

## MES Virtual Meeting - 20 November 2024

### **Participants**

Skylar Suiso, HI-EMA  
Regina Browne, VITEMA  
Stephen Cahill – Guam  
Jeff Lorens, NWS Western Region HQ  
Victor Huerfano - UPRM/PRSN  
Nick Graehl, CGS  
Ethan Weller - WA EMD  
Katie Nguyen, NWS Southern Region HQ  
Ed Fratto, NESEC  
Sarah Rogowski, NWS NTHMP  
Mario Kaipat, CNMI HSEM  
Christa von Hillebrandt-Andrade, ITIC-CAR  
Corina Allen, NOAA  
Yvette LaDuke, CALOES  
Summer Ohlendorf, NWS  
Tyisha Brown EI, WA EMD  
Elyssa Tappero, WA EMD  
Dante DiSabitino, WA EMD  
Laura Kong, ITIC  
Wildaomaris Gonzales Ruiz, DSP Puerto Rico  
Todd Becker, CALOES  
Nicolas Arcos, NCEI

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### **Partner Updates**

Welcome Tyisha Brown EI from Washington Emergency Management Division

Sarah Rogowski notes the tentative dates and location of NTHMP in-person meeting: May 19-23 May, in Anchorage (AK).

Laura Kong notes that the 2004 Indian Ocean tsunami had 15 countries with deaths, not 14. Important as anniversary is nearing. ITIC and NCEI poster:  
[https://www.ncei.noaa.gov/sites/g/files/anmtlf171/files/2024-11/IO\\_Poster\\_20241030\\_final\\_lowres.pdf](https://www.ncei.noaa.gov/sites/g/files/anmtlf171/files/2024-11/IO_Poster_20241030_final_lowres.pdf)

A press conference will be held at AGU Conference in December in Washington DC, on the 2004 event. Current U.S. panel includes Laura Kong, Vasily Titov and Nate Wood.

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### **MES Co-chair(s) nomination**

No Federal representatives nominated to be MES co-chair. Nic Arcos staying on as MES co-chair as the Federal representative.

Stephen Cahill, Guam Homeland Security, nominated as MES co-chair. MES voted with 9 votes in favor, none against, to approve Stephan as MES co-chair. Stephan's nomination will need to be approved by the NTHMP Coordinating Committee at the February 11<sup>th</sup> meeting.

Many thanks to Regina Browne, VITEMA, for her service as MES co-chair. During her 3-year term, Regina provided valuable insights and dedication to furthering MES achievements. MES looks forward to her continued participation as an MES member.

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### **Pacifex25 Exercise**

The following comments below were received regarding potential dates for Pacifex, (please send any other timing concerns to [summer.ohlendorf@noaa.gov](mailto:summer.ohlendorf@noaa.gov)):

- Best date for WA: May 8<sup>th</sup>
- CARIBE WAVE is March 20 not a good date for meeting
- April not ideal
- Last week in March is not good for CA
- 1st week of April not good
- Last week of March is not good for CA
- CARIBE EWS UNESCO Meeting (Puerto Rico and USVI and HQ) is May 5-9

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### **2025 MES Work Plan**

See slides.

Please let MES co-chairs if you want to be a co-lead of a Work Plan Activity.

Comments on Task ID 4 - NTHMP Social Media Presence:

- Maybe TsunamiZone can help take the lead on promoting NTHMP? (N. Graehl)
  - Might consider combining with canned messaging task, Task ID 2. (co-chairs)
- 

**Next MES Meeting:** Wednesday, January 15th, 2025 (1pm-2pm pst)

# NTHMP MES Meeting

## November 20, 2024

### Agenda:

- Welcome and Sign In
- MES Partner Announcements
- MES Co-chair Replacement
- PACIFEX Dates
- FY2025 Work Plan Activity Review
- Closing

**\*\*Please enter your name and affiliation in the chat.**



# MES Partner Announcements

- Please use the raise your hand button if you would like to make an announcement to the group.



# MES Co-chair Replacement

- Call for vote for Stephen Cahill as an MES Co-chair Territory/State representative to fill outgoing MES Co-chair Regina Browne
- Nic Arcos will stay on as MES Co-chair Federal representative for a new term.



# PACIFEX25 Dates

- Discussion of potential dates for PACIFEX25 during months of March through May 2025.
- What dates may or may not work for your region if you plan to participate?

\*Note: May 19-24, 2024, is currently the placeholder date for NTHMP Annual Meeting

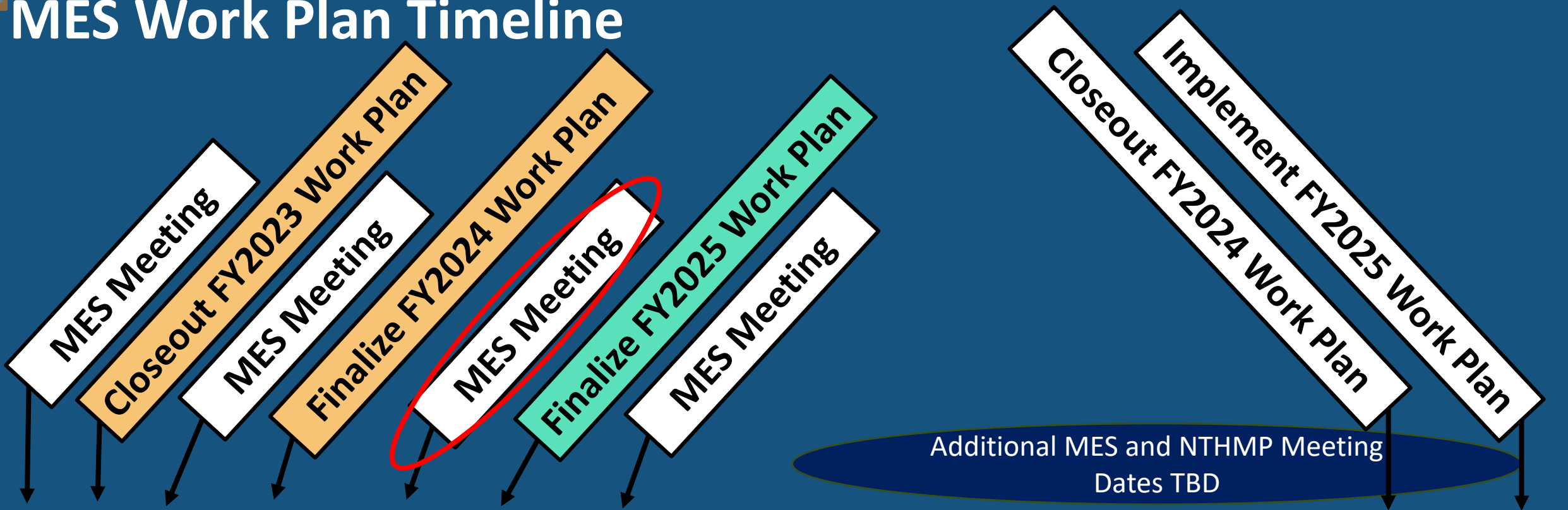


# MES Work Plan Development FY2024 and FY2025

## Objectives:

- ✓ Develop the MES FY2024 by the end of October 2024.
- Develop the MES work plan for the next fiscal year (FY2025) by the end of December 2024.

# MES Work Plan Timeline



Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	
Calendar Year 2024					Calendar Year 2025									
Develop FY2024 Work Plan			Implement FY2024 Work Plan											
Develop FY2025 Work Plan					FY2025 Grant Proposals/Applications									





# FY2025 Work Plan Development

## Tasks:

- Completed
  - ✓ MES Partners submit initial input for work plan activities.
  - ✓ MES Partners review the suggested work plan activities.
  - ✓ MES Co-chairs compile input and coordinate with activity leads.
- In Progress
  - Review draft work plan at MES Meeting on November 20, 2024.
- To Do
  - Complete work plan revisions by early December 2024.
  - Finalize work plan by end of December 2024.
  - Provide work plan to NTHMP CC for February 2025 meeting.



## Proposed FY2025 Work Plan Activity, Task ID: MES-FY2025-1

### Task Description:

**Development of a manual in consultation with the Hazus Help Desk, outlining the steps necessary for NESEC or any other user to update their installation of Hazus to be operational for Tsunami for the USEC.**

### Outcomes:

Manual outlining the steps necessary for NESEC internally or any other user to update their installation of Hazus to be operational for Tsunami for the USEC. FEMA Expansion of Hazus to the USEC.



## Proposed FY2025 Work Plan Activity, Task ID: MES-FY2025-2

### Task Description:

**Canned messaging (editable text and graphics) for use during International Tsunami Awareness Day and other tsunami event anniversaries (2011, 2009, 2004, etc) so partners can more easily push messaging.**

### Outcomes:

NTHMP partners have easy to use resources for International Tsunami Awareness Day and other tsunami-related events throughout the year, thus ensuring these events don't pass by without acknowledgement.



## Proposed FY2025 Work Plan Activity, Task ID: MES-FY2025-3

### Task Description:

**Online repository for sharing files and resources between NTHMP partners - like the Basecamp site Washington has, but one that is operated by NWS/NOAA so access doesn't rely on outside funding or a particular state/territory partner.**

### Outcomes:

An online repository for NTHMP-related files that all NTHMP partners have access to, so file sharing is easy and we have a historical record.



## Proposed FY2025 Work Plan Activity, Task ID: MES-FY2025-4

### Task Description:

**NTHMP Social Media Presence. Identify social media platform, identify lead from MES or NOAA**

### Outcomes:

Online social media presence to share ideas globally like Twitter\X or InstaGram page



## Proposed FY2025 Work Plan Activity, Task ID: MES-FY2025-5

### Task Description:

**Tsunami Ambassador Program - After school program geared towards preteens to spread awareness about hazards of tsunamis, preparedness, and warning signs. Develop a statewide after school program that graduates students as tsunami ambassadors that then go out and spread awareness to friends, peers, and family.**

### Outcomes:

Increase awareness of tsunami hazards and risks. Promote understanding of tsunami warning signs and evacuation procedures. Inspire action by encouraging individuals, families, and communities to develop tsunami preparedness plans.



## Proposed FY2025 Work Plan Activity, Task ID: MES-FY2025-6

### Task Description:

**TsunamiReady Recommendations: C1. WFOs and TsunamiReady Boards should incorporate the Maritime Related Options/Strategies guidance and recommendations developed by NTHMP Partners for use with Ports and Harbors as part of the TsunamiReady Program.**

### Outcomes:

Recommendations to NTHMP CC to endorse NTHMP TsunamiReady Maritime Related Options/Strategies guidance and provide to NWS Tsunami Program on behalf of NTHMP.



## Proposed FY2025 Work Plan Activity, Task ID: MES-FY2025-7

Task Description:

### **Tsunami signage evaluation**

Outcomes:

NTHMP Summary of existing tsunami sign usage in States/Territories.  
Outline of steps for next phase of activity to propose tsunami signs to FHWA for inclusion in Federal Manual on Uniform Traffic Control Devices.





## Proposed FY2025 Work Plan Activity, Task ID: MES-FY2025-8

### Task Description:

### **TsunamiZone.org Global Exercise and Tsunami Education Support**

### Outcomes:

TsunamiZone.org hosts registration for participants for tsunami events and exercises. TsunamiZone.org provides a central repository for tsunami education and outreach resources, a calendar of events, and a nexus to NTHMP partners through individual partner web pages.



## Proposed FY2025 Work Plan Activity, Task ID: MES-FY2025-9

### Task Description:

**Tsunami Maritime Mitigation Funding. Developing a comprehensive, evolving document that outlines funding mechanisms and opportunities for mitigation projects. Collaborating with local stakeholders to continuously update and refine this list of funding sources over time**

### Outcomes:

This project will create a viable document that lists funding sources that can be shared with the maritime community to directly connect local ports and harbors to sources of funding to complete projects that will improve their resilience to tsunami and other overlapping coastal hazards.



## Proposed FY2025 Work Plan Activity, Task ID: MES-FY2025-10

### Task Description:

**Strategic Engagement with the U.S. Coast Guard and Maritime Efforts**  
**Work strategically with the U.S. Coast Guard to understand their initial response actions, roles, and responsibilities during tsunamis.**

### Outcomes:

Improved Tsunami Alerting and Response Timelines for each state and territory and an updated Boater's Guide from Washington that can be shared with other states and territories. Improved understanding of USCG procedures post-tsunami.



## Proposed FY2025 Work Plan Activity, Task ID: MES-FY2025-11

Task Description:

### **WA State Tsunami Hospitality Guide**

Outcomes:

Development of a WA State Tsunami Hospitality Guide focused on educating and preparing the coastal hospitality industry which includes best practices and lessons learned from NTHMP partners.



## Proposed FY2025 Work Plan Activity, Task ID: MES-FY2025-12

### Task Description:

**Exercise Support for NTWC, PTWC, and WCS in annual exercises (CaribeWave, Lantex, Pacifex)**

### Outcomes:

Increased participation in exercises.

Exercise feedback from local entities to inform future exercises



## Proposed FY2025 Work Plan Activity, Task ID: MES-FY2025-13

### Task Description:

### **USVI Tsunami Awareness and Preparedness Survey**

### Outcomes:

Asses the current levels of awareness, knowledge, and preparedness regarding tsunami risks within the USVI community.

By identifying gaps and areas for improvement, the survey will inform targeted educational and training programs, enhance early warning systems, and support the development of effective emergency response strategies.

# Closing

- Next Meeting: Wednesday, January 15<sup>th</sup>, 2025 (1pm-2pm pst)
- Action items and upcoming activities:
  - FY2025 Work Plan Revisions (MES Co-chairs)
  - MES Terms of Reference Update (MES Co-chairs)
  - FY2024 Work Plan Activity Updates at January MES Meeting (MES Activity Leads)
  - Provide FY2025 Work Plan to NTHMP CC for February 2025 meeting (MES Co-chairs)

## MES Virtual Meeting - 15 January 2025

### **Participants** *(in no particular order)*

Skylar Suiso, HI-EMA  
Stephen Cahill, Guam  
Ethan Weller, WA EMD  
Katie Nguyen, NWS Southern Region HQ  
Ed Fratto, NESEC  
Sarah Rogowski, NWS NTHMP  
Mario Kaipat, CNMI HSEM  
Corina Allen, NOAA  
Mike Crop, OEM  
Althea Rizzo, OEM  
Yvette LaDuke, CALOES  
Summer Ohlendorf, NWS  
Elyssa Tappero, WA EMD  
Wildaomaris Gonzales Ruiz, DSP Puerto Rico  
Chris Birchfield, NWS ERH  
Greg Schoor, NWSHQ  
Stephanie Ross, USGS  
Anne Sheehan, FEMA  
Jose Lara, CALOES  
Todd Becker, CALOES  
Nicolas Arcos, NCEI

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### **Partner Updates**

Sarah Rogowski: No new budget information. The tentative dates and location of NTHMP in-person meeting: May 19-23 May, in Anchorage (AK).

Summer Ohlendorf: Kara Sterling compiling on feedback for Pacifex 2025 dates. Options: Apr 30, May 1, May 6, May 7. Please give Summer and/or Kara feedback on these dates asap, but no later than end of January. Feedback is also encourage on ideas for scenarios.

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### **Vote on MES FY2025 Work Plan**

Yes votes (10): Washington, Guam, Oregon, California, East Coast region, Hawaii, NOAA, Commonwealth of the Northern Mariana Islands, Puerto Rico, Alaska (virtual)

No votes (0): None



Not present or abstained (4): FEMA, U.S. Virgin Islands, Gulf of Mexico region, American Samoa

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### **Vote on Updated MES Terms of Reference**

Yes votes (10): Washington, Guam, Oregon, California, East Coast region, Hawaii, NOAA, Commonwealth of the Northern Mariana Islands, Puerto Rico, Alaska (virtual)

No votes (0): None

Not present or abstained (4): FEMA, U.S. Virgin Islands, Gulf of Mexico region, American Samoa

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### **Other**

MES Co-chair recommendations will be provided to the NTHMP Coordinating Committee (CC) for the meeting on February 11th, 2025.

In November 2024, MES voted to approve Stephen Cahill, Guam Homeland Security, as MES co-chair. Stephan's nomination will need to be approved by the NTHMP CC at the February 11<sup>th</sup> meeting. If approved he will begin his 3-year term after the CC meeting.

Nic Arcos (NCEI) will stay on as MES Co-chair Federal representative for a new term of 2-years.

On behalf of the MES, Todd Becker thanks Regina Browne, VITEMA, for her service as MES co-chair. During her 3-year term, Regina provided valuable insights and dedication to furthering MES achievements. MES looks forward to her continued participation as an MES member.

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### **Next MES Meeting**

19 March (1pm-2pm PST).

MES members should expect a calendar invite in the coming days.

Agenda topics expected: (1) FY2024 Work Plan updates from leads; (2) In-person meeting planning

# NTHMP MES Meeting

## January 15, 2025

### Agenda:

- Welcome and Sign In
- MES Partner Announcements
- MES FY2025 Work Plan Vote
- MES Terms of Reference Vote
- MES Co-chair Transition
- Closing

**\*\*Please enter your name and affiliation in the chat.**



# MES Partner Announcements

- Please use the raise your hand button if you would like to make an announcement to the group.



# MES FY2025 Work Plan

- Call for a vote to approve the MES FY2025 Work Plan.
- MES Coordinating Committee Voting Members or their designee please indicate in the chat a “yes” or “no” vote to approve the MES FY2025 Work Plan.



# MES Terms of Reference

- Call for a vote to approve the updated MES Terms of Reference,
- MES Coordinating Committee Voting Members or their designee please indicate in the chat a “yes” or “no” vote to approve the updated MES Terms of Reference.



## MES Co-chair Transition

- Stephen Cahill voted to serve as the MES Co-chair Territory/State representative to fill outgoing MES Co-chair Regina Browne during November 2024 Meeting.
- Nic Arcos will stay on as MES Co-chair Federal representative for a new term.
- MES Co-chair recommendations will be provided to the NTHMP CC for the meeting on February 11th, 2025

# Closing

- Next Meetings
  - Third Wednesdays of March, May, July, Sept 2025
  - 1300-1400 PT
- Action items and upcoming activities:
  - Calendar invite for next meetings
  - Next Meeting – March 2025
    - FY2024 Work Plan updates from leads
    - Summer Meeting Planning



# ALASKA

Anthony Picasso, MSDM

State of Alaska

Division of Homeland Security & Emergency Management

National Tsunami Hazard Mitigation Program

Annual Meeting

May 2025







# Program Overview and Significance: Introduction to the NTHMP partnership and its importance to Alaska.

- Alaska has 33,904 miles of coastline - highest tsunami risk in U.S.
- Tsunamis caused 122 of 130 deaths in 1964 Alaska earthquake
- Program provides \$700,000 (-56%) annually for Alaska preparedness
- Funds critical tsunami sirens, mapping, research, education
- Coordinates state efforts with NOAA, FEMA, USGS





## 2024 Program Status and Funding Challenges: Details about the program's current status, including funding challenges and the potential impact of elimination.

- Alaska DHS&EM Director: losing program "could mean deaths"
- Officials learned about cuts on March 27 (1964 earthquake anniversary)
- Sen. Murkowski committed to fighting for continued funding
- Technology alone cannot save lives without community preparations



# Key 2024 Achievements in Hazard Assessment: Recent mapping and research accomplishments.

- New tsunami inundation maps for Cook Inlet communities (Fall 2024)
- Updated maps for Anchor Point, Kenai, Ninilchik, Tyonek
- Research shows Anchorage at risk during high tide
- Underwater landslide risks now incorporated in assessments
- Maps created using UAF supercomputer modeling
- Maps reflect worst-case scenarios for maximum safety
- Coordinated by Alaska Geological Survey, UAF, emergency



management





# Community Preparedness Initiatives

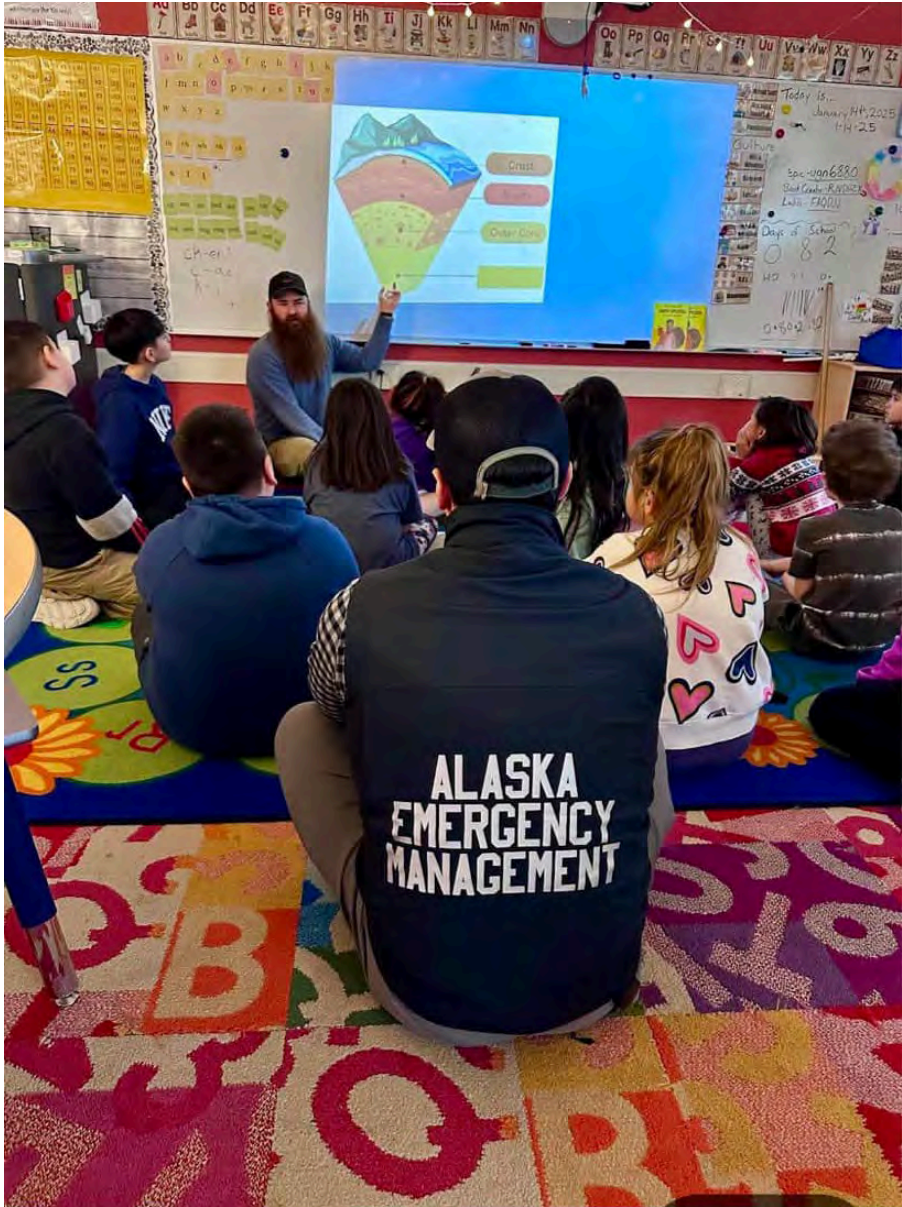
- Seldovia Village Tribe: first Alaska tribe with TsunamiReady certification
- Tsunami warning system test conducted March 27, 2024
- Governor proclaimed March 23-29, 2025 as Tsunami Preparedness Week
- TsunamiReady requirements: hazard mapping, warning points, evacuation routes
- Expanding TsunamiReady certifications across Alaska
- Community-specific evacuation plans and signage implementation
- Strong coastal-state-federal coordination



# Educational Outreach and Resources

- New "Know Your Tsunami Hazard" community brochures
- Fall 2024 focus: Anchorage, Mat-Su, Hope, Seldovia
- Created with local emergency managers for customization
- Help communities understand specific tsunami risks
- Media and social network awareness campaigns
- Education on natural warning signs (shaking, water recession)







# Warning System Improvements

- National Tsunami Warning Center operations in Palmer
- Multiple warning systems: sirens, media, NOAA Weather Radio
- Community siren maintenance/upgrades in 2024
- Improved state-local emergency coordination
- Refined warning communication protocols
- Integration with Wireless Emergency Alert system
- Rapid response for both local and distant tsunami threats





# Scientific Research and Technology Advancements

- Enhanced monitoring of Barry Arm landslide area
- August 2024 Pedersen Lagoon landslide-tsunami (17-meter wave)
- Provided valuable real-world research data
- Advancing early warning for non-earthquake tsunamis



Photo: Lituya Bay, Alaska





# Local Implementation Success Stories

- Community tsunami preparation drills
- Infrastructure improvements for mitigation
- Updated local emergency operations plans
- Evacuation route signage installation
- Tribal government and state agency collaboration
- NTHMP guidelines implementation in coastal communities







## Challenges and Future Directions

- Urgent funding uncertainty threatens program
- Climate change increasing landslide-tsunami risks
- Need for expanded remote area monitoring
- Improving warning times for near-shore tsunamis
- Enhancing community-level response capabilities
- Preparing for non-seismic tsunamis (landslides, volcanic)
- Developing new detection systems for local tsunamis





# Alaska's Unique Tsunami Risk and Program Value

- Alaska's tsunami history: 122 deaths in 1964
- Ongoing earthquake and landslide risks
- Unique challenges: geography, remote communities
- Protecting critical coastal infrastructure
- Preventative measures reducing potential casualties
- Program's proven life-saving value
- Call to action: support continued funding and expansion





Thank you!





