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Emergency Preparedness: Floods

Introduction

Floods are one of the most common hazards in the United States. A flood is defined as any high flow, overflow or inundation by water that causes or threatens damage. Flood effects can be local, impacting a neighborhood or community, or very large, affecting entire river basins and multiple states. Each year coastal, estuarine, riverine, overland and flash flooding places thousands of people, pets and livestock at risk of serious injury and death, and destroys property and infrastructure costing valued at billions of dollars.

- Flood plains are the portions of river valleys that have been inundated by the river during historic floods.
- Low-lying areas are subject to periodic severe flooding caused by any combination of heavy rains, melting snow, high tides and strong winds.
- Land adjacent to or near rivers, creeks, sloughs, bays and the ocean are most vulnerable to flooding; however, flooding can occur in any lowland area.
- November to April are the most vulnerable times for flooding, but flooding can occur any time of the year.
- Thunderstorms, tropical storms and hurricanes, sustained or sudden rainfall amounts, rapid snowmelt, tectonic shifts (tsunamis and seiches) and technological errors (dam failures) are the main causes of flooding.
- NOAA data indicate that floods kill more people annually than lightning, tornadoes and hurricanes.
- Storm surges and inland flooding caused extraordinary losses of life and property damage in the aftermaths of hurricanes Katrina and Rita in 2005.

Flood Types: Not all floods are the same. Some floods develop slowly, sometimes over a period of days. Flash floods, however, can develop quickly, sometimes in just a few minutes and without any visible signs of rain.

- **Flash Flood:** A rapid and extreme flow of high water into a normally dry area, or a rapid water level rise in a stream or creek above a predetermined flood level, beginning within six hours of the contributing event.
  - The actual time threshold may vary in different parts of the country.
  - Ongoing flooding can intensify to flash flooding in cases where intense rainfall results in a rapid surge of rising flood waters.
- **Overland Flood:** In hydrologic terms, the flow of rainwater or snowmelt over the land surface toward stream channels. The flooding occurs outside defined rivers and streams. Once it enters a waterway, it becomes runoff.
- **Flood Watch:** Issued to inform the public and cooperating agencies that current and developing hydrological conditions are favorable for flooding, but the occurrence is neither certain nor imminent.
- **Flash Flood Watch:** Issued to indicate current or developing hydrologic conditions are favorable for flash flooding in and close to the watch area, but the occurrence is neither certain or imminent.
- **Flood Warning:** Issued to inform the public of flooding along larger streams in which there is a serious threat to life or property
  - A flood warning usually includes river stage (level) forecasts.
- **Flash Flood Warning:** Issued to inform the public that flash flooding is in progress, imminent or highly likely.

Flood Categories: Terms used to describe the forecast points that describe or categorize the severity of flood impacts in the corres-ponding river/stream reach include:

- **Minor Flooding:** Minimal or no property damage, but possibly some public threat.
- **Moderate Flooding:** Some inundation of structures and roads near the stream. Some evacuations of people and/or transfer of property to higher elevations.
- **Major Flooding:** Extensive inundation of structures and roads. Significant evacuations of people and/or transfer of property to higher elevations.
- **Record Flooding:** Flooding that equals or exceeds the highest stage or discharge at a given site during the period of record keeping.

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Be Prepared: ***Protect your Home from Flooding***

- Avoid building in flood-prone areas unless you elevate and reinforce your home.
- Elevate the furnace, water heater and electric panel if susceptible to flooding.
- Install check valves in sewer traps to prevent floodwater from backing up into the drains of your home.
- Contact community officials to find out if they are planning to construct barriers (levees, beams, floodwalls) to stop floodwater from entering the homes in your area.
- Seal the walls in your basement with waterproofing compounds to avoid seepage.
- Sandbagging around your home may be necessary. Plan ahead to have bags on hand, ready to fill.
- Purchase flood insurance because regular homeowner's insurance policies do not cover flooding.

Develop Emergency Plans: Families, schools and workplaces should develop written emergency plans. Practice your plan, and share it with others.

Create a Disaster Supply Kit: Build disaster supply kits for all family members and pets for at least three days. Make the kits so they can be scaled down in case of evacuation. Your kits should include:

- Food and water
- Medicines, copies of prescriptions, personal hygiene items, first aid supplies
- Important documents, personal identification, copies of insurance
- Cash or travelers checks
- Other essential supplies that your family may need: flashlights, extra batteries, blankets, seasonal clothing, a battery-operated or crank radio, a weather radio, cell phones and chargers

During the Flood: ***Evacuating your Home***

- Take your disaster supply kits with you when evacuating.
- Turn off utilities, and do not touch electrical equipment if you are wet or in standing water.
- Avoid walking through moving water.
- Avoid driving into flooded areas.
- Be cautious since floodwaters may be contaminated.

After the Flood: ***Re-entering Flood-impacted Areas***

- Return home only when you're told it's safe to do so.
- Air dry items that can be salvaged as quickly as possible to avoid mold and mildew.
- Clean and disinfect salvageable items that got wet.
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- Discard porous items and other items that can't be salvaged due to contamination or water damage.
- Service damaged water and sewage systems as soon as possible.

Turn Around… Don't Drown: Many flood casualties are the results of careless or unsuspecting motorists attempting to navigate flooded roads. The National Weather Service warns "Turn around… don't drown!"

- If flooding occurs, get to higher ground and avoid flood-prone areas, low spots, valleys, ditches and washes.
- Avoid flooded areas or those with rapid water flow. Do not attempt to cross a flowing stream. Only 6 inches of fast-flowing water can sweep you off your feet.
- Do not allow children to play near high water, storm drains or ditches.
- Never drive through floodwaters or on flooded roads.
    - If your vehicle stalls, leave it immediately and seek higher ground.
    - Water only 2 feet deep can float away most vehicles.
- Avoid camping or parking your vehicle along water sources when threatening conditions exist.
- Be especially cautious at night when it is harder to recognize flood dangers.

Information Sources:

www.eden.lsu.edu; www.fema.gov; www.ready.gov; www.weather.gov; www.noaa.gov; www.redcross.gov;www.ag.ndsu.edu/flood

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2020 VCE-413NP