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LOWER PLATTE SOUTH natural resources district

Know Your NRD: Flood Awareness Special Issue

PROTECTING OUR NATURAL RESOURCES FOR FUTURE GENERATIONS.

3125 Portia St, Lincoln, NE



402-476-2729

LPSNRD'S ROLE IN FLOOD MITIGATION: OUR COMMITMENT TO COMMUNITY SAFETY

Safeguarding Communities— One Project at a Time

Flood mitigation at the Lower Platte South Natural Resources District (LPSNRD) is not just infrastructure, it is a commitment to keeping our communities safe. As responsible managers of land and water resources covering 1.3 million acres, we are proactive in minimizing flood risk, maximizing emergency readiness, and saving lives and property.

Streamgages & Monitoring: Making a Difference Through Data

Knowledge is power when it comes to flood readiness. That is why LPSNRD funds a system of streamgages and remote sensors to track real-time water levels in our watershed. These instruments:

- Assist us and our partners in predicting and monitoring flood events.
- Supply timely warning in emergency situations.
- Provide a smart, data-driven flood response and flood planning.

Working in Partnership for Increased Impact

No single agency can address flooding alone. LPSNRD works closely with key partners to enhance flood resilience:

- City of Lincoln and neighboring municipalities on infrastructure projects and emergency planning.
- Nebraska Department of Natural Resources (NeDNR) in floodplain management and water modeling.
- U.S. Army Corps of Engineers on levee rehabilitation and other federally funded projects.
- Federal Emergency Management Agency (FEMA) on risk mapping and hazard mitigation programs.
- Neighboring NRDs in the Lower Platte River Basin.

Flood Mitigation Programs: Resilient by Design

LPSNRD manages a system of flood control projects and partners with local, state, and federal agencies to tackle flood hazards in a responsible, proactive manner. Whether mapping floodplains or upgrading vital infrastructure, we strive to create a more flood-resilient region through the power of long-term planning and community-based solutions.



CRITICAL FLOOD CONTROL STRUCTURES IN ACTION

Flood protection in our district is supported by a robust network of levees, flood control dams, and other engineered structures. Many of these structures are located within the Salt Creek Watershed. The map on the following page illustrates the Salt Creek Watershed upstream of Lincoln and highlights many of the structural measures currently in place. In addition to the Salt Creek Watershed, LPSNRD has supported the construction

of flood control structures in 11 other HUC-10 (Hydrologic Unit Code) watersheds within the district. Examples include:

- Salt Creek Levee System: This protective barrier runs through Lincoln, shielding key residential, commercial, and infrastructure areas against the floodwaters of Salt Creek.
- High-Hazard Dams: LPSNRD operates ten high-hazard dams that are routinely inspected to meet stringent safety

specifications. Each of these structures has an emergency action plan to guide officials in the event of a critical incident. These high-hazard dams play a critical role in reducing the risk of loss of life and property during heavy rainstorms.

- Non-High-Hazardous Dams: In addition to high-hazard dams, LPSNRD operates over 180 dams that support sediment control, stormwater storage, and habitat protection.
- Land Treatment Cost-Share Programs: LPSNRD also offers cost-share assistance to landowners in rural areas on various land treatment practices that help control runoff during high rain events. Some of these practices include terraces with tile outlets that capture large amounts of rainwater runoff and slowly releases it; cover crops planted in farm fields to help minimize runoff; vegetated buffer strips along streams and rivers that reduce runoff throughout the year; and farm ponds that serve as detention basins under heavy rainfall conditions.



Upper Salt 3-A High Hazard Dam near Sprague, NE

WHY FLOOD PREPAREDNESS IS IMPORTANT TO EVERYONE

Flooding is one of the most destructive and costly natural disasters facing communities today. By understanding flood risk and taking action, we can build stronger communities, ecosystems, and economies. Promoting flood awareness and mitigation is central to the Lower Platte South NRD's mission to protect lives, property, and natural resources.

The Financial Cost of Flooding

Floods can do more than wash away roads and inundate buildings—they often trigger a ripple effect that can disrupt local economies for months or even years. In southeast Nebraska, a major flood can lead to:

- Loss of business productivity due to facility closure or damage.
- Agricultural losses due to flooded fields and soil erosion.
- Declining property values in flood-prone areas.
- Strain on public infrastructure, including roads, bridges, and utilities.