**California Tsunami Steering Committee County Members**



# The California Tsunami Program

California Governor's Office of  
Emergency Services and  
California Geological Survey

NTHMP Annual Meeting  
Mitigation and Education  
Subcommittee

May 2025



# Offshore Cape Mendocino Tsunami Warning

WEAK51 PAAQ 051849  
TSUAK1

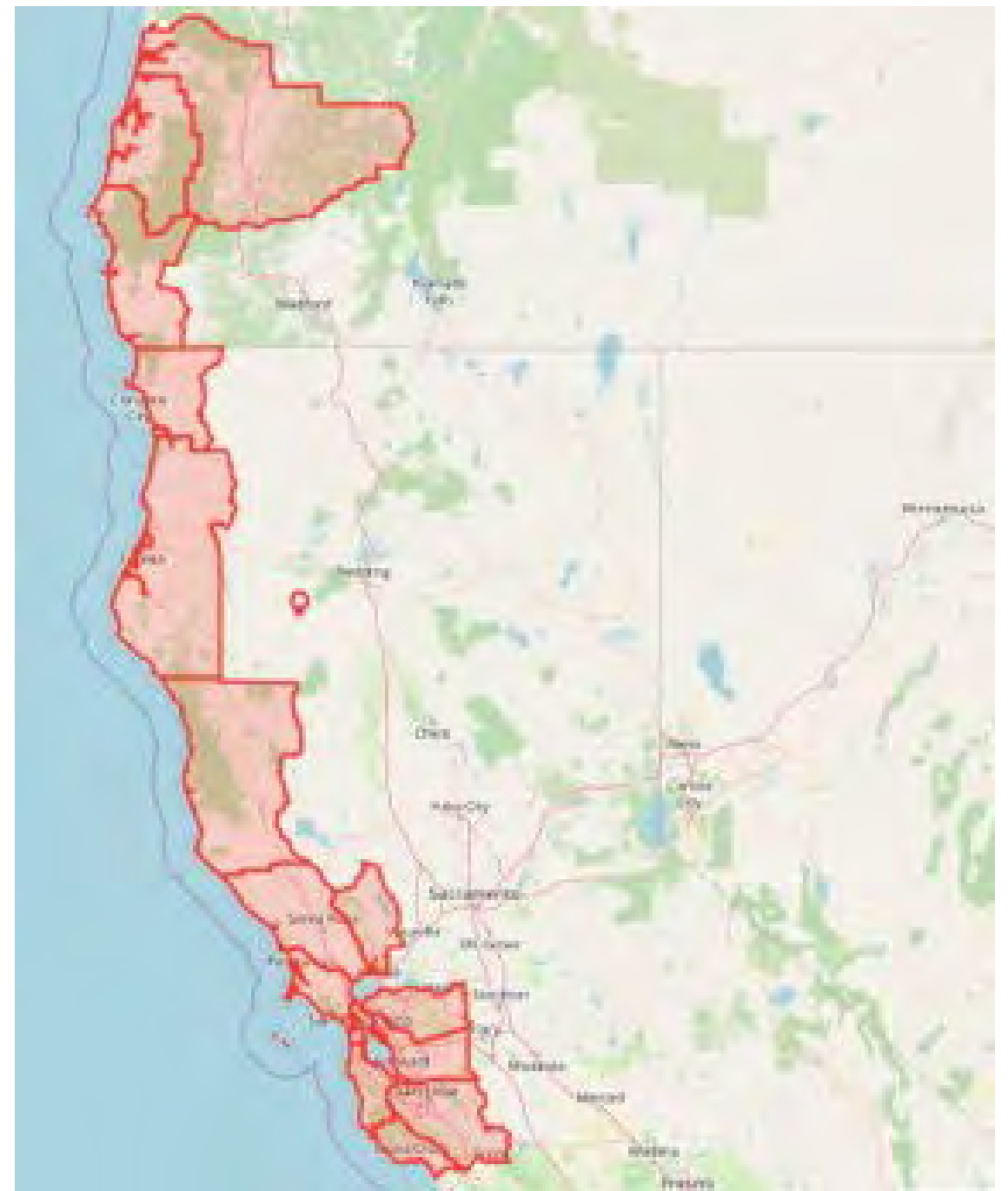
BULLETIN  
Public Tsunami Message Number 1  
NWS National Tsunami Warning Center Palmer AK  
1049 AM PST Thu Dec 5 2024

...A TSUNAMI WARNING IS NOW IN EFFECT...

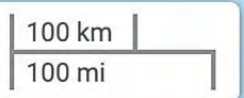
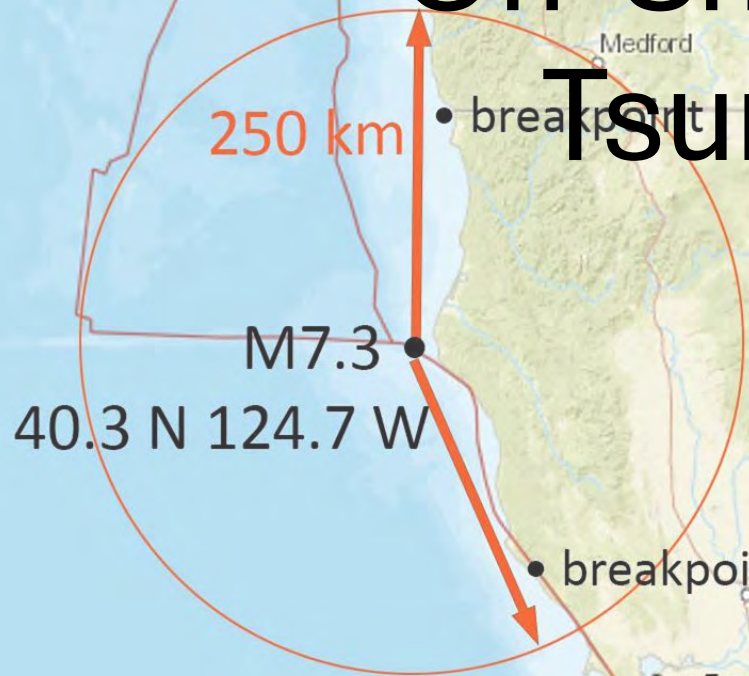
Tsunami Warning in Effect for;

- CALIFORNIA, The coast from Davenport, California (10 miles NW of Santa Cruz) to The Oregon/Cal. Border including San Francisco Bay
- OREGON, The coast from The Oregon/Cal. Border to Douglas/Lane Line, Oregon (10 miles SW of Florence)

For other US and Canadian Pacific coasts in North America, the level of tsunami danger is being evaluated. Further information will be provided in supplementary messages.



# Off-Shore Cape Mendocino Tsunami Warning Area



# Tsunami WEA Messages



## Emergency Alert

The National Weather Service has issued a **TSUNAMI WARNING**. A series of powerful waves and strong currents may impact coasts near you. You are in danger. Get away from coastal waters. Move to high ground or inland now. Keep away from the coast until local officials say it is safe to return.

National-Level WEA Message



Local WEA Message

# Exercises and Drills

**NORTH COAST TSUNAMI DRILL**  
DEL NORTE, HUMBOLDT, & MENDOCINO COUNTIES

## THIS IS A DRILL!

County Reverse Calling Systems Tested  
Practice Drop, Cover, and Hold On  
Practice Your Tsunami Evacuation Plan

**If you are in the tsunami hazard zone:**  
Practice your evacuation plan by walking out of the tsunami zone.

**If you are not in the tsunami hazard zone:**  
Stay put! However, take time to think about what you would do after a damaging earthquake.

NWS EUREKA, CA




California Tsunami Program



## USCG DISTRICT 11 TSUNAMI WORKSHOP

U.S. Coast Guard District 11  
Workshop Agenda  
March 18, 2025  
1300-1530



2025 City of Long Beach  
**TSUNAMI WALK & PREPAREDNESS FAIR**

Saturday, March 29, 2025 9:00 AM - 2:00 PM

WILL PROCEED FROM 10:00 AM TO 11:00 AM

**ARE YOU IN THE ZONE?**  
Check if you are in the tsunami zone. Register for the tsunami walk on March 29 to get tsunami ready.

**TSUNAMI WALK @ 10:30 AM**  
Practice making out of the tsunami zone to safety.

**REAL FROM EXPERTS**  
Learn the tsunami warnings and how to prepare.

**RESOURCE BOOTHS**  
Get preparedness tips and supplies.

CITY OF LONG BEACH  
Disaster Preparedness & Emergency Communications

Cal OES  
California Department of Conservation  
California Geological Survey  
Seismic Hazardity / Tsunami Unit

## 2025 California State Tsunami Exercise

### Local Tsunami: Magnitude M 7.4 Earthquake

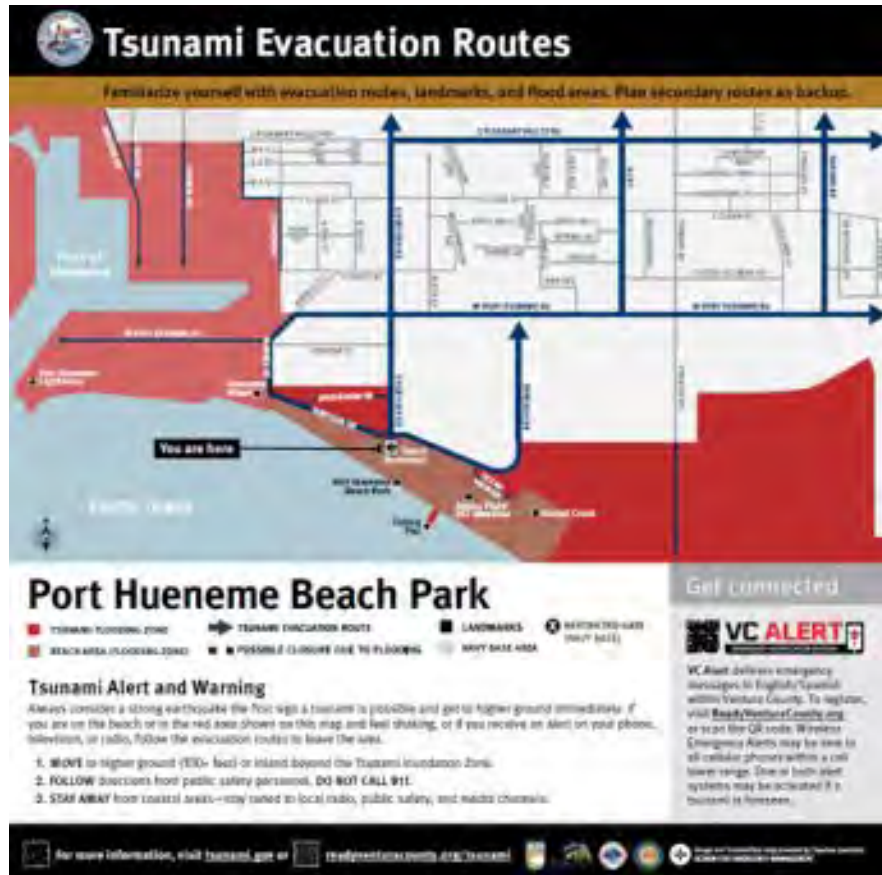
**Exercise, Exercise, Exercise**

California Tsunami Program

**Bob Becker** - California Governor's Office of Emergency Services  
**Yvette LaDuke** - California Governor's Office of Emergency Services  
**Nick A. Grahn, M.S.** - California Geological Survey, Tsunami Unit  
**Jason K. Patton, Ph.D.** - California Geological Survey, Tsunami Unit



# Tsunami Signs/Evacuation Maps



Statewide Tsunami Hazard Zone Sign Guidance and Specifications for the California Manual of Uniform Traffic Control Devices

# Workshops and Trainings



## Cal Poly Humboldt hosts public forum on Earthquake and Tsunami lessons

By Yvonne King | Mon, March 10th 2025 at 1:13 PM  
Updated Mon, March 10th 2025 at 7:43 PM



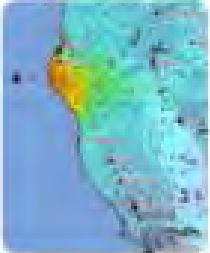
**Earthquake Country Alliance**

### ECA Bay Area Winter 2025 Online Workshop

Join us online to explore tsunami and earthquake hazards – including lessons from the Dec. 5 Cape Mendocino earthquake and tsunami warning, Marin County’s response and local hazards, plus ECA activities and opportunities in 2025.

March 5 | 10am - 12pm PT

[EarthquakeCountry.org/bawi25](https://EarthquakeCountry.org/bawi25)



**Earthquake Country Alliance**

### ECA SoCal Winter 2025 Workshop

Join us in Newport Beach to learn about tsunami preparedness, earthquake information tools, and how we all can encourage collaborative science, engineering, and preparedness policy.

February 20 | 9am - 12:30pm PT

**Register Now**  
[EarthquakeCountry.org/sowi25](https://EarthquakeCountry.org/sowi25)

**Join Us**  
for California #TsunamiPrep Week  
March 22 - 30, 2025

Register [EarthquakeCountry.org](https://EarthquakeCountry.org)

**Earthquake Country Alliance**


### Tsunamis Mean Business: Is Your Organization Ready?

This year’s California Tsunami Preparedness webinar focuses on how tsunamis can impact businesses and other organizations (including disruptions faced by your clients, suppliers, and staff) and provide ways to get prepared.

March 24, 2025 | 2pm - 3pm PT

[EarthquakeCountry.org/ctpw25](https://EarthquakeCountry.org/ctpw25)

**Are You in the Zone?**  
#TsunamiReady



# Tsunami Zone and RCTWG

- Over 430,000 Californians registered their TPW activities on TsunamiZone.org.
- This is the highest level of participation the site has ever recorded.
- Over 945,000 participants registered globally.
- TsunamiZone.org website visits increased from daily average of:
  - 70-80
  - 3,955 (Dec. 5<sup>th</sup>)
- RCTWG.Humboldt.edu website visits increased to:
  - 31,326 (Dec. 5<sup>th</sup>)



**GUAM HOMELAND SECURITY/  
OFFICE OF CIVIL DEFENSE**

**Stephen Cahill  
Guam NTHMP**

NTHMP Summer Meeting  
July 2024





# New Inundation Modeling for Northwest Guam

- Successfully procured purchase order for Neowave Inundation Study for Northwest Guam (populated coastal area)



# Outreach

- Community
- Events
- Hotels
- Schools



# Outreach



- Mayors Council

- 24 of 24 Operational Sirens Post Typhoon Mawar (May 2023)



# Local Partnerships

- CNMI meeting
- Annual collaboration and review



# New Outreach Media -Tsunami McKenna

## Running Media Campaign

- What to do when you hear the AHAWS
- Are you are in an evacuation zone?
- Responding to Local Tsunami
- Disaster Kits
- Tsunami Information for Boaters
- Understanding Tsunami Alerts
- Tsunami threats to Guam by Region



# New Outreach Media -Tsunami McKenna



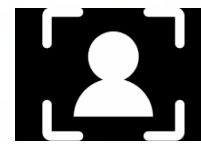
# Tropical Weather Services

- Tsunami Deep Dive, Washing State
- Finished Phase 1 & 2
- Phase 3 in progress: Hazard Simplification and Costs
- Provided inputs to FEMA NRI
- Summarized final study for Guam
- 173 pages to 7 pages for the layman
- Reviewed several technical studies to update previous and new information papers on tsunami issues threatening Guam





**THANK YOU!**



# NTHMP ANNUAL MEETING

HAWAII EMERGENCY MANAGEMENT AGENCY

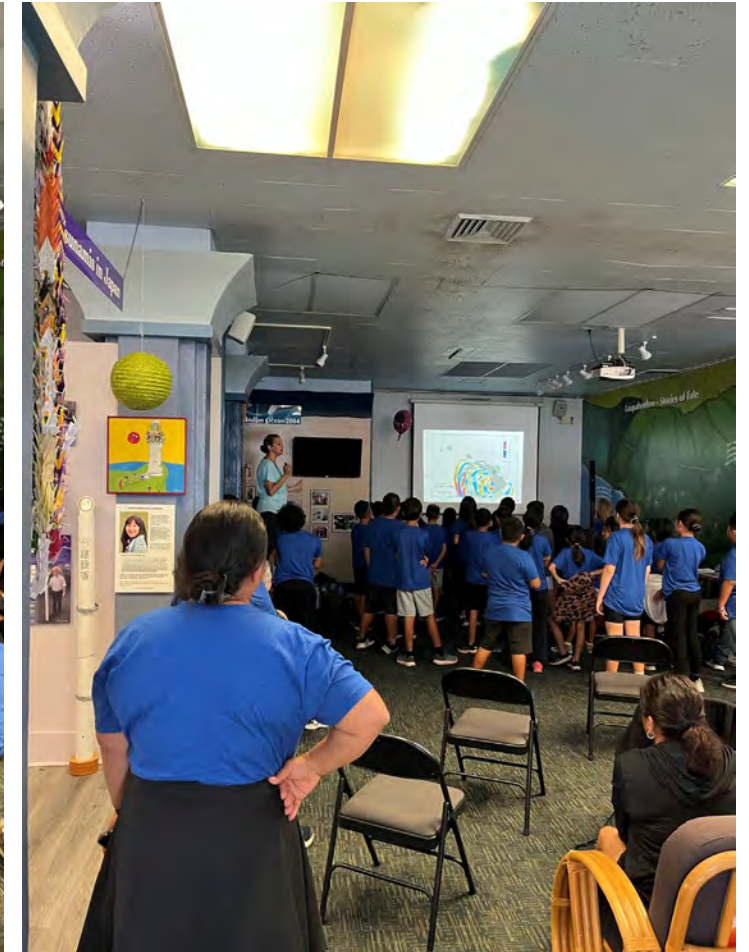
MAY 20-22, 2025



# HAWAI'I TSUNAMI AMBASSADOR PROGRAM PACIFIC TSUNAMI MUSEUM – MILILANI UKA 4<sup>TH</sup> GRADERS



- Interactive tsunami presentation by museum staff on:
  - How they form
  - Their impact
  - How to respond
- Explored museum exhibits/activities
- Outcome: gained awareness of one of nature's deadliest hazards



# HAWAII TSUNAMI AMBASSADOR PROGRAM TSUNAMI SUMMER JAM – PACIFIC TSUNAMI MUSEUM



- Over 100 participants attended throughout the day.
- Tsunami education and disaster preparedness.
- Three readings of *Kaiona the Kia'i* (English, Hawaiian, & Tagalog).
- Highlighted the importance of community readiness.
- Included interactive educational booths and hands-on activities led by federal, state, and local agencies.
- Keiki and families learned about:
  - Tsunami warning systems
  - Evacuation procedures
  - Preparedness strategies



# HAWAII TSUNAMI AWARENESS MONTH



The state of Hawai'i, University of Hawai'i at Mānoa, County EM Agencies, NOAA, and others were involved internal state announcement highly recommending all state workers view UH Mānoa's Tsunami Awareness Month updated informational video.

It can be viewed here:

[2025 Tsunami Preparedness Video \(high resolution\)](#)



# MAHALO

## HI-EMA

4204 Diamond Head Road  
Honolulu, Hawai'i 96816-4495

[HawaiiEMA@hawaii.gov](mailto:HawaiiEMA@hawaii.gov)

(808) 733-4300

## Kelsey Yamanaka

[Kelsey.a.Yamanaka@hawaii.gov](mailto:Kelsey.a.Yamanaka@hawaii.gov)

(808) 271-5710

## Skylar Suiso

[Skylar.j.Suiso@hawaii.gov](mailto:Skylar.j.Suiso@hawaii.gov)

(808) 636-7137





# Projects

- Continued Growth within the Agency
- Coastal Roadshows
  - Althea Rizzo, Kayla Thompson, Natasha Fox
  - Girl Scouts STEM Day with Kayla Thompson, Coastal Field Geologist Laura Gabel and Mapping Geologist Vanessa Swenton with DOGAMI
- B2WR Training for Employees
- [Understanding Tsunami Debris and Sediment Planning and Mitigation: A Guide for Local Debris Planners](#)
- Oregon Tsunami Vertical Evacuation Structure (VES) Guidance: A Resource for Researching and Planning Tsunami Mitigation



# Contact Info

- **Althea Rizzo**

- Geologic Program Coordinator
- [althea.rizzo@oem.oregon.gov](mailto:althea.rizzo@oem.oregon.gov)

- **Bridget Good**

- Mitigation Program Analyst
- [Bridget.good@oem.Oregon.gov](mailto:Bridget.good@oem.Oregon.gov)

- **Natasha Fox**

- IDEA Coordinator
- [natasha.fox@oem.oregon.gov](mailto:natasha.fox@oem.oregon.gov)

- **Kayla Thompson**

- Community Preparedness Coordinator
- [kayla.thompson@oem.oregon.gov](mailto:kayla.thompson@oem.oregon.gov)





# Washington State Tsunami Program Partner Update

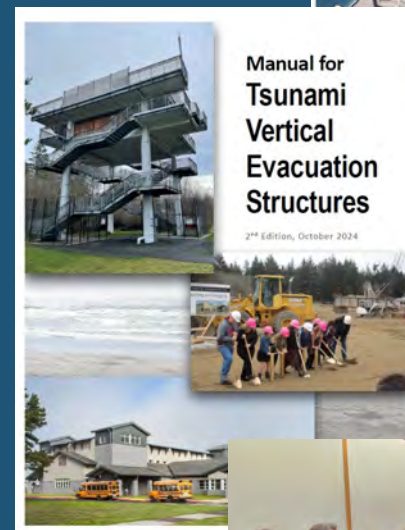
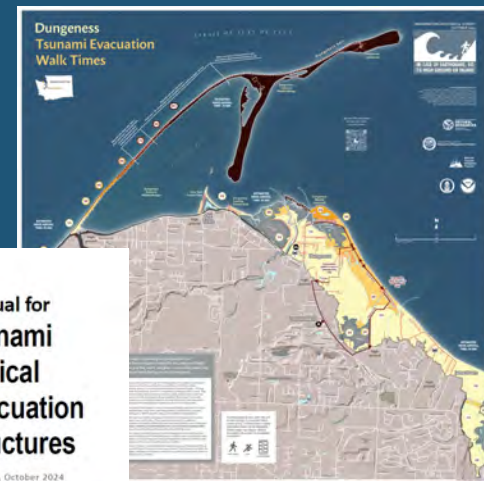




# FY23 Projects Completed Since Last NTHMP Meeting

## WA Tsunami VES Manual Updates

- Second edition of the manual includes best practices from partners in the NTHMP and lessons learned from the OSU, Ocosta, and Shoalwater Bay Tribe structures
- Expanded and new sections on access, security, maintenance, signage, and funding



## Pedestrian evacuation walk maps

- Neah Bay, Kalaloch, Dungeness, Tsoo-Yess River Valley, and Lower Elwha



## Eagle Harbor TMRMS

- Located along WA's inner coast on Bainbridge Island
- First WA strategy to include mitigation steps already taken





# FY23 Projects In Progress

## Tsunami Sign Installations

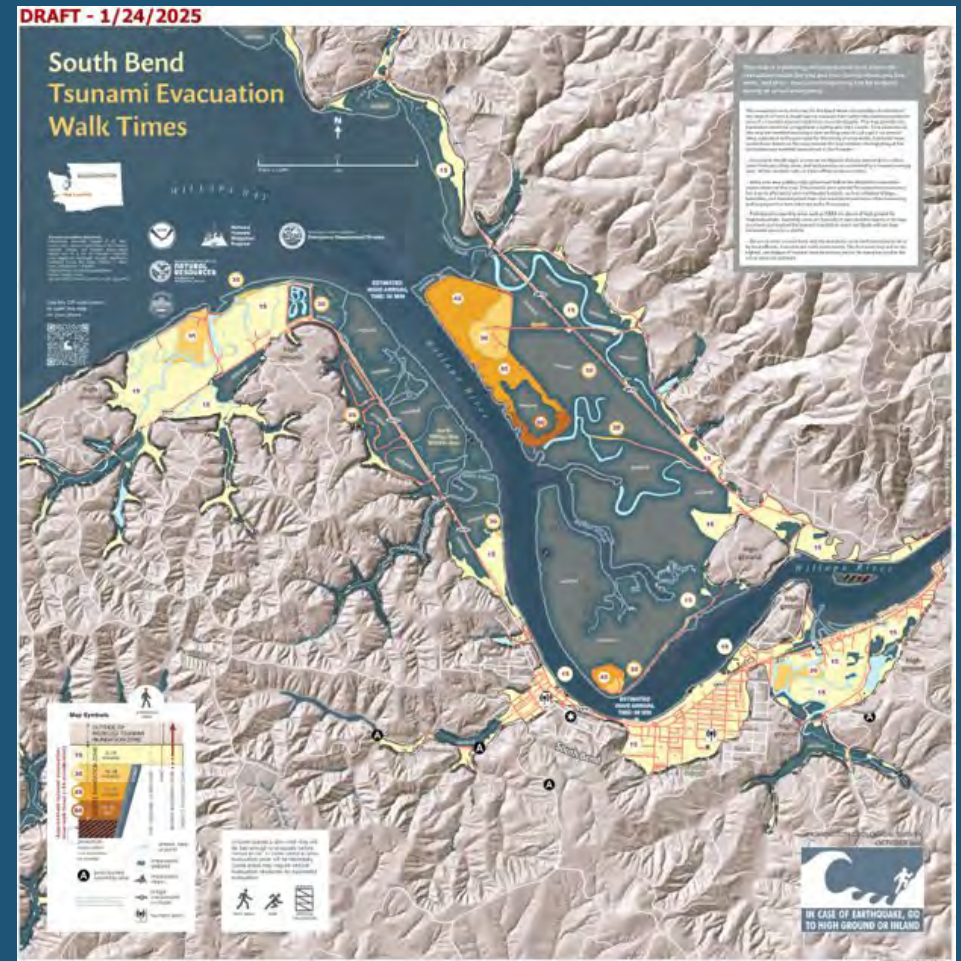
- Installed 60+ new signs for Skagit County, the City of Edmonds, and the Quinault Indian Nation
- Purchased 430+ signs for the Port of Seattle, Jamestown S’Klallam Tribe, Chehalis Tribe, Makah Tribe, Clallam County, Grays Harbor County, Skagit County, and Pacific County

## TsuInfo Alert NTHMP Newsletter

- Funded through 8/31/25

## Pedestrian Evacuation Walk Maps

- Outer coast communities of South Bend and Raymond-Willapa





# FY24 Projects - Maritime

**Port of Port Angeles Tsunami Maritime Response and Mitigation Strategy** to be completed 8/30

**US Coast Guard ShakeOut exercise** with WA EMD participation on 10/16/25

**Updated WA Tsunami Boaters Guide** with USCG approval and logo



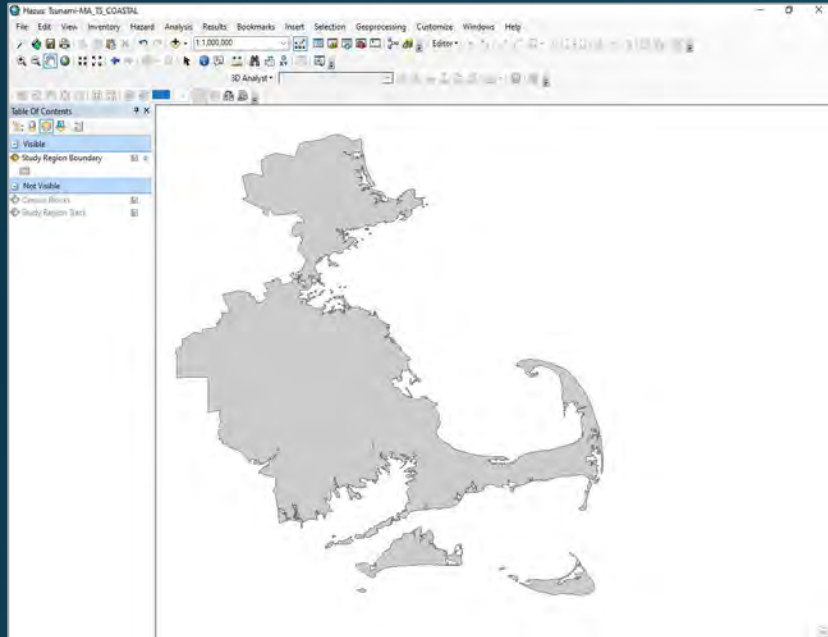


# FY24 Projects – Education and Outreach

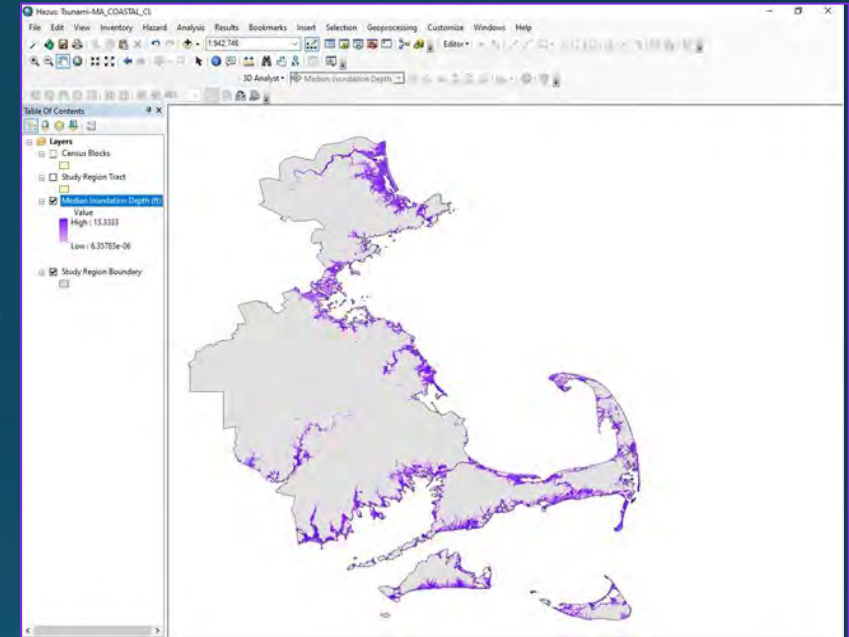


# Expansion of Hazus Tsunami to the USEC (MES 25-01)

Before



After



By combining AI assistance (\$20/month) with my time (a few hours a week) I've got Hazus Tsunami working for Massachusetts, with expansion for the U.S. East Coast underway. This approach is expected to yield remarkable savings in time, tens of thousands of dollars in development costs and immediately empowers me in my work.

