

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





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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