Levees, dams, and stormwater infrastructure improvements are key mitigation measures that help reduce these costs, strengthening the resilience and stability of communities and the regional economy.

Water Quality Protection

When floodwaters rise, they often carry sediments along with a variety of contaminants such as fertilizers, motor oil, sewage, and trash. These contaminants can cause long term damage to both surface and ground water quality. In some cases, flood control measures reduce the infiltration of contaminated water into private wells or public drinking water supplies.

LPSNRD's flood control efforts - including wetland preservation,

land treatment cost-share practices, streambank stabilization, and dam management—play a vital role in protecting our most valuable resource: clean water.

Everyday Benefits of Flood Control

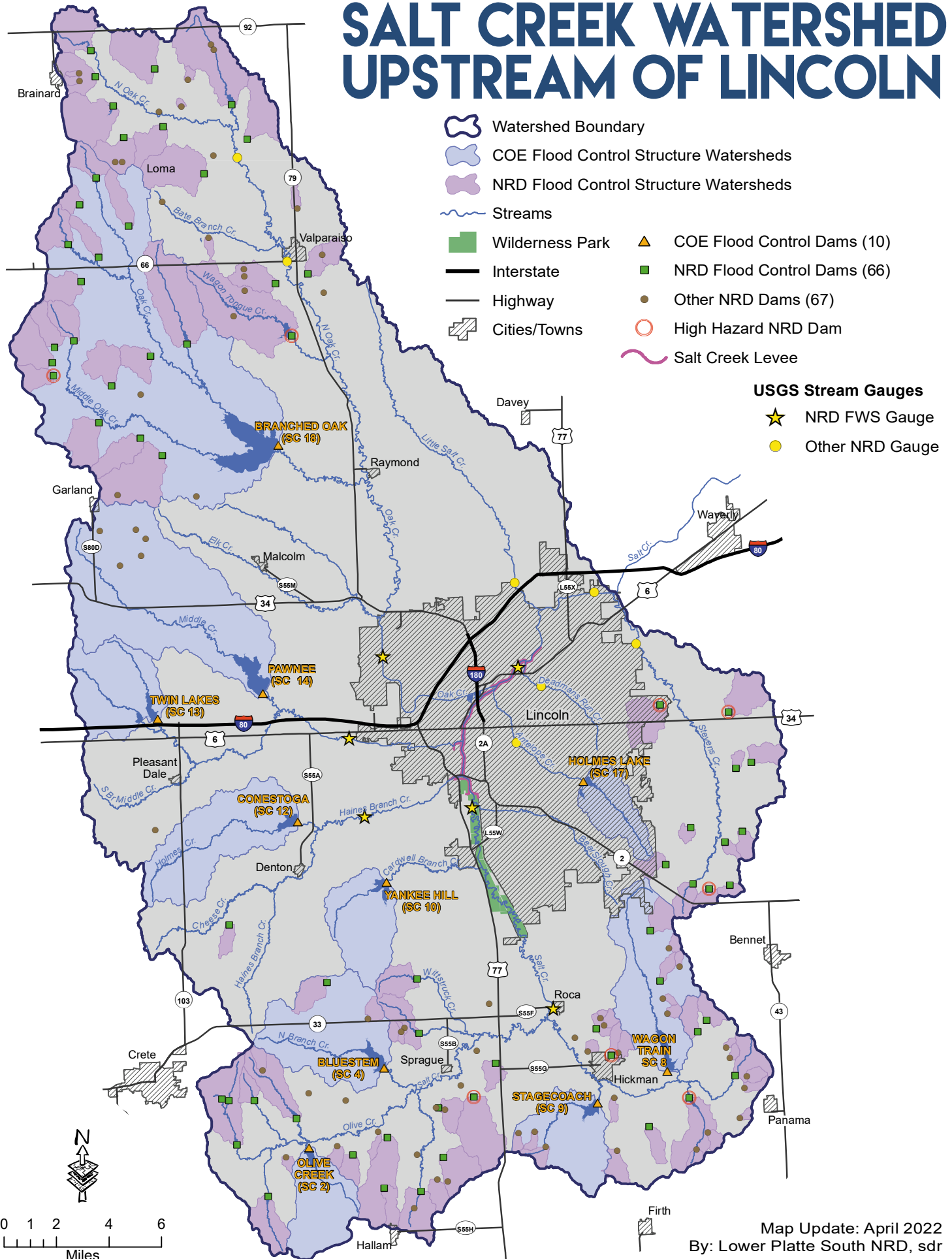
While flood control measure may not always be visible, their value permeates almost every aspect of life in the district. With effectively managed flood infrastructure and proactive planning, residents can:

- Enjoy safer neighborhoods with reduced flood risks.
- Experience fewer road closures and less disruption to critical infrastructure.
- Benefit from lower insurance premiums in areas outside the floodplain.
- Gain greater confidence in the local emergency response system.

