# BREMERTON/CENTRAL PUGET SOUND REGION
# PUGET SOUND MARITIME
# DISASTER RESILIENCE
# WORKSHOP REPORT

**APRIL 14, 2022**

*Photo Courtesy of Kitsap County Ferries*

# Executive Summary – Bremerton (Central Puget Sound) Maritime Area Workshop

**April 14, 2022**

## Project Contacts

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## Contributing Participants

- Alex Dolcimascolo, Subsurface Lead and Tsunami Hazard Geologist, Washington Department of Natural Resources
- Dante DiSabatino, Tsunami Program Coordinator, Washington State Emergency Management Division
- John Clauson, Executive Director, Kitsap Transit
- Jan Glarum, Plans, Training, & Exercise Officer, Kitsap Co. Dept. of Emergency Management
- James Weaver, Director of Marine, Facilities, Port of Bremerton
- Tim Lupher, Port Recovery Planner, U.S. Coast Guard Sector Puget Sound

## Purpose

The Six Maritime Area Workshops were designed to identify specific strengths and gaps in response and recovery planning, build relationships and trust between emergency managers and the marine industry, and to inform development of the Maritime Resilience Framework through the identification of maritime assets, plans, and capabilities available after a major earthquake or tsunami incident. For a full recording of the workshop, please see **link here.**

## Overview

**Exercise Participation:** The Bremerton area workshop hosted 44 public and private stakeholders from a variety of organizations: Emergency Management; City, County, and State Government; Port Authorities ad Operators; Public and Private Ferry Lines; Maritime Shipping Associations; Tug, Towing, and Barge Companies; Merchant Mariners; and the US Coast Guard.

**Anticipated Earthquake and Tsunami Threats:** WA EMD and WA Geological Survey provided anticipated earthquake and tsunami impacts for the Puget Sound Region as well as specific information for the Bremerton (Central Puget Sound) Maritime Area.

**Local Response to Anticipated Impacts Panel:** Specific areas discussed by members from both the maritime and emergency management sectors included concerns from the various sectors, immediate information needs after an incident, and how long will do citizens need to be prepared to be on their own.

**All Hands Discussion:** A communication and information-sharing discussion was held regarding the Tonga volcanic eruption and tsunami impacts. Information regarding communication tools and gaps were also discussed.

**Best Practices:** Current volunteer management updates and planning initiatives in Kitsap County including marine volunteer program

**Brief Overview of the Maritime Resilience Framework:** Development objectives and processes to identify maritime assets and the resilience of those assets was presented.

Puget Sound Regional Catastrophic Preparedness Grant Program
King County Emergency Management
Pacific NorthWest Economic Region
CRDR Center for Regional Disaster Resilience

## Bremerton (Central Puget Sound) Maritime Area Workshop Results

### Identified Plans or Planning Initiatives:

- Sector Puget Sound Maritime Transportation System Recovery Plan (MTSR)
- WA Tsunami Mitigation Planning Initiative (Port of Bellingham)
- Kitsap County Volunteer Management Planning (Hooves across Kitsap, wings over Kitsap, boats across Kitsap)
- Regional Community Points of Distribution Siting and Planning Initiative RCPGP Open Data
- Kitsap Emergency Operations Center utilizes satellite-based communications devices for internet and voice communications (Zoleo and Explorer 510 Cobham)
- Bainbridge Island established the "emergency flotilla" to assist with transport of people
- Kitsap EM applied for a grant this year that will coordinate aerial assets and share the information they are able to gather for damage assessment
- 14 Kitsap port districts have accessible piers and launches. These are critical to the planning for M9 event.
- Suquamish has upgraded and expanded HAM communication with UHF Omnidirectional antenna and Two microwave point-to-point dish antennas were also installed on the tower to connect the Suquamish EOC to the Puget Sound Data Ring (PSDR)

### Identified Gaps

- Communications capabilities and interoperability in the event of a large-scale power outage
- The need for the development of regional rapid damage assessment protocols & coordination strategy along with a clearinghouse for reported damage information
- Ongoing coordination and communications between all levels of government planners with maritime transportation system stakeholders
- Coordination and synchronization of tsunami alerts and warnings across county departments and partnering transportation and maritime organizations
- Once a Presidential declaration is made, the county will not have access to navy resources. In the initial hours after the event, they will need to secure fuel or other resources immediately

### Recommendations

The following recommendations were developed based on stakeholder comments, presentations, and panel discussions throughout the workshop to help close gaps highlighted:

- Create regular opportunities for maritime stakeholders to coordinate with emergency management planners to build trusted relationships.
- Continue to identify key maritime assets and capabilities that could assist in response and recovery.
- Develop communication and information-sharing strategies to reach maritime stakeholders.
- Develop and maintain an emergency contact list of cell phone numbers and emails for marine partners, including marinas, terminals, and staff for rapid communications.
- Develop a regional maritime and emergency planning communications working group to identify gaps and improvements across the Puget Sound.
- Encourage the port and surrounding area to work with WA Emergency Management to develop a tsunami mitigation framework.
- Coordinate marine volunteer management best practices across the Puget Sound region.
- Develop and share coordinated rapid damage assessment plans and capabilities across the region.
- Create a standardized process for sharing assessed damage of critical maritime transportation facilities with key organizations and decision makers.
- Explore resources to host an annual regional maritime resilience exercise to test and update plans.

