NTHMP MES Meeting – February 2, 2022

Welcome Everyone

*Please record your name and agency/affiliation in the chat

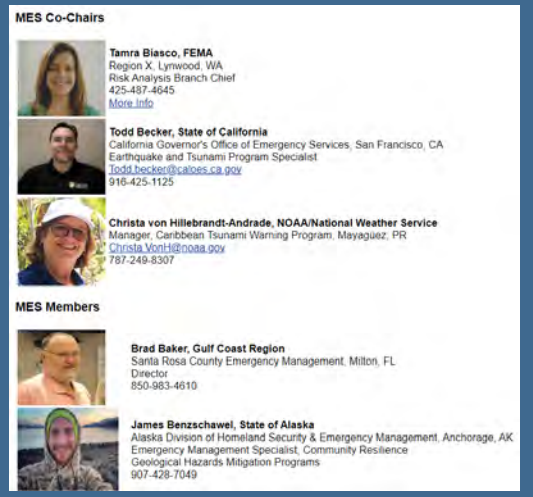
Agenda:

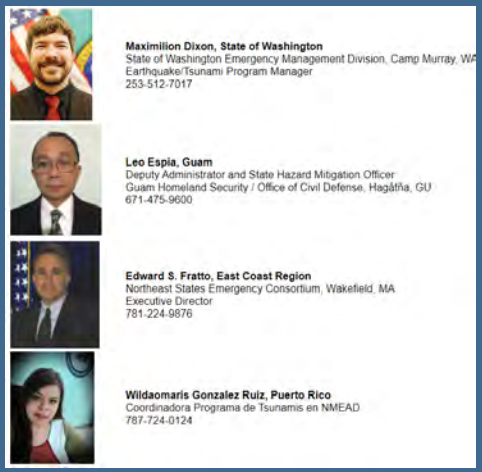
- MES Terms of Reference and Work Plan
- Lightning Briefs
- Pacifex
- Chairpersons Election

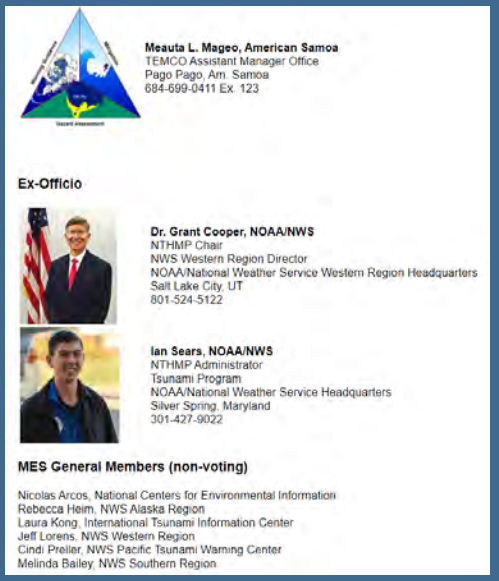
NTHMP MES Terms of Reference

https://nws.weather.gov/nthmp/documents/MESTermsofReference.pdf

- **Purpose:** Works to reduce tsunami impacts primarily through education and outreach that increase awareness and encourage preparedness and resilience. Also Promotes and provides guidance on other risk reduction activities
- **Membership:** 12 state emergency management representatives, one from each of the regions of the NTHMP Coordinating Committee, FEMA and NOAA and non-voting members that support MES goals and objectives. The NTHMP Administrator is an ex-officio member. https://nws.weather.gov/nthmp/mesbios.html
- **Leadership:** Chair, First Vice Chair, and Second Vice Chair, 1 year in each role
- **Communications:** In-person meetings are usually held bi-annually in conjunction with NTHMP meetings. Between in person meetings, communication will occur primarily through email and conference calls;
- **Activities:** The MES will develop an annual work plan that describes MES activities to be accomplished during the calendar year and submit it for approval at the annual meeting by the Coordinating Committee.







MES 2021 Work Plan

NTHMP SUBCOMMITTEE 2021 ANNUAL WORK PLAN

Subcommittee:_____Mitigation & Education_____ Version date:_____1.20.2021_____

Activity	Strategy(ies) addressed (#)	Action Step(s)/Milestones	Activity Lead and workers	Dependencies	Metrics – expected outcome and target date
MES – 2021 TsunamiZone.org	2.1.3 Conduct training and educational outreach events and campaigns	• Update/Provide/develop content • Develop outreach campaign • Register activities • Register individuals	SCEC, CA, PR, USVI, WA, OR, AK, HI, CTWP, Guam,	NOAA Grant (CA)	Ongoing Increase state/territory web pages, PR and USVI pending Include unique yet consistently messaged content provided by NTHMP Partners Increase national and international registration annually Incorporate World Tsunami Day – Nov. 5th Pages available for: OR, WA, AK, Guam, CA, HI, Caribbean.

UPDATE WITH 2022 GOALS

MES 2021 Work Plan

MES – 2021 Social Science Project	2.1.4: Conduct and incorporate social science evaluation of tsunami education outreach effectiveness	Evaluate evacuation products. • Maps • Outreach brochures ☒ Mike Lindell was the Social Scientist was contracted ☒ Conducted survey in three states/locations. ☐ Results discussed; report developed and outreach materials developed	Dixon (lead), Richards, Rizzo, LaDuke, Hahn	NOAA Grant (WA) MES Subcommittee-endorsed Allowable Grants activity #22	**COMPLETED** Presentations made and report shared. Todd will upload to a Google Drive and share all documents with MES. Also to be posted on NTHMP website. The goal was to compare evacuation products from the participating states/territories, showing them to different audiences in different locations, in order to learn what works best at: informing these audiences on risk and evacuation/preparedness actions; and motivating them to take appropriate actions. Additional work was done by M. Lindell for Oregon, outside of the NTHMP grant. Guam is considering including Social Science activity for 2021 grant cycle focusing on alert communication, focus on cultural sensibilities. PR has social science project under FY20 grant (alert

COMPLETED

MES 2021 Work Plan

MES – 2021 Complete additional components of Maritime Guidance Document and Website	2.2.2 Increase TsunamiReady Communities 2.4.1 Engage stakeholders on preparedness and response 4.2.2 Improve community warning point reception capabilities	Develop National Guidance using MES/NTHMP partner Existing protocols Objectives included the following: • Update mapping and modeling guidance. Include reference of criteria/guidance for analysis of modeled tsunami currents/velocities • Initiate development of preparedness, response, mitigation and recovery guidance • Incorporate special guidance for various customers, especially large ports, the cruise industry, U.S. Navy, and the U.S. Coast Guard. • Develop website (in progress)	LaDuke, Wilson, Richards, Waddell, Biasco, Dixon, Rizzo, Preller, Becker, Witcraft, Kong, von Hillebrandt	NOAA Grant (CA) Allowable grants activity #21: Evacuation Products/Tools Guidance • MMS Input/Coordination required • Ongoing funding from FEMA to California helps leverage work on guidance for currents and mitigation/recovery (need to confirm funding still extists).	Ongoing NTHMP guidance document for consistent Response, Planning Situational Assessment Alert and Warning Risk and Disaster Resilience Assessment The document was used to update the website. Need to follow-up with the status of the document and if the website replaces the document. Web site using a google site was set up by California, https://sites.google.com/view/tsunami-maritime-guidance/home there is a form for feedback. For FY21 California is proposing to migrate into Story Map Format, would need to integrate comments from other partners.

