

# Oregon's 5-year tsunami activity report (1997–2001)

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**Abstract.** Oregon tsunami mitigation efforts have focused on tsunami evacuation planning through 1) development and dissemination of evacuation brochures, 2) distribution and installation of interpretive, hazard zone, evacuation route, and evacuation site signs, 3) development and distribution of various educational materials, 4) development and distribution of new videos and distribution of existing videos, 5) development of school curriculum, 6) evacuation planning for schools in the inundation zone, and 7) tsunami education/planning workshops. Tsunami evacuation brochures include general tsunami information and a map with evacuation lines (safe zone) and often evacuation routes and evacuation sites. Brochures have been developed for 17 Oregon cities and Fire Protection Districts and will be developed for 8 more by 2001. Tsunami inundation maps were used as the basis for the evacuation lines. The goal is to have all tsunami safe zones, evacuation routes, and sites on a coastal GIS database. Educational materials include bookmarks, stickers, magnets, mugs, and tent cards. A catalogue was produced that contains all the available educational materials, videos, and signs. School curriculum is developed in accordance with state educational standards. A workshop for coastal lodging facilities was held February 2000 at the Inn at Spanish Head, Lincoln City, Oregon to educate and assist lodging facilities located in high-risk areas with tsunami evacuation planning.

## 1. Education

We have created templates, purchased, and distributed tsunami hazard zone, evacuation route, and evacuation site signs to the coastal counties. These signs have been installed and are scheduled to be installed in various locations on the coast. We developed a tsunami hazard zone decal that can be placed on existing signs, especially in parks. We also developed an interpretive sign that has been placed in state parks and other locations along the coast. We have assisted schools with evacuation planning and tsunami sign purchase. The Oregon Department of Transportation will develop entering and leaving tsunami hazard zone signs that will be placed at selected locations on Highway 101.

We have produced and distributed a variety of educational materials, either Oregon specific or generic that can be used by all coastal states. We produced an Oregon tsunami information brochure for residents and tourists. For a multi-state project, Oregon took the lead in producing several generic educational materials, such as tsunami mugs, stickers, magnets, tent cards, bookmarks, etc. All these are included in a Tsunami Public Education Materials Catalog created from the multi-state project.

Oregon produced an educational tsunami video (*Tsunami: Surviving the Killer Wave*) that was distributed to all schools and coastal state parks in Oregon. We also purchased and distributed *The Wave: A Japanese Folktale* for use in grades K–3.

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We developed a tsunami educational curriculum for grades K–12. Curriculum workshops were offered to teachers.

We've spoken at several public forums.

## **2. Tools for Emergency Managers**

We created inundation maps for the entire Oregon coast that limit construction of new essential and special occupancy structures in tsunami inundation zones (Oregon Revised Statutes 455.446 and 455.447). We have also produced more detailed inundation maps for Warrenton/Astoria, Seaside, Lincoln City, Newport, Coos Bay, and Gold Beach. NTHMP funds have been used to fund the Warrenton/Astoria, Gold Beach, and Coos Bay maps. The Newport map was funded by the National Earthquake Hazard Reduction Program of the U.S. Geological Survey (USGS), the Seaside map was funded by state and local sources, and the Lincoln City map was funded by state and federal sources.

These inundation maps have been the basis for the development of evacuation maps/brochures for several communities along the coast. The evacuation maps include an evacuation line and often evacuation routes and sites, as well as text. We are digitizing and centralizing all existing and new evacuation data (lines, routes, and sites) and developing one map/brochure design for the entire coast. Evacuation maps for three locations without maps will be produced using this uniform design. All evacuation maps will be incorporated into a web-based coastal geographic information system being developed by the Oregon Department of Land Conservation and Development.

Several communities have warning systems in place from simple sirens to more sophisticated electronic/voice systems and telephone systems.

Oregon took the lead in writing a multi-state project Tsunami Warning Systems and Procedures Guidance document. The document is essentially completed and will be the basis of discussion at the Tsunami Warning Workshop scheduled for 14–15 May 2001 in Portland.

Oregon completed a community needs assessment, and two general public tsunami surveys.

## **3. Building and Land Use Guidance**

Oregon created inundation maps for the entire Oregon coast that limit construction of new essential and special occupancy structures in tsunami inundation zones (Oregon Revised Statutes 455.446 and 455.447).

## **4. Information Exchange and Coordination**

There is a good working relationship with all coastal county emergency managers, first responders, and planners.

Oregon has tsunami web pages and DOGAMI is upgrading theirs.

Oregon works with British Columbia, Guam, Marianas, and American Samoa through WSSPC and chairs the WSSPC Tsunami committee.

We held a Tsunami Workshop for emergency managers, first responders, and planners. We held a planning workshop for lodging facilities.

We are coordinating the multi-state project Tsunami Warning Workshop scheduled for 14–15 May 2001.

## 5. Long-Term Tsunami Mitigation

Oregon started a tsunami workgroup that assisted with writing and reviewing the tsunami warning systems and procedures guidance document.

Oregon will develop a tsunami hazard mitigation plan for state government.

Oregon has Revised Statutes 455.446 and 455.447 that limit construction of new essential and special occupancy structures in tsunami inundation zones.

Oregon, through the department of Geology and Mineral Industries and Oregon Emergency Management, offers ongoing advice and consultation with coastal communities regarding evacuation planning, signage, and local educational programs.

## 6. Budget Recommendations for Next 5 Years (Federal)

Task	Cost
Development and printing of tsunami evacuation maps, update of database, and purchase of tsunami signs	\$100,000
Travel to steering group meetings and local meetings	70,000
Warning system improvement (NOAA Weather Radio, etc.)	277,280
Subtotal	447,280
<b>State contribution</b>	540,000
<b>Total</b>	<b>\$987,280</b>