Flood mitigation is not solely about preparing for the next big storm—it's about ensuring everyday peace of mind.

Thanks to the District's partnership with the U.S. Army Corps of Engineers (USACE), an estimated \$453 million in cumulative flood damages have been prevented to date. This total includes approximately \$265 million from the Salt Creek dams, \$119 million from the Salt Creek levees, and \$69 million from the Antelope Creek project. This collaboration highlights the value of proactive planning, investments in infrastructure, and strong interagency partnerships.

SALT CREEK WATERSHED UPSTREAM OF LINCOLN





NATURE'S SHIELD: HOW WETLANDS HELP FIGHT FLOODING

Wetlands play a crucial role in flood prevention and reduction by acting as natural sponges—absorbing and storing excess rainwater, snowmelt, and runoff, then slowly releasing it over time. This process reduces the speed and volume of water entering rivers and streams, helping to lower the risk of flash floods and downstream flooding. Additionally, wetland vegetation slows the flow of water across the landscape, which helps reduce both flood heights and erosion rates. Remarkably, a single acre of wetland can store up to 1.5 million gallons of floodwater.

Saline wetlands, located in the low-lying areas around Lincoln, offer many of the same benefits as other wetlands while also acting as natural buffers that protect our communities and infrastructure. In addition to their role in flood control, saline wetlands support rare and unique ecosystems and offer a sustainable, nature-based solution for managing stormwater. Without the presence of these vital wetlands, stormwater can overwhelm drainage systems and contribute to flash flooding in both urban and rural communities.

WHEN WATERS RISE: LPSNRD'S PLAN FOR SALT CREEK LEVEE FLOOD ALERTS

Flooding along Salt Creek poses a serious risk to Lincoln and surrounding areas. To protect lives and property, the Lower Platte South Natural Resources District (LPSNRD) has established flood alert procedures focused on early detection and quick response. These procedures are designed to reduce potential flood damage to both public infrastructure and private facilities, while ultimately safeguarding our community. The Salt Creek Levee spans 13.5 miles along both banks of Salt Creek, from South 1st and Calvert Streets to North 40th and Superior Streets. This system is vital for reducing flood risk to homes, businesses, and roads, while also safeguarding lives.

During a flood event, NRD staff patrol the levee, monitor that the system is working as designed, record data, and watch for issues like sand boils or erosion. Emergency actions such as sandbagging may be deployed as needed.

LPSNRD's communications team also works closely with the Emergency Operations Center to share updates through the District's website and social media.

By combining advanced technology, expert coordination, and proactive communication, LPSNRD remains committed to keeping Salt Creek communities safe—even as weather becomes more unpredictable.

LPSNRD uses a combination of tools, procedures, and partnerships to monitor and respond to potential flooding:

- A network of streamgages provides real-time data on water levels.
- Alerts from the National Weather Service, advanced radar systems, and field observations help track storms and rainfall.
- Staff are alerted when there is a potential for flooding and when stream conditions reach certain thresholds.
- LPSNRD coordinates closely with the City of Lincoln, Lancaster County Emergency Management Agency, U.S. Geological Survey, U.S. Army Corps of Engineers, and other local emergency partners. Depending on flood severity, the District may also request resources from the State of Nebraska or neighboring NRDs.

DEADMANS RUN PROJECT:

STRENGTHENING FLOOD RESILIENCE

Safer Future for Lincoln's Northeast Neighborhoods

One of the district's more significant ongoing projects, the Deadmans Run Flood Reduction Project, seeks to alleviate the threat of flood and increase public safety in one of the city's most flood-prone regions.