**Regional Catastrophic Preparedness Grant Program (RCPGP)**
**Seattle Area Maritime Resilience Workshop Report**

**Project Overview**
The Federal Emergency Management Agency (FEMA) provided a Regional Catastrophic Preparedness Grant (RCPG) to King County on behalf of Central Puget Sound partners to address the enormous risk the region faces from a catastrophic earthquake. The purpose of this project is to maximize the ability of the Maritime sector to assist in the disaster response and recovery from a catastrophic earthquake when road, rail, and air transportation may be disrupted for weeks, months, and even years.

Puget Sound waterways provide a means to transport all manner of personnel, goods, and materiel that may be needed to respond to, recover from, and restore the region after a catastrophic earthquake. The RCPG project focuses on six maritime areas across Puget Sound, involves public and private partners from the region and Alaska, and works to identify maritime assets and capabilities that could play a role in response, recovery, and restoration efforts.

Following a catastrophic earthquake, supplying the Puget Sound Region with life-sustaining commodities such as water and food will require a tremendous, coordinated effort. Current planning to supply Community Points of Distribution (CPODs) assumes that resupply will come via land routes over the Cascade Mountains from the east or by air. These delivery routes are not assured due to the significant potential for large landslides to block the few mountain passes, for bridges to collapse, for airfield runways and facilities to be significantly damaged, and for uncertain availability of aircraft.

The Regional Catastrophic Preparedness Grant (RCPG) project focuses on public and private maritime assets in the following six maritime areas of focus in the Puget Sound Region, and also involves stakeholders from the State of Alaska:

| | | |
|---|---|---|
| Bellingham | Bremerton | Everett |
| Seattle | Tacoma | Olympia |

**Workshop Overview**
Facilitated by the Pacific Northwest Economic Region (PNWER), the Bremerton area workshop focused on the port and surrounding maritime transportation system assets and capabilities. The workshop was designed to identify specific strengths and gaps in response and recovery planning, build relationships and trust between emergency managers and the marine industry, and to inform development of the Maritime Resilience Framework. A full recording of the workshop can be found **here.**

51 public and private stakeholders attended the workshop from a variety of organizations. Examples of the disciplines represented include:

- Emergency Management

- City, County, and State government
- Port Authorities and Operators
- Public and Private Ferry Lines
- Maritime Shipping Associations
- Tug, Towing, and Barge Companies
- Merchant Mariners
- U.S. Coast Guard

**Workshop Goal:** Work to identify maritime assets, plans and capabilities available that could play a role in response, recovery, and restoration efforts after a major earthquake and subsequent tsunami.

**Objectives:**

1. Orient stakeholders to maritime supply chain response and Community Points of Distribution (CPOD) concepts.
2. Connect maritime stakeholders with emergency management and supply chain planners across the region.
3. Identify specific rapid damage assessment plans and information sharing protocols and procedures.
4. Elicit information about stakeholder capabilities, practices, and plans that support maritime supply chain response and recovery efforts.

**Sponsor:** Funding for the workshop was provided through a Regional Catastrophic Preparedness Grant (RCPG) funded by the Department of Homeland Security. The King County Office of Emergency Management executes the grant on behalf of the eight-county Regional Catastrophic Planning Team (RCPT).

**Workshop Design:** A planning team consisting of regional and local stakeholders provided input during several planning meetings on the development of the agenda and by identifying specific speakers and topics for discussion. The planning team included:

- Brandon Hardenbrook, Deputy Director, Pacific Northwest Economic Region (PNWER)
- Sasha Rector, Regional Catastrophic Program Coordinator, King County
- Eric Holderman, Director, Center for Regional Disaster Resilience, PNWER
- Jeannie Beckett, AICP, The Beckett Group
- Lis Klute, Director, Kitsap County Director of Emergency Management
- Jan Glarum, Plans, Training, and Exercise Officer, Kitsap County Department of Emergency Management.
- James Weaver, Director of Marine, Facilities, Port of Bremerton

**Workshop Summary**

**Opening Remarks**

**Brendan McCluskey, Director, King County Emergency Management:**

Mr. McCluskey stated that the purpose of these workshops is a region better prepared and more resilient for catastrophic events, and how our maritime system fits into that effort. He emphasized that regional response and restoration is a collective effort—a symphony, not notes and noise. We all need your assistance and insights to find creative solutions to difficult problems. Emergency Managers are like

orchestra conductors—we facilitate relationships that bring together the essential people, assets, and capabilities.

**Mayor Greg Wheeler, City of Bremerton:**

- Commerce and access to important services are connected to the maritime sector within the Bremerton Region
- Kitsap County has unique road system vulnerabilities--the Gorst Interchange which connects Kitsap with the rest of Western Washington is vulnerable to flooding, land movement, and bridge collapse. A catastrophic event could impact the Hood Canal Floating Bridge
- We must assume the Central Puget Sound Region will be isolated after a major earthquake/tsunami. We must recognize this fact and coordinate now

**Project Background and Workshop Goals**

**Sasha Rector, Regional Catastrophic Program Coordinator, King County:**
Ms. Rector explained that the workshop is designed to establish relationships, update current contacts, establish cross-sector trust, identify gaps and needs, and understand roles and responsibilities of key public and private players across the Region. This is an opportunity to both provide and gather information, which doesn't end with this workshop—if you come up with something interesting, please let me know!

**Brandon Hardenbrook, Deputy Director, PNWER:**
The Puget Sound Regional Catastrophic Preparedness Project consists of two phases: In Phase One, a series of workshops introduced stakeholders to disaster risks, reviewed existing response and recovery plans, and discussed assets and capability gaps; Phase Two facilitates development of the Maritime Resilience Framework. The Framework will create an adaptable and usable document that identifies key maritime assets to aid in emergency efforts and resource distribution. Mr. Hardenbrook stated current planning in the event of a large scale earthquake/tsunami emergency is base supplies in Eastern WA. Onward movement may be critically limited due to highway and rail damage, plus possibly overtaxing available air assets. Knowing our land transportation system will likely be damaged for many years following an event, we must examine the capability of our maritime assets and organizations to assist in response and recovery.