Ed Fratto



# AMERICAN SAMOA TSUNAMI PROGRAM PARTNER UPDATE FY 23 & 24 PROJECTS



NTHMP Annual Meeting  
May 21, 2025

# OUTREACH PROGRAM

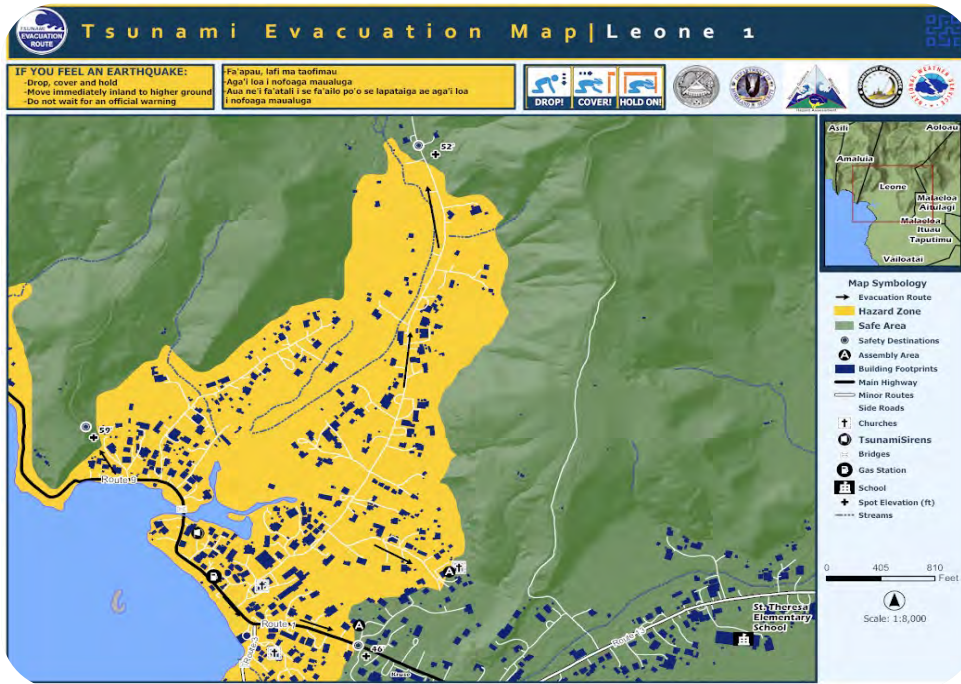
- In-person Outreach
- Evacuation Drills
- Adopt-A-Village
- Digital Billboard
- Radio Advertisement & Talk Show



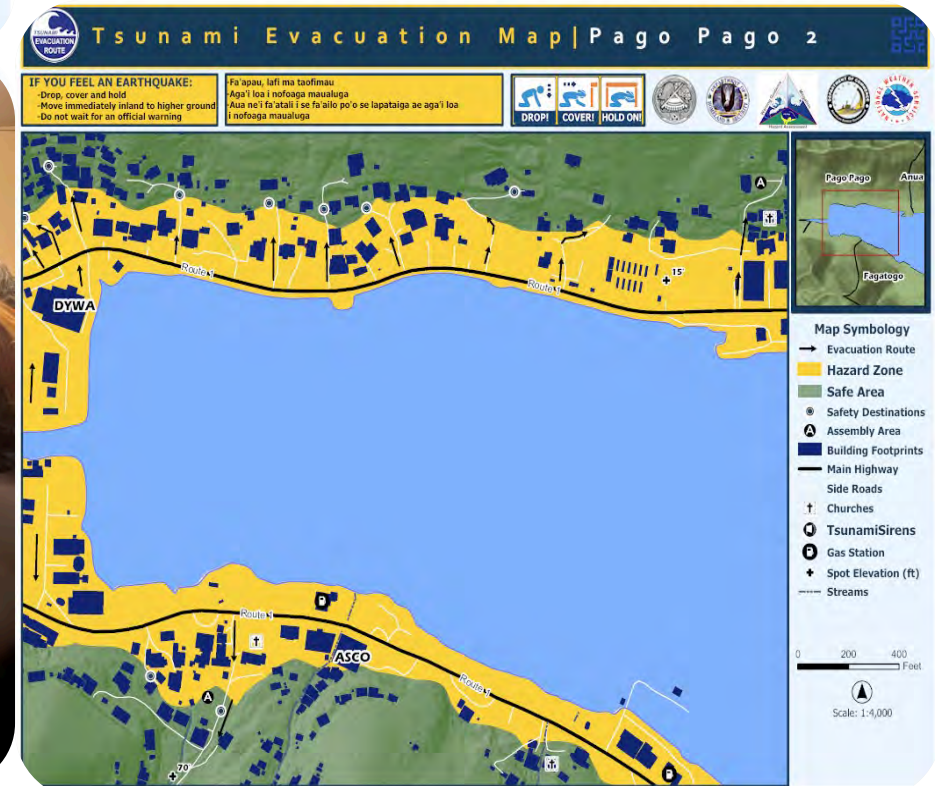


# SIRENS REHABILITATION AND REPAIRS





# TSUNAMI EVACUATION MAPS FOR COASTAL VILLAGES



# EVACUATION DISPLAYS FOR SCHOOLS IN TSUNAMI VULNERABLE AREAS





**THANK  
YOU**

Any Questions?



# MES Partner Meeting

# Puerto Rico

## NTHMP COMPONENT

Presented by:  
Dr. Elizabeth Vanacore  
PRSN



# Tsunami Education and Outreach Program

## Accomplishments

Recent important accomplishments and activities in Puerto Rico.

### First TsunamiReady Supporter Marina



Marina Puerto Real,  
Cabo Rojo, PR

### New TsunamiReady Community



San Juan LMM  
International Airport.

### Great Caribe Wave 2025 Experience



More than 172,000  
people registered.

# TsunamiReady Supporter

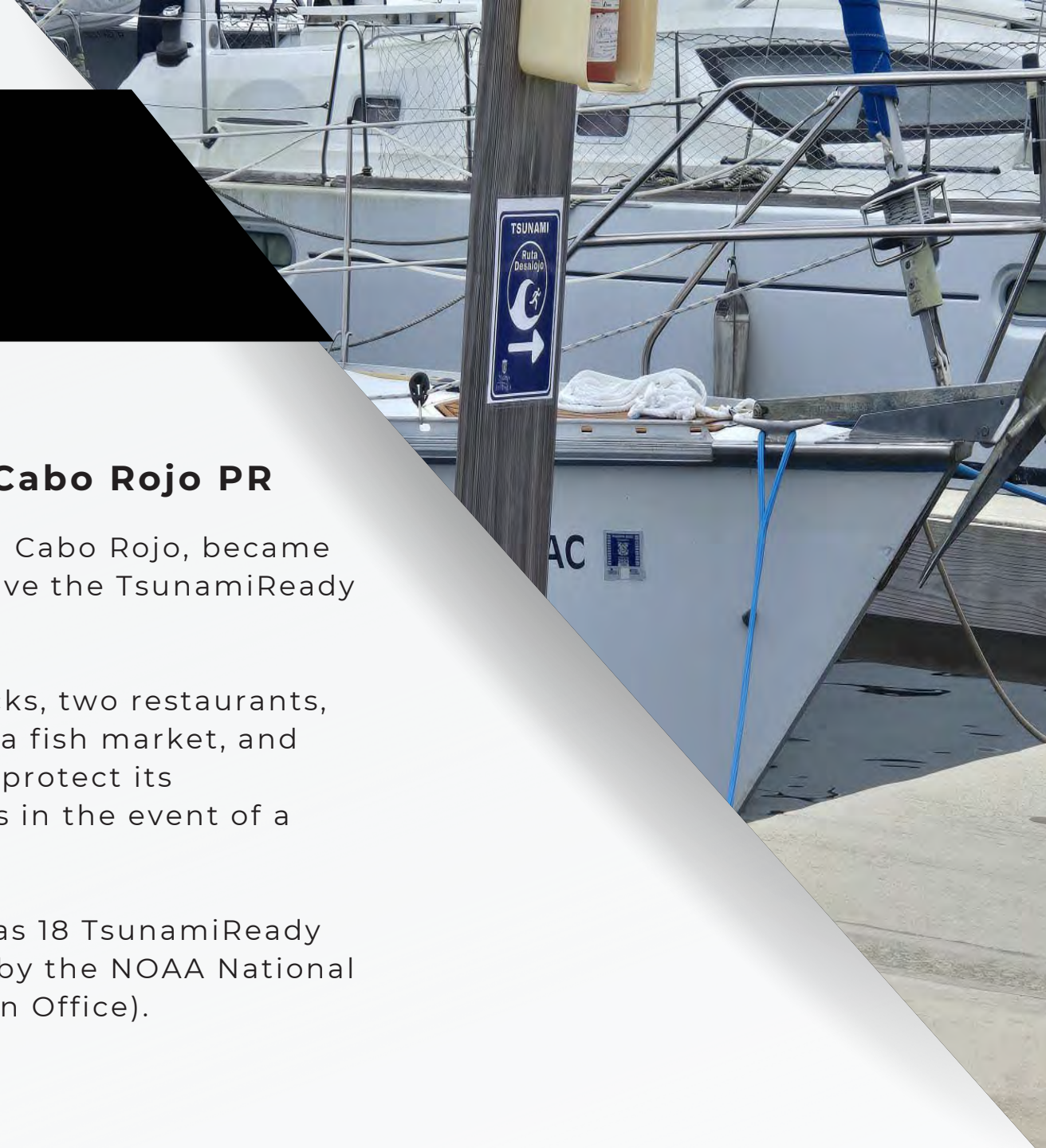


## Marina de Puerto Real, Cabo Rojo PR

The “Marina de Puerto Real”, in Cabo Rojo, became the first in Puerto Rico to receive the TsunamiReady Supporter recognition.

The marina manages three docks, two restaurants, seven commercial spaces, and a fish market, and has implemented measures to protect its employees, visitors, and vessels in the event of a tsunami.

At this moment, Puerto Rico has 18 TsunamiReady Supporter entities recognized by the NOAA National Weather Service (NWS San Juan Office).



# New TsunamiReady Community



## Luis Muñoz Marín (LMM) International Airport in San Juan.

The LMM Airport, in San Juan, became the first airport in Puerto Rico (2<sup>nd</sup> in the U.S.) to receive the TsunamiReady recognition.

This is the main airport in Puerto Rico, serving approximately 100,000 people daily. It employs around 9,000 staff members and hosts operations for 39 airlines. They participate during Caribe Wave 2025 conducting a tsunami evacuation exercise.

At this moment, Puerto Rico has 47 TsunamiReady communities recognized by the NOAA National Weather Service (NWS San Juan Office).



LMM Airport social media post about Caribe Wave 2025 tsunami exercise.





# Caribe Wave 2025

## **Great Caribe Wave 2025 participation.**

On March 20, 2025, Puerto Rico participated in the annual Caribe Wave tsunami exercise.

Puerto Rico selected the Portugal scenario, which simulated a distant tsunami. Approximately 213,500 people in Puerto Rico live in tsunami-prone zones across 46 of the island's 78 municipalities, with millions of tourists visiting throughout the year. This scenario posed a significant challenge for emergency managers and government officials, requiring critical decision-making, alert notifications, and evacuation planning.

A total of 172,124 people registered to participate through TsunamiZone.org. The PR Department of Education participated in the exercise, with many schools in coastal communities conducting their tsunami evacuation drills.



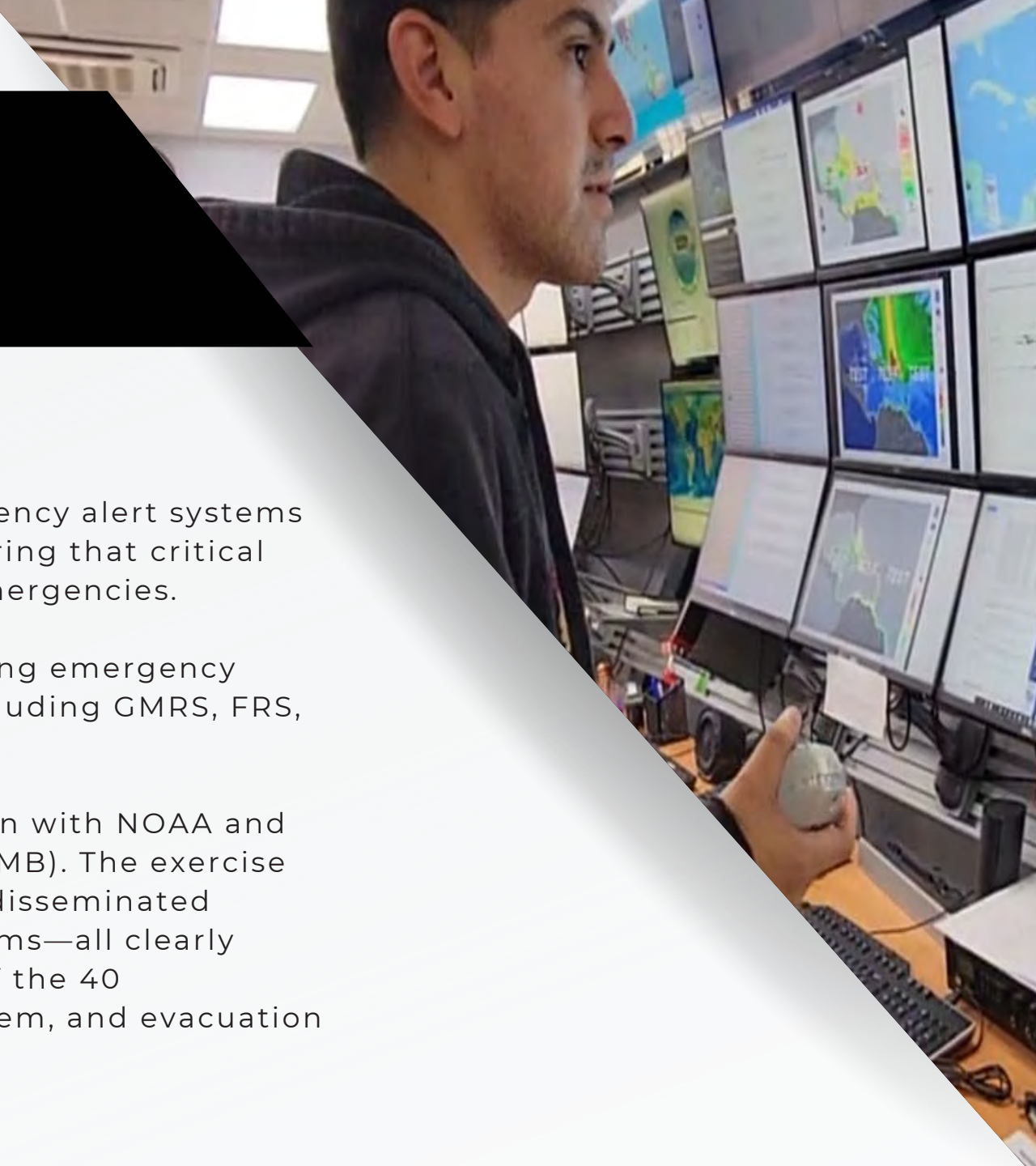
# Caribe Wave 2025 Communication Exercise

## **Statewide Emergency Alert Systems Test.**

The exercise also evaluates the effectiveness of emergency alert systems such as the EAS, IPAWS/WEA, EMWIN and others ensuring that critical information reaches residents promptly during real emergencies.

Amateur radio operators played a crucial role by relaying emergency messages across various communication channels, including GMRS, FRS, MURS, CB, and amateur radio frequencies.

In PR, the exercise was led by the PRSN in collaboration with NOAA and the Puerto Rico Emergency Management Bureau (PREMB). The exercise began at 11:00 AM Atlantic Standard Time, with alerts disseminated through radio, television, and mobile emergency systems—all clearly marked as a test. Siren systems were activated in 30 of the 40 municipalities equipped with this communication system, and evacuation drills were conducted in many coastal areas.



# MES Partner Meeting Puerto Rico





# USVI Tsunami Program

NTHMP Annual Meeting  
2025

# Alfred the Leathery Turtle: New PSA & Outreach Campaign

**Launched new Alfred the Leathery Turtle PSA** featuring creative tsunami education messaging

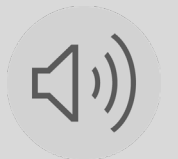
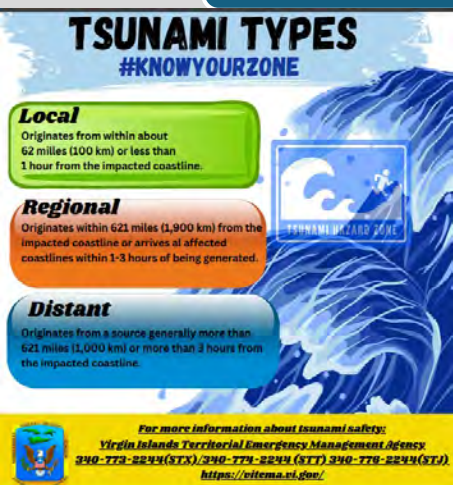
**Developed catchy new music jingle** to enhance retention of tsunami safety information

**Created accompanying educational materials** featuring Alfred character for children

**Distributed across multiple media channels** including radio, TV, and social media platforms

**Incorporated age-appropriate tsunami safety messages** based on survey feedback

**Success Highlight:** Positive reception across all age groups with increased message retention metrics



# Social Science-Driven Tsunami Survey Initiative



**Implemented comprehensive tsunami awareness survey** (Oct 28 - Dec 30, 2024)



**Applied age-appropriate social science methodology** with questions tailored to different demographic groups



**Deployed multi-island approach** covering St. Thomas, St. Croix, St. John, and Water Island



**Leveraged World Tsunami Awareness Day** (Nov 5) as focal point for campaign launch



**Offered multilingual support** (English, Spanish, Haitian Creole)



**Success Highlight:** 27% increase in survey participation compared to previous outreach efforts

# Innovative Community Assessment Strategies



# Stakeholder Engagement & Collaboration Successes



**Hosted Earthquake and Tsunami Town Hall meetings** across all islands to enhance community preparedness



**Conducted collaborative meeting with Puerto Rico Seismic Network and ITIC** to strengthen regional capabilities



**Established interagency coordination mechanism** with Tsunami Service Providers (TSPs)



**Completed comprehensive Alerting and Response Timeline document** that visually maps responsibilities



**Coordinated planning for Caribe Wave Drill** ensuring comprehensive participation



# **Tsunami Ready Program Expansion**

**Celebrated Tsunami Ready Renewal Ceremonies on St. Thomas, St. Croix, and St. John in March 2025**

**Recruited 4 new organizations** interested in becoming Tsunami Ready Supporters

**School-based tsunami preparedness presentations reached 1,500 students** across 8 schools

# Tsunami Alert Level Education Improvements

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**Challenge Identified:** Stakeholder comprehension assessment revealed confusion between different tsunami alert levels (Advisory, Watch, Warning)

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**Evidence-Based Solution:** Developed simplified explanatory materials with concrete action steps for each alert category

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**Strategic distribution** of 2,000 emergency whistles with attached tsunami response instructions

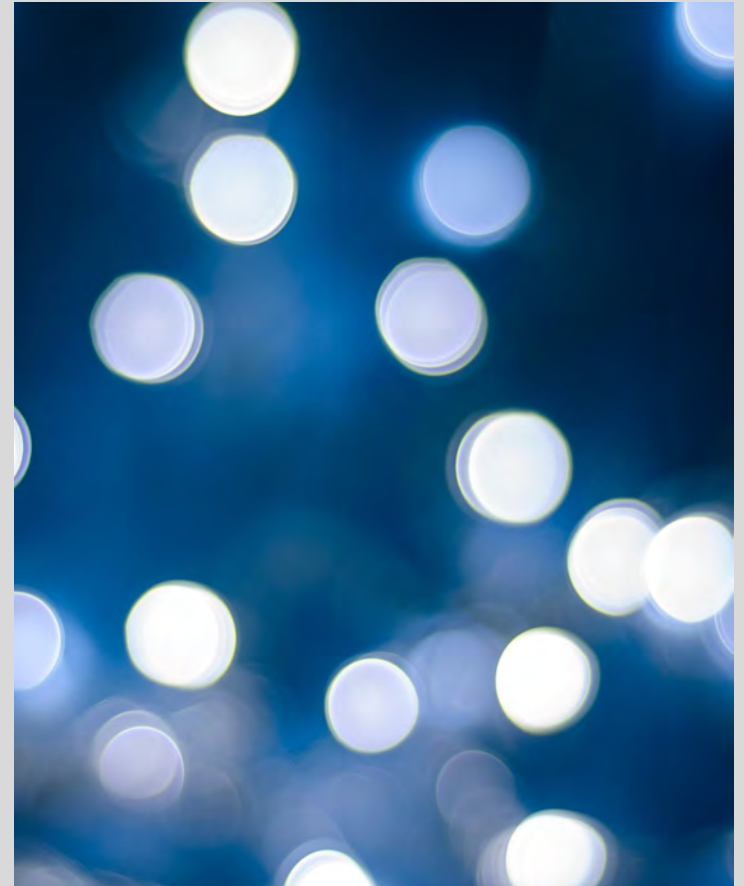
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**Created culturally relevant scenarios** that increased audience engagement as measured through focus group feedback

---

**Success Highlight:** New tsunami alert level identification materials showed 93% effectiveness in concept testing with target audiences

---



# Contact Information

- Regina Browne, Deputy Director of Planning and Preparedness
  - [Regina.browne@vitema.vi.gov](mailto:Regina.browne@vitema.vi.gov)
- Roy Watlington, Project Director of OCOVI; Board member, Caribbean Coastal Ocean Observing System (CARICOOS); USVI Science Representative
  - [rawatlington@gmail.com](mailto:rawatlington@gmail.com)



# NTHMP ANNUAL MEETING

ANCHORAGE, ALASKA  
MAY 2025

CNMI OFFICE OF HOMELAND SECURITY & EMERGENCY MANAGEMENT  
MES PARTNER BRIEF



## ACTIVITIES – EDUCATION & OUTREACH

- CNMI HSEM conducted tsunami education and outreach at local schools and youth centers.
- Children are always highly engaged participants and showed enthusiasm in learning about disaster readiness.





## ACTIVITIES – EDUCATION & OUTREACH



- All students participated in the Great ShakeOut Earthquake Drill, facilitated by CNMI HSEM – a part of the presentation that is always a favorite among the kids.







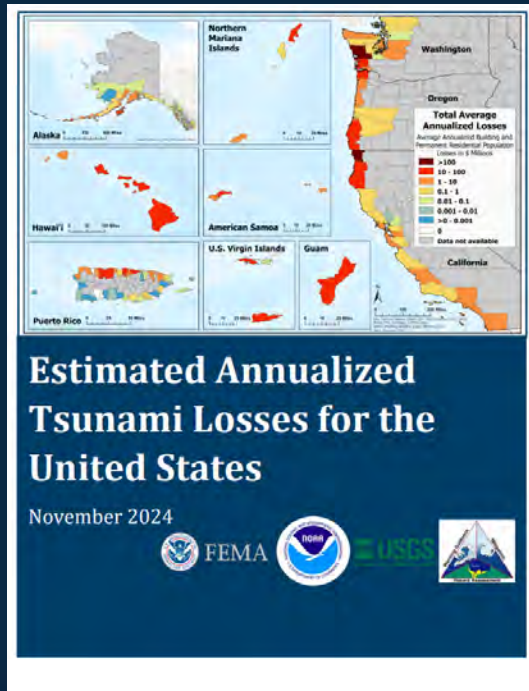
# ACTIVITIES – TECHNICAL ASSISTANCE (CHIP GUARD)



## The Commonwealth of the Northern Mariana Islands Tsunami Alerting and Response Timeline Version 1.0



9/9/2024 | 1



- With the assistance of Mr. Chip Guard, CNMI completed the Tsunami Alerting and Response Timeline document, a project led by Washington State partners.
- There are future plans to develop a formal presentation of the document for government stakeholders to ensure a unified understanding and coordination.
- He advocated on the CNMI’s behalf during the review of FEMA’s recently completed National Risk Index (NRI) Report.
- He played a key role in helping CNMI HSEM revive the Tsunami Workshop for Businesses with the support of Dr. Laura Kong and her team.





## ACTIVITIES – TSUNAMI SIGNAGE MAINTENANCE

- Due to tropical climate, regular maintenance is required to prevent rapid overgrowth and ensure tsunami signage remains visible.
- Road Maintenance agencies often overlook areas near tsunami signs, making dedicated upkeep essential.







## ACTIVITIES – TSUNAMI SIGNAGE MAINTENANCE



- Due to limited internal capacity, CNMI HSEM contracts a vendor to conduct monthly maintenance and visual inspections of tsunami signs to identify any damage or urgent issues.



