

# Community Emergency Response Training

## Unit 10: All Hazards



Community Emergency Response Training

# Overview and Objectives

- 15 hazards (natural and cultural)
- Regional emphasis
- Awareness equals preparation
- Mitigation
- Understand the characteristics of all hazards
- Identify risks in this region
- Describe actions to take before, during and following a disaster.



# For All Hazards. . .

- Family disaster plan
- Teach all family members how and when to turn off gas, electricity and water.
- Teach children: 9-1-1 and radio stations to tune in for emergency information.
- Local Emergency Management Office or American Red Cross chapter



# For All Hazards continued.

- 72 hour (3-day) kit
- Develop an emergency communication plan
- Mitigate – Prevent, reduce, or lessen the damaging effects
- Know your insurance  
Keep it up-to-date

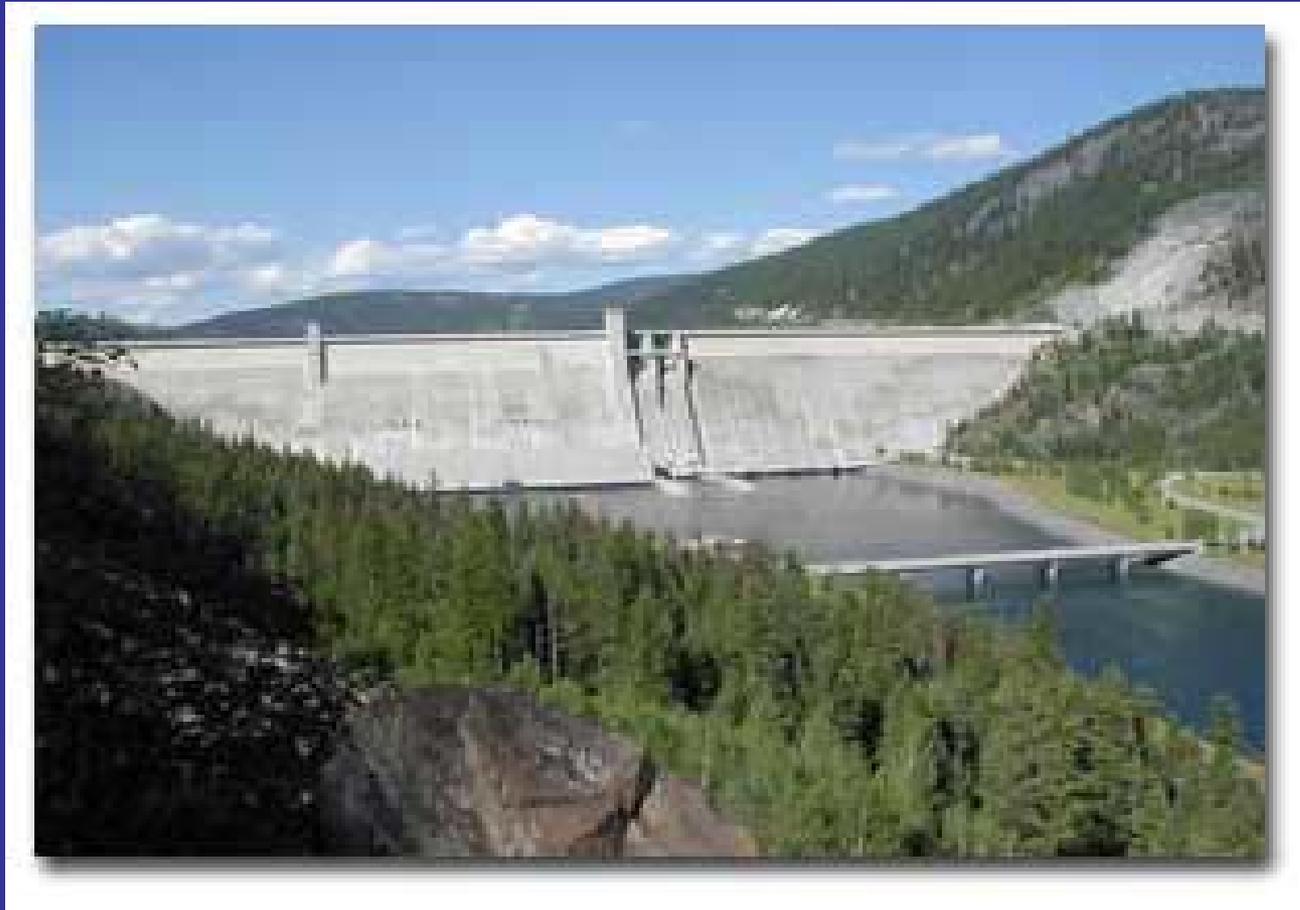


# Dams

- Dams
- When or where can a dam break?
- What damage can occur from dam failure?
- Emergency Information



# The Libby Dam in Montana



<http://www.libbymt.com/areaattractions/libbydam.htm>



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# Earthquake

Earthquakes?