**Anticipated Earthquake and Tsunami Hazards:**

**Alex Dolcimascolo – Subsurface Lead & Tsunami Hazards Geologist, Washington State Department of Natural Resources**

- Tsunami Causes

  Tsunamis are triggered by large disturbances or displacement of seawater

  - This is most often caused by earthquakes but can be caused by landslides, volcanoes, or meteorological events
  - Earthquake types:
    - Distant source: these arrive from places far away (Alaska)
    - Local source: close by (Cascadia)
    - Local Source Crustal Fault (Seattle Fault)

Question in Chat: Tsunami effects on the oceans and the Sound are understood. What about rivers--rapid drawdown and then regaining normal upstream levels which might take hours or days?

Answer: As we continue to make progress with our tsunami modeling and mapping along our coasts, the upstream effects of tsunamis are something WGS is able to focus on more. I know they've done work for the Columbia River - Daniel may be able to say what rivers they plan to look at next.

Answer: Looks like my EMD friends did a great job covering your question and yes, there would be a detectable tsunami on the Columbia River all the way up to the dam. The most severe impact though is to the estuary area downstream of Tongue Point.

The Seattle fault event model does include uplift of ~27 ft and subsidence of ~6 ft along the fault trace. Horizontal displacement was not accounted for in the model as the Seattle Fault is a largely vertically displacing fault system. The details of this modeling will be published soon!

- Cascadia Subduction Zone:
  - Events every 300-600 years
  - 700 miles long
  - Most predictable fault in the region
  - Last great rupture occurred about 322 years ago
  - 10-25% chance of rupture within the next 50 years
  - Magnitude 8.0-9.0+
  - Shaking felt for 3-6 mins
  - Earthquake followed by major tsunami within 10 mins to several hours after
  - Aftershocks could continue for many years and potentially could produce tsunamis themselves
  - 41 earthquakes in the last 10,000 years according to turbidite evidence

- Other major earthquake and tsunami events:
  - 2004 9.1 earthquake and tsunami in Sumatra - killed around 227,000 people
  - 2011 9.1 Tohoku Earthquake and tsunami in Japan – killed around 20,000 people
  - Severe economic impacts and initial damage costs – billions of dollars

- To prepare for the tsunami, you have to also prepare for the earthquake
  - Ports are often built on mud, sand, and fill which are prone to liquefaction
  - Ground shaking – damage to infrastructure – chemical and biological spills
  - Soil settlement – loss of pore water pressure in soils, compaction

- Maritime Tsunami Hazards:
  - Strong and unpredictable currents

    - Water level fluctuations
    - Eddies/whirlpools
    - Tsunami bores and amplified waves
    - Drag - vessels on land/docks
    - Debris
    - Scour and sedimentation
    - Contaminated water
    - Dangerous tsunami conditions can last tens of hours

- Tsunami Impact for Bremerton Region:
    - Inundation depth: 1 foot at Naval Shipyard
    - Minor flooding in Port Orchard
    - Flooding of highway system in Gorst
    - Current velocity: 6-9 knots in topographic areas, >9-10 knots in Point Glover area

- Tsunami Maritime Response and Mitigation Strategy:
    - High resolution modeling can assess how the Port will perform in certain scenarios

- Seattle Fault Tsunami Publication Pending:
    - New modeling for the Seattle fault covering the same areas as the 2021 Puget Sound CSZ mapping
    - 7.5 magnitude event similar to the last event to happen on the fault in 930 AD

Question in Chat: What about Dyes Inlet side of the Seattle Fault?

Answer: Dyes Inlet experiences a relatively minor impact from CSZ (https://fortress.wa.gov/dnr/geologydata/tsunami_hazard_maps/ger_ms2021-01_tsunami_hazard_puget_sound.zip). For the Seattle Fault, on the subsided side of the fault system we would anticipate more severe flooding and long term shoreline loss due to the land level changes, that publication will come soon!

Question in chat: What is the likelihood that we could use the maritime industry for a response post tsunami without putting them at risk? It seems like utilization of maritime for effective response would not be feasible in the first few weeks post CSZ. At least, that's what I took from the tsunami modeling and projections. What is your take? Thank you.

Answer: Absolutely. The Sound won't be safe for navigation until the tsunami debris is cleaned out, the waterways resounded, and areas of concern potentially dredged. That will take weeks, if not months. An active area of research by the tsunami modeling community is to model and understand tsunami debris and sediment transport for recovery planning. We hope as this research matures we will be able to provide more concrete estimates of impacts for use in planning.

**Maritime Tsunami Hazards in Washington State:**
**Danté DiSabatino – Inner Coast Tsunami Program Coordinator, Washington State Emergency Management Division**

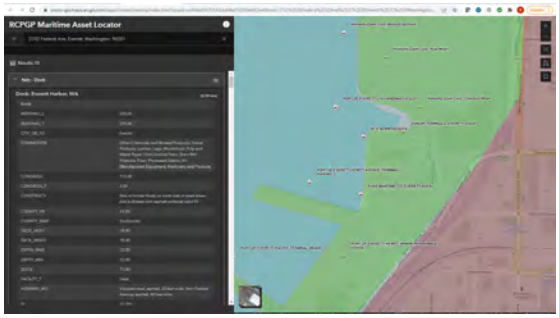
- WA Maritime by Numbers:
    - 3,000 miles of coastline
    - $21.4 billion maritime industry
    - 31 ports
    - 7 coast guards bases
    - 4 Navy bases
    - NW Seaport Alliance - 5th largest container gateway in the US
    - Largest ferry system in the US
    - AK and HI dependent on goods from WA ports

