# Welcome!

# **Tsunamis Mean Business:** Is Your Organization Ready? 2025 California Tsunami Preparedness Webinar









# **Today's Presenters**

Todd Becker (Tsunami Planning Coordinator, Seismic Hazards Branch, California Governor's Office of Emergency Services)

Overview of Tsunami Hazards and Warnings

### Anne Wein (Operations Research Analyst, United States Geological Survey)

Economic Impacts of the SAFRR Tsunami Scenario in California

# Chris Wright (President, Business & Industry Council on Emergency Planning and Preparedness – BICEPP)

Guidance and Considerations for Business Tsunami Planning

# Mark Benthien (ECA Executive Director | Statewide California Earthquake Center at USC)

TsunamiZone.org: Resources and Suggestions for How to Improve Tsunami Preparedness

### **Overview of Tsunami Hazards and Warnings**





California Tsunami Hazard and Warnings

## **Tsunami Facts**





Source: Surviving a tsunami: lessons from Chile, Hawaii, and Japan; USGS Circular 1187

#### **California Tsunami Hazards and Warnings**

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California Tsunami Hazards and Warnings



### **Tsunamis in California**



Bodega Bay, CA from Pamela J. Boehand, USCG;



Crescent City, CA from NOAA NWS

**California Tsunami Hazards and Warnings** 



# Tsunami Warnings

"Know Your Tsunami Zone"



#### **California Tsunami Hazards and Warnings**

# The Most Important Things to Remember about Earthquakes and Tsunamis



**California Tsunami Hazards and Warnings** 

# **Thank You**

### "Know Your Tsunami Zone" Tsunami.ca.gov

Cal OES Tsunami Program Contacts <u>Todd.Becker@CalOES.ca.gov</u> <u>Yvette.LaDuke@CalOES.ca.gov</u>



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### **Business Interruption: Coastal Property**

- \$1.7 B damages; BI loss \$1.8 B
  - Vulnerable sectors < 0.3%
    - Health, education, retail in S. Cal
    - Hotels in Rest of Cal





SCS Natural Hazards: Earthquake • Volcanic Eruption • Landslide • Flood • Geomagnetic Storm • Wildfire • Tsunami • Coastal Erosion



- Overlap with \$5.9 BI losses from evacuating max. tsunami zone
- Resilience strategies suggest potential 80-90% reduction of BI loss

**Business Interruption Loss:** 

### \$1-\$6 billion

Preparedness and resilience controls the bottom line



## Guidance and Considerations for Business Tsunami Planning

Chris Wright President - BICEPP



### What is your primary risk?

 Businesses/entities such as restaurants, theaters, museums, schools, markets and large offices or factories that contain large numbers of customers/staff/vendors <u>should focus preparatory</u> <u>measures on preventing a tsunami from causing</u> <u>loss of life</u>.



# Conduct an assessment on the potential impacts to your company

### <u>Assess Direct Impacts</u>

- Determine if any of your companies' facilities are in tsunami impact areas. Document your findings.
- Determine if any employees that perform critical roles for your company live in tsunami impact areas. Document your findings.
- Evaluate if key roads or freeways that are used by your company and/or employees are in tsunami impact areas. Document your findings.



# Conduct an assessment on the potential impacts to your company

### Assess Indirect Impacts

- Determine if any of your key customers are in tsunami impact areas. Document your findings.
- Determine if any of your key providers of products or services to your company are in tsunami impact areas. Document your findings.



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### Utilize the results of your assessment

### If you have employees that perform critical roles that live in tsunami impact areas, consider the following steps:

- Evaluate if you have alternate employees preidentified and trained to fill the critical roles needed to maintain your critical company activities? If not, now may be the time to do some cross training and/or develop a business continuity plan to support the loss of those filling critical roles.
- Provide additional education to the employees who live in higher risk areas on proper tsunami preparedness steps they should consider for their family/home.



## Utilize the results of your assessment

- If you have key customers and/or key providers of product or services to your company that are located in tsunami impact areas, consider the following steps:
  - Develop business contingency plans for how you would attempt to continue to provide your products/services to impacted customers
  - Consider if you need to identify alternate providers of products or services that your company relies on







### www.BICEPP.org

### Mark Benthien **ECA Executive Director,** Statewide California Earthquake Center at USC

TsunamiZone.org: Resources and Suggestions for How to Improve Tsunami Preparedness

# Earthquake Country Alliance

Country

- 4000+ Public-Private-Grassroots leaders
- Statewide *committees* develop resources and deliver programs
- Regional Alliances organize meetings and outreach activities
- California's Office of Emergency Services provides NEHRP funding for ECA earthquake mitigation activities
- USC's Statewide California Earthquake Center (SCEC.org) administers ECA (annually ~\$270K)

Join: EarthquakeCountry.org/join



# **ECA Statewide Activities**

Develop Messaging and Resources: <u>EarthquakeCountry.org</u> <u>EarthquakeCountry.org/resources</u> <u>Terremotos.org</u>

Support Tsunami Preparedness Week: <u>TsunamiZone.org/california</u>

*Created and Coordinate The Great California ShakeOut:* **ShakeOut.org/california** 

Webinars & other events EarthquakeCountry.org/calendar



Seven Steps To Earthquake Safety



EarthquakeCountry.org/sevensteps

Terremotos.org/sietepasos

# Safety Guidance in 16 Languages



### EarthquakeCountry.org/languages

# California Tsunami Preparedness Week

- 2025 Goal: 500,000 Participants (year-long)
- As of today: 424,000
- You can: provide tsunami messaging to your employees, customers, etc.; then register your total #
- Encourage large employers, universities, school districts to have activities or share guidance, and then register!
- Ramping up social media follow & share:
  - x.com/thetsunamizone
  - facebook.com/thetsunamizone
  - instagram.com/thetsunamizone/

### TsunamiZone.org/california



Know Your Zone: Maps for all coastal areas (nationally) showing tsunami hazard zones

**Resources:** Videos, manuals, posters, bookmarks, postcards, luggage tags for go bags, important document holders (new!)

