Tsunami Preparedness in Communities
(Role and Responsibilities)

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National Tsunami Hazard Mitigation Program

- Warning Guidance
- Mitigation

= Required Community Products

Hazard Assessment

Hilo Bay
State of Washington Tsunami Program

State/Local Tsunami Workgroup

- Bottom up approach
  - Strategies based on community needs
  - Rapid buy in

“Defining clear goals and objectives is one of the most important -- Initial activities provides a platform for an effective risk Communication”
An Integrated Emergency Management Approach

Hazard Identification & Risk Assessment + Vulnerability Analysis = Priorities

Mitigation/Preventions Strategies = Reduce Impact

If Hazard Remains = Get Ready

Preparedness Education Contingency Planning Effective Response Fast Recovery
“Risk information that comes from a trustworthy source is more readily believed than information from an untrustworthy source”
Identifying the Hazard

Earthquakes

Tsunami Evidence
- Published geologic tsunami deposit
- Candidate geologic tsunami deposit seen in reconnaissance
- Native American Stories
- Published co-seismic Vertical Deformation Estimates (Color-coded for Tsunami Evidence)
  - Uplift of n meters
  - Subsidence of n meters
- Fault Zones
- Vertical deformation for Mw 7.3 Seattle Fault

Peak Ground Acceleration with 2% probability of exceedance in 50 years (after Frankel, et al., 1996)

Map (a) is based on discussions held during the Puget Sound Tsunami Sources workshop held in Seattle, Washington on 10 June 2002, and on subsequent reviews and discussion by workshop participants. Contributing institutions included Kami State University, National Oceanic and Atmospheric Administration (NOAA), University of Nevada, University of Washington, U.S. Geological Survey (USGS), and Washington Division of Geology and Earth Resources. The workshop was organized by NOAA's Center for Tsunami Warning Efforts (CTWE), the USGS, Washington's Department of Natural Resources (WADNR) and Washington's Emergency Management Division (WEMD).
Hazard Identification & Risk Assessment + Vulnerability Analysis = Priorities

- **Risk Assessment**
  - A measure of the probability that damage to life, property, and/or the environment
- **Vulnerability**
  - Exposure to a threat
- **Vulnerability Analysis**
  - Identifies & quantifies what is susceptible to damage

“Financial impact, business impact, and real estate values are often important issues to the community when discussing risk issues”
Risk Assessment + Vulnerability Analysis

Seattle Inundation Modeling

(a) Source Deformation

(b) Maximum Inundation Depth

(c) Maximum Current Speed
If Hazard Remains = Get Ready

- Preparedness Education
- Contingency Planning
- Effective Response
- Fast Recovery

• Develop Evacuation Routes
• Signage
• Public Education
• Alert and Notification Systems
Evacuation Routes

Planning Elements

✓ Identify ALL Stakeholders
✓ Workshops
✓ Single Access Roads
✓ Congregation areas

“Local tsunami evacuation maps developed based on modeling, maps and local oral history”
Tsunami Signs

- Pre-event Awareness
- Evacuation Routes
- Consistent Message
- Life Safety Signs
Preparedness Education

- Media
- Interpretive Signs
- Education Materials
- Workshops
Media

Major partner in awareness education

- Newspaper
- Radio
- TV
Interpretive Signs

Placed in areas that are highly trafficked
Education Materials

Tsunami!
Safety Tips for the Washington Coast!

Surviving a Tsunami—Lessons from Chile, Hawaii, and Japan
Workshops

Ties scientific research and emergency management principles

• Partnership brings credibility to program and brings the program to the community
Alert & Warning

- Getting warning to the responders
- Getting warning to the public
- Use table top exercises to identify problems and for training
- Conduct drills in the community
- Test the notification systems
TsunamiReady Program

- 24-hour warning point
- Duplication of communication systems
- Workshops
- Tsunami Plan
TsunamiReady Program