Flood Response for CERTs

Community Emergency Response Team

FEMA

citizen corps

Participant Introductions

- Introduce yourself to the class by providing your:
  - Name
  - Reason you want to learn more about flood response

Administrative Announcements

- Breaks
- Emergency exits
- Restrooms, smoking policy, cell phones silent
- Module completion

Module Purpose

To teach CERT members how to respond to a flood in a safe and efficient manner.

What You Will Learn

- CERT Basic Training Concepts That Apply to Flood Response
- Overview of Flood Response
- Personal Safety Around Floodwaters
- Working With Sandbags
- Building a Sandbag Barrier Activity

Module Objectives

- At the end of this module, participants will be able to:
  - Identify the CERT role in responding to floods
  - Explain *CERT Basic Training* concepts that apply to flood response
  - Describe how to know when a flood response will be needed and how the emergency management system responds to floods

Module Objectives (cont'd)

- At the end of this module, participants will be able to:
  - Explain the dangers of floodwaters and how to work safely around them
  - State how to work safely with sandbags
  - Demonstrate how to fill and move a sandbag correctly and construct a sandbag barrier correctly

What Do You Think?

- What experience do you have with floods or flood response?

Local Flooding History

- Event
- Response
- Lessons learned
- Future threats

Review of *CERT Basic Training* Concepts

- Onscene Management and ICS
- Maintaining Personal Safety
- Typical Flood Response Injuries

Onscene Management

Purpose of onscene management is to:

- Maintain safety of responders
- Provide clear leadership and organizational structure
- Improve effectiveness of rescue efforts

Incident Command System (ICS)

- CERTs are part of ICS
- Basic ICS structure is established by person who arrives first on scene
- CERT members always defer to professional responders
- If no professional responders on scene, CERT Incident Commander/Team Leader (IC/TL) is in charge

What Do You Think?

- What are the command positions of the ICS?

Team Organization

- CERT may operate in two ways
  - One team performing all tasks
  - Smaller teams performing specific tasks
- In all situations, each unit must have an identified leader
  - To supervise tasks being performed
  - To account for team members
  - To report information to his or her leader

Maintaining Personal Safety

- Personal safety is CERT member's #1 priority
- Know your limitations
  - Don't engage in activities that are uncomfortable
- Use buddy system

What Do You Think?

- What safety concerns do you have about flood response?

Typical Flood Response Injuries

- Working in and around floodwaters is dangerous
- Reminder: Safety precautions limit injuries
- Typical injuries
  - Heat- and cold-related injuries
  - Sprains
  - Strains
  - Lacerations
  - Blisters

Cold-Related Injuries

- Causes
  - Exposure to cold air or water
  - Inadequate food combined with inadequate clothing and/or heat
- Signs and Symptoms
  - Body temperature of 95° Fahrenheit (37° Celsius) or lower
  - Redness or blueness of the skin
  - Numbness accompanied by shivering
- Older people particularly at risk

Treating Cold-Related Injuries

- Remove wet clothing
- Wrap in blanket or sleeping bag; cover head and neck; protect from weather
- Conscious survivor: warm, sweet drinks and food; warm bath if possible
- Unconscious survivor: recovery position
- Do not use massage
- Keep survivor from walking around

Heat-Related Injuries

- Heat cramps
  - Muscle spasms from over-exertion in extreme heat
- Heat exhaustion
  - Loss of body fluids through heavy sweating while working in extreme heat
  - Blood flow to skin increases, blood flow to vital organs decreases
  - Result: mild form of shock
- Heat stroke
  - Life-threatening
  - survivor's temperature control system shuts down; possible brain damage and death

Treating Heat-Related Injuries

- Place survivor in cool environment
- Cool body slowly with cool, wet towels or sheets
- Have survivor drink water slowly: ½ glass every 15 minutes
- If vomiting, cramping, or loss of consciousness: NO food or drink; alert medical professional ASAP

Treating Sprains and Strains

- Signs
  - Tenderness at injury site
  - Swelling and/or bruising
  - Restricted use, or loss of use
- Treatment
  - Immobilize and elevate
  - Treat it as if it were a fracture

What Do You Think?