**How to Participate:** Guidance for tsunami activities, evacuation drills, etc. (all should be register on TsunamiZone.org)

Activity Registration: Register your activities during Tsunami Preparedness Week (or any day of the year) to be included in the annual total at Tsunamizone.org/register

**Event Calendar:** Learn about drills, presentations, and other events near you (and add your events)



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TsunamiZone.org

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### Here are possible tsunami preparedness activities that you can plan:

- Attend or organize a tsunami walk drill
- Print out a map of your evacuation zone
- Attend a public lecture about tsunamis
- Put together a "go bag" with essential supplies
- Make a household or workplace tsunami plan
- Participate in a tsunami exercise at work
- Join a tsunami communication exercise
- Share #TsunamiPrep info on social media or email
- Participate in a school evacuation drill
- Hold a boater/marina evacuation drill to high ground
- Watch a tsunami preparedness video

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C	slifornia T	sunami Preparedness Week (March 22-30)			
		ami Preparedness Week (March 23-29)			
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W	orld Tsun	ami Awareness Day			
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0	ther				
		May we share information about your participation with			
O Y		researchers studying how people participate in tsonami progardness activities 7			

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North Coast	21,557	Inyo-Mono	0
Del Norte	16	Invo	0
Humboldt	21,127	Mono	0
Lake	0		
Mendocino	414	Central Valley South	68
Charles Charles In	4	Fresno	26
Shasta Cascade		Kem	7
Butte	4	Kings	0
Glenn	0	Madora	0
Lassen	0	Mariposa	0
Modoc	0	Merced	26
Plumas	0	Tulare	9
Shasta	0	and the second	
Sierra	0	Central Coast	35,878
Siskiyou	0	Monterey	129
Tehama	0	San Benito	0
Trinity	0	San Luis Obispo	121
		Santa Barbara	35,557
Bay Area	39,353	Santa Cruz	71
Alamoda	27,650		
Contra Costa	14	Southern California Coast	111,975
Marin	177	Los Angelas	65,484
Napa	0	Orange	1,254
San Francisco	2,890	Ventura	45,237
San Mateo	8,478	Inland Southern California	453
Santa Clara	68	Imperial	32
Solano	2	Riverside	198
Sonoma	74	San Bernardino	223
Delta Sierra	253	San Bernardino	22.3
Alpine	4	San Diego	31,933
Amador	4		
Calaveras	4 2	Multiple Counties	2,513
and the second	2		
Colusa	6		
El Dorado			
Nevada	2		
Placer	3		
Sacramento	172		
San Joaquin	6		
Stanislaus	39		
Sutter	15		
Tuolumne	0		
Yolo	0		
Yuba	0		

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#### PACIFEX

May 23, 2024, 918 - 2 pm (Virtual) PACIFEX 2024 Exercise led by the NWS National Tsunami Warning Center Mans Info

Annual Tsunami Response Playbook Communications Exercise

March 27, 2024, 2 - 3 pm (Virtual)

Welcome to 2024 Tsunami Preparedness Week

On March 27, 2024, at 1400 hours, the California Tsunami Program will conduct the annual Tsunami Response Playbook

Exercise Scenario: M8.9 Earthquake located in Ih\_\_\_\_\_

#### Tsunami Community Breakfast

March 23, 2024, 8 - 11 am (Humboldt Grange #501) Educational handouts will be made available. <u>More Info</u>

#### Tsunami Preparedness Community Bike Ride (Wilmington)

April 1, 2023. 9 am - 12 pm (Winnington Waterhont Park - Los Ángeles ). Celebrate Tsucami Preparedness Week with a Community Bike Ride hosted by the City of LA Emergency Management Department In: Joordination with the SoCal Thriff Bike group. Man: Info I Event Website

Annual Tsunami Playbook Communications Exercise (Statewide)

#### March 29, 2023, 1 - 3 pm (online event)

Annual exercise organized and run by Cal OES, CA Geol. Survey, and NWS-Weather Forecast Offices: participants will be emergency response officials from counties, cities, harbors, ports, and other governmental agencies who are on the TEDL. More Into.

MORE INIO

#### Tsunami Warning Communications Test (North Coast)

March 29, 2023, 11 am - 12 pm (Del Norte, Humboldt, and Mendocino Counties Only). Annual test of Tsunami Warning System to ensure it works properly during a real tsunami emergency

More Info | Event Websile

# California TsunamiZone Page

- California-specific resources
- Annual California Tsunami Webinars
- Videos, posters, flyers, brochures
- Links to CGS and Cal OES Mapping Tools
- Includes maritime guidance
- What else should be included?

### TsunamiZone.org/california



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# California Tsunami Preparedness Week

- What activity will you do & register?
- Who will you encourage to participate? (people, schools, organizations, agencies...)
- What will inspire more involvement?
- How do we better involve "inland" Californians?

### TsunamiZone.org/california





To be notified of future events and recordings, join ECA (free!): **EarthquakeCountry.org/join** 

Please take our survey: SurveyMonkey.com/r/NGTVN6M Questions? info@earthquakecountry.org

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# **Connect with ECA & TsunamiZone**

- <u>EarthquakeCountry.org</u>
- info@earthquakecountry.org
- <u>TsunamiZone.org</u>
- info@tsunamizone.org



Please take our brief survey about today's workshop: <u>SurveyMonkey.com/r/NGTVN6M</u>