Safety, Economy, and Community: A Victory

The effects of this project extend far beyond flood protection. Upon its completion, it will:

- Save an estimated 480 homes, residential, and commercial properties from frequent flooding.
- Enhance road safety and emergency response accessibility.
- Lower flood insurance premiums for homeowners.
- Improve stream and riparian water quality and habitat.

More importantly, it offers peace of mind to families who have lived for years under the threat of flooding.

What is the Deadmans Run Project?

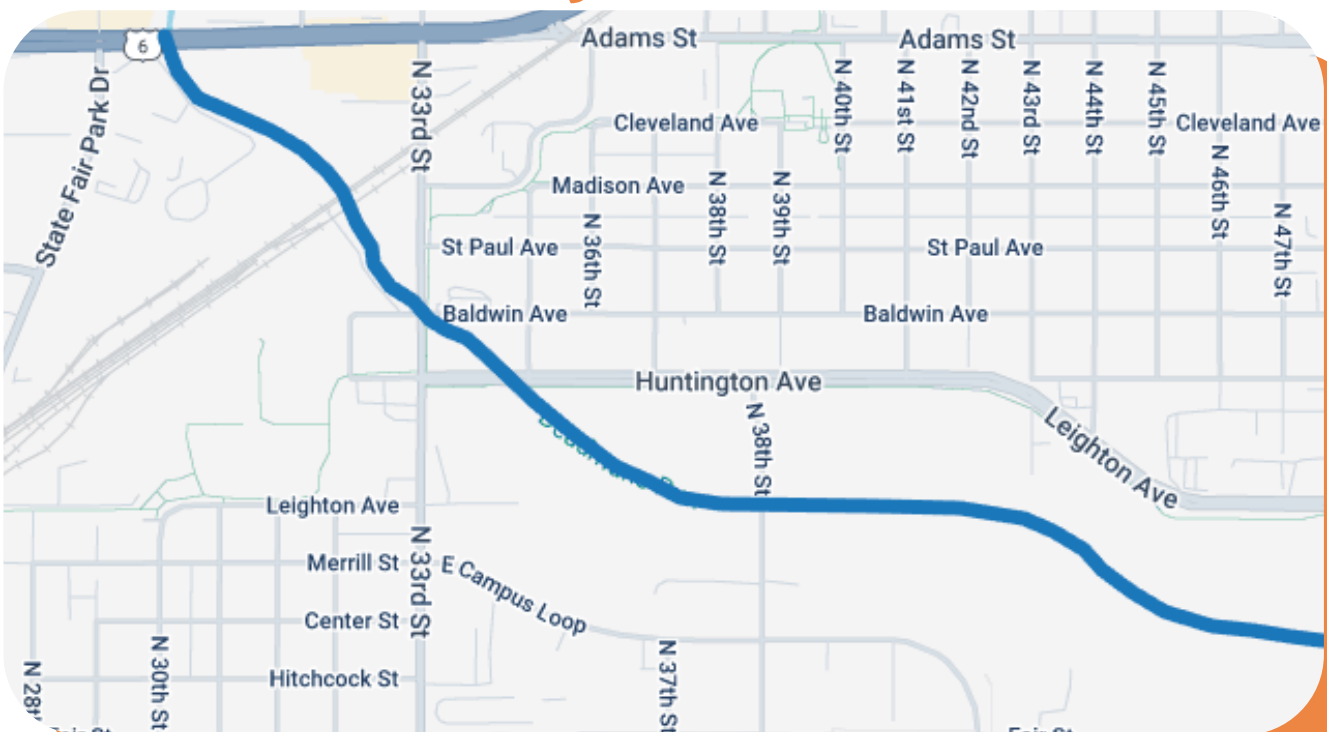
Deadmans Run is a small but significant tributary of Salt Creek that flows through northeast Lincoln. For decades, heavy rain events have overwhelmed the stream and flooded adjacent neighborhoods, roads, and businesses. In cooperation with the City of Lincoln and UNL, the LPSNRD implemented a multi-year project to mitigate this risk. The project encompasses:

- Widening the Deadmans Run channel so that more water can safely pass through and contain a 100-year flood.
- Detention basins to alleviate high water flow and help mitigate flood risks.
- Redesign of the 33rd Street bridge to facilitate better water flow.
- Modify the 100-year floodplain to mitigate flood risk for an estimated 480 homes, businesses, and other structures.