# Thank You

MARIO KAIPAT

[mario.kaipat@cnmihsem.gov.mp](mailto:mario.kaipat@cnmihsem.gov.mp)

CNMI HSEM Facebook – <https://www.facebook.com/cnmieocswp/>

CNMI HSEM Instagram – [https://www.instagram.com/cnmi\\_hsem/](https://www.instagram.com/cnmi_hsem/)

## MES Virtual Meeting - 20 August 2025

### **Participants** *(in no particular order)*

Skylar Suiso, HI-EMA  
Stephen Cahill, GHS OCD  
Katie Nguyen, NWS Southern Region HQ  
Ed Fratto, NESEC  
Sarah Rogowski, NWS NTHMP  
Mario Kaipat, CNMI HSEM  
Mike Crop, OEM  
Althea Rizzo, OEM  
Yvette LaDuke, CALOES  
Elyssa Tappero, WA EMD  
Stephanie Ross, USGS  
Anne Sheehan, FEMA  
Jose Lara, CALOES  
Todd Becker, CALOES  
Nicolas Arcos, NCEI  
Daniel Eungard, WA DNR  
Victor Huerfano, PRSN  
Laura Gabel, DOGAMI  
Jonathan Allan, DOGAMI  
Nick Graehl, CGS  
Dante DiSabatino, WA EMD

---

### **MES Partner Announcements**

None

**Featured Presentation** by Laura Gabel (DOGAMI) on “Vertical Evacuation Structure – evacuation analysis of Seaside, OR” and “Coastwide Hazus assessment”

See attached PDF of slides presented.

Links to reports:

Seaside VES: <https://www.oregon.gov/dogami/pubs/Pages/ofr/p-O-24-12.aspx>

Coastwide CSZ Impacts: <https://www.oregon.gov/dogami/pubs/Pages/ofr/p-O-25-01.aspx>

Anne Sheehan (FEMA) commented that non-randomized NSI points used for the FEMA tsunami AAL analysis have been recently published here: <https://hazards.fema.gov/hazus-loss-library/library>

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## **MES Work Plans**

MES previously aligned our work plans to align with the grant period of performance. September 1 through August 31 of each year.

The FY2024 Work Plan runs through the end of this month (August) and the FY2025 Work Plan which was finalized back in January by the MES begins this upcoming September 1<sup>st</sup>.

Due to the uncertainty with grant funding and budgets MES Co-chairs have not been coordinating with the Work Plan leads during the last few months until everyone had a better idea of their funding. There is still some uncertainty with the final funding amounts, so the MES Co-chairs are tracking this and will follow up with Work Plan leads over the next couple months to see where everyone is at and the work plan tasks that the MES will coordinate on for the upcoming year.

The FY2024 MES Work Plan is on the NTHMP MES Webpage. MES 2024 Work Plan Link: [https://www.weather.gov/media/nthmp/MES/MES%20Work%20Plan%20FY2024 final 10.07.2024.pdf](https://www.weather.gov/media/nthmp/MES/MES%20Work%20Plan%20FY2024%20final%2010.07.2024.pdf)

MES co-chairs will reach out to FY2024 Work Plan activity leads to work towards closing out and/or updating status.

MES Co-chairs will coordinate with Sarah to get the FY2025 MES Work Plan posted to the website also.

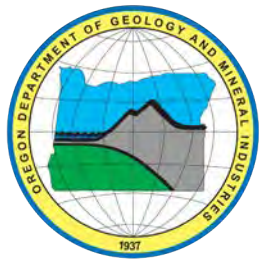
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## **Next MES Meeting**

17 Sept (13:00-14:30 PST).

MES members should expect an updated calendar invite. \*Note that the meeting will be extended by a half-hour, previous invite was from 1300-1400 PST.

Agenda topics expected: 29 July 2025 Kamchatka Tsunami Event. Reporting expected by Pacific States/Territories (Guam, CNMI, American Samoa, Hawaii, Alaska, Washington, Oregon, California). Template to be provided.



# Tsunami mitigation in Oregon, 2 recent projects


## Vertical evacuation & coastwide impacts

State of Oregon  
Oregon Department of Geology and Mineral Industries  
Ruairi J. Day-Stirrat, State Geologist


OPEN-FILE REPORT O-25-01

**EARTHQUAKE AND TSUNAMI IMPACT ANALYSIS FOR  
THE OREGON COAST**

By Jonathan C. Allan<sup>1</sup> and Fletcher E. O'Brien<sup>2</sup>



The collage consists of four images: top-left shows a large pile of debris from destroyed buildings; top-right shows a view of a coastal town with debris scattered across the landscape; bottom-left shows a wide view of a coastal town with debris; bottom-right shows a view of a coastal town with debris and a body of water in the foreground.




2025

<sup>1</sup>Oregon Department of Geology and Mineral Industries, Coastal Field Office, P.O. Box 1033, Newport, OR 97365  
<sup>2</sup>Oregon Department of Geology and Mineral Industries, 800 NE Oregon Street, Suite 965, Portland, OR 97232

State of Oregon  
Oregon Department of Geology and Mineral Industries  
Ruairi J. Day-Stirrat, State Geologist


OPEN-FILE REPORT O-24-12

**VERTICAL STRUCTURES AND OTHER TSUNAMI EVACUATION  
IMPROVEMENT OPTIONS IN SEASIDE AND CANNON BEACH, CLATSOP  
COUNTY, OREGON**



The image shows an aerial view of a coastal town, likely Seaside or Cannon Beach, Oregon, with a large body of water in the foreground and a sandy beach area.

By Laura L. S. Gabel<sup>1</sup>, Jonathan C. Allan<sup>2</sup>, and Fletcher E. O'Brien<sup>2</sup>



2024

<sup>1</sup>Oregon Department of Geology and Mineral Industries, Coastal Field Office, P.O. Box 1033, Newport, OR 97365  
<sup>2</sup>Oregon Department of Geology and Mineral Industries, 800 NE Oregon Street, Suite 965, Portland, OR 97232

**Laura Gabel**

**Jonathan Allan**

**Fletcher O'Brien**

*Oregon Department of Geology and  
Mineral Industries*

## Project 1: VES in Seaside (and Cannon Beach) Oregon

**Objective:** Quantitatively assess the need for VES and bridge retrofits in Seaside and Cannon Beach, OR

**Funding:** NTHMP

**Tasks:** Form advisory committee, develop and refine VES sites and other mitigation ideas with city, analyze and compare scenarios, publish report, present to city council

### DOGAMI Open-File Report O-24-12

[www.oregon.gov/dogami/pubs/Pages/ofr/p-O-24-12.aspx](http://www.oregon.gov/dogami/pubs/Pages/ofr/p-O-24-12.aspx)

Dr Jonathan Allan

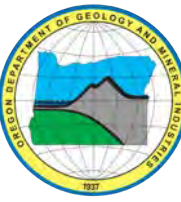
Laura Gabel

Fletcher O'Brien

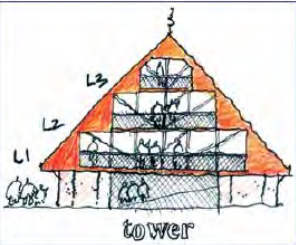


# Washington State (and Nate!) leads the way

Model for Oregon

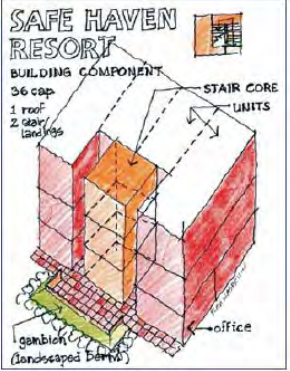


**PROJECT SAFE HAVEN:**



tower

**TSUNAMI VERTICAL EVACUATION ON THE WASHINGTON COAST**



**SAFE HAVEN RESORT**

BUILDING COMPONENT


- 36 cap
- 1 roof
- 2 stair landings

STAIR CORE

UNITS

office

igambloch (landscaped berm)



berm a

20' 40'

*Pacific County*

**Manual**




for

**Tsunami**

Vertical

Evacuation

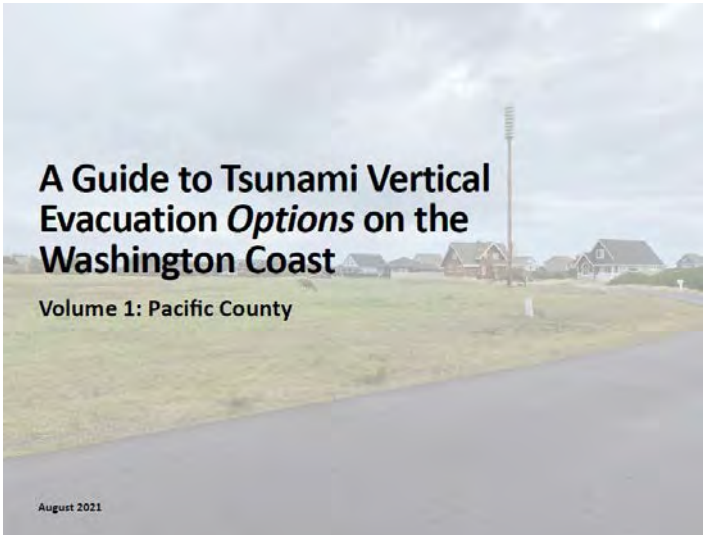
Structures



**A Guide to Tsunami Vertical Evacuation Options on the Washington Coast**

Volume 1: Pacific County

August 2021



[www.dnr.wa.gov/programs-and-services/geology/geologic-hazards/Tsunamis](http://www.dnr.wa.gov/programs-and-services/geology/geologic-hazards/Tsunamis)



# Population

Number of people  
inside the tsunami zone

Permanent Residents	Temporary Residents	Total Population
~7,000	+ ~10,000	= ~17,000

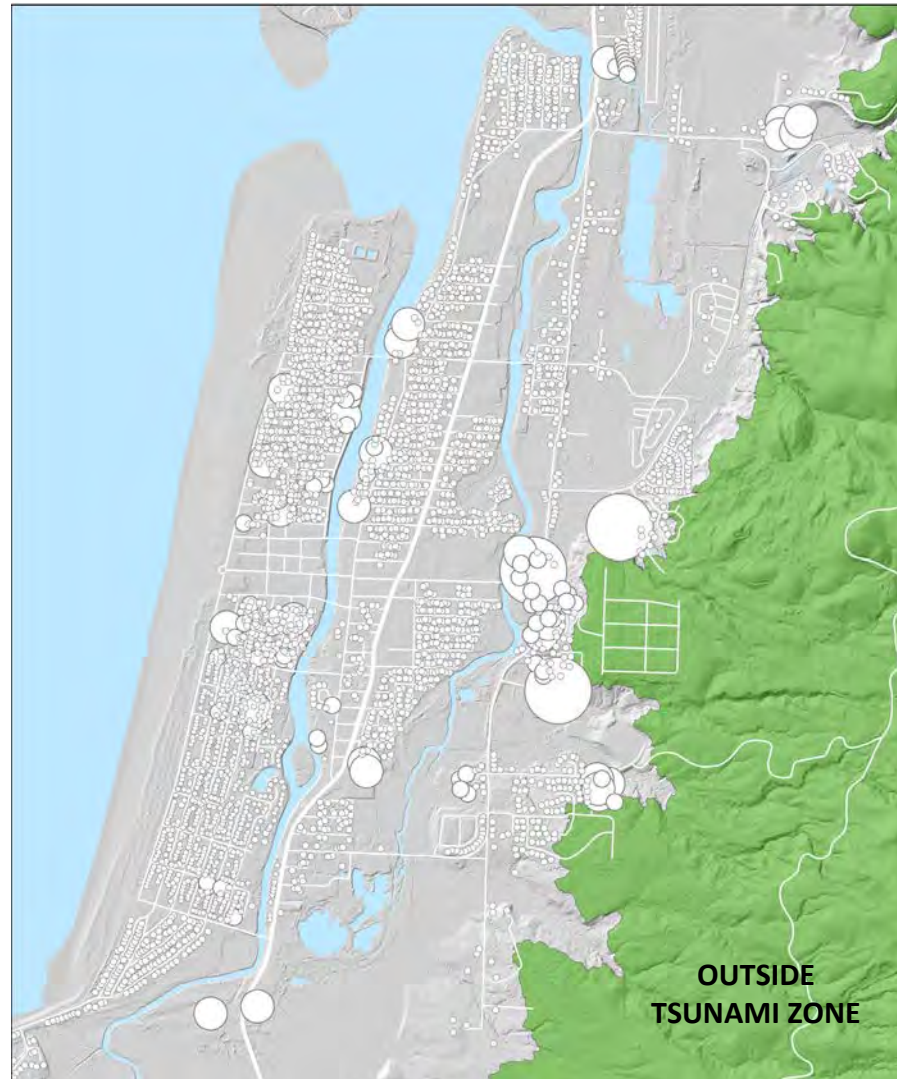
Does not include day visitors,  
~10,000-16,000 additional  
people

## # people per building

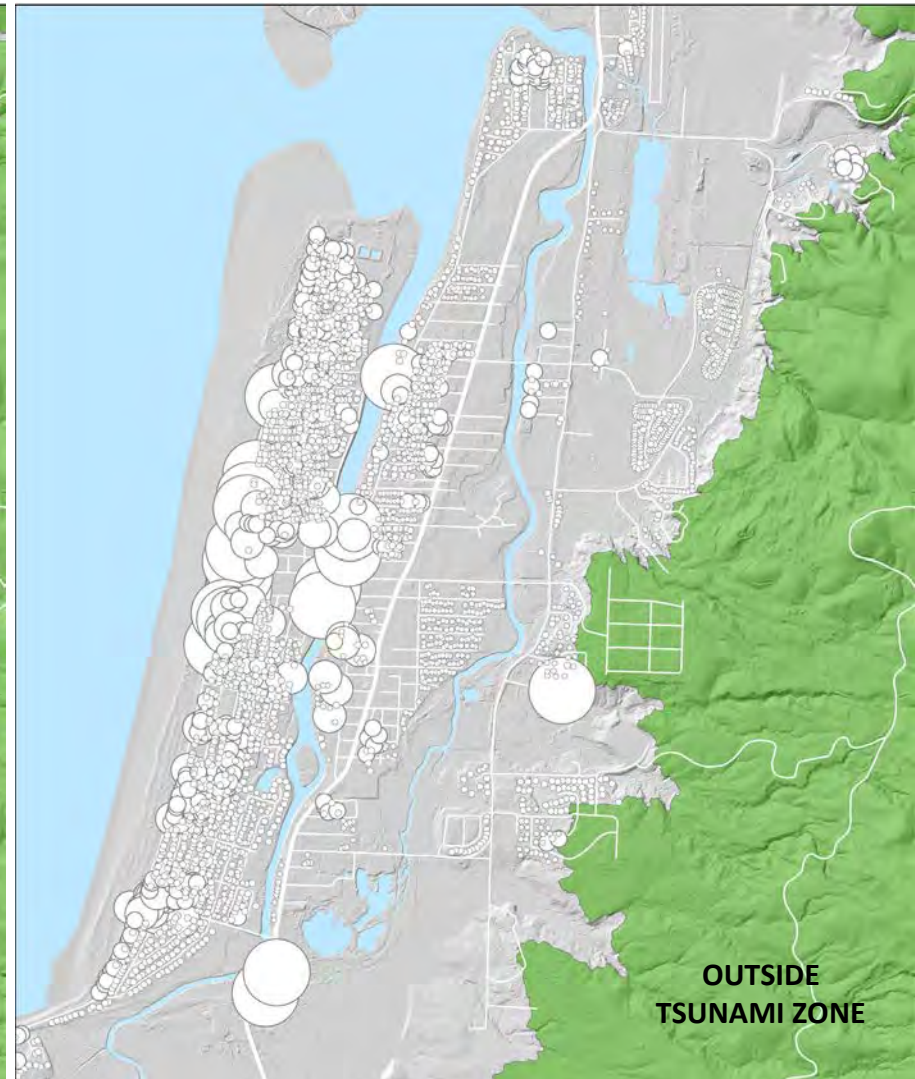
- 1
- 1 – 5
- 5 – 10
- 10 – 50
- 50 +

DOGAMI Open-File Report O-24-12  
[www.oregon.gov/dogami/pubs/Pages/ofr/p-O-24-12.aspx](http://www.oregon.gov/dogami/pubs/Pages/ofr/p-O-24-12.aspx)

## Permanent Residents



## Temporary Residents

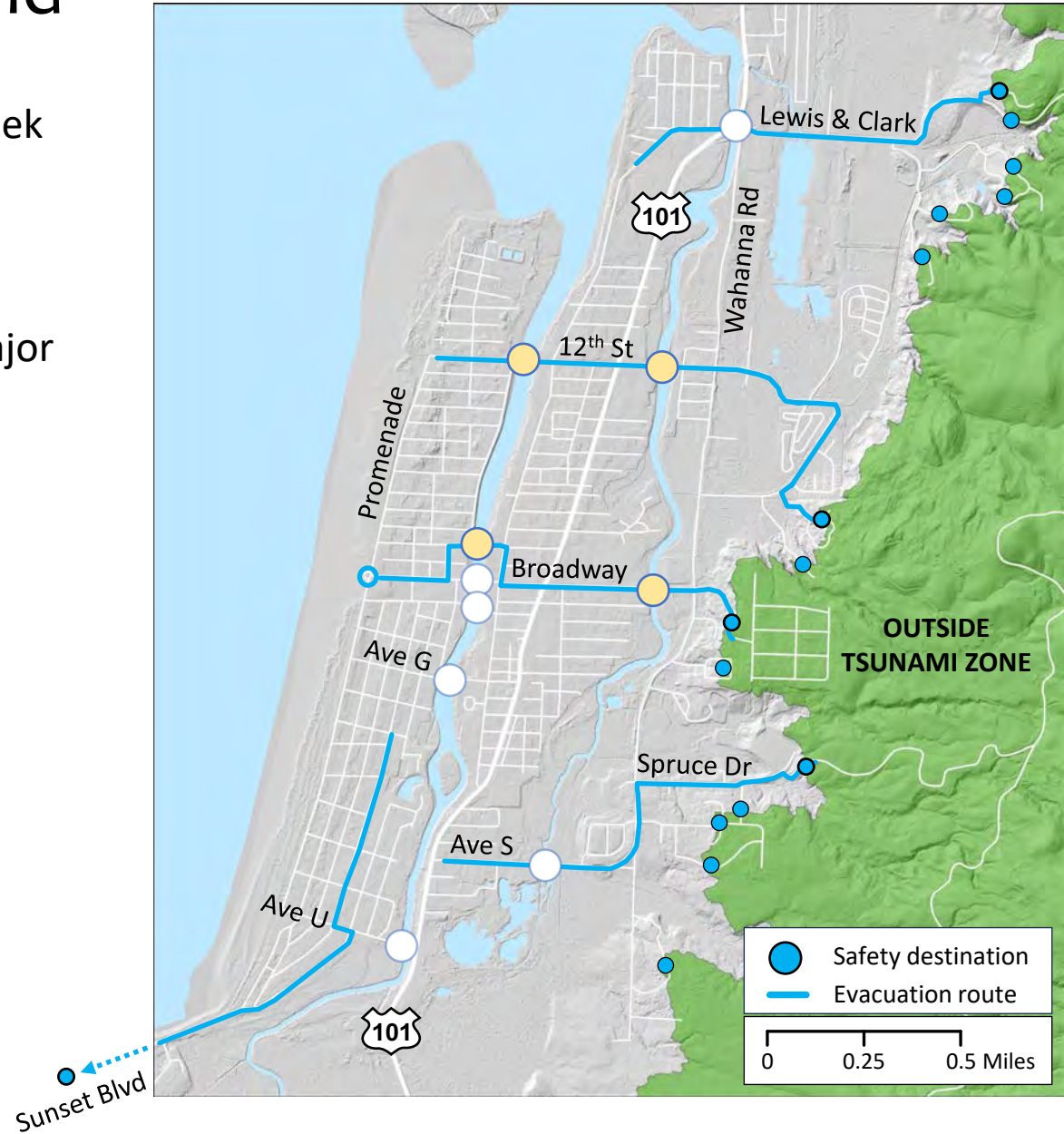






# Seaside: Getting to high ground

- 10 bridges cross Necanicum River & Neawanna Creek
- 4 were built after 1995 (2001-2003)
  - Designed for seismic loads but does not meet current standards
  - Likely to be accessible by pedestrians after major event

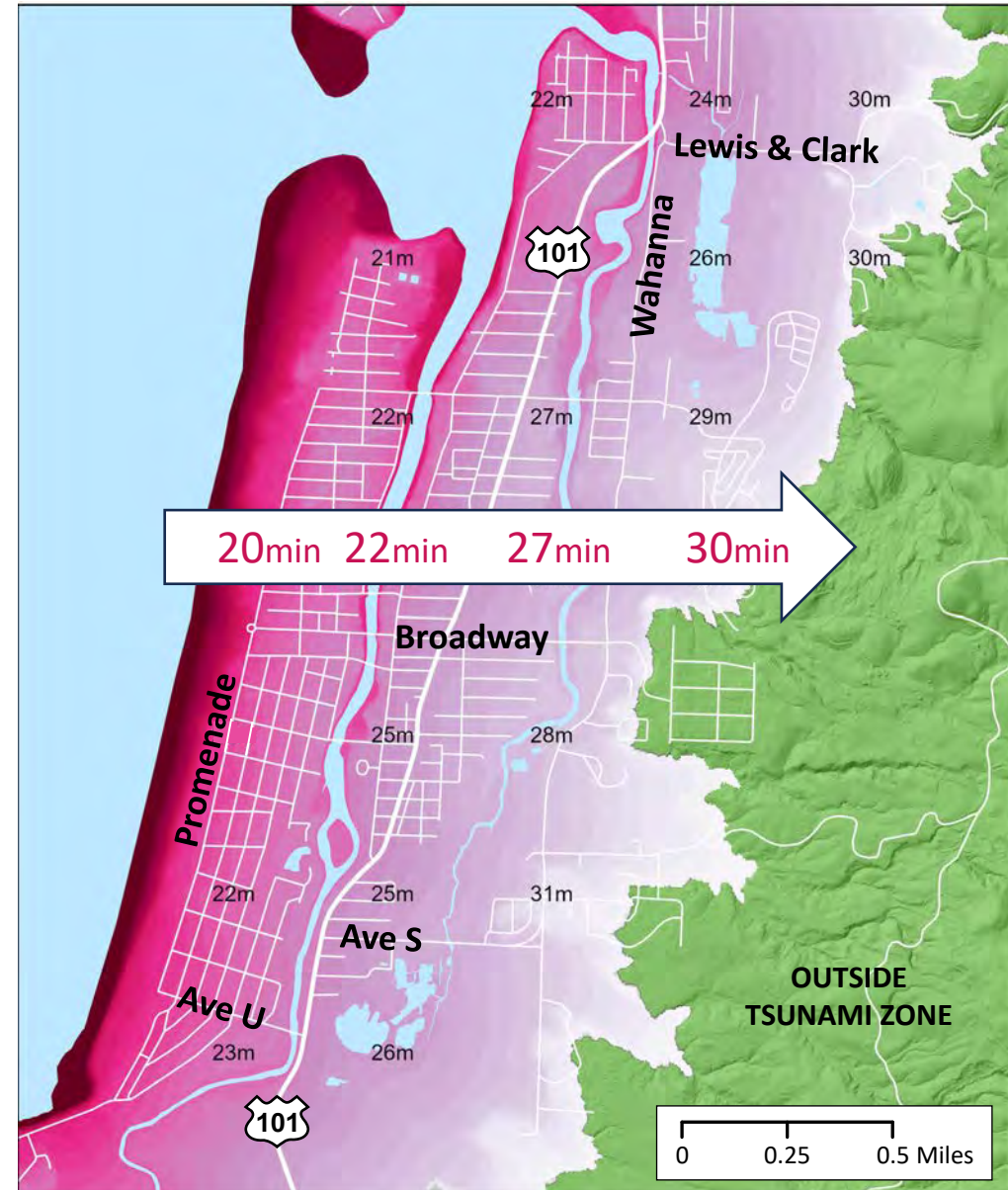
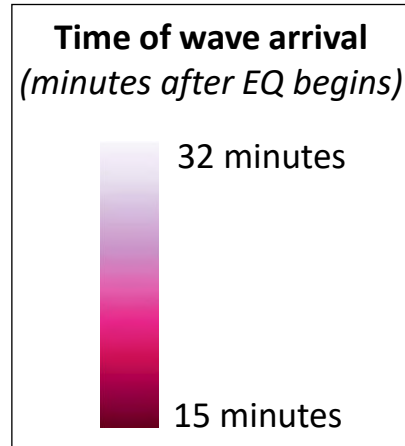


**DOGAMI Open-File Report O-24-12**  
[www.oregon.gov/dogami/pubs/Pages/ofr/p-O-24-12.aspx](http://www.oregon.gov/dogami/pubs/Pages/ofr/p-O-24-12.aspx)



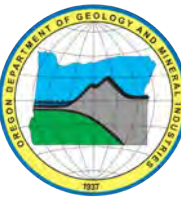
# Wave arrival

Time it takes for the tsunami to arrive after the earthquake begins



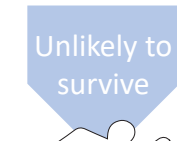
**DOGAMI Open-File Report O-24-12**  
[www.oregon.gov/dogami/pubs/Pages/ofr/p-O-24-12.aspx](http://www.oregon.gov/dogami/pubs/Pages/ofr/p-O-24-12.aspx)

# Understanding the results



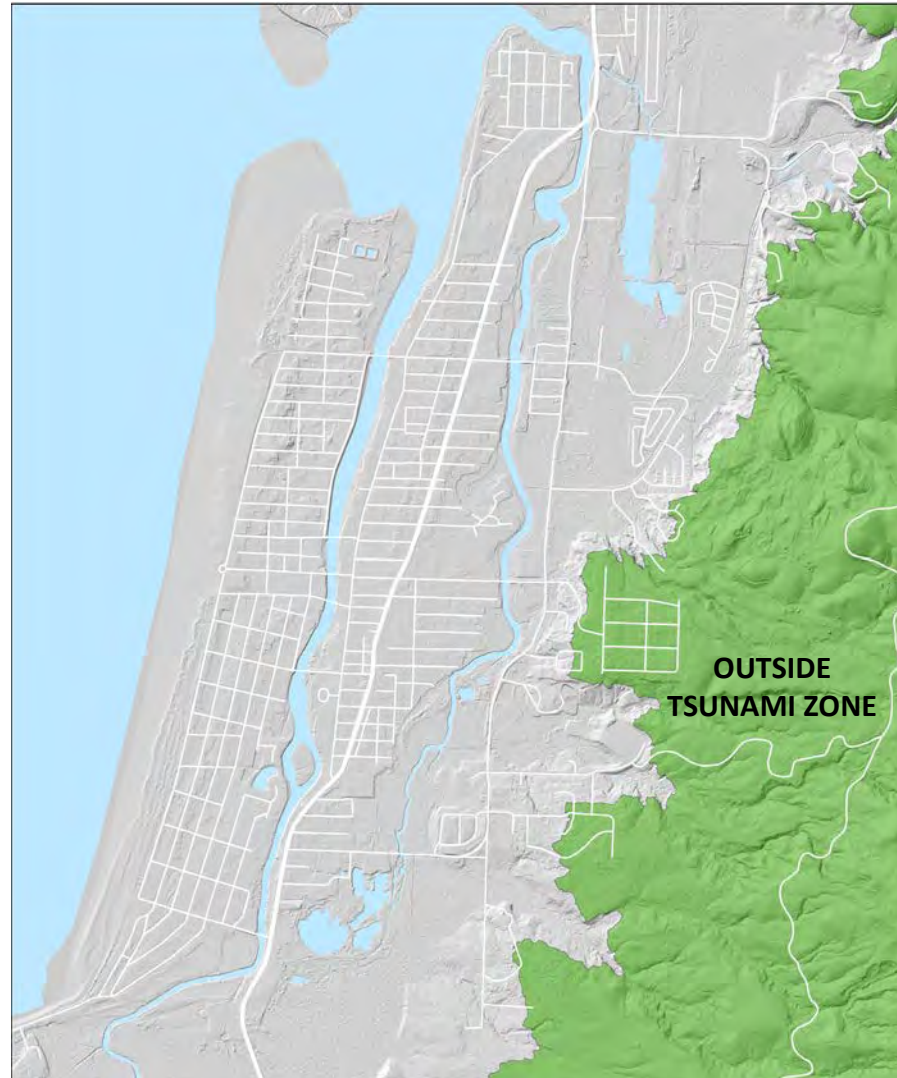
**Black Roads**  
Can reach safety at a walking pace

