

# PUGET SOUND MARITIME DISASTER RESILIENCE

*A Regional Catastrophic  
Preparedness Grant (RCPG)  
Project*



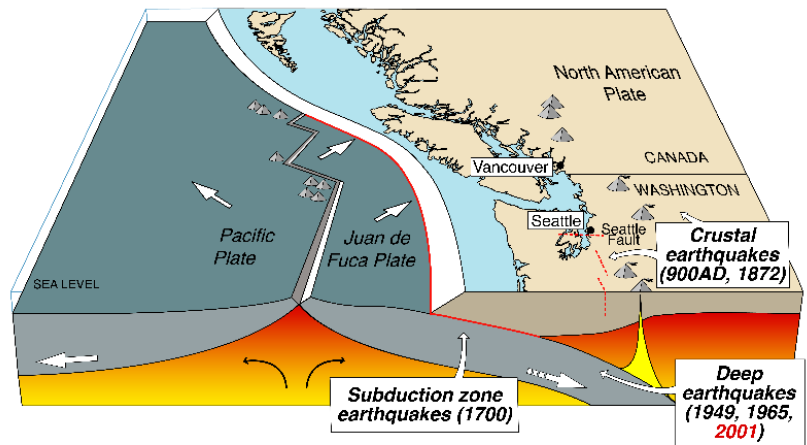
## PROJECT PURPOSE

The Federal Emergency Management Agency (FEMA) provided a Regional Catastrophic Preparedness Grant to 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, or even years.

## CATASTROPHIC RISK

The Puget Sound faces enormous risk from the Cascadia Subduction Zone (CSZ), a 1,000-kilometer-long fault just off the coasts of Washington, Oregon, and British Columbia that can generate magnitude 9.0 earthquakes (Pacific Northwest Seismic Network). In addition to the CSZ, the Puget Sound Region contains several other crustal faults. These include the Seattle Fault, the Tacoma Fault, and the South Whidbey Island Fault. Jurisdictions throughout the region recognize the significance of the challenges these hazards pose to the distribution of life-sustaining commodities. Addressing the Logistics and Supply Chain Management core capability to respond to this hazard is a high priority for the region.

### Cascadia earthquake sources



Graphic courtesy of Pacific NW Seismic Network & USGS

## PROJECT SCOPE

The RCPG project will focus on public and private maritime assets in the following six port areas in the Puget Sound region, and involve stakeholders from the State of Alaska.

- Port of Bellingham
- Port of Bremerton
- Port of Everett
- Port of Seattle
- Port of Tacoma
- Port of Olympia



Image courtesy of U.S. Department of Transportation,  
Federal Highway Administration

In 2013, this span of Interstate 5 over the Skagit River in Mount Vernon, Washington collapsed after being struck by a semi truck. The long closure to freight resulted in far-reaching direct and indirect impacts to the Puget Sound Region.

## POST-EARTHQUAKE RESPONSE AND RECOVERY CHALLENGES

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 Puget Sound provides an opportunity to transport goods, personnel, and materiel both in the immediate response period and throughout long-term recovery.

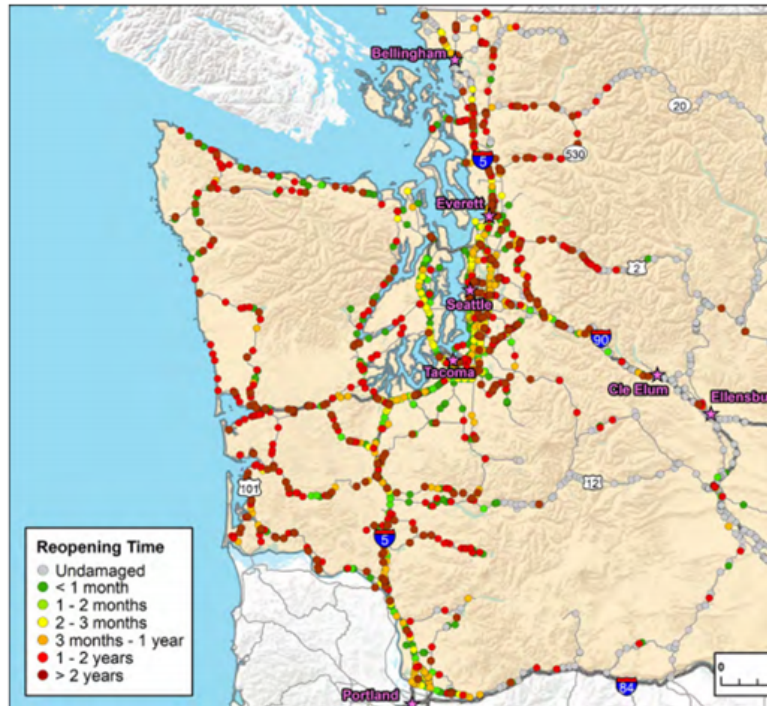
### Community Points of Distribution (CPODs):