COMPLETED

MES 2021 Work Plan

MES – 2021 Tsunami Exercise Planning	Goal 2.3: Exercises effectively supported Exercises enhance the efficiency and effectiveness of tsunami disaster management when dealing with real events. Strategy 2.3.1: Conduct exercises that include tsunami scenarios	• Establish Calendar for Pacifex and Lantex (NTWC), and CaribeWave and PACWAVE (PTWC/ITIC/CTWP) for next three years. • Establish desired scenarios for the above exercises • Discuss additional exercise development and planning considerations (virtual exercise) • Discuss inputs from MMS and add'l externally-provided inputs • Other EX (e.g. NLE, Cascadia Rising,	von Hillebrandt, Ohlendorf, LaDuke, Tappero Kong	PTWC and NTWC with stakeholders to decide on dates/scenarios for 2021, 2022 and 2023 exercises.	Scenario and dates selected for CARIBE WAVE 21, pending selection of scenario for LANTEX 21 and decision on PACIFEX 21 (plan is to use the 2020 scenarios) PTWC is responsible for supporting exercises in HI, PR/VI, Guam, Samoa, Marianas, CNMI TsunamiZone to include additional regions to track participation. Because of COVID, Guam and CNMI the 2021 exercise will be virtual For 2022 Cascadia Rising will take place in June, pending to see integration of tsunami scenarios Similar actions on WCS – need to define MES vs WCS actions.

UPDATE 2022 AND 2023 PLANNING, EXECUTION AND REPORTING

MES 2021 Work Plan

MES – 2021 Mitigation and Recovery Group	Goal 3.1: Mitigation and recovery strategies initiated and incorporated into long-term community planning Strategy 3.1.1: Develop guidelines and model practices for mitigation and recovery for communities and critical infrastructure Strategy 3.1.2: Implement guidelines and model practices for mitigation and recovery	•	Wilson, Dixon, Siok	None	DONE – Mitigation and Recovery Planning Work Group was established

COMPLETED

MES 2021 Work Plan

MES 2021 "TsunamiReady Tier 2" communities development	Strategy 2.2.2: Increase number of recognized TsunamiReady Tier 2 Communities	1. Develop brochure describing BENEFITS of achieving "TR Tier 2" status - pending 2. Develop NTHMP Vertical Evacuation Guidance • Provide lessons learned from case studies of new construction implementation • Washington 3. Develop Guidance for communities use & mitigation regarding existing structures – pending - California	Becker, Dixon	NWS WFO	Manila and King Salmon, California TsunamiReady Tier 2 recognition (2019) No other partners working on Tier 2 Washington will be updating 2018 VES Guidance based on lessons learned. FEMA P646 is Available. Should action(s) be made for TsunamiReady Tier 1? To discuss with Ian Sears.

UPDATE?

2030: 100% TSUNAMI READY – OCEAN DECADE GOAL

Next Steps

- Update Membership of MES on NTHMP Page
- Election of New 1rst and 2nd Vice Chairs
- Prepare 2022 MES Workplan

MES Partner Lightning Briefs

- U.S. East Coast
- Washington
- Guam
- CNMI
- California
- Alaska
- TsunamiZone
- Puerto Rico
- U.S Virgin Islands
- ITIC

U.S. East Coast

US EAST COAST (USEC) NTHMP MES Lightning Presentation

HAZUS Tsunami Risk Awareness State Assessments

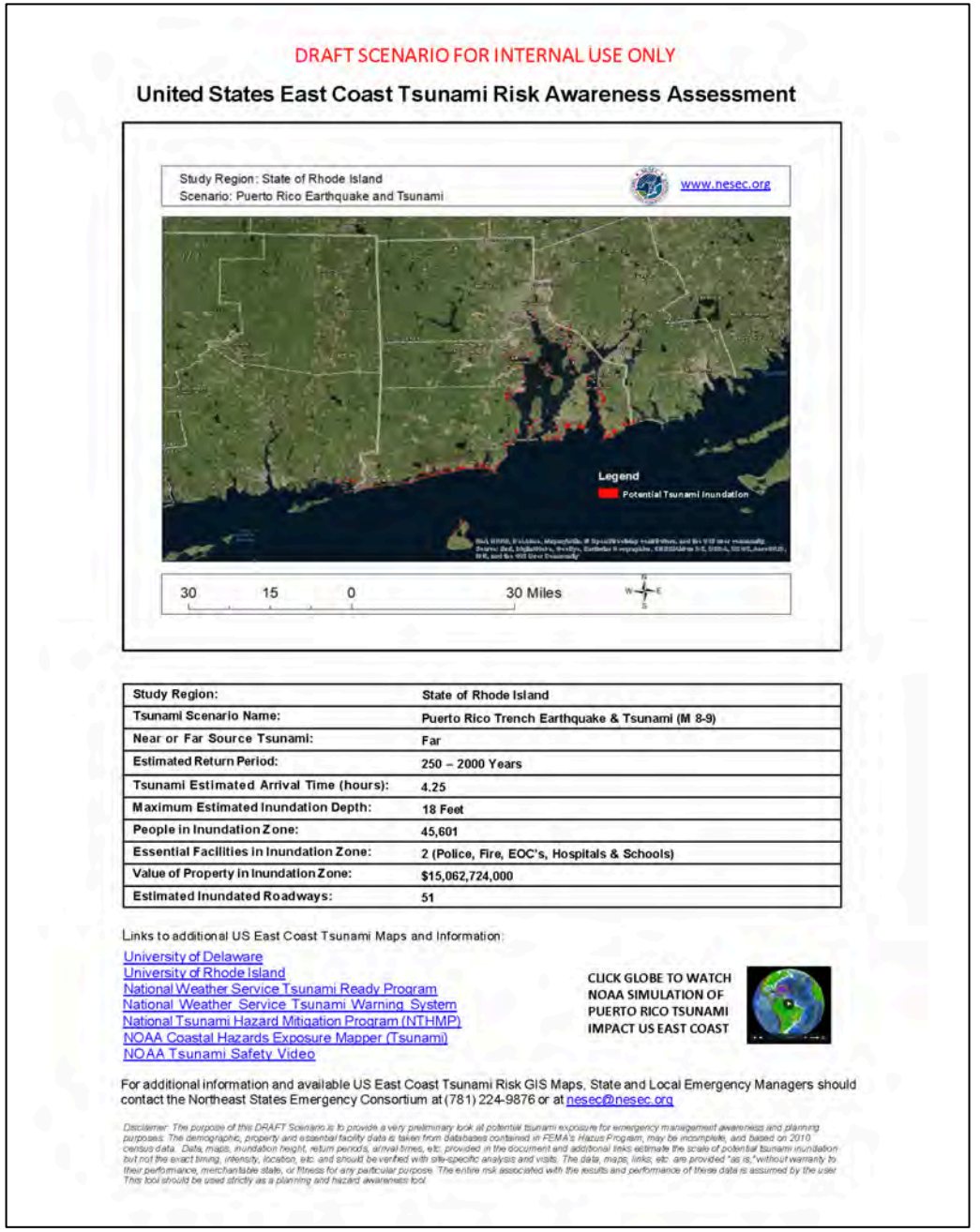
Current Status

- **Hazus Tsunami is not currently functional for the USEC.**
- **Developing Tsunami Risk Assessments by county utilizing GIS, Hazus data, inundation maps, estimated return periods and arrival times.**
- **With assistance from FEMA's Hazus Help Desk (Doug & Colin) I was able to make Hazus fully functional for the State of Rhode Island by updating the code .**

FY22 and Beyond Planning

- **Move from county to whole state Hazus Tsunami capability and high resolution map development.**
- **Possible discussions with FEMA to expand Hazus to include all 14 USEC States.**
- **If not successful, form a partnership to update Hazus code for remaining 13 USEC States (est. 4-8 hours per state).**
- **Potential for MES collaboration and partnership.**

Edward S. Fratto, Executive Director Northeast States Emergency Consortium (NESEC)



DRAFT SCENARIO FOR INTERNAL USE ONLY

United States East Coast Tsunami Risk Awareness Assessment

Study Region: State of Rhode Island
Scenario: Puerto Rico Earthquake and Tsunami

www.nesec.org

Legend
Potential Tsunami Inundation

30 15 0 30 Miles

Study Region:	State of Rhode Island
Tsunami Scenario Name:	Puerto Rico Trench Earthquake & Tsunami (M 8-9)
Near or Far Source Tsunami:	Far
Estimated Return Period:	250 – 2000 Years
Tsunami Estimated Arrival Time (hours):	4.25
Maximum Estimated Inundation Depth:	18 Feet
People in Inundation Zone:	45,601
Essential Facilities in Inundation Zone:	2 (Police, Fire, EOC's, Hospitals & Schools)
Value of Property in Inundation Zone:	$15,062,724,000
Estimated Inundated Roadways:	51