When and where do earthquakes occur?

What damage can occur from an earthquake?

Emergency Information.



# Earthquake Damage to Structures



San Miguel, CA

Photographer - Dane Golden



Seattle, WA

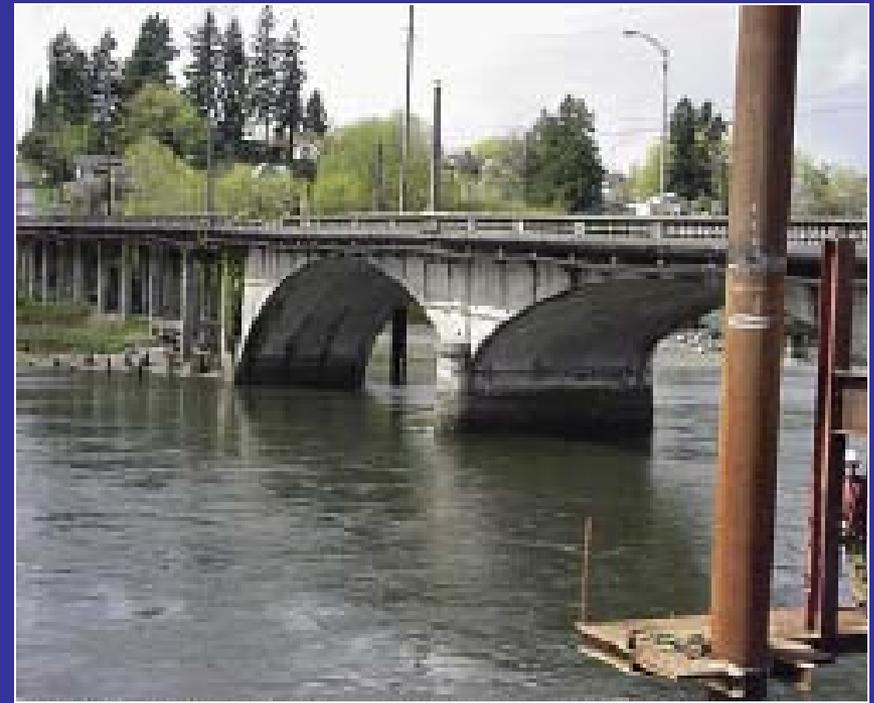
Photographer - John Shea



# Earthquake Damage to Infrastructure



Collapsed highway  
Northridge, CA



Damage to bridge over water  
Olympia, WA

Photographer - Robert A. Eplett



Photograph - FEMA News Photo  
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# Extreme Heat

- Extreme heat?
- Where does extreme heat occur?
- What damage can occur from extreme heat?
- Emergency Information.



# Extreme Heat / Drought



**‘Dust Devils’, NV**

Photographer - K. Dewey, High Plains  
Regional Climate Center Boulder City, NV



**Lake Meade, NV**

**Low Water Mark**

Photographer - K. Dewey, High Plains  
Regional Climate Center Boulder City, NV



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# Flood

- Flooding.
- When and where do floods occur?
- What damage can occur from a flood?
- Emergency Information.



# Flood Damage



Ice Jams during flooding

FEMA News Photo



Community members  
sandbagging

Photographer – Dave Saville



# Flood Damage



Grand Forks Herald Newspaper building after flood caused fire  
Photographer – Phil Cogan



Flooded railroad bridge with 24 foot clearance  
Photographer – Phil Cogan



# Flood Damage



Earth dike at 52 feet,  
Floodwaters at 54 feet +.

Photographer – Dave Saville



Sheriff's dinky on patrol  
in flooded area

Photographer – Dave Saville



# Flood Damage



Humane Society animal rescue

Photographer – Dave Saville



Rescued cat

Photographer – Dave Saville



# Hazardous materials

- What are hazardous materials?
- When and where do hazardous material disasters occur?
- What damage can occur from an hazardous materials disaster?
- Emergency Information.



# Hazardous Materials



Oil Spill at Valdez Harbor  
Photographer - Terry FitzPatrick



Hazardous Materials drill  
Chardon Ohio

<http://www.chardonfire.com/training3.htm>



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# Hurricanes

- Hurricanes.
- When and where do hurricanes occur?
- What damage can occur from a hurricane?
- Emergency Information.



# Hurricane Infrastructure Damage



Boardwalk and shoreline  
Damage from storm surge

Photographer – Mark Wolfe



Road damage from hurricane

Photographer – Dave Saville



# Hurricane Damage to Homes



Shoreline mitigated home and inland mitigated home  
both damaged by hurricane.