- Very unpredictable how each waterway will be affected
    - Damage to fuel piping systems and pumps
    - Damage bridges, overpasses, roadways
    - Damage to port/marina infrastructure and goods
    - Supply chain issues
    - Communication facilities
    - Natural gas facilities
    - 54 petroleum processing facilities
    - 35 known potable water facilities
    - Facilities (sea, air, rail, etc.) west of the I5 corridor suffer complete to severe damage
    - Bridge reopening times - up to 2.5 years to completely restore supply chain

- Response Factors for Boaters to Consider:
    - Alerts: WEA, local alerts, Twitter, NOAA, Marine radio, EAS or tsunami siren
    - Recognizing signs of tsunami: ground shaking, ocean bubbling and receding, loud sounds

**Maritime GIS Mapping Capability Planning Resource**

Snohomish County Emergency Management and PNWER collaborated to develop an online GIS mapping tool that consists of open-source maritime transportation system assets across the Puget Sound. These assets include docks, marinas. boat launches and other capabilities that could be utilized during response and recovery efforts. This mapping resource can be found online at RCPGP Open Data - Scroll to the area of interest and click "Search this area" to view more detail about the map markers.




**Local Response to Anticipated Impacts Panel:**

- **Moderator: Eric Holdeman – Director of CRDR**
- **John Clauson – Executive Director, Kitsap Transit**
- **Jan Glarum – Plans, Training, & Exercise Officer, Kitsap Co. Dept. of Emergency Management**
- **James Weaver – Director of Marine Facilities, Port of Bremerton**
- **Tim Lupher – Maritime Recovery Specialist, U.S. Coast Guard Sector Puget Sound**

Eric Holdeman began the discussion by asking the panelists what immediate information they are seeking once the ground has stopped shaking.

John Clauson responded that Kitsap Transit would immediately begin to determine what damages have occurred and what capabilities remain. Kitsap Transit has conducted training and planning for staff resources, rapid damage assessment, and setting up links between transit and county emergency management.

James Weaver responded that Kitsap County's Department of Emergency Management coordinates regularly with the Port of Bremerton since Kitsap County is highly dependent on maritime resources. The initial concern is staff safety. Weaver's team will assess access to maritime vessels and other resources considering Bremerton is vulnerable to liquefaction and landslides. There are more than 18 bridges throughout the county, so if there is extensive damage it may split the county in half.

Tim Lupher stated that the USCG will immediately begin to assess the status of their vessels and what damages have occurred. They will then begin to determine the incoming tsunami threats. It depends on the time of day on who will be available to respond to the disaster, especially given the geography of the county. Rapid damage assessment will be important.

Jan Glarum responded the only thing he wants to know initially is where the epicenter was. Was it CSZ or Seattle Crustal Fault? Glarum expressed the importance of communications and how response will vary depending on what is available.

Holdeman asked what the distribution of personnel throughout the community would look like?

Glarum responded that his department does not have many employees, but they have hundreds of volunteers spread throughout the county. They work closely with Mason County Emergency Management and have exercised with them. They need to establish communications before worrying about setting up an EOC. He does not care what jurisdiction people are from but wants to focus on a regional response.

Eric asked Tim Lupher how the Coast Guard will go about damage assessment?

Lupher responded that the USCG will rely on Coast Guard stations to report damage, search and rescue, and liquefaction. The Coast Guard would likely shut down the maritime sector until damage can be assessed. The whole maritime domain would be shut down, if you're not underway then you are not

going underway and if a larger ship is underway we would have them reach deeper water to brace for tsunami impact or eventually leave the Puget Sound.

Holdeman then asked what the USCG's access to helicopters is like?

Lupher stated that they have access to helicopters and we would immediately get them off the ground to use for search and rescue.

Holdeman then asked Glarum and Clauson, what they would do for damage assessment?

Glarum responded that Kitsap County EMD has developed key intelligence questions which are built off assessment of critical lifelines. It is assumed that power will be out so the response will depend on what we have access to.

Clauson responded that his staff has received training so they can undertake assessments of their facilities. They would be focusing on resources that operate as emergency operations centers. Staff have been instructed that operations entirely stop until those assessments can be done and other needs within our facilities can be responded to. Kitsap Transit has contracted engineers they can call in to do any other assessments needed. They have been making some improvements to their three facilities so they are relatively comfortable with their seismic abilities. They also have about three days worth of stored fuel and other resources within their facilities, but they usually fuel our larger ships in Seattle.

Weaver stated that the Port of Bremerton would be looking for life safety issues for vessels such as sinking boats. They have covered moorage as well so danger to life and property. Their staff is split half and half on either side of Gorst. Their rally point is in Port Orchard. Most of their first responder vessels are moored at the Port of Bremerton facilities so providing access to these vessels is going to be first priority. It is a community effort. They have 11,000 gal. tanks in Port Orchard, but damage to these and the fueling lines would be a concern. The Navy would tell them who to prioritize for fuel distribution.

Holdeman asked if anyone on the panel owns and operates a drone? Smaller organizations and Ports have secured drones for marketing purposes but they can be used for damage assessment.

Glarum responded his office does not currently have a drone but they did apply for a grant this year that will coordinate aerial assets and share the information they are able to gather.

Lupher responded that the USCG do not currently have a drone but are discussing one for marketing purposes. Sector Puget Sound has two that are used for oil purposes but could be used for emergency assessment.