- What did you learn in *CERT Basic Training* about immobilizing a sprain or strain?

Splinting a Sprain or Strain

- Support injured area above and below site of injury, including joints
- Assess PMS in extremity before initiating splint
- Try to splint injury in position that you find it
- Don’t try to realign bones or joints
- Fill voids to further stabilize and immobilize injury
- Immobilize above and below injury
- After splinting, reassess PMS and evaluate against initial PMS assessment

Treating Lacerations and Blisters

- Keep blisters clean and intact
- Control bleeding
  - Direct pressure
  - Elevation
  - Pressure points
- Dress and bandage wound
  - Irrigate wound with clean, room temperature water
  - Apply dressing and bandage to keep wound clean and control bleeding

Overview of Flood Response

- What Is a Flood?
- The Emergency Management Response
- Flood Response Supplies, Operations, and Tools

What Is a Flood?

- One of most common hazards
  - May be confined or widespread
  - May develop slowly or quickly
- Types
  - Coastal flooding (from storms)
  - Overland (from rain, snow melt)
  - Flash floods (from heavy rain in short time)
  - Ice jams (from rapid warming and snow melt)
  - Dam and levee failure

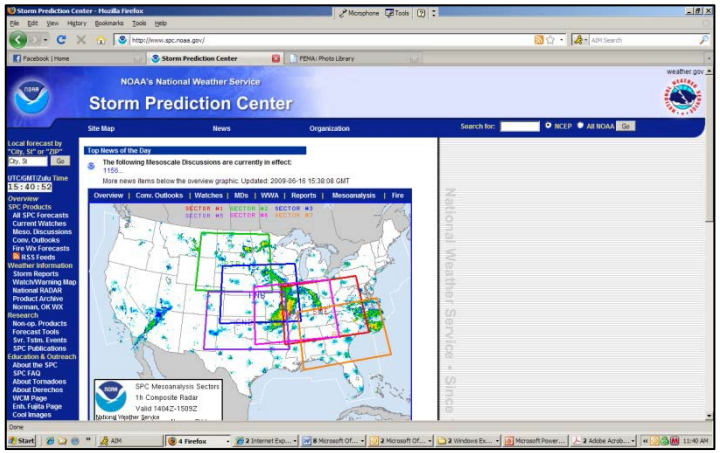
Scenario

What Do You Think?

- How do you know if a flood is coming?

National Weather Service

- Storm Prediction Center issues watches and warnings
- CERT members should monitor these alerts during severe thunderstorms and coastal storms



Flood Watch

- Indicates that flooding is possible and situation could worsen
- During a flood watch, you should:
  - Watch water levels
  - Stay tuned for further advisories
  - Alert neighbors

Flood Warning

- Issued when flooding is expected
- Flash flood warning issued after few hours of locally heavy rainfall, a dam or levee failure, or water released from ice jam

Flood Warning (cont'd)

- During a flood warning, you should take action
  - Alert neighbors
  - Listen to radio or television for further instruction
  - If any possibility of flash flooding, move to higher ground immediately
  - Prepare to evacuate
  - Evacuate

The Emergency Management Response

- Response protocols vary by community
  - Protocols are described in community's Emergency Operations Plan
- Roles and responsibilities
  - Many public and private partners contribute to flood response
  - Roles and responsibilities are determined by local jurisdiction and may change

CERT Roles and Responsibilities

- CERT roles will vary by type of incident
- Adhere to protocols for that incident
- Do not self-activate
- Remember personal safety
  - Don’t take on more than you can handle
  - CERT Safety Officer and IC/TL will help monitor individual and team safety and well-being

Flood Response Supplies

- Sandbags
- Polyethylene: commonly called “Poly”
- Lumber and planking
- Shovels, wheelbarrows, etc.
- Other basic supplies
  - Drinking water and sanitation supplies
  - First aid kit and gloves