Links to additional US East Coast Tsunami Maps and Information:

University of Delaware
University of Rhode Island
National Weather Service Tsunami Ready Program
National Weather Service Tsunami Warning System
National Tsunami Hazard Mitigation Program (NTHMP)
NOAA Coastal Hazards Exposure Mapper (Tsunami)
NOAA Tsunami Safety Video

CLICK GLOBE TO WATCH NOAA SIMULATION OF PUERTO RICO TSUNAMI IMPACT US EAST COAST

For additional information and available US East Coast Tsunami Risk GIS Maps, State and Local Emergency Managers should contact the Northeast States Emergency Consortium at (781) 224-9876 or at nesec@nesec.org

Disclaimer: The purpose of this DRAFT Scenario is to provide a very preliminary look at potential tsunami exposure for emergency management awareness and planning purposes. The demographic, property and essential facility data is taken from databases contained in FEMA's Hazus Program, may be incomplete, and based on 2010 census data. Data, maps, inundation height, return periods, arrival times, etc. provided in the document and additional links estimate the scale of potential tsunami inundation but not the exact timing, intensity, location, etc. and should be verified with site-specific analysis and visits. The data, maps, links, etc. are provided "as is," without warranty to their performance, merchantable state, or fitness for any particular purpose. The entire risk associated with the results and performance of these data is assumed by the user. This tool should be used strictly as a planning and hazard awareness tool.

US EAST COAST (USEC)
NTHMP MES ⚡Lightning Presentation

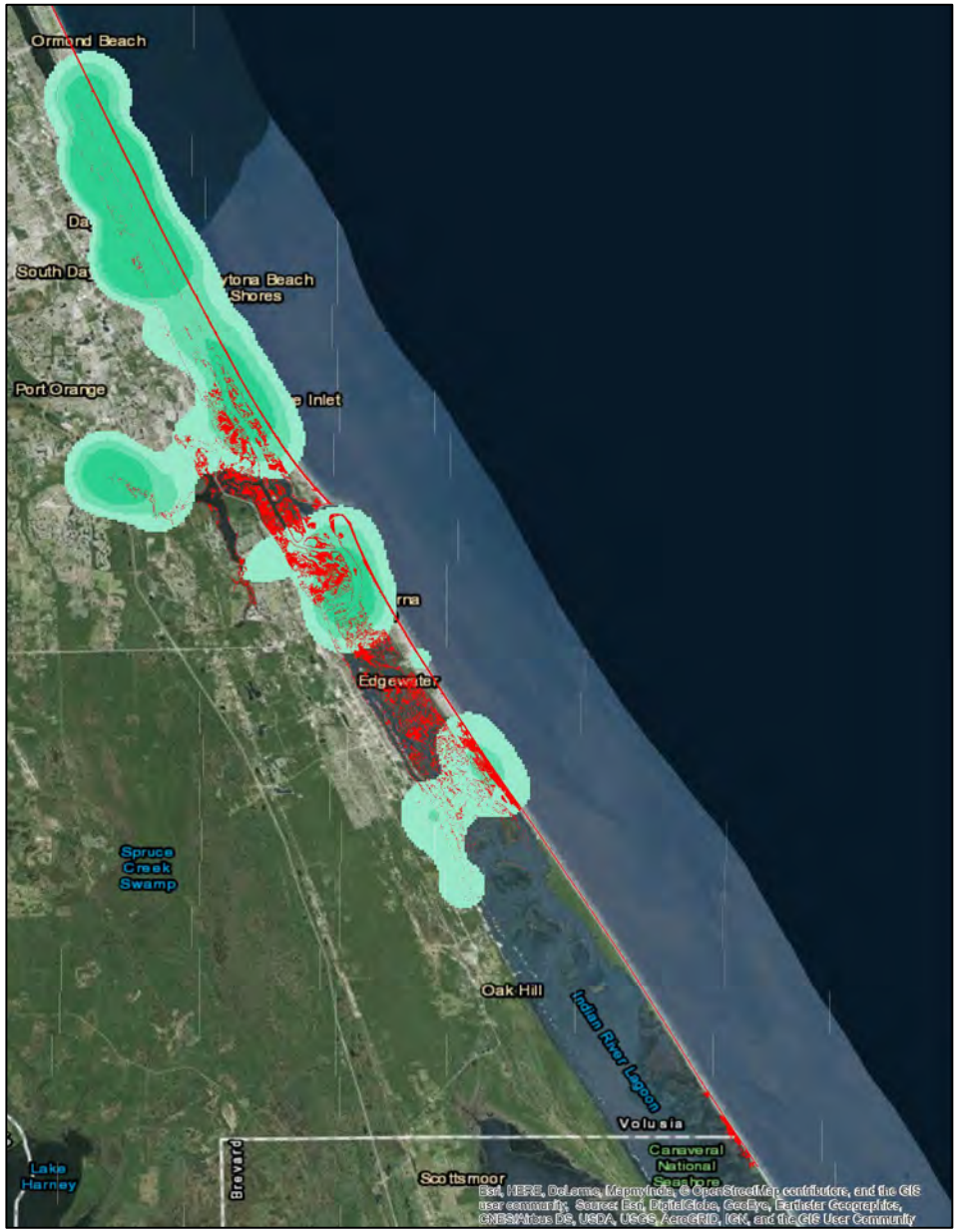
Social Vulnerability and Equity Analysis for Tsunami Hazard Mitigation and Emergency Planning

Current Status

- **Developing a prototype GIS process (Using Hazus data) to identify potentially vulnerable populations relative to tsunami inundation.**
- **To promote equity and inclusion in tsunami related emergency management plans, procedures and mitigation activities.**

FY22 and Beyond Planning

- **Continue to develop and enhance the process.**
- **Possible development of a simple web based manual to share the process with others.**
- **Possible discussions with FEMA to expand Hazus Tsunami to include social vulnerability and equity analysis.**
- **Potential for MES collaboration and partnership.**

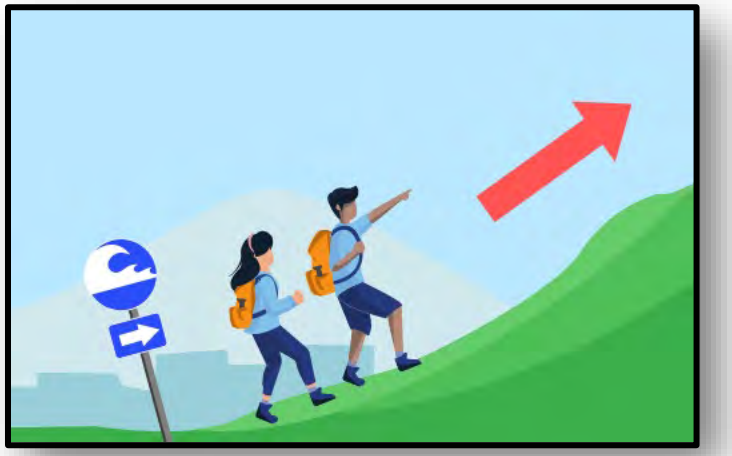


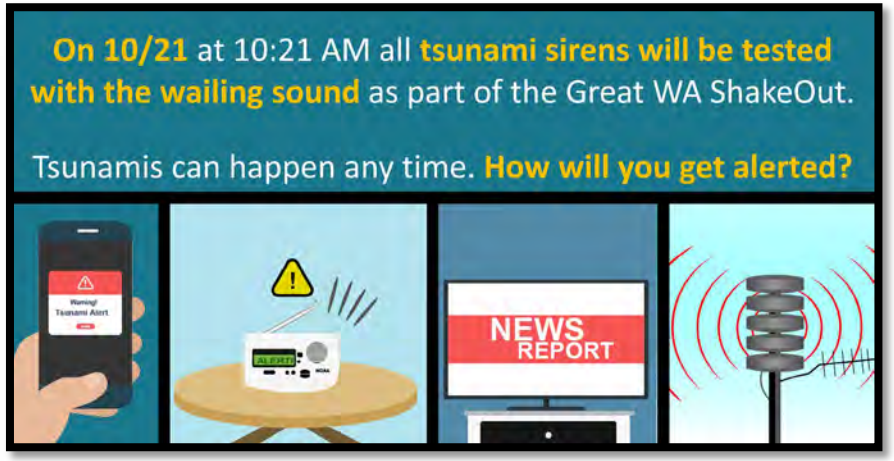
Edward S. Fratto, Executive Director Northeast States Emergency Consortium (NESEC)