Weaver responded that the Port of Bremerton does not have a drone but their staff privately own them. This was not pursued because there is not a lot of available air space in Sinclair Inlet but perhaps in an emergency situation they could be authorized for emergency management purposes.

Holdeman asked what the panelists anticipate will be major problems?

Clauson stated that communications will be a major factor in response.

Weaver has concerns of liquefaction, transportation, and ability to alert tenants of an incoming tsunami. VHF for communications will be key.

Glarum noted that the peninsula will provide lower impact from the tsunami. This affords our region greater ability to distribute resources considering the access available to deeper waters. They will be getting supplies from air or water and cannot expect anything coming by land. He emphasized that for Kitsap County, it is a community effort. They are all in this together. They have an excellent relationship with their Navy partners. The Navy has their own focus, but they have their families there as well so there will be collaboration.

Lupher's first concern is communication – with partners, staff, etc. His second concern is getting personnel where they need to be. His third concern is fuel – it will quickly run out and it is vital we figure out how to bring fuel in and distributed.

Holdeman asked what is anticipated of the Navy and their response?

Glarum stated that the Navy will obviously have a national security threat and they will need to address those operations. Once a Presidential declaration is made, Kitsap will no longer have access to them so in the initial hours after the event are vital to secure fuel from them. If they have assets that are not committed to national security then they will likely use them to get Kitsap County up and running. It is a huge resource to have them close and as partners.
Glarum stated that he does not anticipate they are high priority so they will have to make do with what they have.

Lupher stated that Hood Canal will be affected the most. The Navy will be working with their strategic assets. They would link up with regional EOC on Bangor which controls all the communications.

Holdeman asked if there are other maritime entry points to the water? Can tugs and barges be used from non-commercial docks, etc.?

Weaver responded that for Port facilities, most of their assets are in the South Kitsap County area. They do have ramps that are accessed by the military, etc. that will be available. They do have recreational piers that can be used. Their 14 port districts also have piers and launches that can be accessed. Involving all of these entities is imperative in the planning.

Clauson stated that they have a fleet of 10 vessels. They have 2-3 vessels that can access these non-commercial entry points.

**Discussion - Communication and Information Sharing Tools:**
**Moderated by Jeannie Beckett; Principal, The Beckett Group**
In regard to the recent tsunami warnings following the Tonga Volcanic Eruption, what kinds of communications tools did you use during the event? What happened during the event? What worked? What didn't work?

James Weaver responded that for the Port of Bremerton, communications rely on VHF radio and text alerts.

John Clauson stated that generally, communications for Kitsap Transit have been an issue in previous events. Kitsap Transit shares their facilities with 911 facilities and utilizes cellular alerts.

Tim Lupher responded that the USCG gets immediate notifications and tsunami advisories directly from NOAA and broadcasts immediately to mariners.

Elyssa Tappero responded that the notification came into their alert warning center that is active 24/7. Once received, the duty officers sent that through AlertSense to all of the WA State EMD as well as anyone who had signed up for those alerts. It was bumped up to an advisory at around 4 AM so her department became focused on pushing information out on social media and other notification platforms. She noted that her department did not set off the warning sirens mainly because people associate sirens with evacuation and her team wanted to avoid any confusion. They spent a lot of time explaining and answering questions throughout the event in addition to several conference calls held throughout the day.

James Weaver responded that his team emailed all of their tenants which was successful and worked well doing it before they anticipated the event.

Jan Glarum responded that they are putting in place some redundancy beyond VHF radio, through other devices that can send alerts for key people that will utilize cellular, wifi, and satellite. Amateur radio operators can also be utilized to fill in the gaps. He stated that the Kitsap County Department of Emergency Management relies on that system as backbone in the event that regular communications systems are out.

- Zoleo and Explorer 510 Cobham

**Best Practices in the Bremerton/Central Puget Sound Region:**
**Presented by Jan Glarum – Plans, Training, & Exercise Officer, Kitsap Co. Dept. of Emergency**
Kitsap County has established a Volunteer Management Program that allows volunteers to register as emergency workers and utilize the resources they can provide. This program includes four groups. These groups are organized by asset, including "Hooves Across Kitsap", "Wheels Across Kitsap", "Boats Across Kitsap", and "Wings Across Kitsap". For the Marine Volunteer Management Program, the county would

utilize volunteer boaters for logistical operations to support their teams. Kitsap County is interested in taking any boater that would like to be a part of a coordinated response to move resources through the county's micro-islands. This coordinated effort would play many roles in the event of a catastrophic earthquake including getting essential staff, commuters, visitors, etc. to and from the island, as well as provide ongoing recovery support. There are many advantages to coordinating this program beforehand, including providing volunteers with local knowledge and training as well as the potential to provide volunteers with insurance. Boaters will play a vital role in recovery considering they already have the right boat for local waters as well as a source of power, communication, shelter, and mobility. You can sign up through the Kitsap County EMD website to fill out a volunteer packet.

**Brief Overview of the Maritime Resilience Framework**
**Presented by David Cruz, Senior Port Planner, Moffat & Nichol**
The Maritime Resilience Framework will be a usable document that evolves over time, identifies key maritime assets, and assesses how resilient those assets are. The document will also outline processes and actions to take before, during, and after a large-scale emergency. The purpose of the framework is to incorporate maritime and transportation resources to use, receive, and distribute the sustaining commodities to CPODs with maritime assets in the event of a Cascadia Zone Fault Event.

**Closing Remarks**
Brandon Hardenbrook, Deputy Director, Pacific Northwest Economic Region,
thanked the attendees for their contributions and their enthusiasm. The upcoming workshops will continue gathering additional information and identifying gaps, which will inform the specific goals and deliverables that will be incorporated into the Maritime Disaster Resilience Framework. Please mark your calendars for our Regional Workshop on May 24th, bringing together all six maritime areas.