People in adjacent buildings counted as survivors




**White Roads**  
Can not reach safety at a walking pace


People in adjacent buildings counted as 'unlikely to survive'



**DOGAMI Open-File Report O-24-12**  
[www.oregon.gov/dogami/pubs/Pages/ofr/p-O-24-12.aspx](http://www.oregon.gov/dogami/pubs/Pages/ofr/p-O-24-12.aspx)

0 0.25 0.5 Miles

 Black roads represent areas where people can reach safety ahead of the tsunami at a **walk**

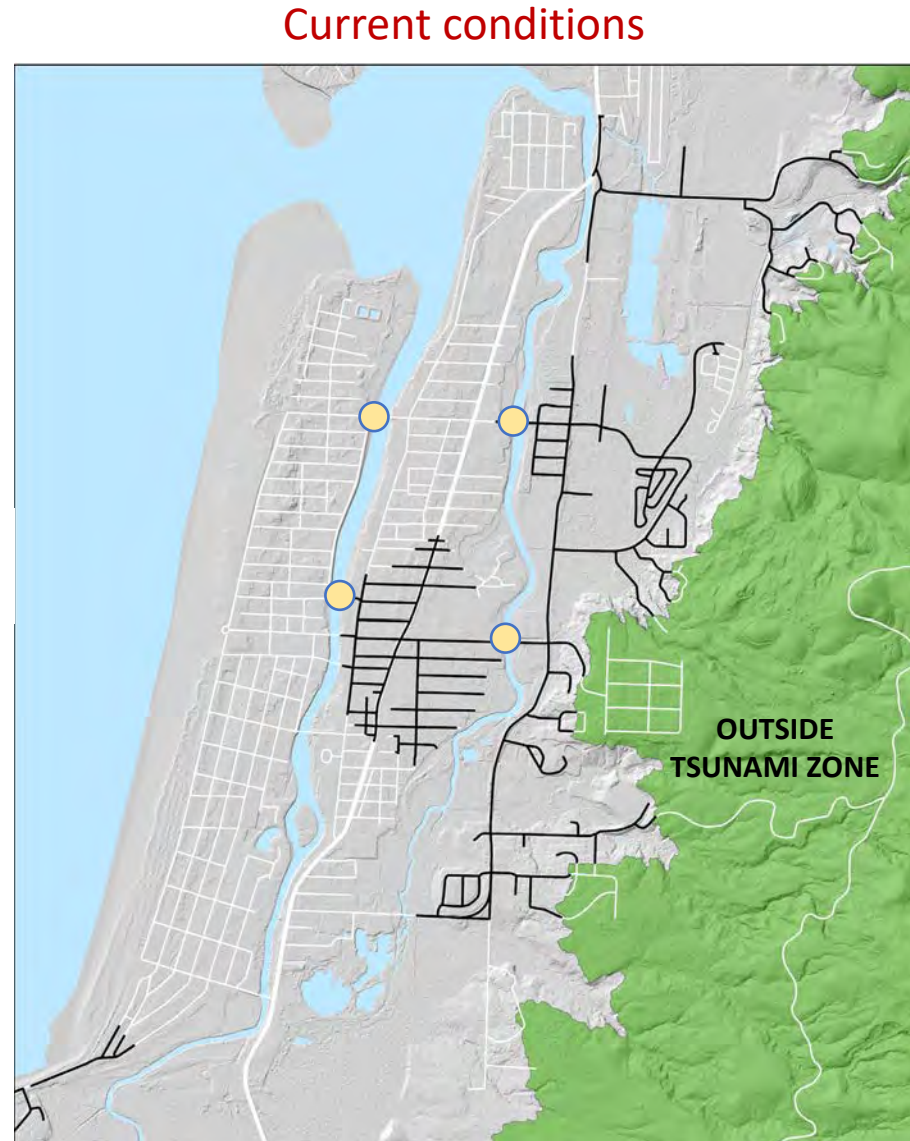
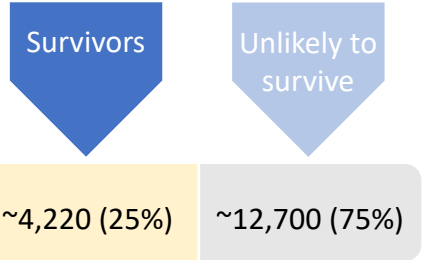
 White roads represent areas where people can **NOT** reach safety ahead of the tsunami at a **walk**



# Current conditions

Post-1995 bridges available

No VES



DOGAMI Open-File Report O-24-12  
[www.oregon.gov/dogami/pubs/Pages/ofr/p-O-24-12.aspx](http://www.oregon.gov/dogami/pubs/Pages/ofr/p-O-24-12.aspx)

0 0.25 0.5 Miles

Black roads represent areas where people can reach safety ahead of the tsunami at a **walk**

White roads represent areas where people can NOT reach safety ahead of the tsunami at a **walk**

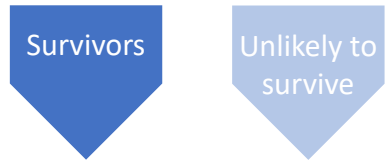
Bridge, in

# VES @ Convention Center

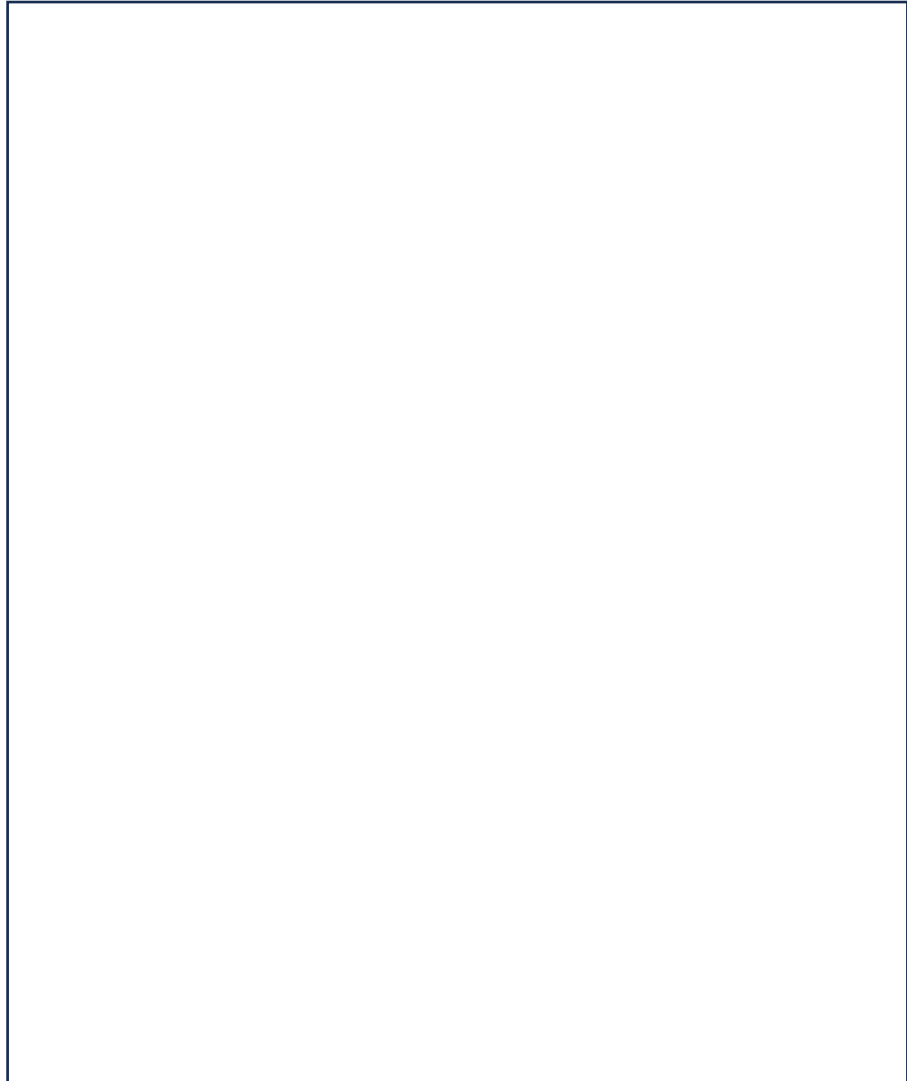
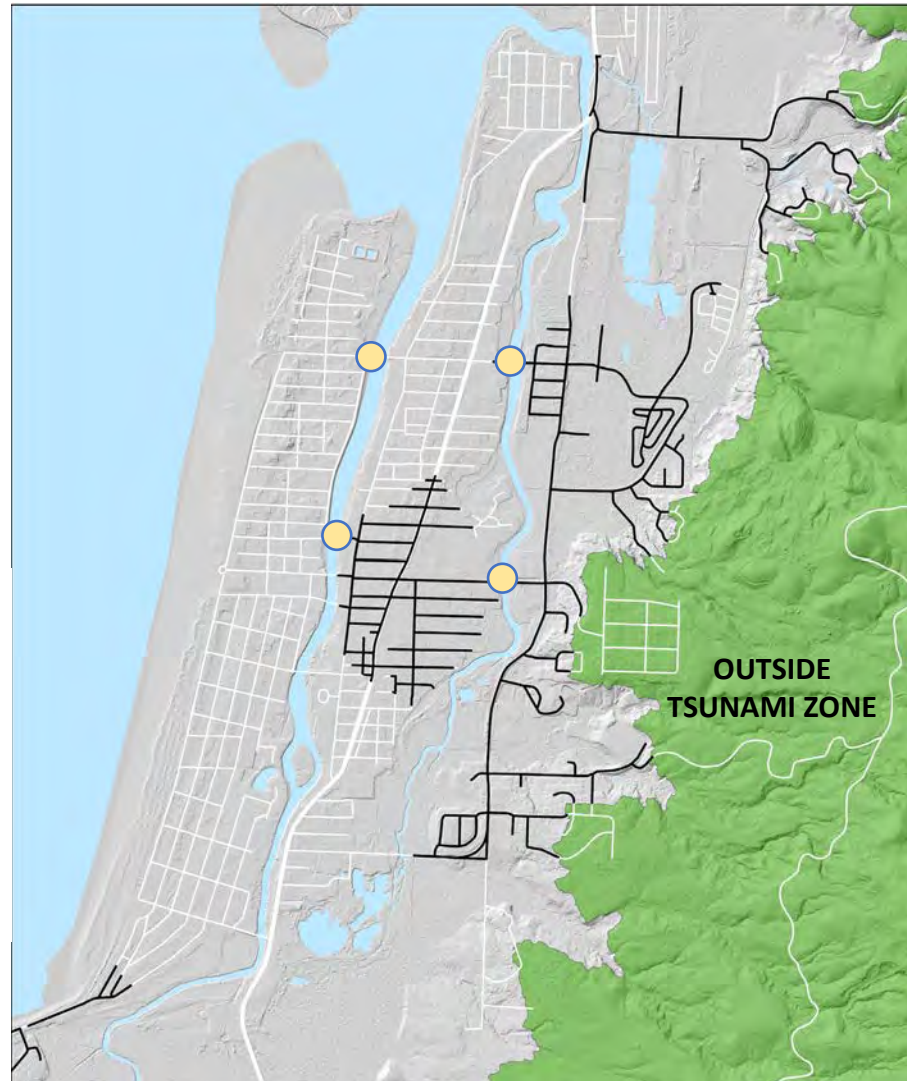


Current conditions

VES: Convention Center



Current Conditions	~4,220 (25%)	~12,700 (75%)
VES		



DOGAMI Open-File Report O-24-12  
[www.oregon.gov/dogami/pubs/Pages/ofr/p-O-24-12.aspx](http://www.oregon.gov/dogami/pubs/Pages/ofr/p-O-24-12.aspx)

0 0.25 0.5 Miles

— Black roads represent areas where people can reach safety ahead of the tsunami at a **walk**

— White roads represent areas where people can NOT reach safety ahead of the tsunami at a **walk**

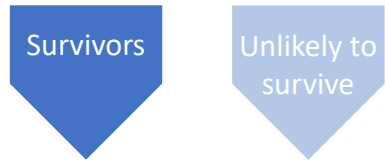
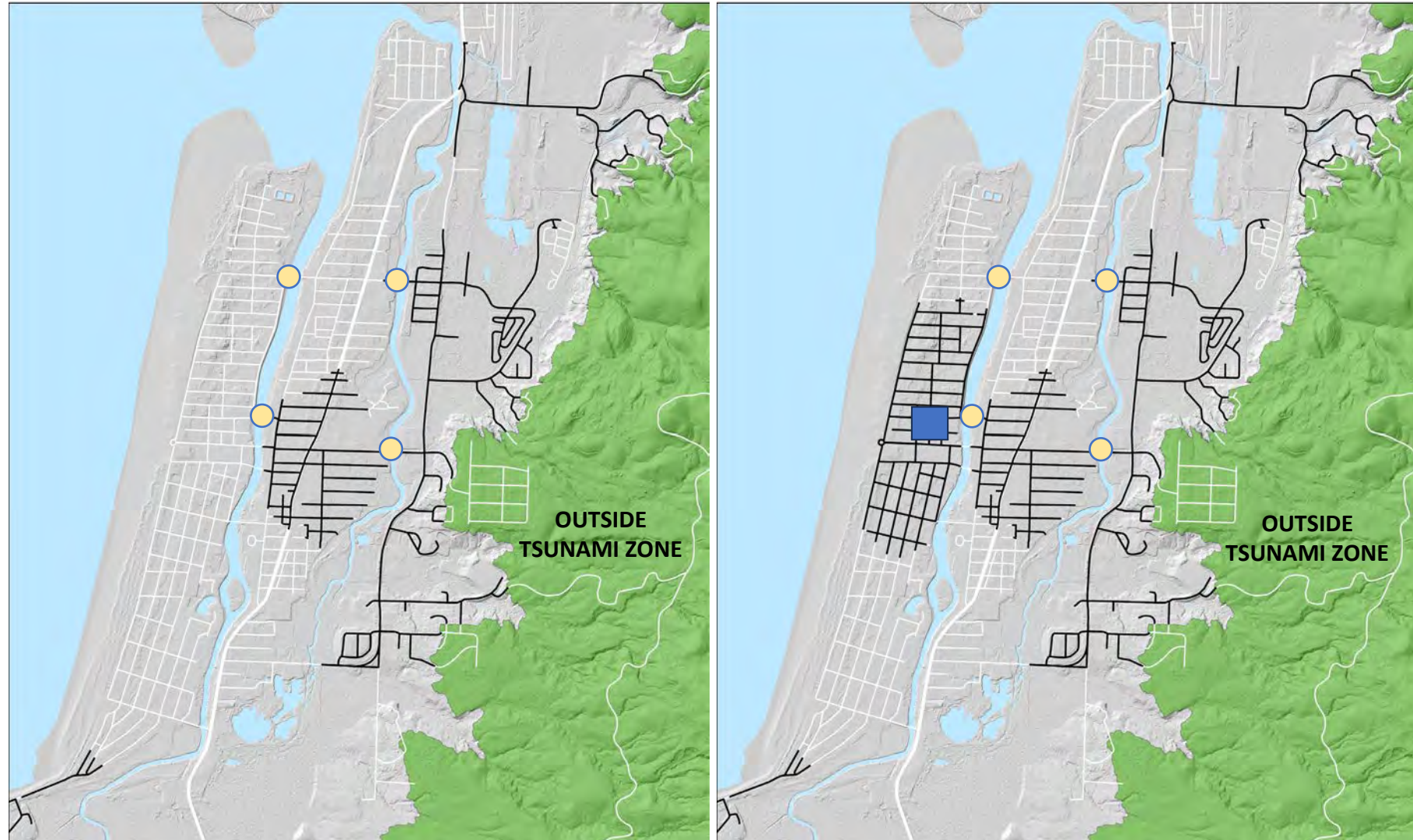
● Bridge, in

# VES @ Convention Center



Current conditions

VES: Convention Center



Current Conditions	~4,220 (25%)	~12,700 (75%)
VES	~8,500 (50%)	~8,400 (50%)

~4,200 people  
 ~25% total population  
 (inside tsunami zone)

**DOGAMI Open-File Report O-24-12**  
[www.oregon.gov/dogami/pubs/Pages/ofr/p-O-24-12.aspx](http://www.oregon.gov/dogami/pubs/Pages/ofr/p-O-24-12.aspx)

0 0.25 0.5 Miles
 
 Black roads represent areas where people can reach safety ahead of the tsunami at a **walk**

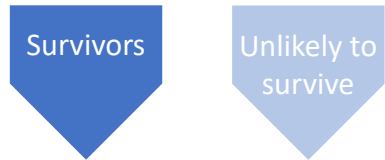
 White roads represent areas where people can NOT reach safety ahead of the tsunami at a **walk**

 Bridge, in
 
 VES



# All Bridges In

Assume all bridges survive EQ shaking

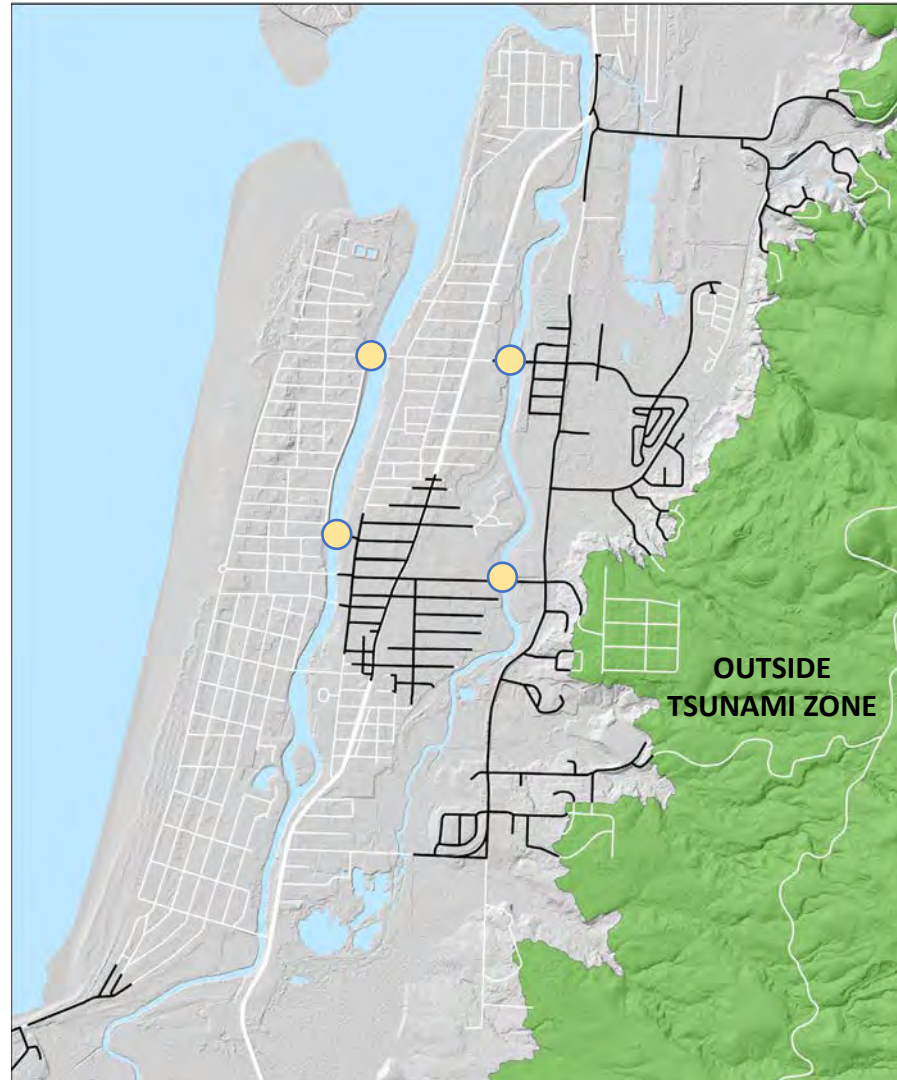


Current Conditions	~5,400 (32%)	~11,600 (68%)
All bridges in	~5,700 (33%)	~11,300 (67%)

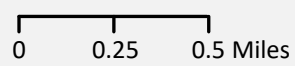
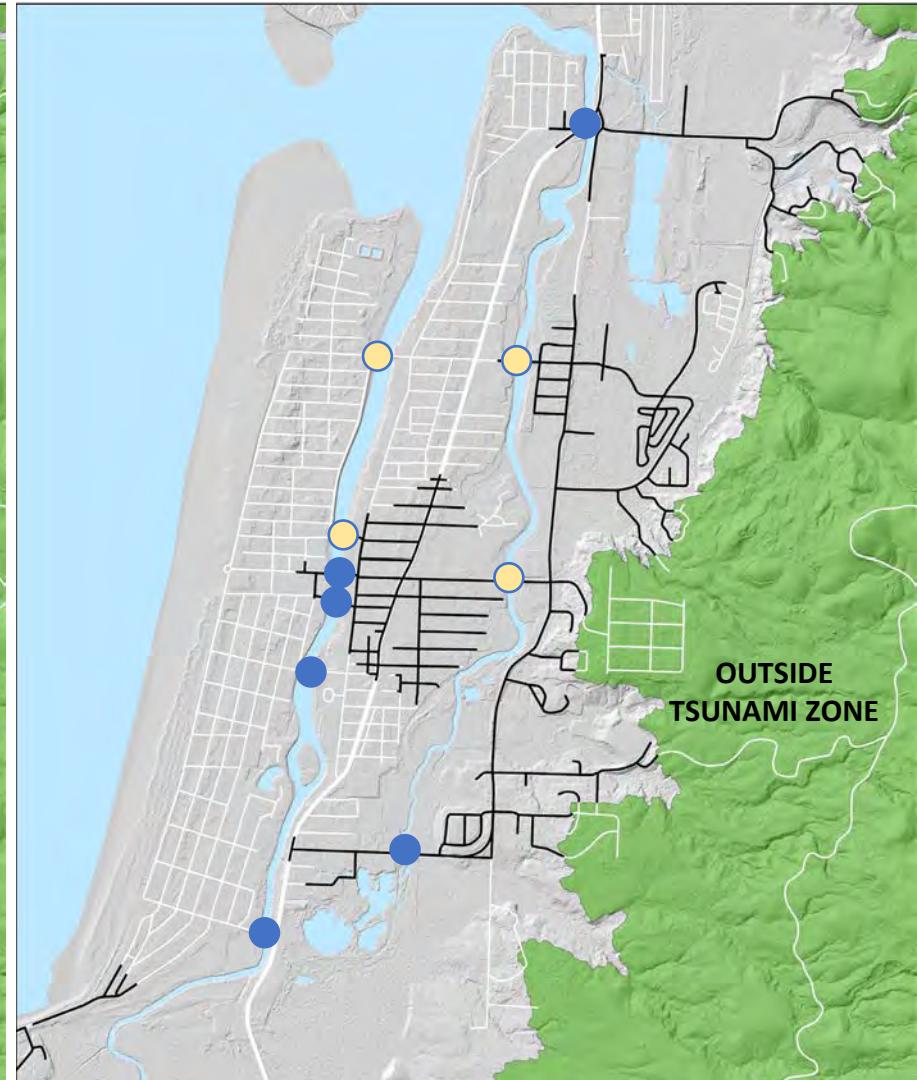
↑ ~300 people  
 ~1% total population  
 (inside tsunami zone)

**DOGAMI Open-File Report O-24-12**  
[www.oregon.gov/dogami/pubs/Pages/ofr/p-O-24-12.aspx](http://www.oregon.gov/dogami/pubs/Pages/ofr/p-O-24-12.aspx)

Current conditions



All bridges in



— Black roads represent areas where people can reach safety ahead of the tsunami at a **walk**

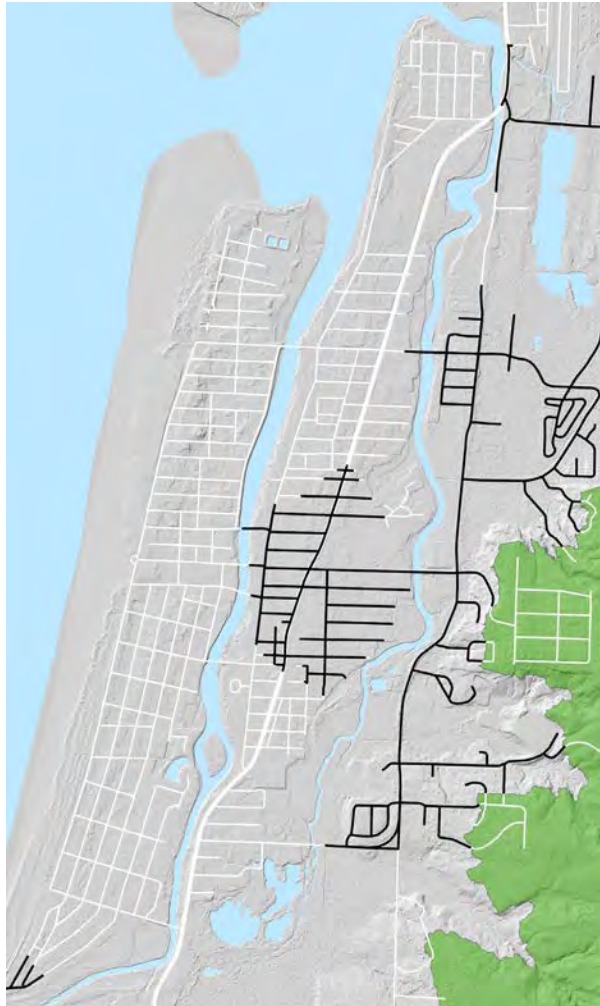
— White roads represent areas where people can NOT reach safety ahead of the tsunami at a **walk**