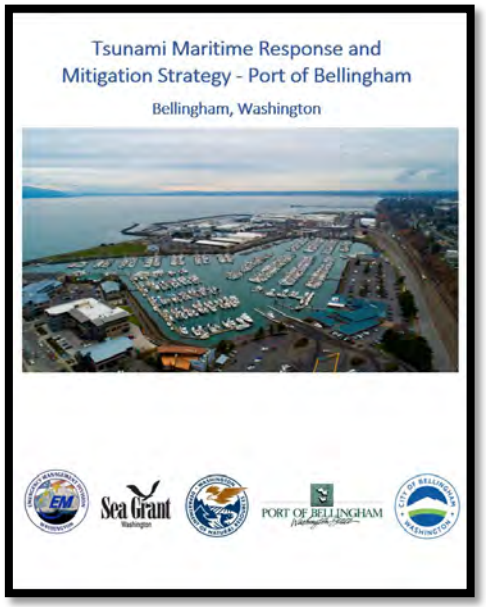
Washington

Washington Tsunami Program FY22 MES Objectives

1. **Education & outreach** – events, webinars, presentations, trainings, etc
2. **Maritime response & mitigation strategy** – location-specific mitigation and response recommendations, mapping, and other resources for TBD port/harbor
3. **Outer coast wayfinding assessment** – second part of a tsunami evacuation route assessment in high-risk outer coast communities using pedestrian evacuation walk maps to identify locations for new tsunami signs and routes that need maintenance

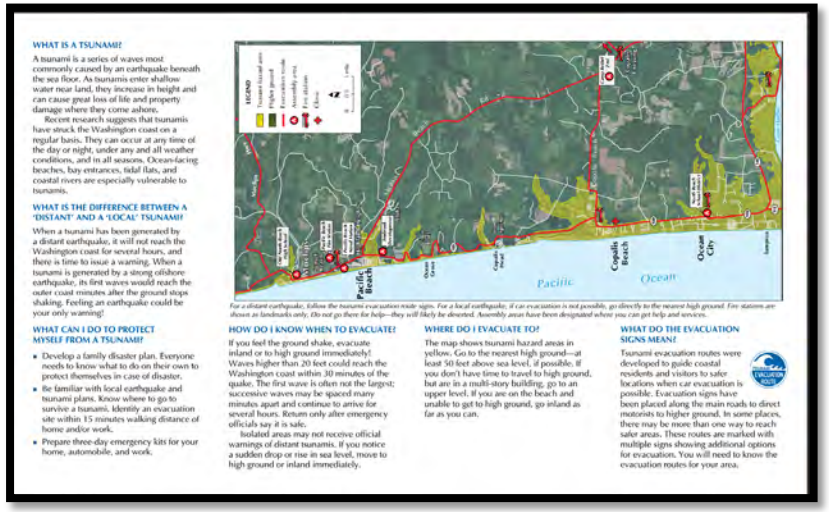






Washington Tsunami Program FY22 MES Objectives

4. **Outer coast brochure updates** – updates to previously published evacuation brochures for outer coast communities which do not have pedestrian evacuation walk maps to be used in the third (and potentially fourth) phases of the wayfinding project
5. **Tsunami signs** – purchase of new tsunami signs for local jurisdictions, as well as funding to contract with WSDOT to install signs on WSDOT-owned roads
6. **TsuInfo Alert newsletter** – continued publication of the *TsuInfo Alert* newsletter

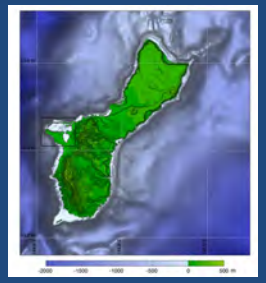


Guam

Guam Tsunami Program Goals

Hazard and Risk Assessment

- Threat and hazard assessments, all-hazards, in support of strategic planning and the Unified Coordination Group (UCG) priorities
- Implementation of risk mapping discovery and related risk assessment initiatives



Tsunami Education and Preparedness

- Enhanced community engagement and whole community approach
- Expansion and sustainment of Tsunami Ready communities
- Adoption of multi-year and integrated EM preparedness, planning, training and exercises

Mitigation and Recovery

- New potential mitigation actions are incorporated in the mitigation strategy
- Restructure the GHS/OCD Mitigation Section and the Guam Recovery Office

Alert Warning and Response

- Enhanced capability of the Watch Office / Territory Warning Point
- Redundant and integrated tsunami alert warning capability
- Community complete understanding of PTWC products, NWS Guam WFO forecasts, and relevant alert warning notifications

www.ghs.guam.gov
weather.gov/gum/

Guam Proposed FY2022 Program Activities

- Task 1: Travel to attend the NTHMP Meetings of the Guam Primary Emergency Management (EM) Representative and the Guam Alternate Emergency Management (EM) Representative.
- Task 2: Travels of the Guam Science Representative to attend the NTHMP Meetings and USGS Powell Center Working Group on Tsunami Sources – Pacific Sources Workshop.
- Task 3: Collaborate between NTHMP members by the Guam Primary Emergency Management (EM) Representative and the Guam Science Representative – with the Commonwealth of Northern Mariana Islands (CNMI) Homeland Security and Emergency Management (HSEM) in Saipan, CNMI.
- Task 4: Collaborate between NTHMP members by the Guam Primary Emergency Management (EM) Representative [or the Guam Alternate Emergency Management (EM) Representative] – with the Pacific Risk Management Ohana (PRiMO) in Honolulu, Hawaii.
- Task 5: Model and develop Tsunami Hazard Maps and products for the coastal communities. [NeoWave Modeling]
- Task 6: Update and print Guam's Tsunami Evacuation Maps.
- Task 7: Improve community awareness and education on preparing for and responding to Tsunamis.
- Task 8: Maintain TsunamiReady Programs and sustain the All Hazards Alert Warning System (AHAWS).
- Task 9: Expand alert warning notification utilizing Alertus Technologies and integrate available compatible systems.
- Task 10: Technical assistance on the Guam Tsunami Program and various aspects of Guam's hazards and risk mapping and modeling initiatives.
- Task 11: Support for a Tsunami Specialist assisting the SHMO in managing the Tsunami Program and grant.
- Task 12: Support MES on any collaborative mitigation and education initiatives.

www.ghs.guam.gov
weather.gov/gum/

CNMI

CNMI 2022 NTHMP Grant Cycle

- Fixed-Position Siren Warning/Alert System
- Technical Assistance from Charles Guard for CNMI Tsunami Program
- Awareness Training / Preparedness Exercises
- Awareness Education / Outreach Materials
- Evacuation, Assembly, and Hazard Zone Signage Upkeep & Maintenance

California

California Tsunami Program 2022

- Tsunami Preparedness Week - March 21-25, 2022
- TsunamiZone Registrations
- Tsunami Live Code Test and Playbook Communications Exercise – March 23, 2022
- Manila Tsunami Walk - March 19, 2022
- Tsunami Subject Matter Expertise for State Hazard Mitigation Plan Update (2023)
- Tonga Volcanic Eruption/CA Tsunami Advisory After Action Discussions and Report
- Expanded tsunami signage, evacuation maps, and kiosks
- Tsunami Hazard Area Map and Playbook update outreach to County/local partners
- Translation of RCTWG website and contents into Spanish
- Hazus Analysis Reports and Dashboards