Photographer – Dave Saville



# Hurricane Recovery Efforts



Power restoration efforts

Photographer – Michael Rieger



Disaster Temporary Housing

Photographer – Andrea Booher



# Landslides and Mudslides

- Landslides and mudslides.
- When and where do landslides and mudslides occur?
- What damage can occur from landslides and mudslides?
- Emergency Information.



# Landslides and Mudslides



Landslide at Peers Creek, NC

Photographer – Lief Skoogfors



Mudslide, Southern CA

Photographer – Laura Lee



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# Nuclear Energy Emergency

- What is a nuclear energy emergency?
- When and where do nuclear energy emergencies occur?
- What damage can occur from a nuclear energy emergency?
- Emergency Information.



# Nuclear Energy Emergency



President Jimmy Carter (in bus)  
on his way to Three Mile Island

Photographer – Frank Johnston © Copyright  
1999 The Washington Post Company



Burnt homes within a mile  
of the Los Alamos National  
Laboratory (nuclear facility).

Photographer Andrea Booher



# Terrorism

- Terrorism?
- When and where does terrorism occur?
- What damage can occur from terrorism?
- Emergency Information.



# Terrorism



1995 bombing of the Murrah Federal Building in Oklahoma City.  
Photography – FEMA News Photo



1993 - The bombed underground parking garage of the World Trade Center.  
Photography – Associated Press  
<http://www.emporis.com/en/bu/sk/wt/up/cb/>



# Thunderstorms and Lightning

- Thunderstorms and lightning.
- When and where do thunderstorms and lightning occur?
- What damage can occur from thunderstorms and lightning?
- Emergency Information.



# Thunderstorms and Lightning



Lightning strike in  
an urban area.

Photography – NOAA News Service



Thunderstorm and lightning  
in a forest.

Photography – NOAA News Service



# Tornadoes

- Tornadoes.
- When and where do tornadoes occur?
- What damage can occur from a tornado?
- Emergency Information.



# Tornado

Union City, Oklahoma  
NOAA Photo Library  
<http://www.photolib.noaa.gov>



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# Tornado



Mobile Home  
tornado damage

Photographer - Marvin Nauman



Home with foundation  
tornado damage

Photographer - Marvin Nauman



# Tornado Infrastructure Damage



**Public Utilities**

Photographer - Win Henderson



**Damage to roads and  
business area**

Photographer – Win Henderson



# Tornado Safe Room



Bank vault as a safe room in Tuscaloosa, AL after F-4 Tornado. Photographer - Jason Pack



Tornado damage surrounds the safe room used by this couple in Battlefield, MO  
Photographer – Adam DuBrowa



# Tsunami

- Tsunamis.
- When and where do tsunamis occur?
- What damage can occur from a tsunami?
- Emergency Information.



# Tsunami



1960 Tsunami in Hilo Hawaii. Generated from 8.6 earthquake in Chile. At land the earthquake movement was 9.5, killing 61 people. 537 buildings destroyed, damages in the millions. Photo: Pacific Tsunami Museum Archives - The Kohenen Collection and the Martin Polhemus Collection



# Tsunami



Views of the Halape Hawaii coast before and after the 1975 quake and tsunami. Notice the coconut grove standing in the sea as a result of the 11.5 foot subsidence of the shoreline.

"Before" photo courtesy of D. Reeser, National Park Service (Nov 1973)

"After" photo courtesy of P.W. Lipman, Hawaii Volcano Observatory (Dec 1975) .



# Volcano

- Volcanoes.
- When and where do volcanic eruptions occur?
- What damage can occur from an eruption?
- Emergency Information.



# Volcano



Mt. St. Helens, WA. Before the big eruption in 1980

Photograph – United States Geological Survey.



# Volcano



Mt. St. Helens, WA. Phreatic eruption begins, Spring 1980

Photograph – United States Geological Survey.



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# Volcano

Mt. St. Helens, WA.  
eruption Spring 1980  
Photograph –  
United States Geological Survey.



# Volcano



Mt. St. Helens, WA. Debris flow. Spring 1980

Photograph – United States Geological Survey.



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# Volcano



**Mt. St. Helens – Post eruption, 1980**

Photograph – United States Geological Survey.



# Volcano



Mt. St. Helens, Spring 2005. New magma dome forming  
Photograph – United States Geological Survey.



# Winter Storms

- Severe winter storms.
- When and where do winter storms occur?
- What damage can occur from winter storms?
- Emergency Information.



# Winter Storms



Severe ice damage to trees during a winter storm in Missouri, 2002. Photographer – David Stonner



# Performance Measure

## All Hazards

- At each table – Identify two hazards this region of the country may be at risk to encounter.
- Describe actions to take before these hazards.
- Describe actions to take during these disasters.
- Describe actions to take post disaster.
- Present this information to the whole class.
- Time – 5 minutes to prepare,  
3 minutes to present.





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