**Recommendations**
The following recommendations were developed based on stakeholder comments, presentations, and panel discussions throughout the workshop to help close gaps highlighted:

- Create regular opportunities for maritime stakeholders to coordinate with emergency management planners to build trusted relationships.
- Continue to identify key maritime assets and capabilities that could assist in response and recovery.
- Develop communication and information-sharing strategies to reach maritime stakeholders.
- Develop and maintain an emergency contact list of cell phone numbers and emails for marine partners, including marinas, terminals, and staff for rapid communications.
- Develop a regional maritime and emergency planning communications working group to identify gaps and improvements across the Puget Sound.
- Encourage the port and surrounding area to work with WA Emergency Management to develop a tsunami mitigation framework.
- Coordinate marine volunteer management best practices across the Puget Sound region.
- Develop and share coordinated rapid damage assessment plans and capabilities across the region.
- Create a standardized process for sharing assessed damage of critical maritime transportation facilities with key organizations and decision makers.

- Explore resources to host an annual regional maritime resilience exercise to test and update plans.

**Acronyms**

| | |
|---|---|
| AAR | After Action Report |
| AHAB | All Hazard Alert Broadcast |
| CPOD | Community Point of Distribution |
| CRDR | Center for Regional Disaster Resilience |
| CSZ | Cascadia Subduction Zone |
| DHS | Department of Homeland Security |
| EAS | Emergency Alert System |
| EMD | Emergency Management Division |
| FEMA | Federal Emergency Management Agency |
| GIS | Geographic Information System |
| HITRAC | Homeland Infrastructure Threat and Risk Analysis Center |
| NANOOS | Northwest Association of Networked Ocean Observing Systems |
| PNWER | Pacific Northwest Economic Region |
| RCPG | Regional Catastrophic Preparedness Grant |
| RRAP | Regional Resiliency Assessment Program |
| USCG | United States Coast Guard |
| WEA | Wireless Emergency Alerts |
| | |

**Planning Resources –** During the workshop several planning and information resources were mentioned to assist in the planning and coordination after a major disaster. These can be found at--

https://www.cisa.gov/regional-resiliency-assessment-program

Maritime Coordination | RCPGP Hub - Home (arcgis.com)

Columbia River Tsunami Modeling--https://www.oregongeology.org/pubs/sp/SP-51/SP-51_report.pdf

1995 Kobe Earthquake significant impacts to port facilities--https://www.nationalgeographic.org/thisday/jan17/kobe-earthquake/

mil.wa.gov/alerts, mil.wa.gov/preparedness

Emergency Management Information portals (wa.gov)

Joint Logistics Over the Shore--edocs.nps.edu/dodpubs/topic/jointpubs/JP4/JP4-01.6_050805.pdf

National Tsunami Warning and Alert Page https://tsunami.gov/

Washington State Tsunami Resilience Planning and Projects: mil.wa.gov/tsunami

Geologic Information Portal https://geologyportal.dnr.wa.gov/

Tsunami Hazard Maps
https://www.dnr.wa.gov/programs-and-services/geology/geologic-hazards/tsunamis#tsunami-hazard-maps

Tsunami Evacuation Maps
https://www.dnr.wa.gov/programs-and-services/geology/geologic-hazards/tsunamis#tsunami-evacuation-maps

Tsunami Simulations
https://www.dnr.wa.gov/programs-and-services/geology/geologic-hazards/tsunamis#tsunami-simulation-videos

Northwest Association of Networked Ocean Observing Systems (NANOOS) Pacific Northwest - NANOOS - The U.S. Integrated Ocean Observing System (IOOS) (noaa.gov)

Nanoos Mobile Tsunami Evacuation app
https://apps.apple.com/bo/app/nvs-tsunami-evacuation/id478984841 or Android
https://play.google.com/store/apps/details?=tsunami evacs.nvs.nanoos.org.nvs tsunami android

National Infrastructure Simulation and Analysis Center-- Homeland Infrastructure Threat and Risk Analysis Center (HITRAC) within the DHS Office of Infrastructure Protection, NRMC | CISA

# BREMERTON/CENTRAL PUGET SOUND MARITIME DISASTER RESILIENCE WORKSHOP

**Thursday, April 14, 2022 | 9:00 am to 12:30 pm**

## Featured Speakers

**BRENDAN MCCLUSKEY**
DIRECTOR
KING COUNTY OFFICE OF EMERGENCY MANAGEMENT

Brendan McCluskey is the Director of Emergency Management for King County. King County Emergency Management is responsible for regional emergency preparedness and operations, including mitigation, response, and recovery, and a variety of homeland security matters. Mr. McCluskey oversees all functions of the organization, from planning, to public outreach, to grant management, to operations coordination and EOC operations. McCluskey is the County Executive's representative to the King County Emergency Management Advisory Committee, a designee to the State Emergency Management Advisory Group, and a core member of the Seattle UASI. King County Emergency Management was accredited by the Emergency Management Accreditation Program (EMAP) in 2017.

**GREG WHEELER**
MAYOR
CITY OF BREMERTON

Mayor Greg Wheeler began serving his first term as Mayor in 2018 and started his second term in January 2022. He is a lifelong resident of Bremerton, a Navy veteran and a retiree of the PSNS Engineering Department. Previously, he served on the City Council in District 4 from 2010 through 2017 – three of them as Council President – prior to becoming Mayor. He is a member of two service clubs and many government and nonprofit boards in the community and region. He and his wife Sunny have three adult children, a grandchild and two dogs.

