hrs	3.5- 5.8 ft
Fort Bragg	2045 PDT Mar 27	24 hrs	2.4- 3.6 ft
Crescent City	2100 PDT Mar 27	48 hrs	4.0- 6.3 ft
Monterey	2105 PDT Mar 27	24 hrs	2.0- 3.7 ft
Port San Luis	2120 PDT Mar 27	40 hrs	3.3- 6.1 ft
San Francisco	2130 PDT Mar 27	24 hrs	2.2- 4.2 ft
Santa Barbara	2135 PDT Mar 27	30 hrs	2.5- 3.9 ft
Los Angeles Harb	2150 PDT Mar 27	24 hrs	2.0- 3.5 ft
Newport Beach	2155 PDT Mar 27	24 hrs	2.2- 4.3 ft
Oceanside	2200 PDT Mar 27	18 hrs	1.8- 3.2 ft
La Jolla	2200 PDT Mar 27	18 hrs	1.6- 3.0 ft
* Oregon			
Port Orford	2045 PDT Mar 27	48 hrs	5.6-10.3 ft
Charleston	2055 PDT Mar 27	24 hrs	2.2- 4.1 ft
Brookings	2100 PDT Mar 27	48 hrs	4.2- 7.9 ft
Newport	2105 PDT Mar 27		
Seaside	2110 PDT Mar 27		
* Washington			
Neah Bay	2100 PDT Mar 27	15 hrs	1.3- 2.4 ft
Long Beach	2100 PDT Mar 27	36 hrs	3.0- 5.5 ft
Moclips	2105 PDT Mar 27	30 hrs	2.3- 4.3 ft
Westport	2110 PDT Mar 27	15 hrs	1.0- 1.8 ft
Port Angeles	2135 PDT Mar 27	20 hrs	1.8- 3.3 ft
Port Townsend	2205 PDT Mar 27		less than 1ft

OBSERVATIONS OF TSUNAMI ACTIVITY

* No tsunami observations are available to report.

PRELIMINARY EARTHQUAKE PARAMETERS

-
- * Magnitude 8.8
 - * Origin Time 0915 AKDT Mar 27 2019
1015 PDT Mar 27 2019
1715 UTC Mar 27 2019
 - * Coordinates 22.7 North 144.4 East
 - * Depth 12 miles
 - * Location in the Volcano Islands, Japan region

RECOMMENDED ACTIONS - UPDATED

Actions to protect human life and property will vary within tsunami warning areas and within tsunami advisory areas.

If you are in a tsunami warning area;

- * Evacuate inland or to higher ground above and beyond designated tsunami hazard zones or move to an upper floor of a multi-story building depending on your situation.

If you are in a tsunami warning or advisory area;

- * Move out of the water, off the beach, and away from harbors, marinas, breakwaters, bays and inlets.
- * Be alert to and follow instructions from your local emergency officials because they may have more detailed or specific information for your location.
- * If you feel a strong earthquake or extended ground rolling take immediate protective actions such as moving inland and/or uphill preferably by foot.
- * Boat operators,
 - * Where time and conditions permit, move your boat out to sea to a depth of at least 180 feet.
 - * If at sea avoid entering shallow water, harbors, marinas, bays, and inlets to avoid floating and submerged debris and strong currents.
- * Do not go to the shore to observe the tsunami.
- * Do not return to the coast until local emergency officials indicate it is safe to do so.

If you are in a tsunami watch area;

- * Prepare to take action and stay alert for further information.

IMPACTS

Impacts will vary at different locations in the warning and in the advisory areas.

If you are in a tsunami warning area;

- * A tsunami with damaging waves and powerful currents is possible.
- * Repeated coastal flooding is possible as waves arrive onshore, move inland, and drain back into the ocean.
- * Strong and unusual waves, currents and inland flooding can drown or injure people and weaken or destroy structures on land and in water.
- * Water filled with floating or submerged debris that can injure or kill people and weaken or destroy buildings and bridges is possible.
- * Strong and unusual currents and waves in harbors, marinas, bays, and inlets may be especially destructive.

If you are in a tsunami advisory area;

- * A tsunami with strong waves and currents is possible.
- * Waves and currents can drown or injure people who are in the water.
- * Currents at beaches and in harbors, marinas, bays, and inlets may be especially dangerous.

If you are in a tsunami warning or advisory area;

- * Some impacts may continue for many hours to days after arrival of the first wave.
- * The first wave may not be the largest so later waves may be larger.
- * Each wave may last 5 to 45 minutes as a wave encroaches and recedes.
- * Coasts facing all directions are threatened because the waves can wrap around islands and headlands and into bays.
- * Strong shaking or rolling of the ground indicates an

earthquake has occurred and a tsunami may be imminent.

- * A rapidly receding or receded shoreline, unusual waves and sounds, and strong currents are signs of a tsunami.
- * The tsunami may appear as water moving rapidly out to sea, a gentle rising tide like flood with no breaking wave, as a series of breaking waves, or a frothy wall of water.

ADDITIONAL INFORMATION AND NEXT UPDATE

- * Refer to the internet site tsunami.gov for more information.
- * Pacific coastal residents outside California, Oregon, Washington, British Columbia and Alaska should refer to the Pacific Tsunami Warning Center messages at tsunami.gov.
- * This message will be updated within 30 minutes.

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Tsunami Warning AlertOC Script for Emergency Management:

This is a Drill - The Orange County Coast is currently under a Tsunami Warning due to an 8.8 magnitude earthquake near Volcano Islands in Japan. This is a Drill.

The OC Tsunami Notification Procedure states a conference call will be conducted.

The Conference Call will be held at 2:45 pm today, March 27, 2019

Conference Call Phone Number: 1-877-336-1828

Access Code: 5180323

This is a Drill

Orange County Operational Area Manager
714-628-7060

Contacts:

Coordination, ExPlan and Technical Assistance:

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Orange County Sheriff Department

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After Action Report

An After Action Report (AAR) will be generated from data provided by all participating jurisdictions. A brief post-event survey will be sent out to collect jurisdiction specific statistics, findings and experiences. Additional information can be sent to Pei Lee as deemed valuable.

Thank you everyone for your participation.