

Geoscience Careers and Public Safety: Part of Your Community

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Objectives

- Define need for geoscience expertise in state and local government
- Identify professional roles for geoscientists



Natural hazards*

*Not a comprehensive list

- **Seismic/volcanologic**
 - Earthquake/tsunami
 - Volcano
- **Hydro-meteorological**
 - Tropical storms
 - Floods
 - Winter storms
 - Severe weather (localized)
- **What are important differences between these two categories?**



Who deals with hazards?

- State geological surveys
- State emergency management
- Other state agency
- Local emergency management
 - County
 - City
 - Special district



Geoscience and natural hazards

- Mitigation
- Preparedness
- Response
- Recovery



Mitigation

- Hazard vulnerability analyses (HVA)
- Land-use planning
- Building codes
- Structure/site improvements



Preparedness

- **HVA applications**
 - Prioritize planning, training, equipment acquisition
 - Realistic training/exercise scenarios
- **Emergency Operations Plans (EOPs), other response plans**
 - Realistic planning assumptions
 - Hazard-specific components



Assumptions

Mount Rainier National Park
November 2006 Flood Damage



The Emergency Operations Center at Longmire, after the flood



Assumptions



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Assumptions





Response

- **Warning**
 - Potential duration
 - Possible event paths
 - Delineating hazard area(s)
 - **Uncertainty**
- **Guidance for initial and long-term response considerations**
- **Potential obstacles to response and recovery**
 - Aftershocks



Recovery

- **Carpe diem!**
 - **Fleeting public awareness, political support**
- **Policy input:**
 - **Limit rebuilding in hazard-zones**
 - **Build to better standards**
 - **Develop more resilient infrastructure**
 - **Incorporate more realistic planning assumptions**

Challenges

- **Generally low level of scientific/technical literacy**
 - **Poor appreciation of uncertainty and scientific method**
- **Complex issues**
 - **Socioeconomic**
 - **Political**
 - **Ethical**



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