Looking Ahead

Engineering is ongoing and construction will stretch through 2027. As work progresses, LPSNRD and the City of Lincoln continue to keep the public informed and engaged—recognizing that flood protection is as much about people as it is infrastructure.

Project Area



SALT CREEK WATERSHED FAQs

What is a levee?

A levee is a man-made barrier built along rivers or streams to help stop or control flooding. Levees are typically built alongside a water way.

Where are the Salt Creek levees and what do they protect?

They run along Salt Creek between Calvert Street in the south to Superior Street in the north. The levees help protect neighborhoods, businesses, and industrial areas nearby.

What does it mean when someone says “100-year flood”?

These terms describe how often a flood might happen:

- 2-year flood – has a 50% chance of happening any year
- 10-year flood – 10% chance
- 50-year flood – 2% chance
- 100-year flood – 1% chance
- 500-year flood – 0.2% chance

This does not mean the flood happens only once in that time—it just demonstrates the likelihood each year.

What are structural and non-structural flood protections?

- Structural methods use physical barriers like levees or dams to stop flooding.
- Non-structural methods reduce flood risk in other ways, like raising buildings, removing them from flood areas, or keeping land open for water to spread out safely.

Why should I care about flood planning if I do not live in a floodplain?

Large flood events can cause widespread damage that affects the entire community—not just those in the flooded areas. Economic damages from flooding can place a heavy burden on a community, especially when essential services like power, water, sewer systems, and transportation are disrupted.

What is a floodplain?

A floodplain is land near a river or stream that can flood during heavy rain.

What affects how much water is in a stream?

Rainfall is the biggest factor. Also, paved (or impervious) areas like streets and roofs do not absorb water, and may cause water to run off quickly. Frozen or already-soaked ground also increases runoff.

How can I protect my property from flooding?

- Learn about floodplain zoning.
- Do not build in flood-prone areas if possible. If you must, raise your building at least 2' above the flood level.
- If your property is located in a flood-prone area, having flood insurance is strongly recommended to help cover potential damages.

How can I help reduce flooding in my neighborhood?

- Add rain gardens or bioswales as these help absorb and filter stormwater.
- Use less pavement – Try gravel or pavers that let water soak through.
- Plant native plants – Native plants improve water absorption and prevent soil erosion.
- Protect open space and wetlands.

What is a detention area?

Detention areas are designed to temporarily store stormwater, slow its flow, and improve its quality before it moves downstream. The green spaces in city parks often provide flood storage as well as outlets in residential and commercial developments. One example of flood storage is Wilderness Park along Salt Creek.



FLOOD SAFETY TIPS

Mitigation Saves

Taking steps now—like building levees, installing sewer check valves, and purchasing flood insurance—can reduce damage and financial loss during a flood.

Before a Flood

Know Your Risk: Contact your local emergency office or Red Cross to learn if your home is in a flood-prone area.

Prep Your Home: Install check valves in drains; keep corks/stoppers for tubs and basins; stock plywood, sandbags, and tools.

Make a Plan: Know evacuation routes (including backups for flash flood areas), practice them, and prepare an emergency kit with:

- Flashlight, batteries, radio
- First aid kit, food, water
- Medications, cash, sturdy shoes

Stay Connected: Choose an out-of-state emergency contact and ensure all family members know how to reach them.

During a Flood Watch

- Listen to weather alerts via battery radio.
- Fill clean containers with water.
- Bring outdoor items inside.
- Move valuables to higher ground.
- Shut off utilities if advised.

During a Flood

Inside: Grab your emergency kit and listen for updates. Evacuate if told to.

Outside: Seek high ground. Avoid walking in moving water.

Driving: Turn around if roads are flooded. Abandon stalled vehicles.

Evacuation

- Leave early to avoid road hazards.
- Stick to official evacuation routes.
- Take your emergency kit and listen for updates.

After a Flood

- Wait for official clearance to return home.
- Help neighbors in need.
- Check foundations and avoid water-surrounded structures.
- Wear sturdy shoes; use flashlights, not candles.
- Take photos of damage for insurance.

Potential Hazards to Watch

- Gas leaks (leave immediately, call gas company)
- Electrical damage (don't touch wet systems)
- Sewage issues (don't use toilets, call a plumber)
- Contaminated food or water (discard if in contact with floodwaters)
- Pump out basements slowly—about one-third of the water per day—to prevent structural damage.