# Presenters

## DANIEL EUNGARD

SUBSURFACE LEAD AND TSUNAMI HAZARDS GEOLOGIST
WASHINGTON DEPARTMENT OF NATURAL RESOURCES

Daniel is the subsurface lead and tsunami hazards program data manager—he is responsible for maintaining and expanding the geospatial databases for both programs. He is a subject matter expert on tsunami science, working with local, state, and federal partners to improve public understanding of risk and encourage mitigation efforts in Washington State.

## DANTÉ DISABATINO

INNER COAST TSUNAMI PROGRAM COORDINATOR
WASHINGTON STATE EMERGENCY MANAGEMENT DIVISION

Danté DiSabatino is the Inner Coast Tsunami Program Coordinator with Washington State Emergency Management Division. He facilitates the development of Tsunami Maritime Response and Mitigation Strategies and oversees the Inner Coast Tsunami Workgroup. Danté is passionate about using his current position to empower communities along Washington's coastline to better prepare for, mitigate the effects of, and respond to tsunamis. Prior to working at the state, he was a hazard mitigation planning intern at the City of Seattle Office of Emergency Management. He received a Master's of Infrastructure Planning and Management from the University of Washington with a focus on hazard mitigation, community-driven resilience, and floodplain management and a Bachelor's of Environmental Science with a minor in Meteorology from Florida State University.

## DAVID CRUZ

ALL HAZARDS TECHNICAL LEAD
MOFFATT & NICHOL

David Cruz has more than 40 years of experience as a planner for port-wide studies and maritime facility projects. He has specialized in project management and civil design for port security projects and all hazards' studies. Mr. Cruz is ANSI/ASME certified in Risk Analysis and Management for Critical Asset Protection (RAMCAP). He has international experience including conducting port and rail facilities' assessments in Peru, Chile, South Africa, and Myanmar. Projects he has worked on include: Puget Sound Regional, All Hazards Risk Management/Mitigation Plan, Trade Resumption/Resiliency Plan, and Area Maritime Security (AMS) Assessment, Puget Sound, WA; Port of Tacoma Tideflats Facility All Hazards Assessment; and Area Maritime Security Committee Port-Wide All Hazards Management Plan, Los Angeles and Long Beach, CA.

# Panelists

**JOHN CLAUSON**
EXECUTIVE DIRECTOR
KITSAP TRANSIT

John Clauson was hired on at Kitsap Transit as a bus driver in 1983, after a 14-year career in the private sector as an entrepreneur. He's spent 39 years with Kitsap Transit, mostly as Service Development Director. For the last 10 years, he has served as Executive Director and continues to lead Kitsap Transit with a focus on communication, both internal and community-wide, and keeping KT involved in innovative transportation projects such as the fast ferry service between Kitsap and Seattle.

John continues to include passenger-only ferry service in the equation for transportation choices in Kitsap County. Under his leadership, Kitsap Transit completed the wake study for the cross-sound passenger-only ferry to Seattle and developed a sustainable 20-year business plan. In November 2016, residents of Kitsap County voted in favor of a sales tax increase to fund Kitsap Transit's cross-sound passenger-only ferry service from Bremerton, Kingston, and Southworth to downtown Seattle.

In addition to being Kitsap Transit's Executive Director, John is the current past-president of the Washington State Transit Association (WSTA) and has been a member of the Port Orchard City Council for over 39 years, a two-term president of the Kitsap Peninsula Visitor and Convention Bureau and a three-term president of the Bremerton Historic Ships Association.

**JAN GLARUM**
PLANS TRAINING, & EXERCISE OFFICER,
KITSAP COUNTY DEPT. OF EMERGENCY MANAGEMENT

Mr. Jan Glarum has extensive experience in the fields of Emergency Medical Services (EMS), fire, law enforcement, healthcare, public health, and emergency management. He is a Department of Defense validated medical CBRNE Subject Matter Expert and HSEEP qualified. Mr. Glarum has co-authored several books on subjects including biosecurity and bioterrorism, hospital hazardous material emergency response, Incident Command, Pandemic Planning and Response and Emergency Management. In 2018 he released his first novel, Cascadia Rips: The Legend of Thunderbird and Whale Reborn. His interest in maritime activities started when he began commercial salmon fishing a dory out of Cannon Beach Oregon in the late 70s and fishing still is a favorite pastime.

# Panelists Cont.

**TIM LUPHER**
PORT RECOVERY PLANNER
U.S. COAST GUARD SECTOR PUGET SOUND

Mr. Lupher is 1 of 2 6 USCG subject matter experts for maritime transportation system (MTS) recovery throughout the US. He also has a specialized focus on developing policy and procedures to enhance the maritime security, safety & environmental protection of the maritime security, safety & environmental protection of the Pacific Northwest, ad building and maintaining interagency and stakeholder relationships. As a certified master exercise practitioner (MEP), he leads planning, design, and execution of exercises for all-hazards scenarios across the maritime domain. He also advises the command on incident management and special projects requiring expertise, experience, discretion, and deep understanding of PNW maritime and emergency management issues.

**JAMES WEAVER**
DIRECTOR OF MARINE SERVICES
PORT OF BREMERTON

# Facilitators and Moderators

**BRANDON HARDENBROOK**
CHIEF OPERATING OFFICER
PACIFIC NORTHWEST ECONOMIC REGION

Mr. Hardenbrook's duties include overseeing all PNWER staff and programs in coordination with PNWER's governing board, which includes legislative leadership of each state, province, and territory as well as governors and premiers, and private sector leaders. PNWER's 22 working groups include trade & economic development, energy, border issues, agriculture, invasive species, tourism, disaster resilience, transportation, water policy and others.