● Bridge, in  
 ● Bridge, out

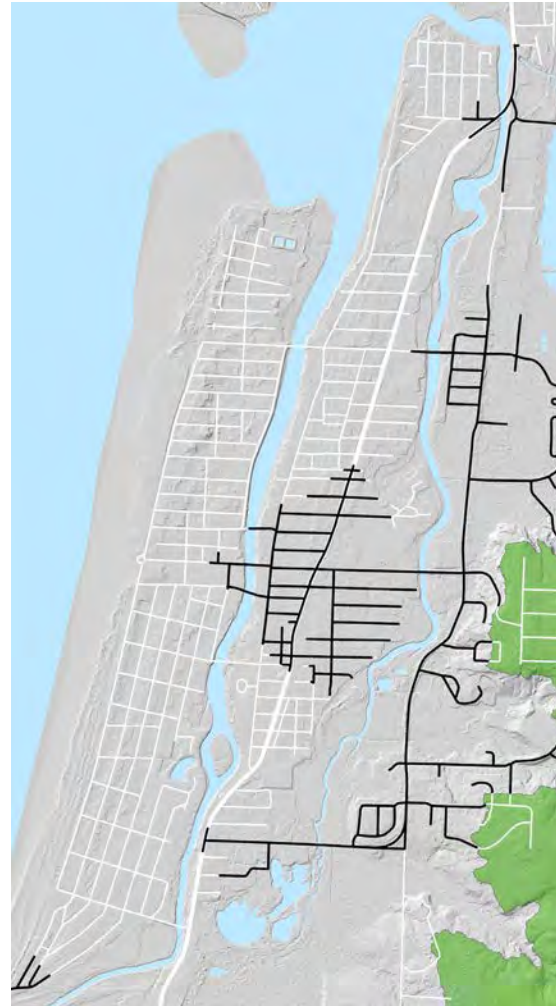
# Scenario comparisons



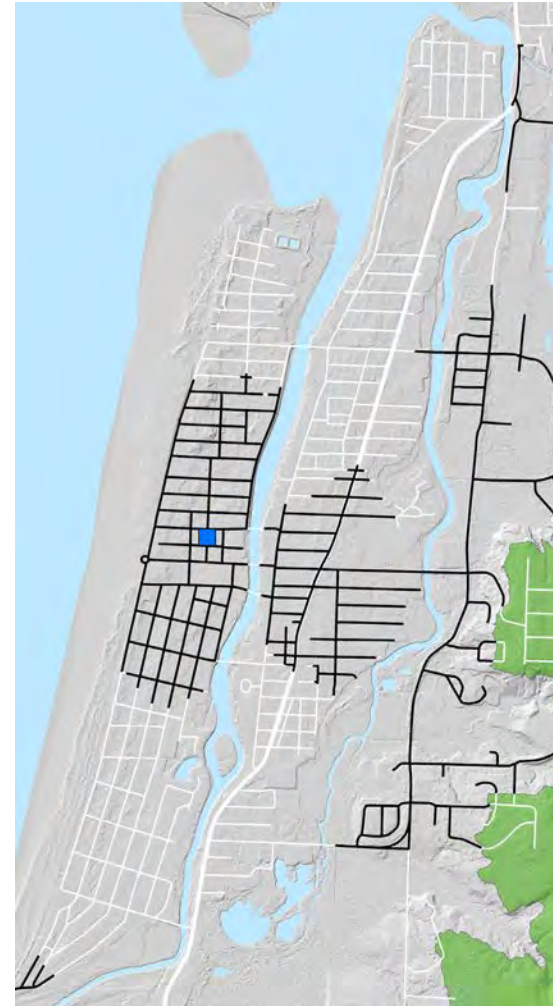
Current conditions



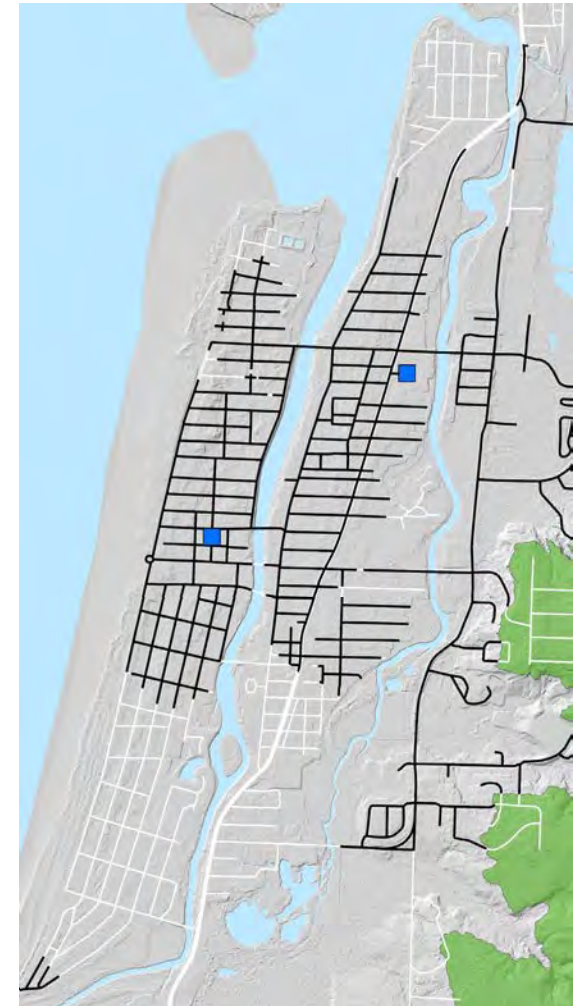
All bridges in



1 VES



2 VES



0 0.25 0.5 Miles

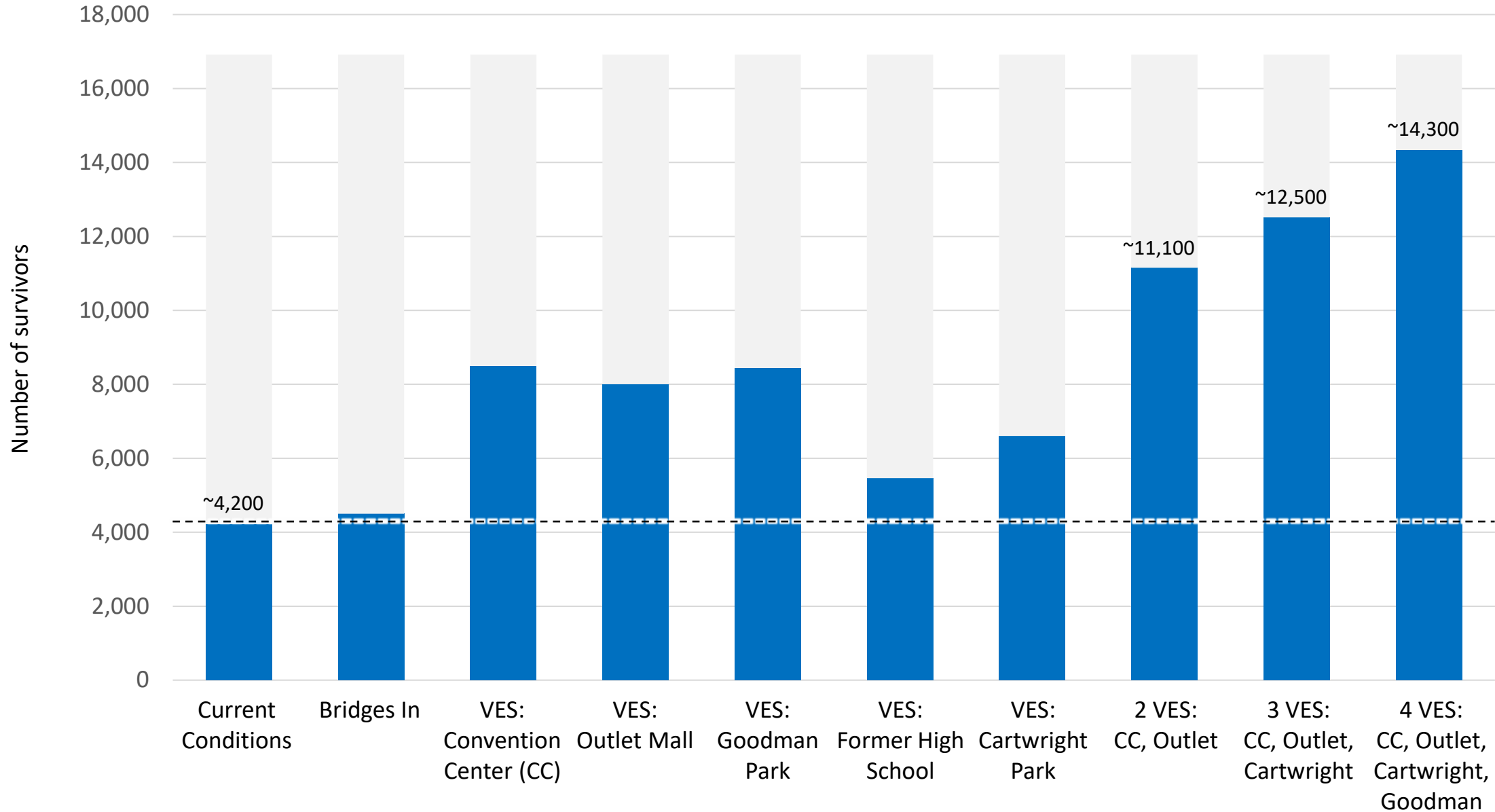
— Black roads represent areas where people can reach safety ahead of the tsunami at a **walk**

— White roads represent areas where people can NOT reach safety ahead of the tsunami at a **walk**

■ VES



# Citywide scenario comparisons



## Project 2: EQ & Tsun Impact Analysis for the Oregon Coast

**Objective:** Understand the degree of potential destruction, including estimates of building losses, debris generated, fatalities and injuries, and displaced populations

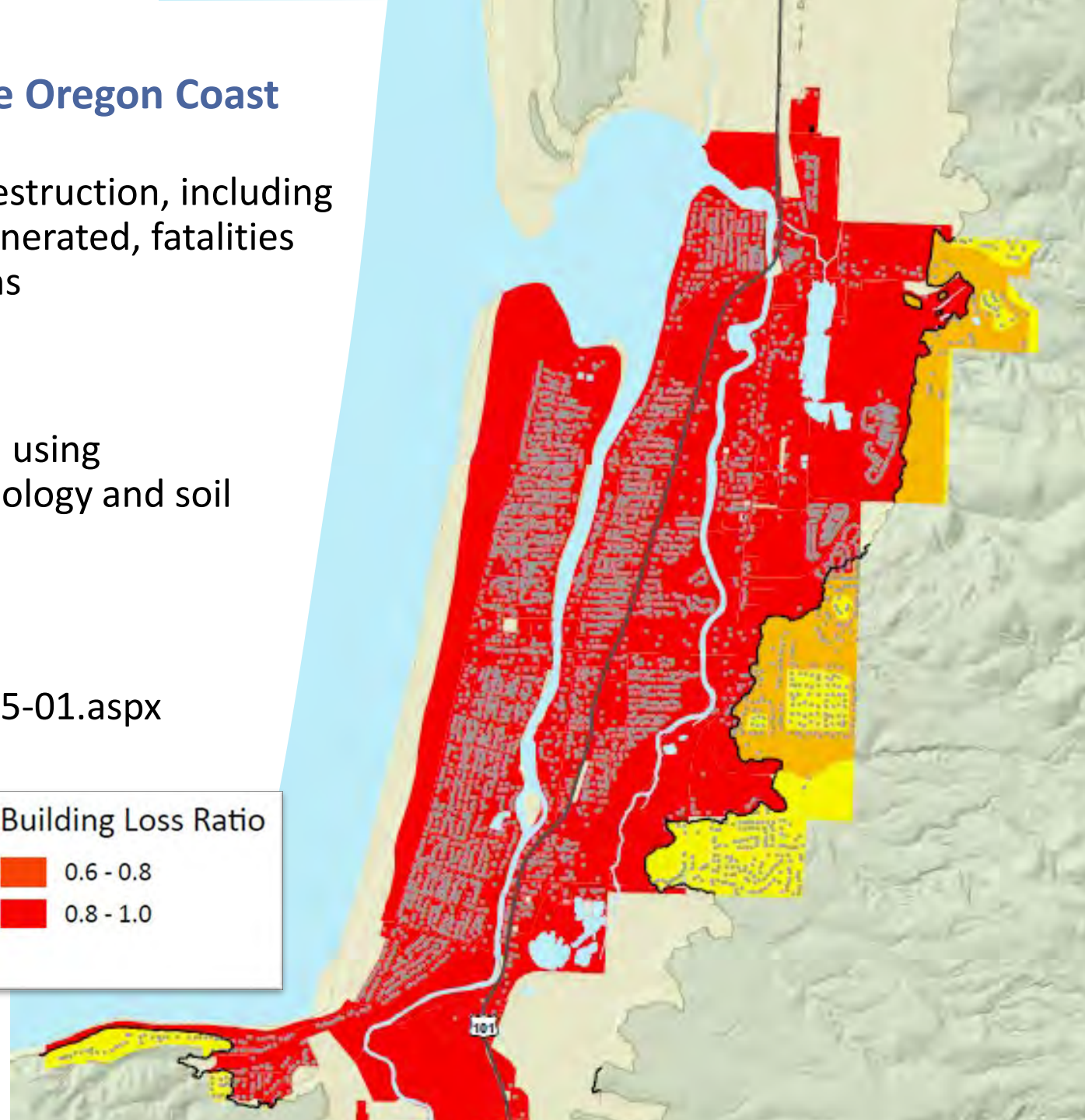
**Funding:** NTHMP

**Tasks:** Update previous countywide assessments using improved/updated USGS EQ scenarios, geology and soil classifications, and 2020 census data

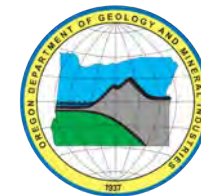
### DOGAMI Open-File Report O-25-01

[www.oregon.gov/dogami/pubs/Pages/ofr/p-O-25-01.aspx](http://www.oregon.gov/dogami/pubs/Pages/ofr/p-O-25-01.aspx)

#### M Tsunami + EQ Building Loss Ratio



# County profiles



## Clatsop County

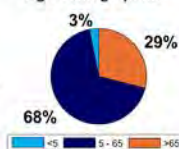
### Demographics



Resident 40,720

Overnight Visitors (100% Occupancy) 38,600

### Age Demographics



### Population in Tsunami Zone

	Medium	Large	XX-Large
Resident	12,171	16,568	20,930
Overnight Visitors (100% Occupancy)	18,700	26,400	32,100

### Injuries

#### Earthquake



1,330

Resident  
Overnight Visitors (100% Occupancy)

### Injuries in Tsunami Zone

	Medium	Large	XX-Large
Resident	480	530	430
Overnight Visitors (100% Occupancy)	710	670	470



Injuries Requiring Hospitalization ~260

### Fatalities

#### Earthquake

30

Resident  
Overnight Visitors (100% Occupancy)

### Fatalities in Tsunami Zone

	Medium	Large	XX-Large
Resident	3,740	4,370	7,360
Overnight Visitors (100% Occupancy)	6,860	8,060	14,700

### Displaced Population



Resident  
Overnight Visitors (100% Occupancy)

### Earthquake and Tsunami Displaced

	Medium	Large	XX-Large
Resident	10,685	13,940	14,890
Overnight Visitors (100% Occupancy)	12,930	19,150	17,590

## Clatsop County

### Building Inventory



Residential 18,482 Commercial 1,242 Indus/Ag 4,664 Government 597 Education 73 Religion 195

### Damaged Buildings

#### Earthquake damage:

Total = 85%



### Tsunami Zone

#### Buildings destroyed in tsunami zone

	Medium	Large	XX-Large
Buildings destroyed in tsunami zone	75%	84%	91%

### Building Losses (\$Billion)



#### Earthquake

\$2.43

+

	Medium	Large	XX-Large
Building Losses (\$Billion)	\$1.19	\$2.01	\$3.13

### Content Losses (\$Billion)



#### Earthquake

\$1.82

+

	Medium	Large	XX-Large
Content Losses (\$Billion)	\$0.82	\$1.40	\$2.24

### Debris Generated (Earthquake & Tsunami)



	Medium	Large	XX-Large
Debris Generated (Earthquake & Tsunami)	575,900 tons (57,590 truck loads)	852,500 tons (85,250 truck loads)	1,223,100 tons (122,310 truck loads)

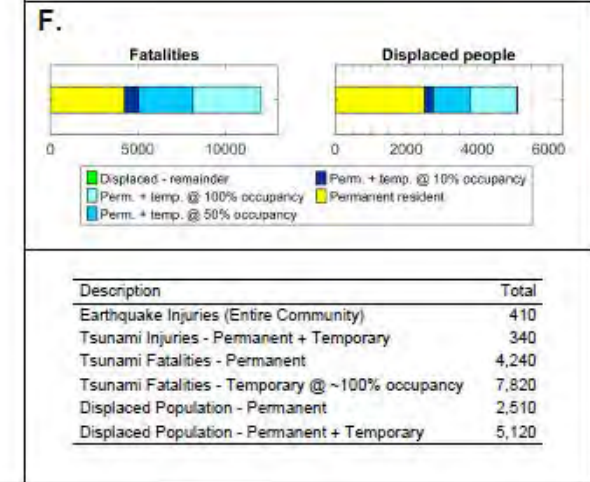
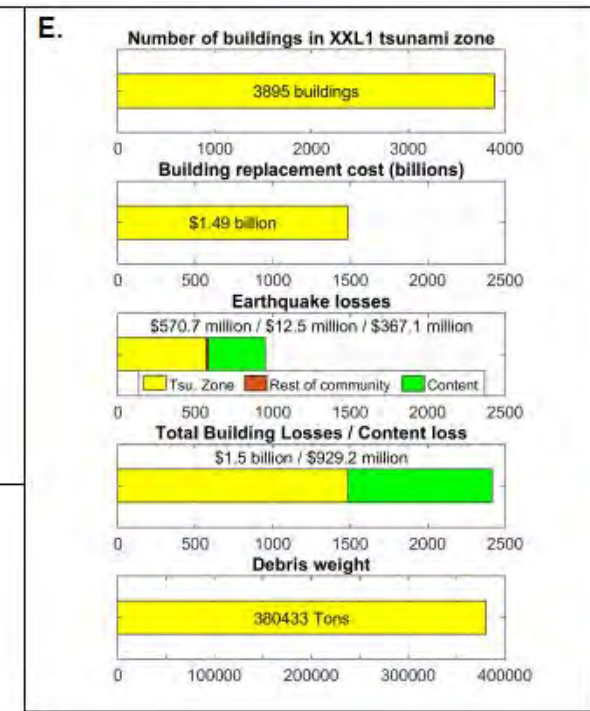
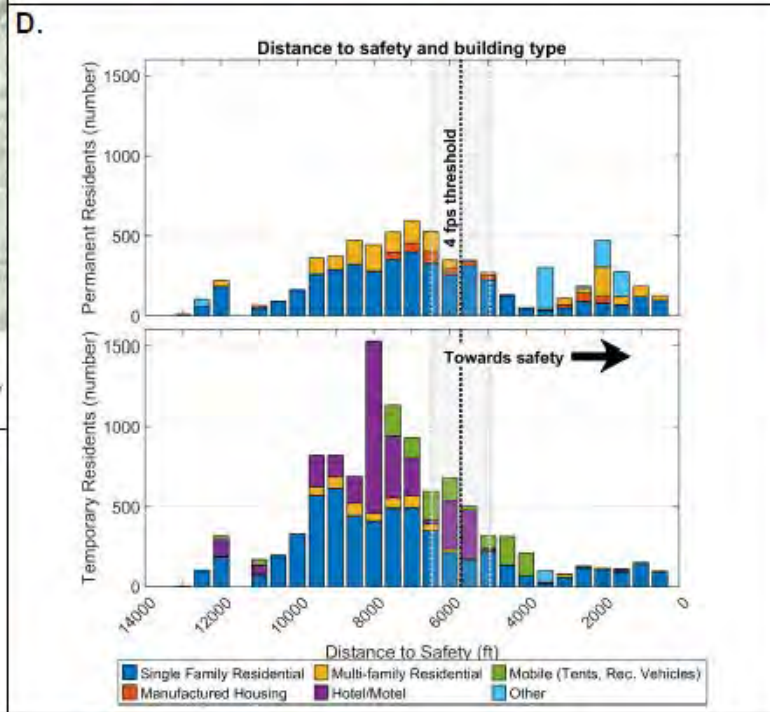
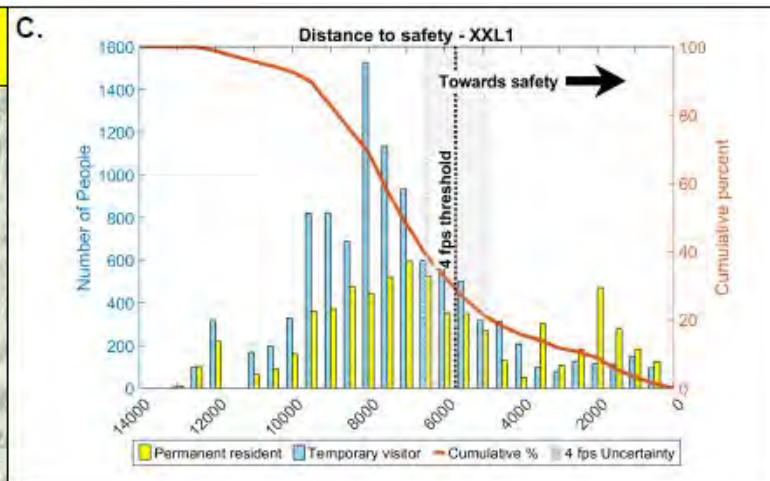
Assumes truck capacity of 10 yd<sup>3</sup>

### Critical Facilities



	fire	enforcement	school	hospital	city hall	public works	sewer	ports & USCG
Medium	6	6	2	1	3	1	7	
Large	9	6	4	1	1	3	2	7
XX-Large	12	6	5	2	1	3	2	7

# City profiles



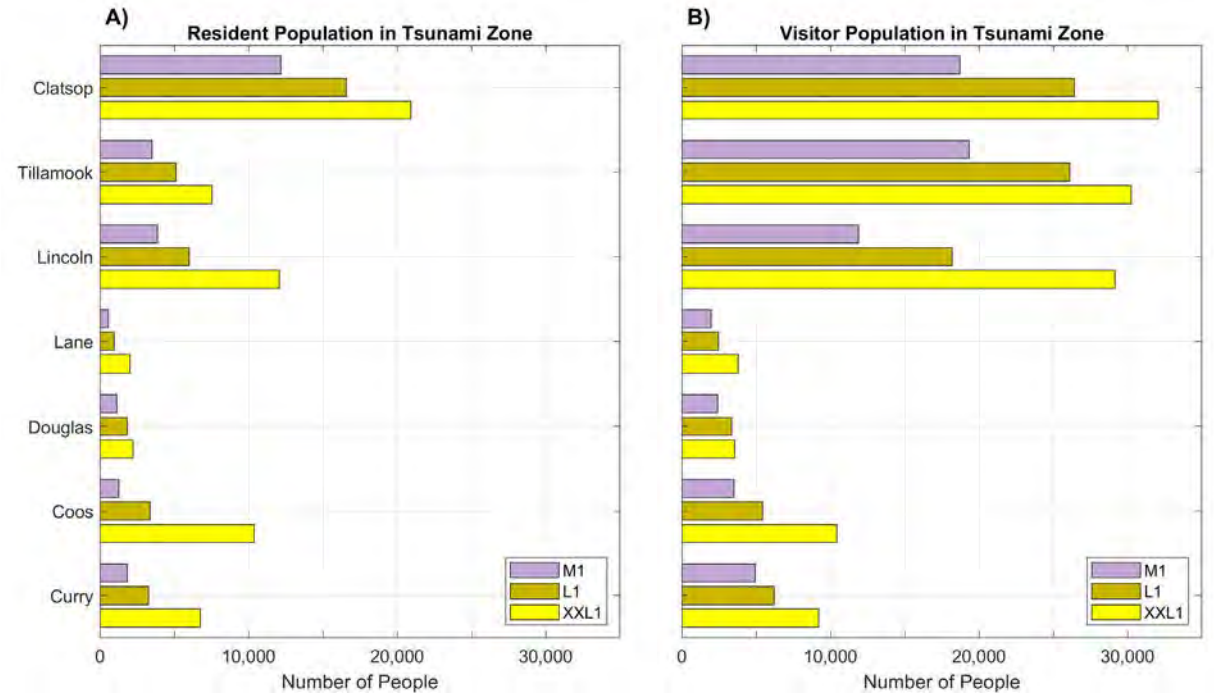
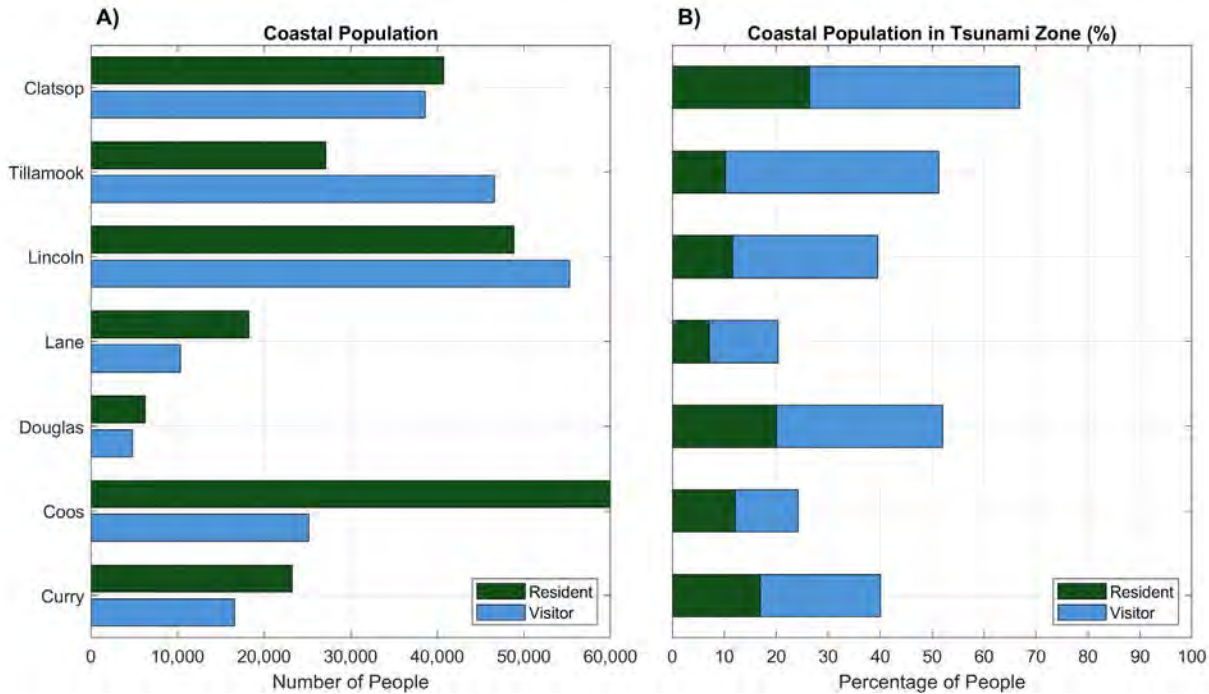


# Population Characteristics and Exposure

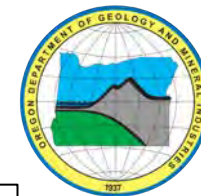
## Coastwide:

- Total resident population: ~24,000 – 62,000 (M – XXL)
- Total overnight visitor pop: ~63,000 – 118,000 (M – XXL)

**DOGAMI Open-File Report O-25-01**  
[www.oregon.gov/dogami/pubs/Pages/ofr/p-O-25-01.aspx](http://www.oregon.gov/dogami/pubs/Pages/ofr/p-O-25-01.aspx)