Cal OES
GOVERNOR'S OFFICE
OF EMERGENCY SERVICES

California
Department of
Conservation

Alaska

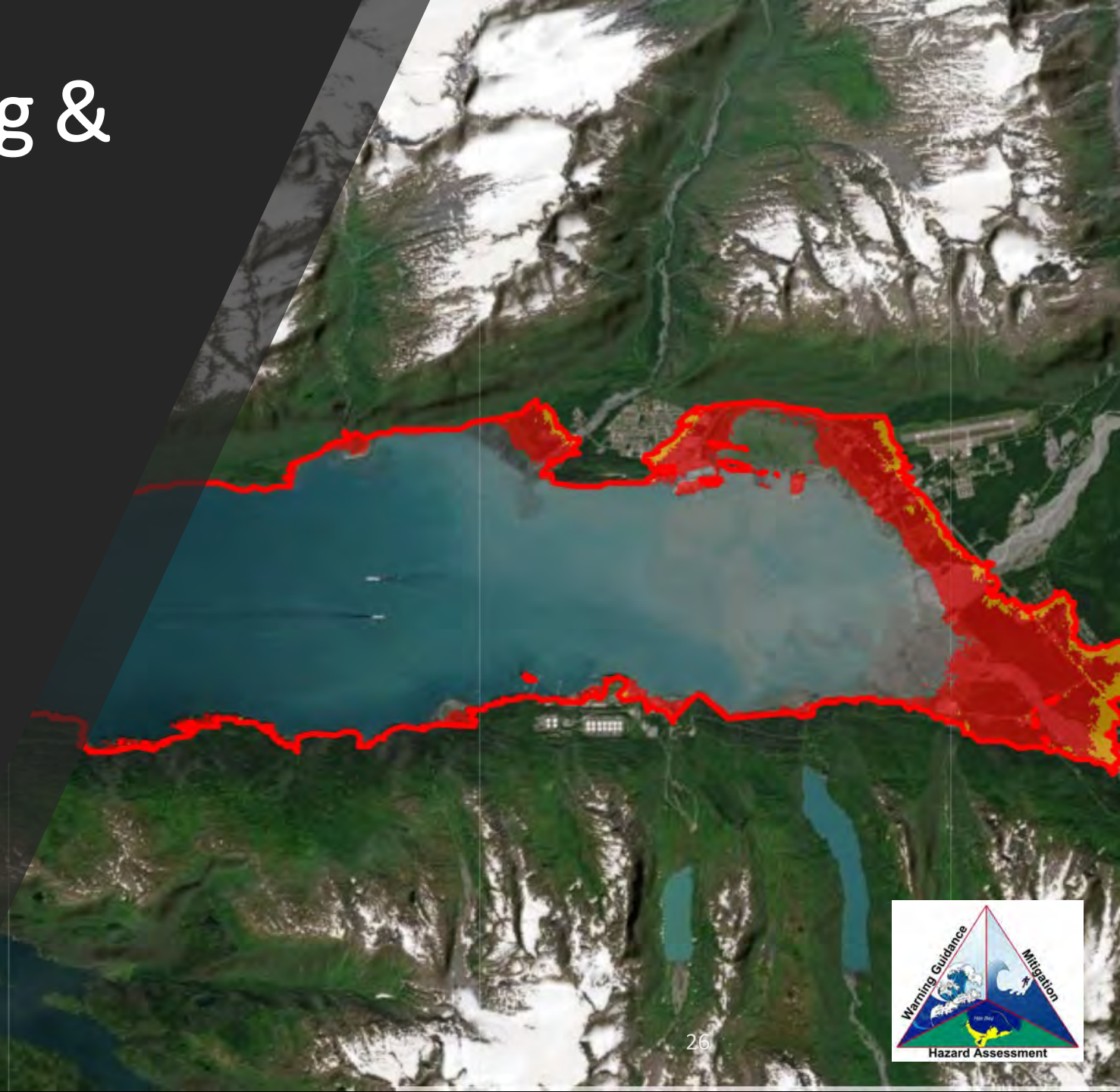
Alaska *lightning* update FY22

Mitigation & Education Subcommittee

National Tsunami Hazard Mitigation Program (NTHMP)

Inundation Mapping & Modeling

- Community inundation maps: http://tsunami.alaska.edu
- provides guidance to at-risk populations with tsunami hazard assessment, evacuation planning and public education
- Partners: Alaska Earthquake Center, Alaska Division of Geological and Geophysical Sciences



Know Your Tsunami Hazard in Valdez

Check Your Community Hazard

Knowing your risk before disaster hits could save your life. Explore the online tool at tsunami.alaska.edu to determine whether your house, workplace, or school is in the hazard zone.

Historical Tsunamis

Valdez faces a double threat from tsunamis: those caused by earthquakes and those caused by landslides. Half a dozen tsunamis caused by earthquakes have damaged Valdez in the past 125 years. The most deadly occurred during the 1964 earthquake. Local underwater landslides caused tsunamis that struck within minutes, leaving little to no time for warnings.

High-risk Areas

Tsunami impacts are greatest near ocean beaches, low-lying coastal areas, and waterways such as harbors and estuaries. Always avoid these areas during tsunamis. A tsunami can be a series of waves that may last for hours, so wait for local authorities to announce when these areas are safe. In addition to wave action, tsunamis can stir up currents that threaten harbors, facilities, and boats.

Learn More about Tsunami Hazards in Valdez

For emergency and disaster preparedness:
City of Valdez office of Emergency and Disaster Management
www.valdezak.gov/294/Emergency-and-Disaster-Management
EDM@ValdezAK.gov

For Barry Arm potential landslide information:
dggs.alaska.gov/hazards/barry-arm-landslide.html

For the full scientific community report and maps:
dggs.alaska.gov/pubs/id/25055

For the maritime response report:
earthquake.alaska.edu/tsunamis

Explore the online tool
tsunami.alaska.edu

Learn More about Tsunami Safety in Alaska

Preparing for tsunamis
Alaska Division of Homeland Security and Emergency Management at
www.ready.alaska.gov/Plans/Mitigation/Tsunamis

Tsunami warning information
National Tsunami Warning Center
www.tsunami.gov

National Tsunami Hazard Mitigation Program
nws.weather.gov

tsunami.alaska.edu

To request brochures, contact 907-474-7320 or uaf-aec@alaska.edu

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Published in 2020.