Flood Response Operations

1. Supply and transportation
2. Filling sandbags
3. Moving sandbags
4. Building a sandbag barrier
5. Flood patrols
6. Support services

Flood Response Equipment

- Pumps
- Trucks
- Forklifts
- Front-end loaders
- Sandbag-filling machines

Flood Response Barriers

Tubes filled with water

Sandbags filled with sand, dirt, gravel

Jersey wall

Hay bales or wood covered with poly

Personal Safety Around Floodwaters

Realities of Flood Response for CERTs

- Mentally and physically demanding
- Personal safety is top priority
- You know your limitations better than anyone

Fatigue

- Work is exhausting
- Listen to your body
- Take breaks as needed, especially when working extended hours

Weather

- Weather conditions can affect a flood response by making tasks more difficult
- Dress appropriately for weather
- Dress in layers

Mental Preparation

- Flood response is long process
  - Work is repetitive
  - Signs of progress are limited
  - Experience can be frustrating
- Take breaks to keep yourself alert

What Do You Think?

- What are some of the most common dangers during a flood response?

Dangers of Flood Response

- Icy/muddy conditions
- Electrical equipment and machinery
- Swift water movement
- Contaminants
- Temperature (hot and cold)
- Debris
- Sand boils

Sand Boils

- Occur when pressure of floodwater causes water to bubble up on dry side of sandbag barrier
- Generally harmless if contain clean, clear water
- Extremely dangerous if contain sand ("dirty")
  - May lead to eventual barrier failure
- Treat all sand boils as "dirty"
  - Do not ignore
  - Surround with ring of sandbags

Common Ailments and Injuries

- Hyperthermia
- Hypothermia
- Sprains and strains
- Raw hands
- Blisters
- Lacerations

Work Smart

- Take care of yourself
- Stay healthy
- Practice safety
- Watch out!

Working with Sandbags

- Operation 2
  - Filling sandbags
- Operation 3
  - Moving sandbags
- Operation 4
  - Building sandbag barrier

Sandbagging Tools

- Sand (or dirt)
- Bags
  (cloth or plastic)
- Shovel

How to Fill a Sandbag

Two- or three-person operation

#1. Holds empty bag on ground

#2. Fills 1/2 to 2/3 full

#3. Stacks and stockpiles

General Sandbagging Tips

- Keep elbows in when filling sandbags
- Rotate duties
  - Holding
  - Shoveling
  - Stacking
- Wear gloves
- Do not tie sandbags

Move a Sandbag Correctly

- Lift with your knees, not your back
- Use a passing line to move sandbags
  - Diagonal-pass formation is most effective
- General rule: When constructing barrier on incline, taller volunteers should be at end of line farthest from barrier