# Building exposure, damage, and content losses

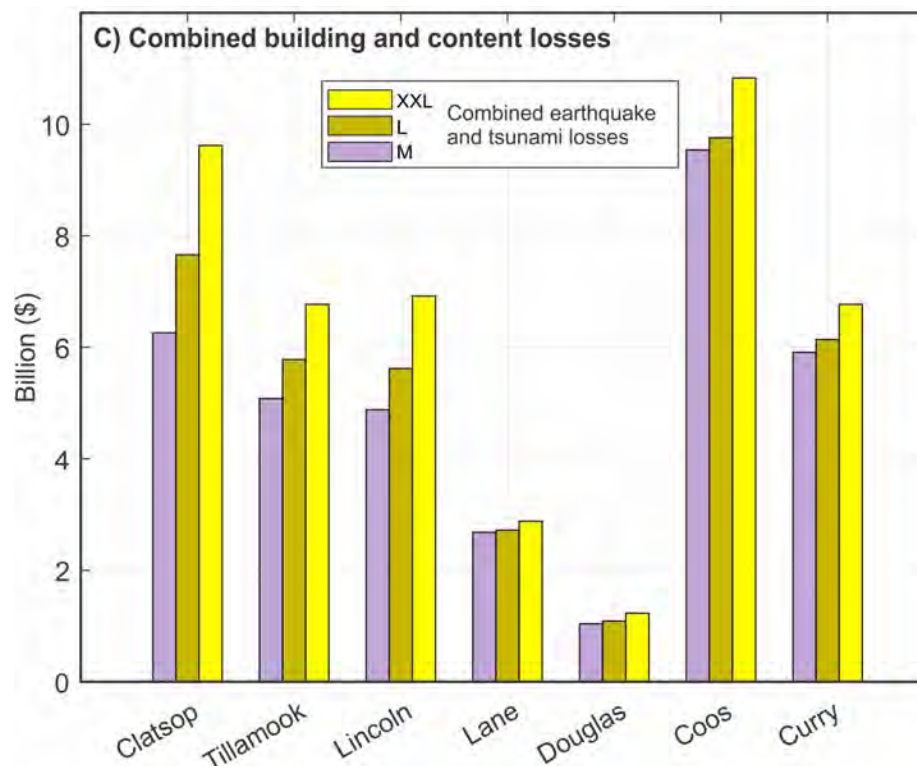
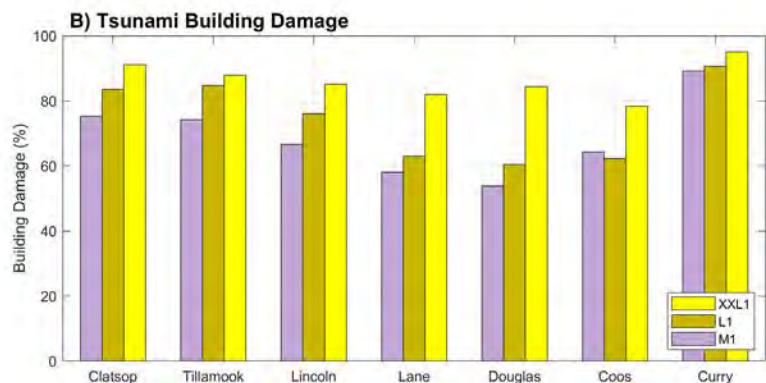
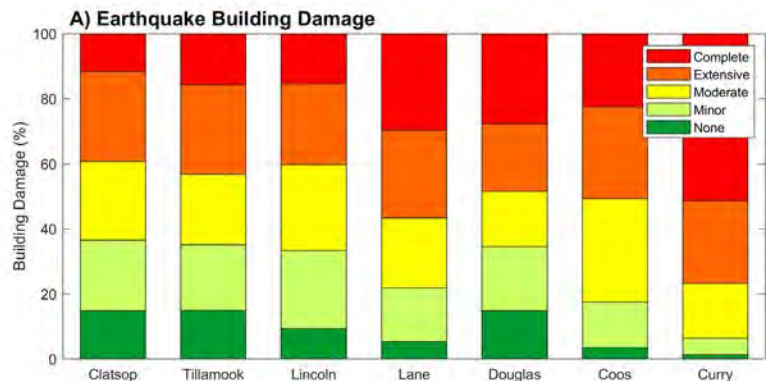


**DOGAMI Open-File Report O-25-01**  
[www.oregon.gov/dogami/pubs/Pages/ofr/p-O-25-01.aspx](http://www.oregon.gov/dogami/pubs/Pages/ofr/p-O-25-01.aspx)

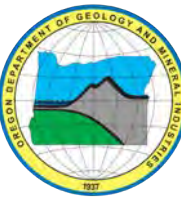
## Coastwide buildings:

~92% of buildings damaged (~175,400 total)

~24% destroyed, 29% extensive damage, 27% moderate damage, 19% minor damage

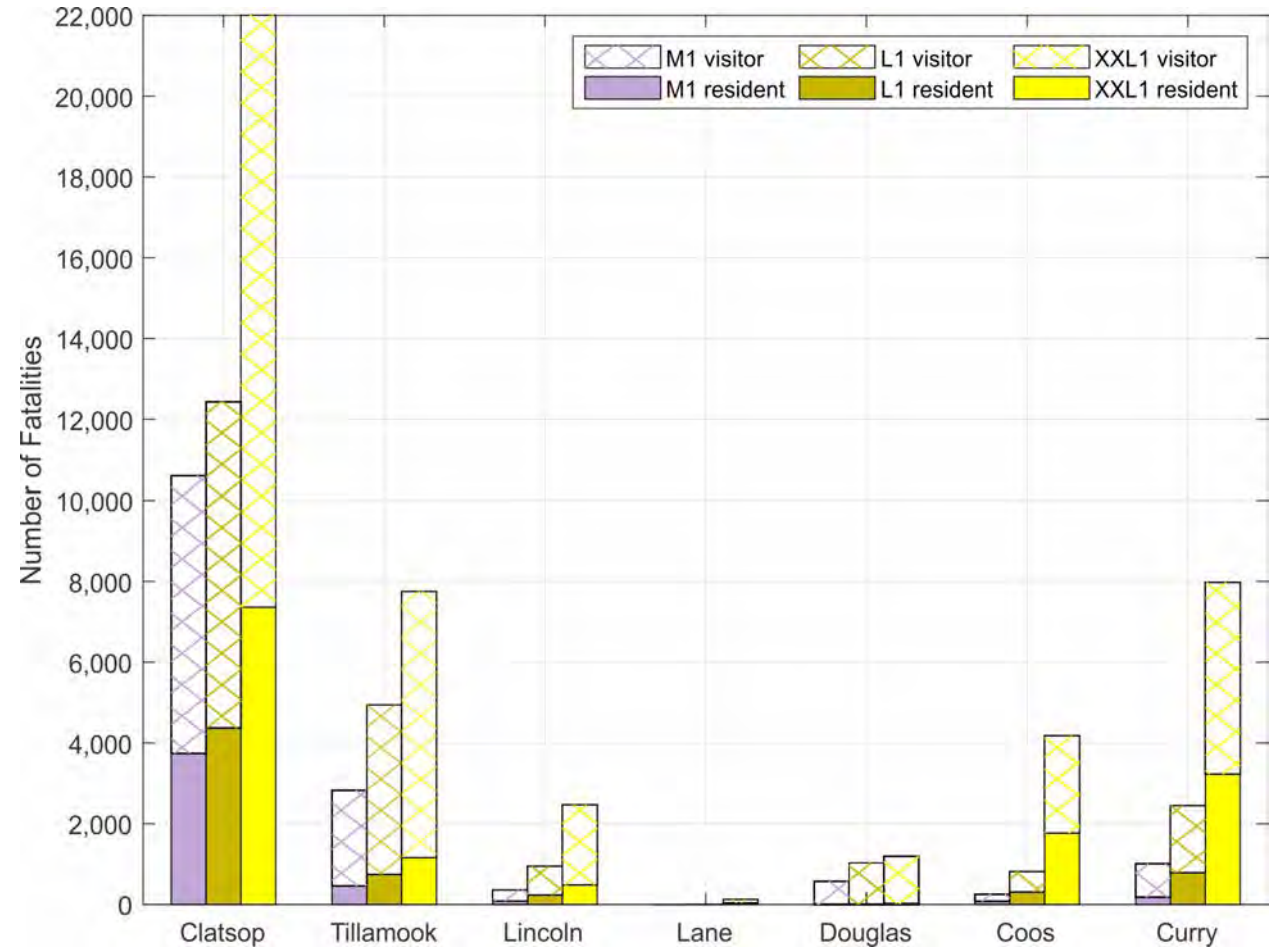


# Tsunami casualties

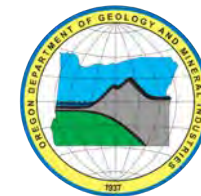


## Coastwide fatalities:

- Residents: ~4,500 – 14,000 (M – XXL)
- Overnight visitors: ~11,000 – 32,000 (M – XXL)

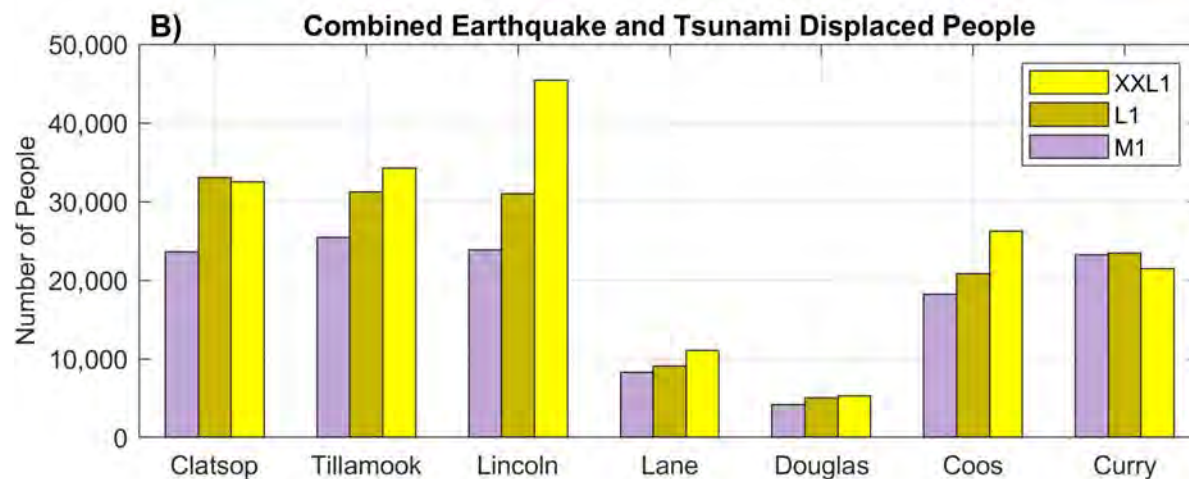
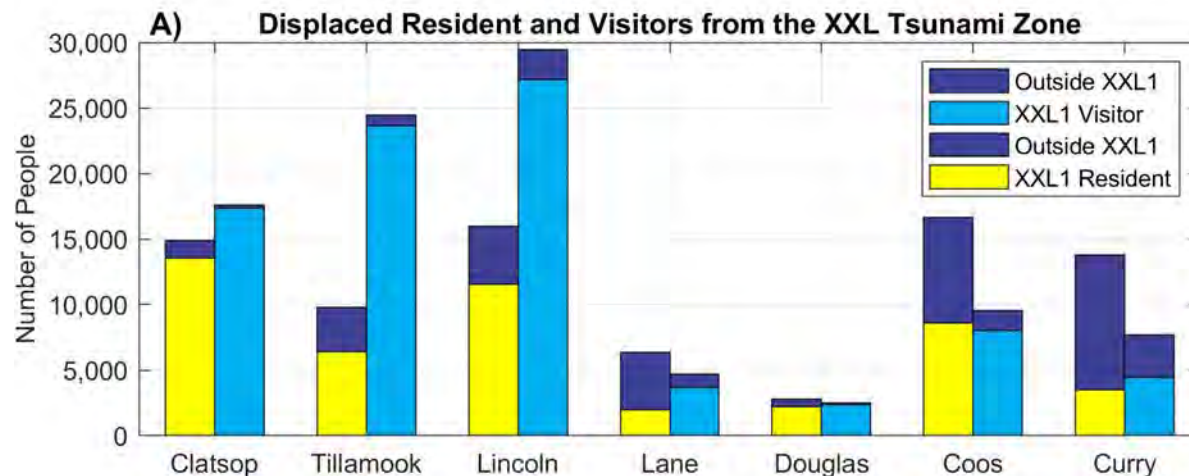


# Displaced population



## Coastwide displaced people:

- Residents: ~60,000 – 80,000 (M – XXL)
- Overnight visitors: ~66,000 – 96,000 (M – XXL)





# Custom tsunami evacuation brochures



Visit [www.oregontsunami.org](http://www.oregontsunami.org)  
to find more great resources!

## TSUNAMI EVACUATION MAP

### LA QUINTA INN

Lincoln County, Oregon



**IF YOU FEEL AN EARTHQUAKE:**

- Drop, cover and hold
- Move immediately inland to higher ground
- Do not wait for an official warning

**SI USTED SIENTE EL TEMBLOR:**

- Tírese al suelo, cúbrase, y espere
- Diríjase de inmediato a un lugar más alto que el nivel del mar
- No espere por un aviso oficial

**ASSEMBLY AREA / ÁREA REUNIÓN**



**NOTICE:** This tsunami evacuation zone map was developed by DOGAMI for the purpose of guiding the public out of the tsunami inundation zone in the event of a tsunami evacuation. This map adopts recommendations from the Oregon Tsunami Advisory Council. The evacuation routes were developed by DOGAMI, in consultation with local emergency officials and OEM.

<b>OUTSIDE HAZARD AREA:</b> Evacuate to this area for all tsunami warnings or if you feel an earthquake.	<b>ZONA DE PELIGRO EXTERIOR:</b> Evacue a esta área para todas las advertencias del maremoto o si usted siente un temblor.
<b>LOCAL CASCADIA EARTHQUAKE AND TSUNAMI:</b> Evacuation zone for a local tsunami from an earthquake at the Oregon coast.	<b>MAREMOTO LOCAL (terremoto de Cascadia):</b> Zona de evacuación para un tsunami local de un temblor cerca de la costa de Oregon.
<b>DISTANT TSUNAMI:</b> Evacuation zone for a distant tsunami from an earthquake far away from the Oregon coast.	<b>MAREMOTO DISTANTE:</b> Zona de evacuación para un tsunami distante de un temblor lejos de la costa de Oregon.



**Nearest high ground**  
Safe Haven Hill (South)

Distance: **0.3 miles**

You have **8 minutes** to reach safety

Required speed : **Walk** or faster...  
( faster than 27 min/mile pace )

**If you can safely take a faster route, take it!**

Step	Direction	Distance
1	Head W on SE 32nd St toward Highway 101 / SW Anchor Way	200 feet
2	Turn right and go on Highway 101	576 feet
3	Turn left and go on SW Abalone St	546 feet
4	Make a sharp right and go on Safe Haven Hill Rd	233 feet
End	Finish at Safe Haven Hill (South)	





SCALE / ESCALA

Feet

0 100 200

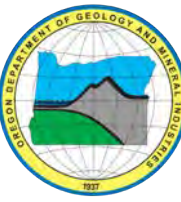
**MAP SYMBOLS / SIMBOLOS DEL MAPA**

- You are here/ Usted está aquí
- Safety destinations / Destinos de seguridad
- Evacuation route / Ruta de evacuación
- Elevation, in feet / Elevación, en pies
- Assembly area / Área reunión

Map Date: 7/16/2024

Online tsunami evacuation viewer  
[nvs.nanoos.org/TsunamiEvac](http://nvs.nanoos.org/TsunamiEvac)





*Thank you!*

[www.OregonTsunami.org](http://www.OregonTsunami.org)

[Laura.Gabel@dogami.oregon.gov](mailto:Laura.Gabel@dogami.oregon.gov)

(971) 413-0624

Newport, OR

MES Virtual Meeting - 17 September 2025

**Participants** *(in no particular order)*

Skylar Suiso, HI-EMA  
Jack Lee, HI-EMA  
Stephen Cahill, GHS OCD  
Sarah Rogowski, NWS NTHMP  
Mario Kaipat, CNMI HSEM  
Mike Crop, OEM  
Althea Rizzo, OEM  
Yvette LaDuke, CALOES  
Elyssa Tappero, WA EMD  
Maximilian Dixon, WA EMD  
Tyisha Brown, WA EMD  
Stephanie Ross, USGS  
Tino Steffany, AS DHS  
Jolene Mageo, AS DHS  
Elinor Lutu-McMoore, NWS  
Jonathan Westcott, FEMA  
Hannah Rabinowitz, FEMA  
Julie Romig, CALOES  
Todd Becker, CALOES  
Nicolas Arcos, NCEI  
Lindsey Wright, NCEI  
Victor Huerfano, PRSN  
Justin Freiler  
Jay Patton, CGS  
Nick Graehl, CGS  
Jeremy Agee, AK DHS&EM  
Michael Lucio, AK DHS&EM  
Robert White, BC EMCR

\*Please see meeting slides for meeting content.

# NTHMP MES Meeting

## September 17, 2025

### Agenda:

- Welcome and Sign In
- Kamchatka Tsunami Event Briefs
- Next Meeting
- MES Partner Announcements

**\*\*Please enter your name and affiliation in the chat.**



# MES Partner Announcements

- Please use the raise your hand button if you would like to make an announcement to the group.

# MES Kamchatka Tsunami Event Briefs

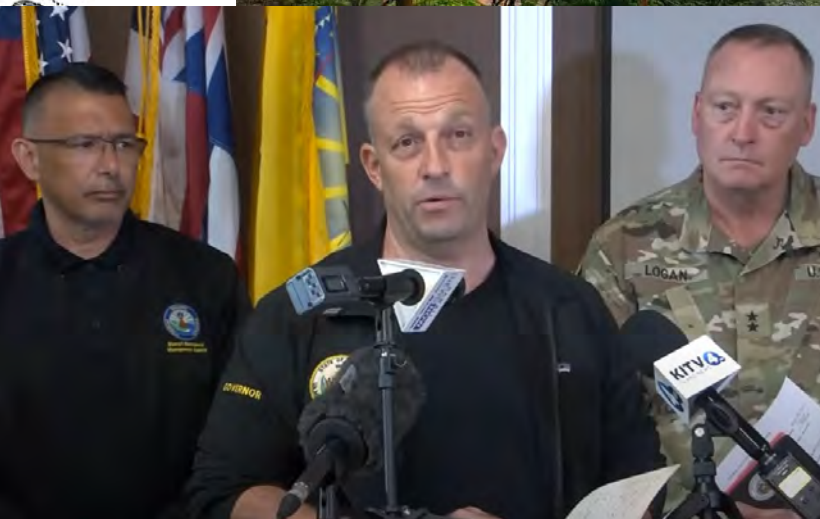
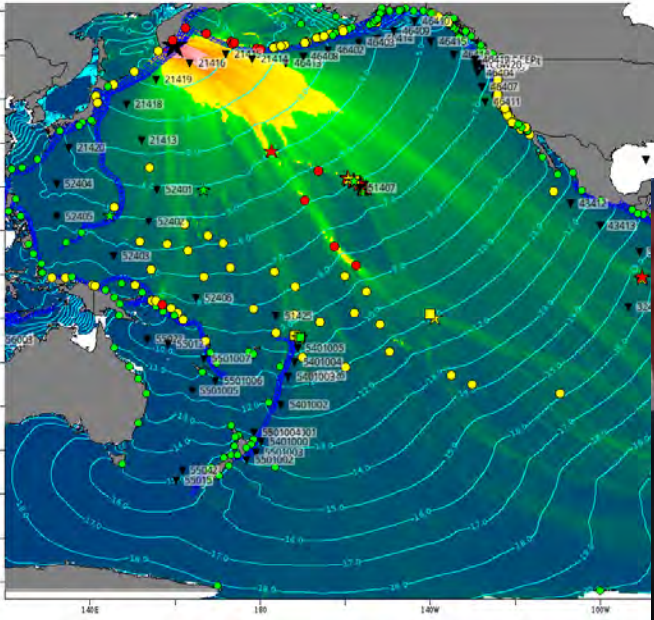
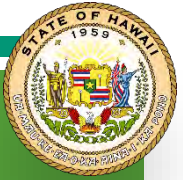
- Hawaii
- Commonwealth of the Northern Mariana Islands
- American Samoa
- Guam
- Washington
- California
- Oregon

# MES Kamchatka Tsunami Event Briefs

- Hawaii



# Kamchatka Tsunami Activation 2025



**Emergency alert: Extreme**

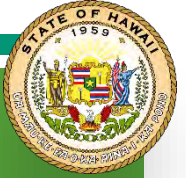
SIRENS SOUNDING FOR TSUNAMI THREAT. 2HRS OUT FROM 1ST WAVE ARRIVAL ESIMATED AT 7:10 PM . EVACUATE COASTAL AREAS. SENT BY Hawaii Emergency Management Agency

OK

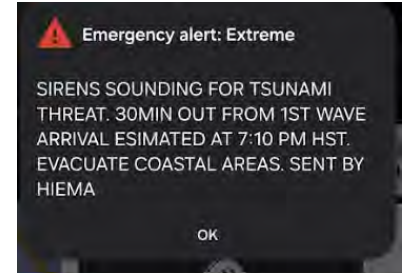
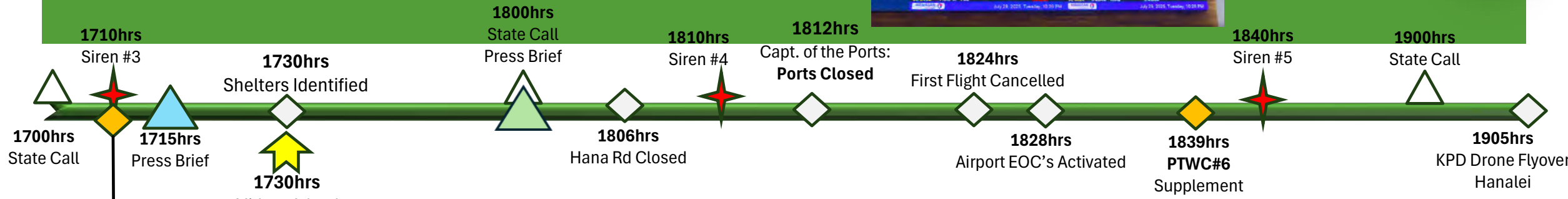


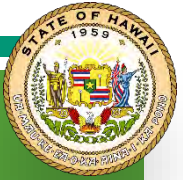


# Kamchatka Tsunami Activation 2025

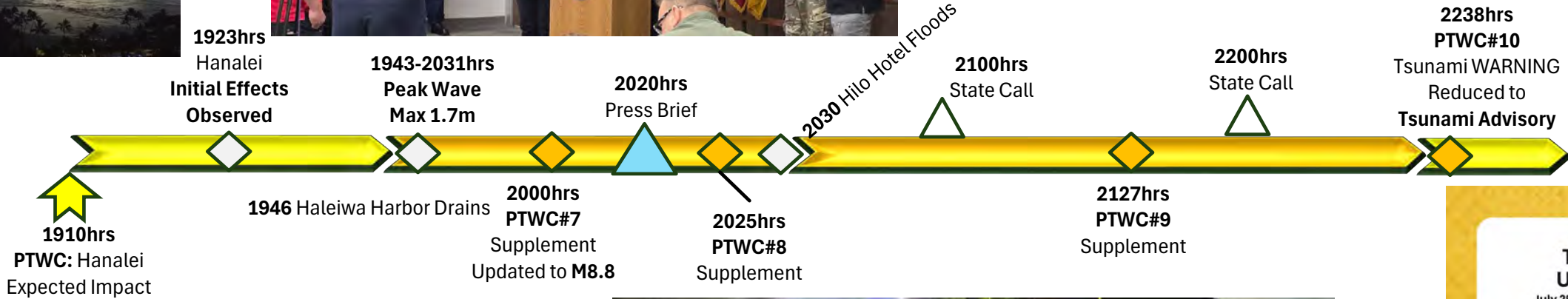


Flight	Time	Operating Co.	STD.	GMT	Hawaii	Flight	Time	Operating Co.	STD.	GMT	Return
HA 2797	4:00PM	HA				JL 6032	7:00PM	Kamohi	7:00PM	A13	
JL 6038	6:00PM	Korea				JL 8076	7:00PM	Lufthansa	8:00PM	A13	
HA 1907	6:10PM	HA	5:10PM	A14	Cancelled	AS 8016	8:00PM	Delta	8:00PM	A13	
AD 8245	6:10PM	Kalabaja	5:10PM	BA	Cancelled	AS 8184	8:00PM	Porter	8:00PM	A13	
AD 8210	6:10PM	HA				AS 8017	8:00PM	Delta	11:00PM	A13	
JL 6063	6:40PM	Japan	6:40PM	B2	Cancelled	JL 8453	9:00PM	Kamohi	9:00PM	A13	
AS 8244	6:50PM	HA	6:50PM	A13	Cancelled	HA 1008	10:00PM	HA	10:00PM	A13	
JL 6039	6:40PM	Korea	6:40PM	A13	Cancelled	AS 8008	11:00PM	Delta	11:00PM	A13	
AS 8243	6:50PM	HA	6:50PM	A13	Cancelled	AS 8009	11:00PM	Delta	11:00PM	A13	
HA 1800	7:00PM	HA	7:00PM	A13	Cancelled	JL 8421	8:00AM	Lufthansa	8:00AM	A13	
JL 6032	7:00PM	HA	7:00PM	A13	Cancelled	JL 8009	8:00AM	Kamohi	8:00AM	A13	





# Kamchatka Tsunami Activation 2025



**Tsunami Update #1**  
 July 29, 2025 – 9:50 p.m. HST

A tsunami reached Hawai'i this evening after an offshore quake near Russia.

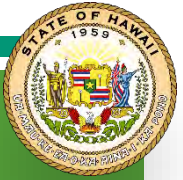
- Wave impact was lower than expected, but **coastal areas remain closed.**
- Stay away from shorelines until an official "all clear."
- Check with airlines for flight updates.

Visit [tsunami.gov](https://tsunami.gov) for more information.

**HAWAII TOURISM**  
 AUTHORITY



# Kamchatka Tsunami Activation 2025



**TSUNAMI INFORMATION STATEMENT**  
Learn more about tsunamis at [tsunami.gov](http://tsunami.gov)

Follow official social media -  
Facebook and Instagram: @HAWAIIDEM  
Twitter: @HAWAIIDEM

Visit [Honolulu.gov/DEM](http://Honolulu.gov/DEM)  
Subscribe at [hnlalert.gov](http://hnlalert.gov)

**Stay Informed.**



Two million total people across the Pacific were ordered to evacuate.

**Public Safety Alert** now

Tsunami Advisory is no longer in effect per Pacific Tsunami Warning Center. **STRONG CURRENTS & DANGEROUS CONDITIONS MAY PERSIST. REMAIN ALERT** to Local Authorities and Local Ocean Safety before entering Hawaiian Waters.