ALASKA EARTHQUAKE CENTER

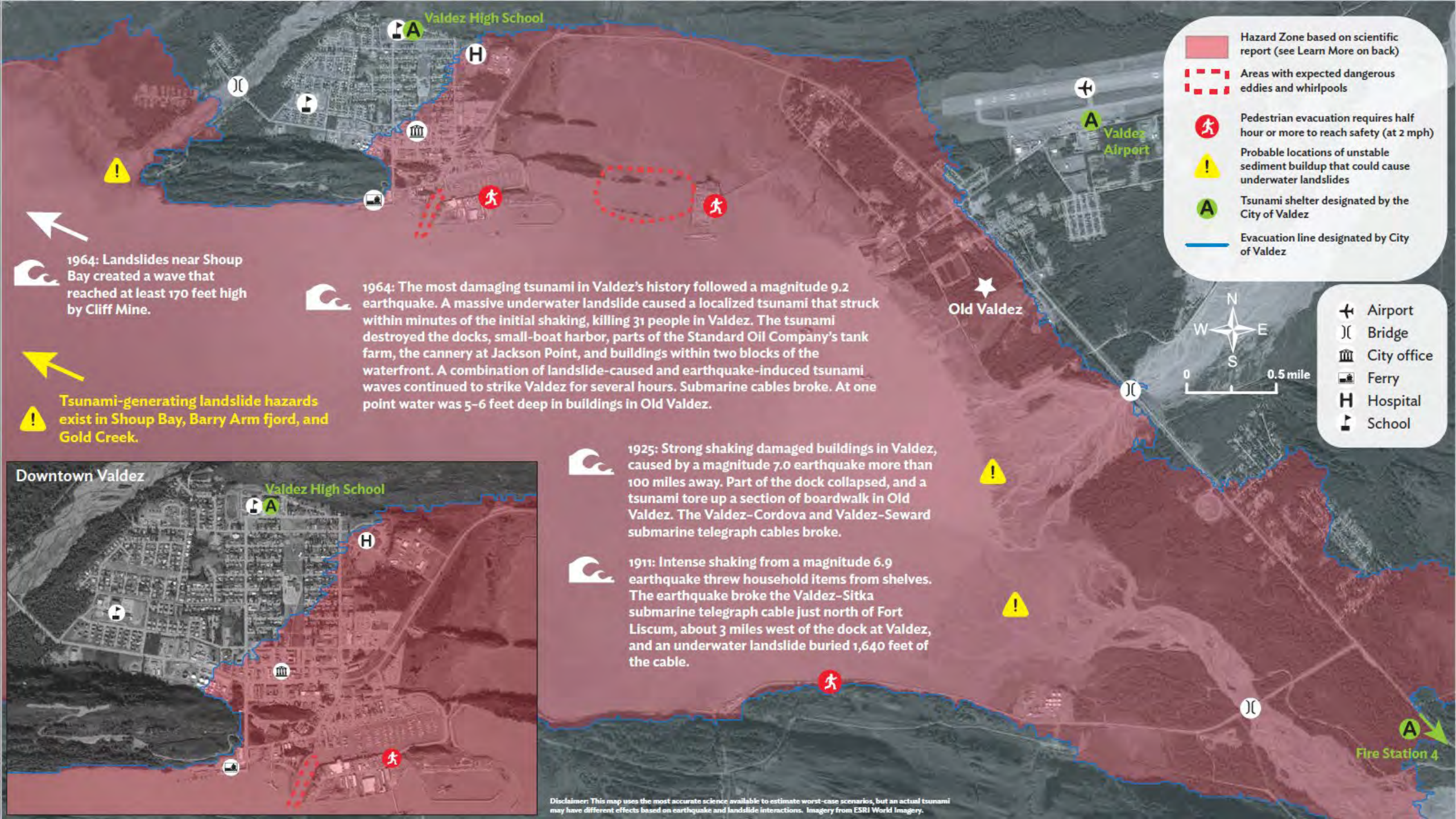
Big Waves in the Biggest State

In Alaska, tsunamis can strike within minutes of an earthquake. Tsunami awareness and safety are crucial to anyone who lives, works, or travels along Alaska's coast.

Earthquakes frequently rumble coastal Alaska. Just offshore, the Pacific Ocean plate scrapes under the continental plate of mainland Alaska, causing much of this activity. Many places along Alaska's rugged coast are poised for landslides above or below the ocean's surface. A major earthquake or landslide near the coast could generate a tsunami.

Keeping Alaska Safe

Tsunami researchers use cutting-edge science to examine historical tsunamis and earthquakes, along with geologic records from prehistoric tsunamis, then generate possible worst-case scenarios. This information is visualized in maps showing potential flood zones to help communities create emergency plans.



Disclaimer: This map uses the most accurate science available to estimate worst-case scenarios, but an actual tsunami may have different effects based on earthquake and landslide interactions. Imagery from ESRI World Imagery.

Small Community Emergency Response Plans (SCERPs)

- A disaster response checklist for communities of 2000 residents or less
- A customizable, community-specific document to assist in disaster planning
- Designed as an easy-to-read, checklist-style plan
- A process of informing the community of critical locations, contacts, and resources available to them.

Tsunami Operations Workshops

- Coordinated in conjunction with the Rural Resilience Workshop (RRW) program
- “EM 101” with emphasis on tsunami risk
- Topics covered:
  - Local EQ/tsunami threat
  - Small Community Emergency Response Plans (SCERP)
  - Maritime guidance
  - Evacuation route planning
  - TTXs
- Aleutian Islands Tsunami Operations Workshop
  DATES: March 15 – 17, 2022
- Bristol Bay Tsunami Operations Workshop
  DATES: March 29 – 31, 2022
- FY22 will likely head back to Southeast Alaska

TsunamiZone

How does your state or territory's TsunamiZone page look these days? Email at info@tsunamizone.org for any new feature requests, edits and updates, or anything else!

State/Territory Pages to Date:

- TsunamiZone.org/alaska
- TsunamiZone.org/california
- TsunamiZone.org/caribbean
- TsunamiZone.org/cnmi
- TsunamiZone.org/guam
- TsunamiZone.org/hawaii
- TsunamiZone.org/oregon
- TsunamiZone.org/puertorico
- TsunamiZone.org/usvi
- TsunamiZone.org/washington

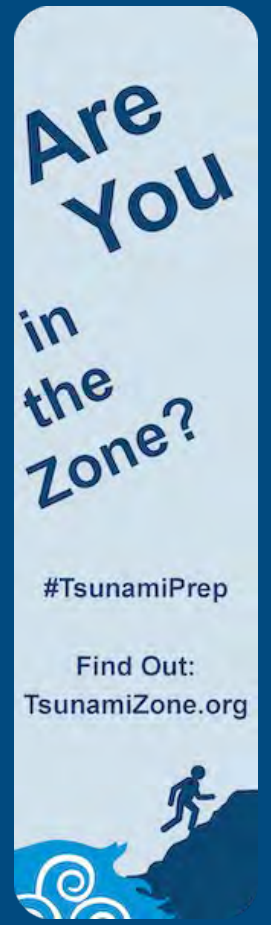
- Spanish-language focus: TsunamiZone is beginning to build out more Spanish-language resources, outreach via email marketing and social media, and website pages. Does your region have Spanish-language resources we can include at TsunamiZone.org? Let us know: info@tsunamizone.org.

- 552,768 participants in TsunamiZone-supported campaigns for 2021. 188,681 from California, and 348,447 from the Caribbean. Let's keep the totals going up!

- Increased coordination with Caribbean partners for registration, website, and outreach support for Caribe Wave (March 10) and other exercises / drills throughout the year, particularly in Puerto Rico and USVI, through the Puerto Rico Seismic Network and the International Tsunami Information Center Caribbean Office (ITIC-CAR, formerly the Caribbean Tsunami Warning Program). See TsunamiZone.org/caribewave.

- Continued registration, website, and outreach support for California Tsunami's Preparedness Week (March 21 - 25), see TsunamiZone.org/california.

- New Instagram account: @TheTsunamiZone, coming soon!



Puerto Rico

MES Winter Meeting – PR

[1]Dr. Victor Huérfano
[1]Dr. Elizabeth Vanacore
[1]Sr. Roy Ruiz
[2]Sra. Christa von Hillebrandt
[2]Sr. Ernesto Morales (WCM)
[3]Sra. Wildaomaris Gonzalez

[1]UNIVERSITY OF PUERTO RICO - MAYAGUEZ
Puerto Rico Seismic Network
Geology Department

[2]NATIONAL WEATHER SERVICE – NOAA
San Juan Forecasting Office
Caribbean Tsunami Warning Program

[3]PUERTO RICO EMERGENCY MANAGEMENT BUREAU – PR EMB

January 2022
PR

PR-NTHMP Component

Task #1: TsunamiReady and TsunamiReady supporter Program implementation and maintenance.

Task #2: Threat and hazard assessments.

Task #3: Support to NTHMP Coordinating Committee, Subcommittees and Island Caucus.

Task #4: Creating a Community-based Culture of Tsunami Preparedness and Response.

Task #5: Social sciences component.

Task #6: Collaborative Projects.

PR-NTHMP Component :: 21-22 (MES)

Task #1: TsunamiReady and TsunamiReady supporter Program implementation and maintenance.

Task #2: Threat and hazard assessments.

Task #3: Support to NTHMP Coordinating Committee, Subcommittees and Island Caucus.

Task #4: Creating a Community-based Culture of Tsunami Preparedness and Response

Task #5: Social sciences component.

Task #6: Collaborative Projects.