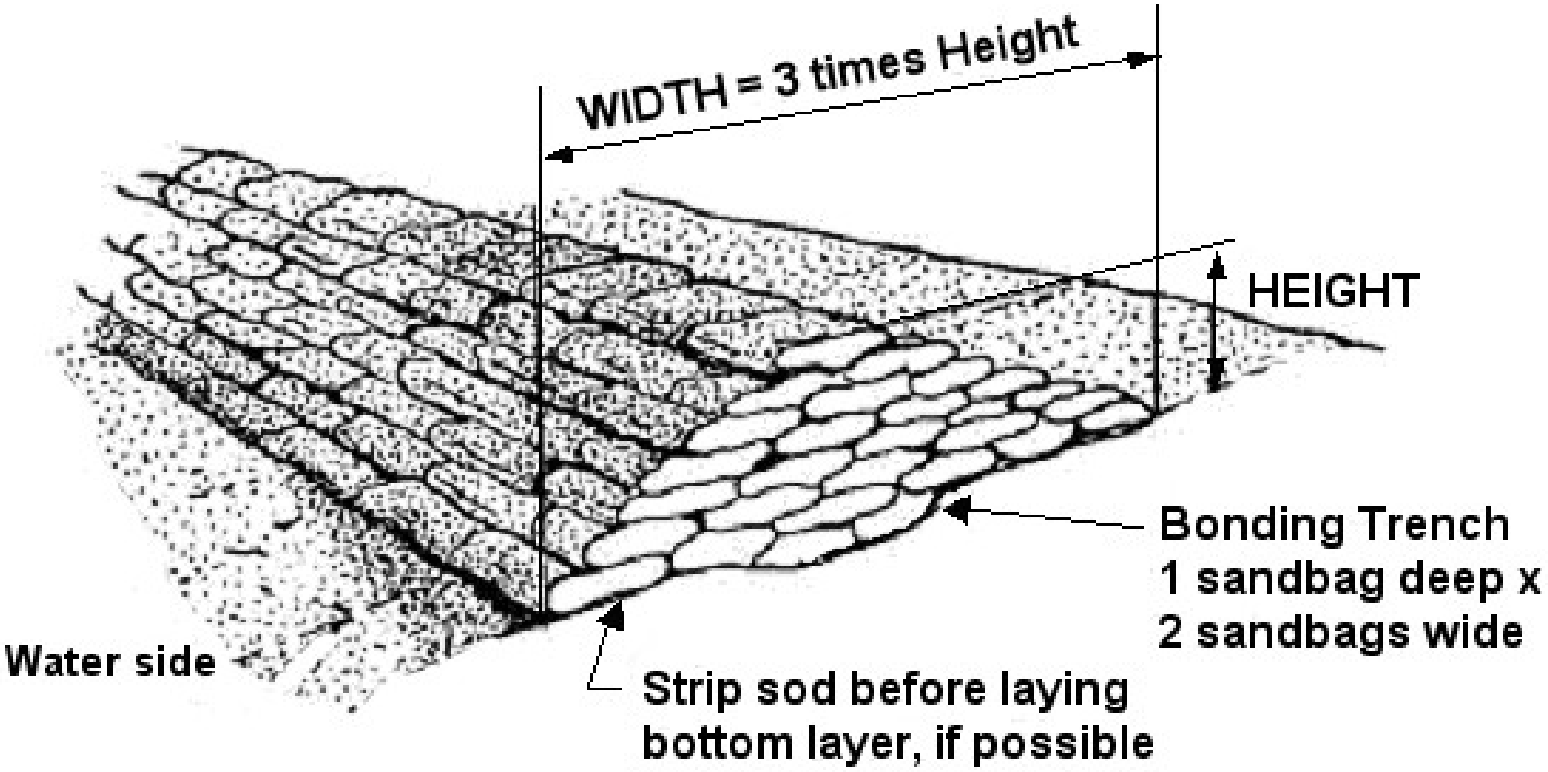
Exercise

Diagonal-Pass Formation

Filling and Moving Safety Concerns

- Maintain situational awareness
- If large vehicles are in the area, listen for the sound of them backing up
- Be careful when working around power-loading equipment

How to Build a Sandbag Barrier



Pyramid or Vertical?

- General rule: Do not stack sandbags vertically
- May be placed one on top of another if floodwater:
  - Is not fast moving
  - Is up to a foot high with no debris

Building a Barrier Safety Concerns

- Maintain situational awareness
- Treat all sand boils as dirty
- Be cautious when working on levees; barriers may break

Summary

- Types of floods common in the local area
- Review of relevant concepts from *CERT Basic Training*
  - Remember onscene management and ICS structure
  - Personal safety is paramount
  - Conduct medical assessment and treatment
- Types of floods and flood watches and warnings
- Emergency management system response to floods

Summary (cont'd)

- Flood response supplies, operations, equipment
- Flood realities and dangers
- How to fill and move sandbags safely and correctly
- How to build a sandbag barrier safely and correctly

Additional Resources

- www.ag.ndsu.edu/disaster/flood.html
- www.redcross.org/en/prepare/events
- OSHA Fact Sheets: Flood Hazards and Flood Cleanup