

Oregon Releases New Guidance to Support Tsunami Vertical Evacuation Structures



Oregon State University's Hatfield Marine Science Center in Newport, OR (pictured) has an integrated tsunami vertical evacuation structure built into the building. Photo Credit: Oregon State University.

SALEM, Ore. — The Oregon Department of Emergency Management (OEM) announces the publication of [Oregon's Tsunami Vertical Evacuation Structure \(VES\) Guidance](#), a new resource designed to help coastal communities reduce loss of life during a locally-generated tsunami.

"Oregon's coastal communities face some of the most urgent tsunami risks in the nation, and this guidance provides several considerations for tsunami safety that can inform locally driven solutions," **OEM Director Erin McMahon**, said. "By combining the latest hazard science with practical planning, design and engagement tools, the Vertical Evacuation Structure Guidance outlines the advantages and disadvantages of options taking into consideration community, geography, and cost to further assist communities in implementing these lifesaving projects. This resource reflects strong collaboration across state, federal and local partners, and we appreciate the expertise and dedication that made it possible."

Ground shaking during a major Cascadia Subduction Zone (CSZ) earthquake may last three minutes or longer. In as little as ten minutes after the earthquake shaking begins, a tsunami will begin to inundate coastal communities across Oregon, Washington, Northern California and British Columbia. For some communities, even evacuating toward natural high ground as soon as the shaking stops may not be enough—the distance is simply too great.

Strategically placed vertical evacuation structures can shorten the distance to high ground, saving hundreds and potentially even thousands of lives. These engineered facilities—towers, berms, specially designed buildings, or other elevated platforms—provide refuge above anticipated tsunami flooding and can offer critical protection when seconds matter.

The newly released guidance integrates hazard science, evacuation modeling, planning and design considerations, community engagement strategies, funding opportunities, and regulatory requirements to support informed local decision-making. It outlines how to assess need, explore options, and move projects from concept through design and implementation.

Key components of the guidance include:

- Cascadia and tsunami hazard explanation

- Current evacuation timelines, delays and challenges
- Vertical evacuation options such as buildings, towers and berms
- Case studies from existing and emerging VES projects
- Planning and implementation frameworks
- Community engagement tools and approaches
- Funding and financing strategies
- Technical and interdisciplinary expertise needed for VES development
- Regulatory requirements, including tsunami design provisions and Oregon's Tsunami Hazard Overlay Zone
- Mapping resources and interactive GIS tools

Acknowledgment of Partnership

Development of this guidance was a collaborative effort led by the Oregon Department of Emergency Management and the Oregon Department of Geology and Mineral Industries, with support from NOAA's National Tsunami Hazard Mitigation Program and FEMA's Emergency Management Performance Grant program.

OEM extends its sincere appreciation to the project leads, coordinators, and partner agencies whose expertise, review, and contributions informed this document. Their collective effort and commitment were essential to shaping the recommendations and resources now available to Oregon communities.

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It is the mission of the Oregon Department of Emergency Management (OEM) to Lead collaborative, statewide efforts to support Oregon's communities before, during and after emergencies, with a vision to create a ready and resilient Oregon.

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