SURVEY: EVALUATION OF THE TSUNMAI PROGRAM IN PR

A total of 302 residents between the ages of 21 and 93 were consulted

- 33.1% (100) claimed to have known about the TsunamiReady Program for 5 years or more.

- Regarding the results in (home) mitigation, preparedness and response, it was observed that most of the participants were aware (but not fully aware) of the *TsunamiReady* Program recommendations.

- The communication resources considered most effective for the *TsunamiReady* Program to reach the community were Social Networks (Facebook, Twitter) with 54.3% (164).

- The time considered relevant for the *TsunamiReady* Program to conduct education workshops and drills in the community, most of the participants 34.1% (103) suggest that it be conducted monthly

- The recommendations to make the *TsunamiReady* Program more accessible were give orientations, talks, drills and ensure that the information reaches people with physical limitations 42.1% (127)

Task: MES Related.

- Help TsunamiReady communities & supporter to renew recognitions.
- Increase the number of TsunamiReady Supporters.
- Strengthen the Tsunami education & Outreach program via de implementation of online modules, sign language (3 schools)
- Improve Tsunami Workshops, trainings, drills and exercises… online modules
- Support, maintain and improve the current communication infrastructure to receive and disseminate TWC (PTWC) messages. Online training
- Encourage the community participation in tsunami preparedness through art murals with tsunami education messages. Promote no conventional signage.

Community involved

U.S. Virgin Islands

International Tsunami Information Center (ITIC)

unesco
Intergovernmental Oceanographic Commission

NOAA

ITIC

NTHMP MES

International Tsunami Information Center (ITIC) Report

Hawaii Office

Dr. Laura Kong
Director, ITIC, USA NOAA

Cdr. Carlos Zuniga
Associate Director, ITIC, Chile SHOA

Christa von Hillebrandt
Deputy Director, ITIC, USA NOAA
Manager, ITIC Caribbean Office

Puerto Rico Office

ITIC – Who we are

- **ITIC - established 1965**






OFFICE - US NOAA NWS

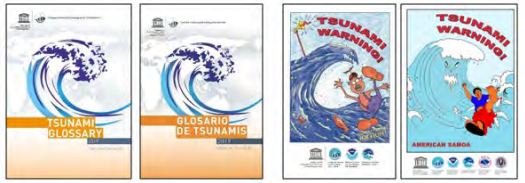
- Director – Dr. Laura Kong
- Deputy Director, ITIC Caribbean Office - Christa von Hillebrandt-Andrade
  Support CTIC, CARIBE-EWS (eff Sept 1 2021, former Caribbean Tsunami Warning Prog, est. 2010)
- Scientist (Oceanographer) – Carolina Hincapie-Cardenas
- Technical Information Specialist - vacant
- Information Technology Specialist – Tammy Fukuji
- Admin Support Assistant – Art Sonen
- Student interns (part, full-time): 1-2 year-round, 2-4 Summer

ASSOCIATE DIRECTOR – established 1974(IOC/ITSU-IV.1, non-USA)

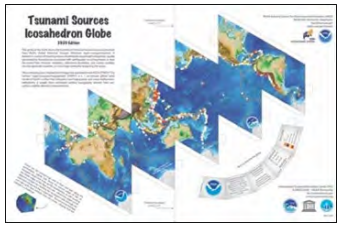
- Cdr. Carlos Zuniga (Chile, SHOA Navy), 2013 (Chile since 1998)

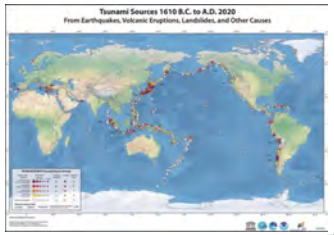
ITIC Services (web and FB)

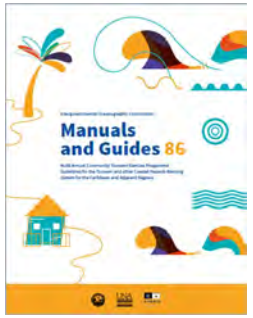
=> updating 2022



- CARIBE WAVE and PACWAVE
- UNESCO IOC Tsunami Ready web site
- Vertical Evacuation 117 references
- Ports and Harbors 100 references
- International Manuals and Guides
- Education and Awareness Materials
- Videos ITIC-NCEI Hazard Posters - updated to 2020 (no print) / 2021 (to print in 2022)
- Event Website/FB – Hunga-Tonga-Hunga-Ha'apai Volcanic Eruption and Tsunami







Pacifex Update
NTWC

MES Chairperson Elections

MES Chairpersons

- Thank You! Christa and Tamra

- One Federal, Two State/Territory Representatives
  - Chair: Todd Becker, California (2022)
  - First Vice Chair: Federal Representative
  - Second Vice Chair: State or Territory Rep

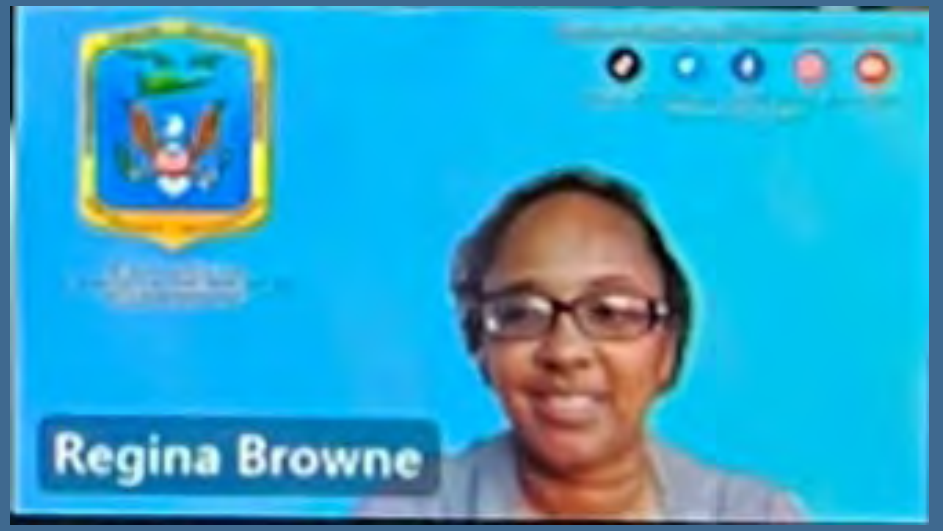
MES Chairperson Nominations

- Regina Browne, U.S Virgin Islands
  State/Territory Representative
  MES Second Vice Chair

- Nicolas Arcos, NOAA - NCEI
  Federal Representative
  MES First Vice Chair

Regina Browne

- Deputy Director Planning and Preparedness
- Career as Hazard Mitigation Planner and Agency Territorial Planner
- Understands complexity from the planning perspective
- Excited and enthusiastic to bring ideas to the MES and work with everyone to mitigate tsunami risk.



Nicolás Arcos

- Grew up in Honduras
- B.A. University of Notre Dame
- Worked at Local TV Station
- Masters, Urban Planning, University of Washington
- International Tsunami Information Center preparedness, mitigation and warning
- Professional research assistant collaborating with NCEI through the Cooperative Institute for Research in Environmental Sciences (CIRES) of the University of Colorado. Collected, validated and maintained tsunami data as well as data relating to deadly and damaging earthquakes and volcanoes
- Physical scientist at NCEI, manages historical natural hazards data, and the Tsunami/Coastal Hazards Lead in the Geophysical Sciences Branch.

Meeting Wrap-up

MES Membership Page

- https://nws.weather.gov/nthmp/mesbios.html

Meetings

- Quarterly schedule
- Virtual
- Summer Meeting


John Marquis (Guest)
Patton, Jason@DOC
Christa von Hillebrandt-Andrad...
Ian
NTWC - Dave Snider (Guest)
Biasco, Tamra
Tappero, Elyssa (MIL)
RIZZO Althea * OMD
Victor Huerfano
Stolpe, Logan J (MVA)
Benzschawel, James K (MVA)
Leo Espia - Guam Homeland ...
Summer Ohlendorf (Guest)
Yvette (Guest)
Ed Fratto (Guest)
Carrie Garrison-Laney WA Se...
David Kochevar (NWS) (Guest)
Alex Tardy NOAA NWS (Guest)
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Becker, Todd@CalOES
Chris Birchfield (Guest)
Regina Browne
Rick Wilson, CA Geological S...