**SASHA RECTOR**
REGIONAL CATASTROPHIC PROGRAM COORDINATOR
KING COUNTY EMERGENCY MANAGEMENT

# Facilitators and Moderators Cont.

**ERIC HOLDEMAN**
DIRECTOR
CENTER FOR REGIONAL DISASTER RESILIENCE

Eric Holdeman is the Director of the Center for Regional Disaster Resilience (CRDR), which is part of PNWER. His areas of expertise include building regional coalitions between agencies, governments, the private sector and non-profits. Building regional disaster resilience is key to what he does day-to-day. He has also authored numerous articles for professional journals and opinion pieces for local, regional and national newspapers. He is a Senior Fellow, columnist, contributing writer and blogger for Emergency Management Magazine. An experienced and accomplished public speaker, he is sought after to present at national and regional conferences.

Eric has the United States' most popular blog on the topic of emergency management at www.disaster-zone.com.

**JEANNIE BECKETT**
PRINCIPAL
THE BECKETT GROUP

Jeannie's 40 years of expertise in provides her clients with "boots on the ground" knowledge of business continuity, emergency management and the logistics of inland transportation. Ms. Beckett works with agencies and associations to leverage their resources and build economic vitality for their regions. Before starting The Beckett Group in 2009, She had a 25 year career with the Port of Tacoma in leadership positions including Senior Director, Inland Transportation, and Director of Operations. Jeannie has worked on projects that profile the logistics and freight delivery needs, business resiliency and recovery as well as infrastructure resiliency efforts. These projects pinpointed areas of inefficiency in the highway and rail freight delivery systems and the lack of business / infrastructure continuity planning.

# BREMERTON/CENTRAL PUGET SOUND MARITIME DISASTER RESILIENCE VIRTUAL WORKSHOP

**Thursday, April 14, 2022 | 9:00 am to 12:30 pm**

*A Regional Catastrophic Planning Grant Project*

## WELCOME & INTRODUCTIONS | 9:00 AM

Welcome & Opening Remarks will be provided by Brendan McCluskey, Director of King County Emergency Management, and City of Bremerton Mayor Greg Wheeler.

Brendan McCluskey
Director,
King County Emergency Management

Greg Wheeler
Mayor,
City of Bremerton

## PROJECT OVERVIEW | 9:15 AM

Sasha Rector, Regional Catastrophic Program Coordinator at King County Emergency Management, and Brandon Hardenbrook, Deputy Director of the Pacific Northwest Economic Region, will give a brief presentation on the project and the workshop goals and objectives.

King County
Emergency Management

Sasha Rector
Regional Catastrophic Program Coordinator,
King County Emergency Mgmt

Brandon Hardenbrook
Deputy Director,
Pacific NorthWest Economic Region

## ANTICIPATED EARTHQUAKE & TSUNAMI HAZARDS | 9:30 AM

Experts from Washington Geological Survey and Washington Emergency Management Division will describe what the Central Puget Sound area can expect during a Cascadia Subduction Zone Earthquake.

Danté DiSabatino
Inner Coast Tsunami Program Coordinator
Washington State Emergency Management Division

Daniel Eungard
Subsurface Lead and Tsunami Hazards Geologist
Washington Department of Natural Resources

## BREAK | 10:25 AM

Learn more at
bit.ly/KingCounty-RCPGP

King County Emergency Management

Puget Sound Regional Catastrophic Preparedness Grant Program

Pacific NorthWest Economic Region

CRDR
Center for Regional Disaster Resilience

## LOCAL RESPONSE TO ANTICIPATED IMPACTS | 10:30 AM

Short presentation on GIS map of maritime capabilities in the area, followed by panel discussion with several key maritime and emergency management partners. Moderated by Eric Holdeman, Director of PNWER's Center for Regional Disaster Resilience.

John Clauson
Executive Director,
Kitsap Transit

Jan Glarum
Plans, Training, & Exercise Officer,
Kitsap Co. Dept. of Emergency Management

James Weaver
Director of Marine Facilities,
Port of Bremerton

Tim Lupher
Port Recovery Planner,
U.S. Coast Guard Sector Puget Sound

## FACILITATED DISCUSSION: COMMUNICATION & INFORMATION SHARING TOOLS | 11:15 AM

Attendees will be invited to join a discussion about how to build connections between the maritime industry and emergency managers and provide for better communication, information sharing, and understanding each partner's roles and responsibilities in the event of a disaster. Moderated by Jeannie Beckett, Principal at The Beckett Group.

Jeannie Beckett
Principal, The Beckett Group

## BEST PRACTICES IN THE CENTRAL PUGET SOUND REGION | 11:45 AM

Jan Glarum, Plans, Training, and Exercise Officer for the Kitsap County Department of Emergency Management, will speak on Marine Volunteer Management in Kitsap County and Supporting Logistical Operations by Water & Other Modes.

Jan Glarum
Kitsap Co. Dept. of Emergency Mgmt.

## VISION FOR MARITIME RESILIENCE FRAMEWORK | 12:15 PM

David Cruz will brief Moffat & Nichol's upcoming work to develop a Maritime Resilience Framework and invite input from workshop participants on how to keep the Framework updated and relevant and ensure the maritime sector can stay engaged.

David Cruz
Senior Port Planner, Moffatt & Nichol

## ADJOURN | 12:30 PM

Learn more at bit.ly/KingCounty-RCPGP

Puget Sound Regional Catastrophic Preparedness Grant Program

King County Emergency Management

Pacific NorthWest Economic Region

CRDR Center for Regional Disaster Resilience