CPODs are centralized locations where the public receives life-sustaining commodities following a disaster. Commodities may include shelf-stable meals, water, ice, tarps and blankets.

## MARITIME RESILIENCE OPPORTUNITIES

One transportation asset that will remain functional is the Puget Sound's waterway. They 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. Planning assumes all land and air transportation infrastructure will be significantly damaged for months and possibly for years. The RCPG project will focus on six port areas across the Puget Sound, involve public and private partners from the region and the State of Alaska, and work to identify specific maritime assets and capabilities available that could play a role in response, recovery, and restoration efforts.

Bridge Seismic Screening Tool (BSST) projected reopening times of highway bridges in Washington after the CSZ Scenario Earthquake



Graphic courtesy of Washington State Transportation Systems RRAP,  
March 2019

## PROJECT DELIVERABLES

The project is divided into two phases which will take place over the course of three years. Phase 1 will examine port area and maritime capabilities, plans, and other resources that could be utilized during the response and recovery phases after a major catastrophic event. Phase 2 will utilize the data collected in Phase 1 to develop a regional Maritime Resilience Framework to coordinate efforts.

### PHASE 1 DELIVERABLES (MAY 2021-APRIL 2022)

Phase 1 of this project will explore disaster risk, review current response and recovery plans, and inventory current and needed community assets. An initial series of region-wide workshops will introduce these concepts to relevant stakeholders and help create a shared understanding of what the region may need to respond to a CSZ earthquake and how best to obtain those resources and distribute them through Community Points of Distribution (CPODs)

- Workshop 1 will educate stakeholders from all sectors on risks faced in the Puget Sound and fostering collaboration between emergency managers and the maritime industry;
- Workshop 2 will focus on identifying and mapping the specific assets in the region that could be used to move goods and supplies to CPODs;
- Workshop 3 will overlay a map of CPODs and assets and evaluate how to connect the CPODs with an appropriate port for resupply; and
- Six additional workshops will be focused on each individual port area to study more deeply the available assets and potential roles and capabilities of each maritime stakeholder.

A final, regionwide workshop will bring all maritime and emergency management stakeholders back together to review work accomplished and identify any additional gaps and opportunities in the maritime sector's role in the response and recovery processes.

### PHASE 2 DELIVERABLES (APRIL 2022-SEPTEMBER 2023)

During Phase 2 of this project, the Moffatt & Nichols team will integrate the data collected in Phase 1 into a Maritime Resilience Framework, and test the Framework in a tabletop exercise. In each port area, the team will also conduct a Homeland Security Exercise and Evaluation Program (HSEEP)-compliant exercise to socialize and train the Framework. Finally, the team will update regional and state catastrophic plans with a maritime annex to identify key maritime capabilities and opportunities for response, recovery, and restoration.



Participants in the 2018 Blue Cascades VII workshop studied the impacts of a CSZ earthquake on Communications, Energy, Transportation Systems, and Water & Wastewater systems in the Puget Sound.

## INITIAL PROJECT PARTNERS

- Black Ball Ferry, City of Seattle, Island County, King County, NW Healthcare Response Network, Pacific Merchant Shipping Association, Port of Anchorage, Port of Everett, Port of Tacoma, Puget Sound Pilots, Snohomish County, Marine Exchange, Skagit County, Washington Emergency Management Division, and Thurston County Emergency Management.
- The Pacific Northwest Economic Region (PNWER) will lead planning and coordination of stakeholder outreach, Phase 1 workshop development, and facilitation.
- Engineering firm Moffatt & Nichol will lead Phase 2, development of the Framework and working with stakeholders to exercise the final product.



For more information about this project, visit the [Center for Regional Disaster Resilience](http://regionalresilience.org) at [regionalresilience.org](http://regionalresilience.org)

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