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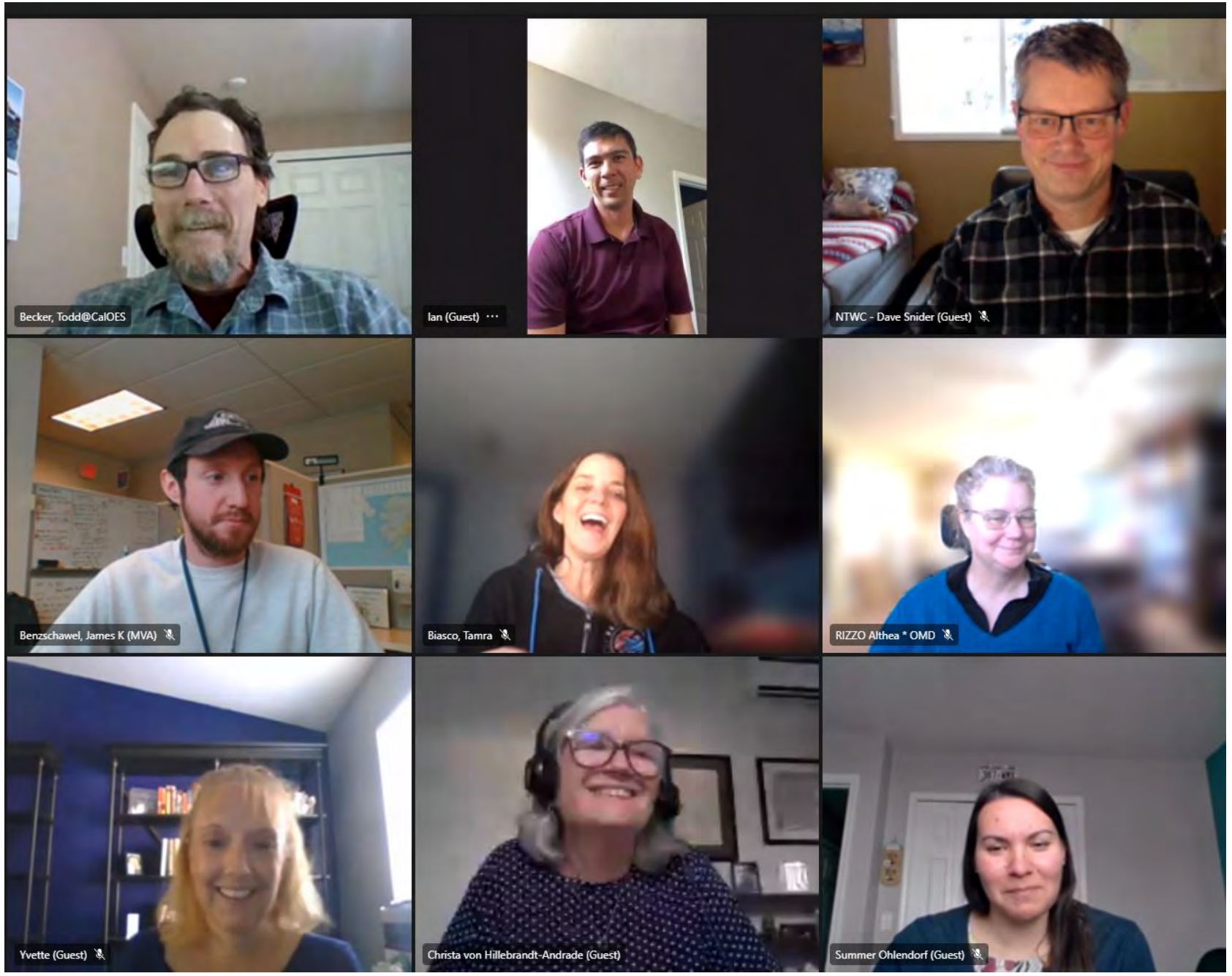
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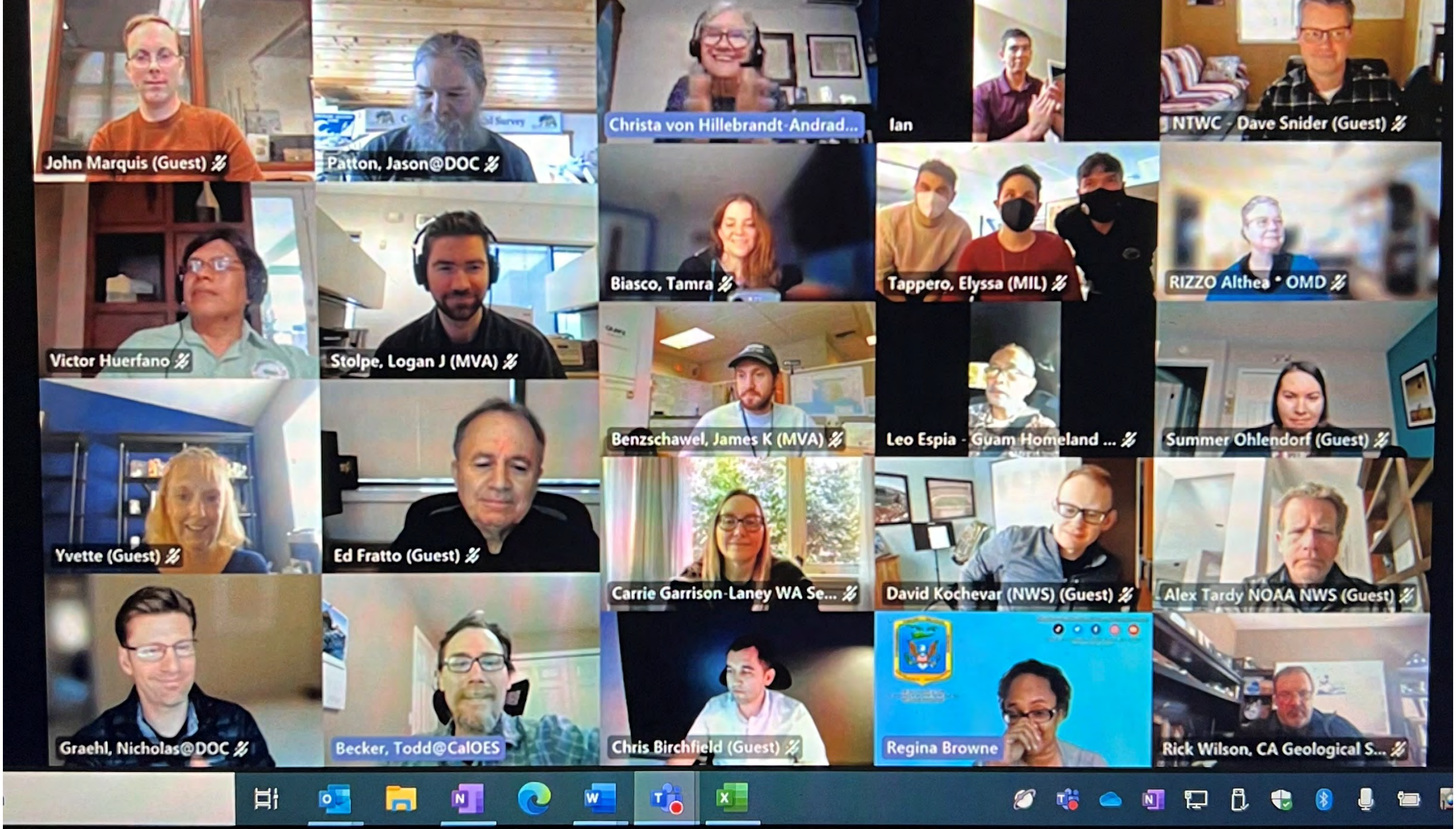
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