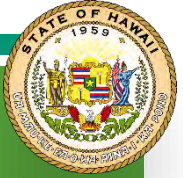
# Kamchatka Tsunami 2025 SIFT Inundation Model Runup



<i>Location</i>	<i>Forecast</i>	<i>Actual</i>
Hanalei	1.8 m	1.0 m
Nawiliwili	0.4 m	0.4 m
Haleiwa	1.5 m	1.5 m
Honolulu	0.4 m	0.35 m
Kahului	1.5 m	1.5 m
Hilo	2.0 m	1.4 m
Kawaihae	0.55 m	0.5 m



# Kamchatka Tsunami 2025 Lessons Learned



- Education and Outreach
  - Extreme Tsunami evacuation zone vs. Tsunami evacuation zone
  - Vehicle vs on-foot
- Confusion NOAA Tsunami Warning & evacuation zones

NOAA / National Weather Service  
U.S. Tsunami Warning System

News Organization Search for: [ ] NWS All NOAA Search

## Tsunami Warning

**Earthquake:**  
Magnitude: 8.7 Origin Time: 7/29/2025, 1:24:52 PM  
Depth: 46 mi. Lat: 52.2° N Lon: 160° E  
Location: OFF THE EAST COAST OF KAMCHATKA RUSSIA

Note: Times are local to your browser, unless otherwise indicated See the map or table below for more information

Alerts/Threats  Earthquakes  
 Previous 40 Messages  Observations  Forecasts  Water-Level Stations  DART Systems  Auto Update 1 min

Default View

100km  
50km

POWERED BY  
Earthstar Geographics esri

Warning Advisory Watch Threat Earthquake  
U.S / Canada International

Map FAQ  
More earthquake information

# MES Kamchatka Tsunami Event Briefs

- Commonwealth of the Northern Mariana Islands

# Commonwealth of the Northern Mariana Islands (CNMI): Overview of Kamchatka 29 July 2025 event

- ▶ Timeline of operational actions during this event:
  - ▶ 1<sup>st</sup> Bulletin/Press Release issued on Wed, 30 July 2025, at 10:00 AM ChST (TSUNAMI WATCH)
  - ▶ 2<sup>nd</sup> Bulletin/Press Release issued on Wed, 30 July 2025, at 11:00 AM ChST (TSUNAMI ADVISORY)
  - ▶ 3<sup>rd</sup> Bulletin/Press Release issued on Wed, 30 July 2025, at 12:00 PM ChST (TSUNAMI ADVISORY / GOVT CLOSURE)
  - ▶ Bulletin/Press Release issued every hour up until 06:00 PM ChST urging residents who self-evacuated that they may return home, BUT to stay out of the water due Tsunami and Rip Current Advisories still being in effect.
  - ▶ Final Bulletin/Press Release issued at 07:00 PM ChST, Advisory cancelled by PTWC, 'ALL CLEAR' declared for the CNMI by leadership.

# Commonwealth of the Northern Mariana Islands (CNMI): Overview of Kamchatka 29 July 2025 event

- ▶ Forecast of Arrival Times and Wave Heights:
  - ▶ Earliest estimated arrival time of tsunami waves – 02:37 PM ChST on Wed, 30 July 2025. Potential impacts still being evaluated.
  - ▶ No Changes to ETA. Potential impacts – Sea Level fluctuations generally no more than 3 feet above and below the tide level. Minor flooding of beach and harbor areas. Strong, unusual currents in harbors, bays, near shore waters.
- ▶ Actual Arrival Times and Wave Heights:
  - ▶ Tide Gauge reading on Saipan – Max Tsunami Height 0.7ft / 0.2m
- ▶ Impacts:
  - ▶ No damages or inundation reported.



# *Commonwealth of the Northern Mariana Islands (CNMI):* Lessons learned from 29 July 2025 event

- ▶ Insert top 3-5 lessons learned from this event by your State/Territory, including local jurisdictions:
  - ▶ Public Information and Messaging Coordination
    - ▶ Need to quickly stand-up Public Information Team/JIC to counter misinformation
  - ▶ Pre-Scripted Messaging and Templates
    - ▶ Critical for timely, consistent communication
  - ▶ Public Outreach, Education, and Community Preparedness
    - ▶ Outreach efforts effective (many self-evacuated), but reinforcement needed to reduce unnecessary evacuations, and strengthen understanding of hazard zones, routes, and protective actions.

# MES Kamchatka Tsunami Event Briefs

- American Samoa

# American Samoa

## Overview of Kamchatka 29 July 2025 event

- While operations were ongoing for Adverse Weather Event (Governor's Office issued the State of Emergency for AS, and EOC was Fully Activated on July 28, 2025), a No-Notice Event occurred.
- At approximately 12:25 PM SST, an 8.8 magnitude EQ occurred off the eastern coast of Russia near the Kamchatka Peninsula generating destructive wave.
- At approximately 12:30 PM, PTWC via WSO Pago contacted the EOC and informed the TCO of the Kamchatka EQ and subsequent tsunami. It was also stated that even though a bulletin has been issued for American Samoa, there is no official product (WARNING, ADVISORY, WATCH, OR INFORMATIONAL STATEMENT) provided due to data still being analyzed but the expected arrival time of the first waves was approximately 9:26 PM (Swains) in the evening.
- The first official product for American Samoa was included in a bulletin that was issued by PTWC at approximately 3:00 PM which was a TSUNAMI ADVISORY (status/level below a TSUNAMI WARNING, mainly for maritime hazards or hazardous conditions that may occur within the water with some effects to low-lying coastal areas) for the Territory. The EOC issued a corresponding PSA with precautions for the public to stay out of the water or away from low lying coastal areas and also provided the expected arrival time of the waves.
- EOC did not issue a mass evacuation order nor activated the early alert tsunami sirens because the event was only an advisory (Evacuation Order and Siren Activation are ONLY for a TSUNAMI WARNING).
- At approximately 7:42 PM, Office of Samoan Affairs dispersed village mayors to assist with notifying their respective villages of the tsunami advisory for American Samoa.
- At approximately 7:57 PM, WSO Pago was on site (EOC) to go LIVE.

- At approximately 9:00 PM, EOC dispatched observation teams to the East, Central and West sides of Tutuila Island to monitor the ocean conditions.
- At approximately 9:49 PM, EOC personnel on the Manu'a Islands dispatched to monitor the ocean conditions. Some residents on Ta'u evacuated inland and/or high grounds. Residents on Ofu and Olosega did not evacuate.
- At approximately 10:14, Marine Patrol reported strong currents in Fagatogo Village.
- At approximately 10:21 pm, Matu'u residents reported higher tides than normal.
- At approximately 10:51 pm, Fagasa residents reported hearing the village bell go off causing people to panic but advised the ocean levels are normal.
- At approximately 10:57 pm, Masefau residents reported ocean coming onto the main road bringing small rocks (Small Craft Advisory, High Surf Warning for South shores, High Surf Advisory for North shores and Flood Watch were all in effect).
- At approximately 11:26 pm, Matafao Shelter that housed 8 displaced families from adverse weather conditions self evacuated to the back of the LBJ Hospital.
- First reports of receding ocean was reported at approximately 11:30 PM followed by reports of minor inundation especially in the bay area.
- At approximately 12:09 am, WSO Pago and TCO steamed LIVE advising the public on the latest tsunami advisory event.
- Following the "special tsunami event report," EOC had been advised residents in the coastal villages have returned back to their homes.
- At approximately 2:00 am, incoming call from WSO Pago informing EOC the Tsunami Advisory is now cancelled.
- At approximately 2:30 am, PSA was sent out to all Media Partners of a Cancelled Tsunami Advisory.

# *American Samoa:*

## Lessons learned from 29 July 2025 event

- Coastal villages (Bay Area, Masefau and Fagasa Villages) chose to self evacuate to higher grounds in an “Advisory” event. Fagatogo and Fagasa utilized the village bell system in an “Advisory” event.
- Public called EOC to confirm definition of advisory level, and asked for recommendations.
- Villages situated inland and/or higher grounds did not deem necessary or urgent to evacuate.
- Outreaches have proven to be an effective tool in helping to navigate actions to take during a tsunami event.

# MES Kamchatka Tsunami Event Briefs

- Guam

# Guam:

## Overview of Kamchatka 29 July 2025 event

- ▶ Timeline of operational actions
  - ▶ First JIC Release: 0950am
  - ▶ Followed Tsunami Response Annex
  - ▶ All Clear: 6:40pm
- ▶ Forecast of Arrival Times and Wave Heights.
  - ▶ GHS/OCD public affairs issued seven (7) news releases, with the first at 9:50 a.m., July 30, concluding at 6:40 p.m., July 30 (ChST) in close coordination with NWS.
  - ▶ .5 ft – 3ft 24-58 minute wave period
- ▶ Actual Arrival Times and Wave Heights.
  - ▶ .5 feet 10 minute wave period
- ▶ Impacts.
  - ▶ No reported impacts

# *Insert name of State/Territory:*

## Lessons learned from 29 July 2025 event

- ▶ Insert top 3-5 lessons learned from this event by your State/Territory, including local jurisdictions. (*Broad overview including any evacuations and all-clear. Detailed timeline can be added or linked to in “Notes” section of slide.*)
  - ▶ Highlight any Education and Outreach lessons learned
    - ▶ Educating on the Differences in Tsunami Alert Levels
    - ▶ Guam advertises the worst case scenario maps not regional & distant
    - ▶ Public sentiment varied from different sources – the AHAWS sirens were not utilized and some social media commenters wondered why. GHS/OCD worked to explain in local media interviews that our office was prepared to use the AHAWS sirens if Guam was upgraded to a Tsunami Warning, instead of an Advisory.
  - ▶ Are there opportunities for the NTHMP MES to collaborate on topics that could support education and outreach from these lessons learned?




# MES Kamchatka Tsunami Event Briefs


- Washington


# WA State Kamchatka Tsunami Advisory Overview

- **7/29 at 4:25 PM PT:** M8.0 earthquake 22 miles deep off the coast of Kamchatka, Russia. West Coast issued an "Undetermined Danger" Information Statement.
- **5:19 PM PT:** Magnitude revised to M8.7 (eventually M8.8 – 7<sup>th</sup> largest EQ in recorded history) and Washington upgraded to a Tsunami Watch. First WA State Tsunami Coordination Call at 6:00 and every subsequent hour through event cancellation.
- **6:27 PM PT:** Washington further upgraded to a Tsunami Advisory.
- **7/30 at 10:20 AM PT:** Washington's Advisory cancelled. Last State Tsunami Coordination Call (#18) at 11:00 AM, ending state response.
- Tsunami response lasted approximately 18.5 hours. Highest recorded wave height in WA was 1.4 ft. No casualties or damage reported for WA.

**HEADS UP – TSUNAMI ADVISORY!**


 OUTER COAST, COASTLINES OF THE STRAIT OF JUAN DE FUCA, COASTLINES OF THE SAN JUAN ISLANDS, & NORTHERN INLAND COASTLINES

 Dangerous waves & strong currents with wave heights between 1-3 feet. The first wave may not be the biggest.

 Stay out of the water and away from the shore. Move off the beach and out of harbors and marinas.

[View latest advisory info at www.tsunami.gov](http://www.tsunami.gov)

Issued: 5:19 PM PDT



# WA State Kamchatka Tsunami Advisory – Forecast vs Actual

- **La Push:** 2335 PDT – 0013 (38 mins later)
- **Neah Bay:** 2340 PDT Jul 29 – 0041 (61 mins later)
- **Long Beach:** 2345 PDT Jul 29 – No gauge
- **Moclips:** 2350 PDT Jul 29 – No gauge
- **Westport:** 2355 PDT Jul 29 – 0029 (34 mins later)
- **Port Angeles:** 0020 PDT Jul 30 – 0100 (40 mins later)
- **Port Townsend:** 0045 PDT Jul 30 – 0133 (48 mins later)
- **Bellingham:** 0110 PDT Jul 30 – No gauge
- **Tacoma:** 0200 PDT Jul 30 – 0233 (33 mins later)

# WA State Kamchatka Tsunami Advisory – Best Practices

- Tribal partners and WA Parks, USCG, WGS, and NWS brought expertise throughout the night to assist those participating in the annual Tribal Canoe Journey
- Quick actions by WA Parks to notify campers and those along waterfront areas of the outer coast
- Non-functioning tsunami siren information shared with partners in case the network needed to be activated
- Social media messaging consistent, partners utilized canned messaging and graphics; event generated new sign-ups for local alerts, as well as 8500% increase in visits to mil.wa.gov/tsunami
- Ongoing coordination on the Teams link between WA State Coordination Calls

Washington State Parks & Recreation Commission

4h · 🌐

A tsunami advisory has been issued for Washington's outer coast. Ocean beaches are closed and people are advised to stay ... See more

**TSUNAMI ADVISORY**

BEACH CLOSED

Stay **OUT OF WATER** and **AWAY FROM SHORE**, including harbors and marinas!  
Dangerous waves and currents expected.

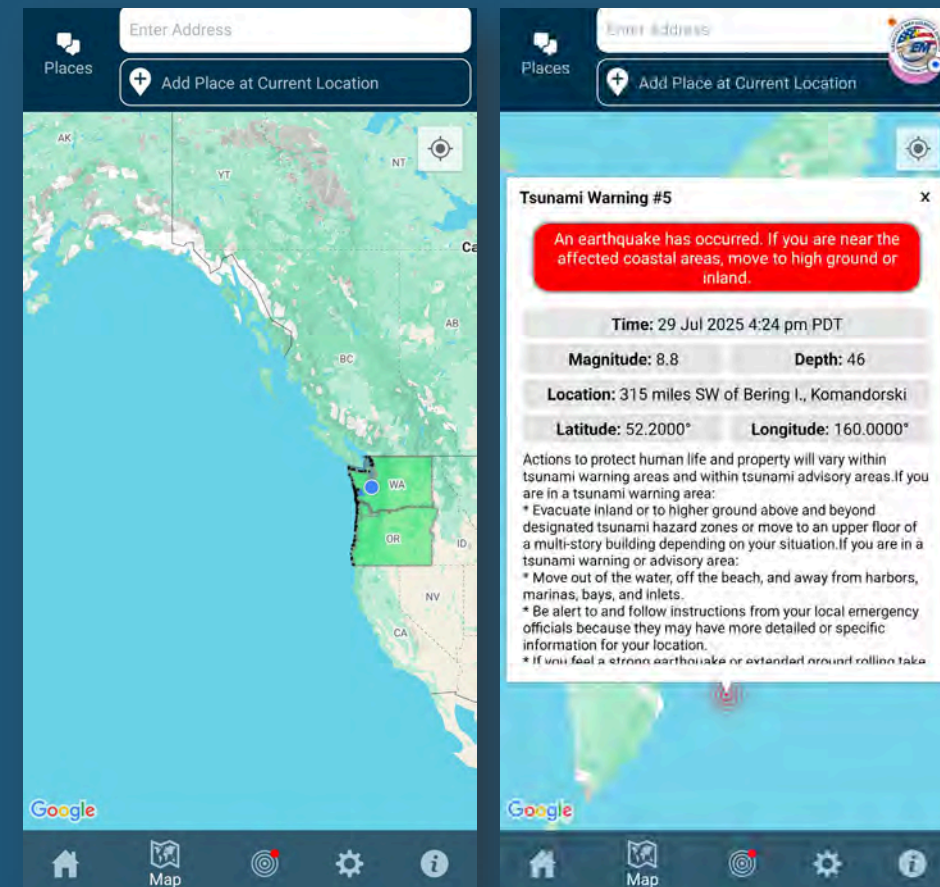
Views by

PAGE TITLE AND S...	IEWS
Tsunami   Washingto...	24K ↑8,526...
Alerts   Washington ...	8.3K ↑404.1%
Tsunami Resources [...	8.3K ↑4,435...
Home   Washington ...	2.6K ↑86.7%
Emergency Manage...	2.3K ↑122.2%

15 comments 495 shares

# WA State Kamchatka Tsunami Advisory – Areas for Improvement

- Inconsistencies in Everbridge message titles and contents – additional training for duty officers and corrections to SOPs
- Continuing to advocate for alerting improvements within NTWC’s systems (removal of “danger still being evaluated” phrasing, additional breakpoints for WA, clarity on tsunami bulletin content and NTWC processes)
- Improving internal staffing patterns for extended tsunami response
- NANOOS NVS Tsunami Evac app only showed CA’s warning, not OR and WA alert levels
- More canned messaging for “undetermined danger” and “why we don’t know what we don’t know”, “what to expect when/if this happens”



# MES Kamchatka Tsunami Event Briefs

- California

### Timeline of operational actions:

- **1625-1645 PDT July 29<sup>th</sup>:** Cal OES Seismic Hazards Branch Duty Officer (SHBDO) evaluates notifications of preliminary M8.0 EQ and NTWC Bulletin#1.
- **1719 PDT July 29<sup>th</sup>:** NTWC Bulletin#2. Tsunami Watch for all CA
- **1827 PDT July 29<sup>th</sup>:** NTWC Bulletin #3. Tsunami Advisory for all CA
- **2027 PDT July 29<sup>th</sup>:** NTWC Bulletin #5. Tsunami Warning for parts of CA. Tsunami Advisory for all other parts of CA.
- **2100-2200 July 29<sup>th</sup>:** CTP Issues Tsunami Playbook Recommendations
- **0519 July 30<sup>th</sup> through 0717 July 31<sup>st</sup>:** NTWC Tsunami Alert Cancellations for CA (Bulletin #14 - #35).
- **~39 hours:** CTP Kamchatka Tsunami Event Response Duration

### Forecast of Arrival Times and Wave Heights:

- First wave arrivals forecast between approximately 2350 July 29th to 0115 July 30<sup>th</sup> from Northern California to Southern California Including San Francisco Bay.
- Wave height forecasts ranging from less than 1-foot up to over 5-feet.
- Tsunami duration forecasts ranging from 9-hours to 36 hours

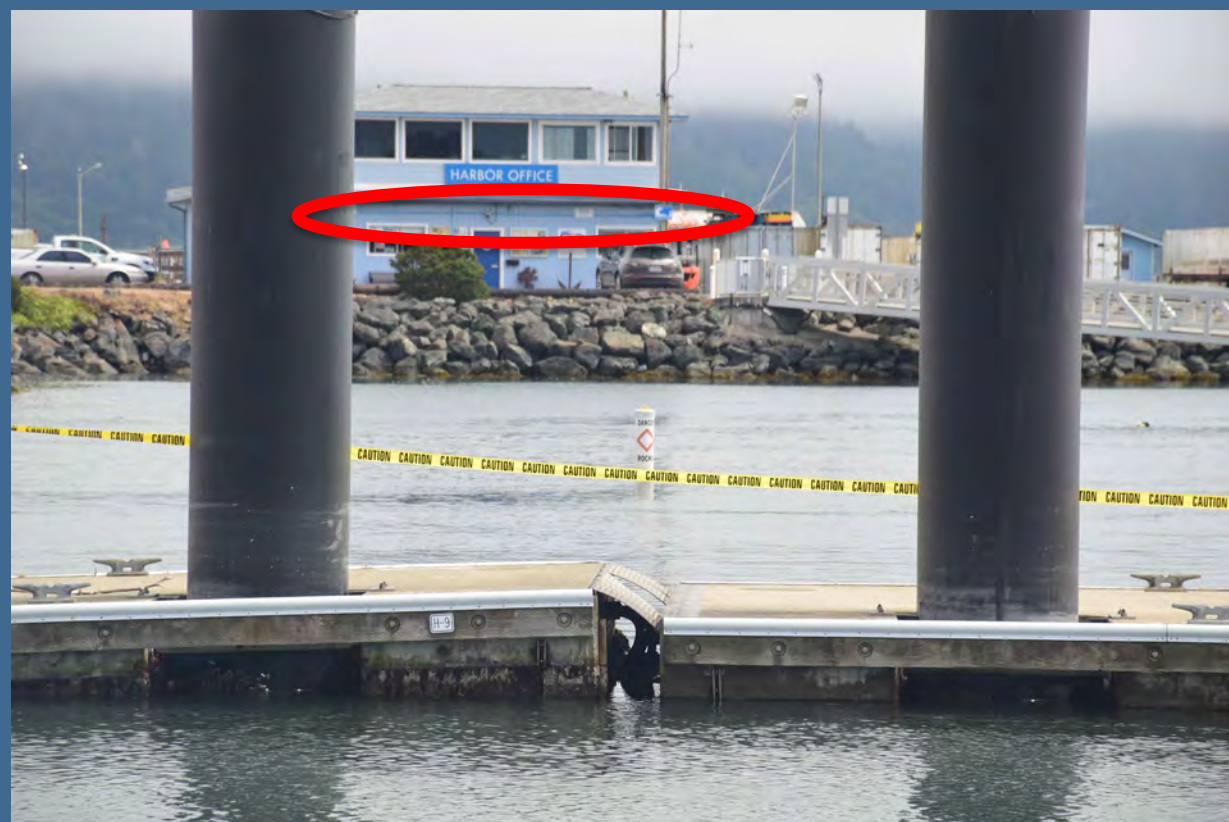
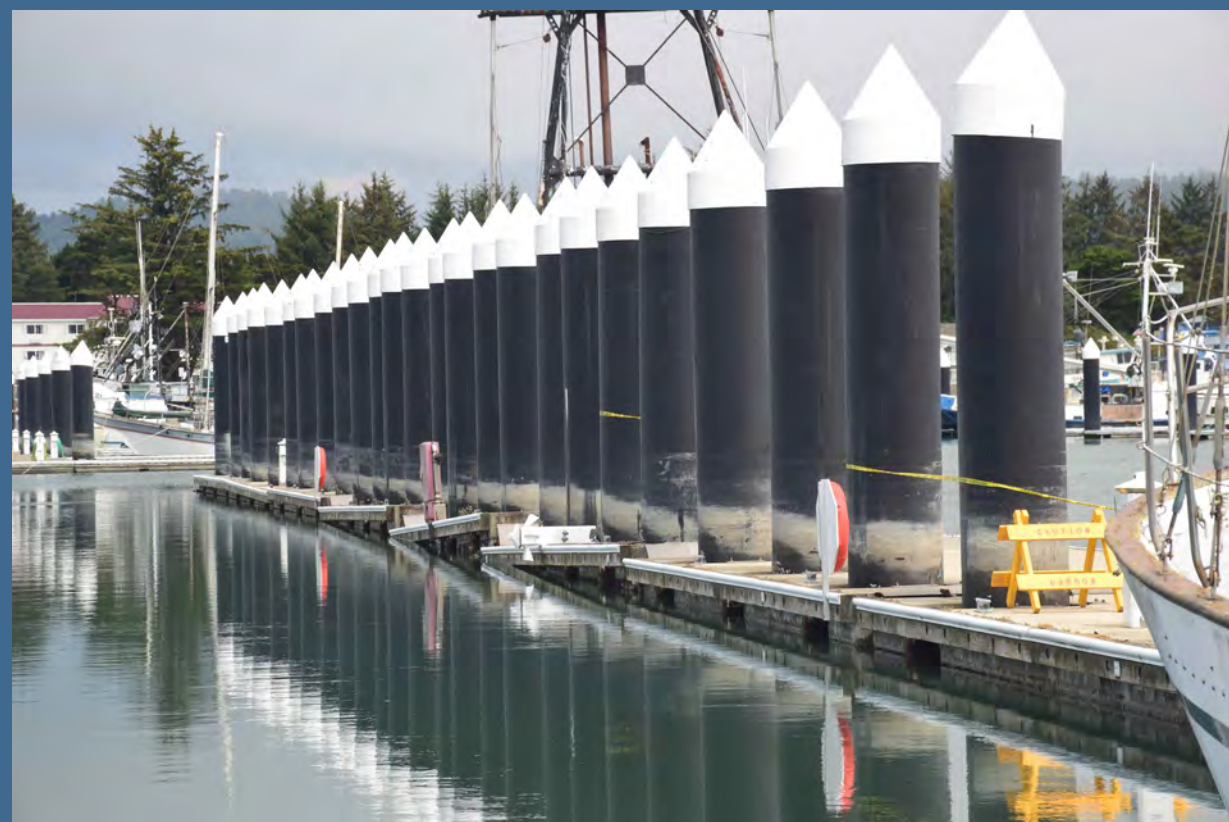
### Actual Arrival Times and Wave Heights:

- First wave arrivals were generally 30 to 45 minutes later than initial forecast.
- Max tsunami wave heights reported were approximately less than 1-foot to almost 4-feet.
- Max tsunami wave heights arrivals were upwards of 6 to over 12 hours after first wave arrival in some locations.



### Impacts:

- Harbor docks in Crescent City sustained damage. Damage estimated at \$1,000,00
- Damage to connecting plates between the docks and electric cabling.



Photos by Jay Patton, California Geological Survey

### What Went Well:

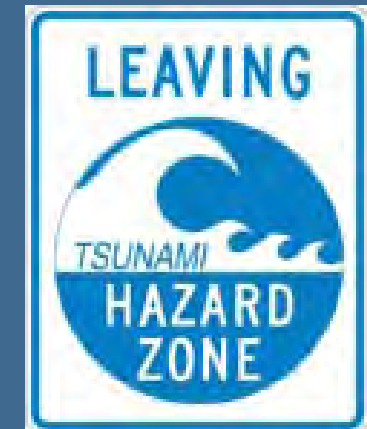
- Exercise-Exercise-Exercise
- Coordination Calls
- Evacuations and Waterfront Closures
- Education and Outreach
- Partnerships
- Teamwork

### Lessons Learned:

- Test systems
- Event duration
- Education and Outreach



**No Casualties!**



# MES Kamchatka Tsunami Event Briefs

- Oregon

# Next Meeting

- Date/Time
  - Wednesday, November 19<sup>th</sup>, 2025
  - 1300-1400 PT
- New meeting platform:
  - MES will switch to using Google Meet.
  - Updates will be sent in an email and a new calendar invite.

# NTHMP Proposed WEA Language Revisions

- Coordinated by WCS. Voted for recommendation to NOAA by CC.

- WCS: WEA Wording Recommendation:

- English & Spanish versions of 360-character limit

- The National Weather Service has issued a TSUNAMI WARNING. A series of dangerous, life-threatening currents and waves are expected to flood low-lying coastal areas. MOVE TO HIGH GROUND OR INLAND NOW to prevent injury or death. Stay away until local officials say you can return. Check your official sources or tsunami.gov for more information.**

- El SNM ha emitido un AVISO DE TSUNAMI. Se espera corrientes y olas que inunden zonas costeras bajas cercanas peligrosas para la vida y propiedad. MUÉVASE AHORA A UN LUGAR ALTO O ALEJADO DE LA COSTA para evitar heridas o muerte. No regrese hasta que autoridades indiquen es seguro. Consulte sus fuentes oficiales o tsunami.gov para más información.**

- English & Spanish versions of 90-character limit

- NWS: TSUNAMI WARNING! Danger at the coast. MOVE TO HIGHER GROUND OR INLAND NOW.**

- SNM: AVISO DE TSUNAMI! Peligro en zonas costeras. MUÉVASE AHORA A UN LUGAR ALTO O ALEJADO.**