

FLOOD TOOLKIT

A planning guide for public health, climate
and emergency response professionals

WISCONSIN CLIMATE AND HEALTH PROGRAM

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INTRODUCTION

Purpose

This flood toolkit provides information to local governments, health departments, and residents about preparing for and responding to flood events. The toolkit includes background information, practical guidance, strategies, news media releases, talking points, definitions, and useful reference materials on this topic. The guides in this toolkit may be copied and printed onto local government or health agency letterhead for distribution to flood-impacted residents. Additional documents can be found in *Appendix A, Additional Resources*.

Background

Although Wisconsin does not have exceptionally steep terrain, mountain slopes, or low-lying coastlands, significant areas of the state are flooded every year. Flooding in Wisconsin is generally caused by the accumulation of excessive surface water run-off in low-lying flat areas or the over-flowing of rivers and lakes. Routine annual flooding poses a danger to human life and safety, causes significant damage to property and infrastructure, and negatively impacts the state's economy. From 2010 to 2021, Wisconsin experienced 14 flood-related fatalities,¹ and countless injuries caused by responding to and recovering from flood events. Flooding in Southwestern Wisconsin in 2008 was responsible for property damage, agricultural losses, and business losses with an estimated value of \$764 million to \$1 billion.²

Although flooding is familiar to Wisconsinites, the magnitude of recent flood events create added health and safety risks, particularly for susceptible populations like the older adults, young children, socially isolated people, unhoused people, those with low economic status, and people living in unsafe housing. Therefore, it's important that all Wisconsinites prepare for the effects of flooding, whether it's government, residents, or businesses.

Climate Change Trends

Wisconsin's long-term climate trends show the state becoming warmer and wetter. Climate data has provided evidence that the lower two-thirds of Wisconsin counties have had a 20 percent increase in annual precipitation from 1950 to 2023 on average. After analyzing historical climate data from 1950 to 2023 and developing downscaled local climate models, University of Wisconsin climate scientists created potential climate projections based on the historical trends and scientifically validated models.³ Several of the modeled outcomes indicate that flooding may become much more frequent and intense in coming years.

Health Impacts

These projections suggest that Wisconsin will need to prepare for many more public health impacts due to flooding, including drowning, contaminated drinking water, damaged and unsafe property, and exposure to mold. Emergency planning must consider flooding needs such as access to safe food and drinking water, safe usage of electrical and heating appliances, and transportation out of flood zones with an added focus on susceptible populations.

Routine annual flooding poses a danger to people's lives and safety, causes significant damage to property and infrastructure, and harms the state's economy.

Flood Response and Recovery Guidance

Under the Wisconsin “Home Rule” principle, flood preparedness and response are considered local activities. The local or county emergency management office, health agency, or police/fire first responders will be the lead agencies during a flood event. However, when requested, the state will provide resources to assist and support the local response.

DEFINITIONS

Surface Water Flooding

Flooding due to increased flow volumes in river and stream beds reaching over their banks, increased flow volumes released from breached dams and impoundments, high volumes of overland flow (runoff), or increased recharge causing lake water levels to rise over their shorelines.

Groundwater Flooding

Flooding due to increased groundwater recharge causing the water table to rapidly rise, either forcing water to flood above the ground surface, or to force water by hydraulic pressure into basements through cracks and crevices.

Septic System

A privately owned and operated home wastewater disposal system, including: conventional septic tank/drain field systems, dry wells, holding tanks, mound systems, and alternative treatment systems.

Safe Water Supply

Drinking water is considered to be “safe” when it is free of coliform bacteria in a certified laboratory test following approved standard methods. The accepted standard is “0” colony forming units (cfu) of coliform bacteria per 100 ml of water, or a “negative” result using a presence/absence sampling medium.

Flood/Flash Flood Advisory

Flooding or flash flooding may cause inconvenience and could threaten life and/or property in the flood watch area.

Flood/Flash Flood Watch

Flooding or flash flooding is possible in the flood watch area.

Flood/Flash Flood Warning

Flooding or flash flooding is already occurring or will occur soon in the warning area.

GENERAL FLOOD INFORMATION

Avoid Flooded Areas

- **Do not swim or bathe in rivers, streams, creeks, or lakes in flooded areas.** Floodwaters may contain sewage, fertilizer, manure, gas, pesticides, hazardous materials, and large pieces of debris (such as tree limbs, boulders, metal objects, and sharp objects like glass, nails, fence posts, etc.).
- **Contact your local parks department for water quality monitoring information at public beaches and access points to surface water.** Additional information on recreational water can also be found at the Wisconsin State Lab of Hygiene webpage (slh.wisc.edu).

Ensure You Have Safe Water

Municipal Water Users

- Turn on and run faucets for at least five minutes before using water for drinking or food preparation.
- If a "boil water" notice is issued, follow any directions given by the Wisconsin Department of Natural Resources, local water utility, or local health department.

Private Well Owners

- Private well owners that are concerned that their well has been affected by a flood should assume that the well is contaminated.
- Signs that a well may be affected by a flood include:
 - Floodwaters that came into contact or ran over the top of a well.
 - Noticeable changes in the taste, smell, or color of the water.
 - A shallow well near areas that have been flooded.
- Do not drink or bathe in water from a private well that has been or is flooded.
- See the [Fixing Your Flood Well](#) steps for more details.

Clean Up Your Flooded Sewage System

- After a flood, private sewage systems are no longer reliable. Portable toilets or other facilities should be used.
- Any areas with sewage backflow from your septic or municipal water system through flood drains, toilets, etc., such as basements, must be cleaned and disinfected with a chlorine solution. Anything that cannot be cleaned should be thrown out.



FLOOD PREPAREDNESS

Take steps to protect you and your family before a flood hits.

Secure your home

- Contact your local or Tribal health department to familiarize yourself with community emergency plans.
- Contact to an insurance company about flood coverage as a renter or homeowner.
- Maintain a list emergency numbers in a contact list.
- If you live in a flood zone, raise electric components, furnace, and water heater above the flood zone level.
- Install backflow valves for drains, toilets, and other sewer connections.
- Install sump pumps with back-up power.

In the case of a flood watch or warning

- Gather emergency supplies (learn how on the next page!).
- Stay informed and listen to local weather reports.
- Turn off power.
- If time allows:
 - Bring outdoor possessions indoors and secure them.
 - Fill bathtubs, sinks, and plastic bottles with clean water.
 - **Do not walk through floodwater.** If water levels begin to rise, immediately go to higher ground.
 - Prepare for evacuation.
 - Make transportation arrangements and make sure the gas tank is full.
 - Check on friends, family, and neighbors that may be isolated or unaware of the conditions, or need help getting to a safe place.
 - Collect important documents like ID cards, insurance cards, and medical records.

In the case of an ordered evacuation

- Turn off the gas, electricity, and water.
- Disconnect appliances.
- Follow evacuation orders and evacuation routes.
- Take emergency supplies. (See a list on next page).
- Avoid flood zones and stay informed by listening to weather reports.
- Map a safe evacuation route in advance if you have access to a vehicle.

Transportation Planning

If you need transportation to a shelter, check with local agencies to find out if a contracted service or voucher is available. Call 211 to find a list of transportation options in your area:

- Urban, rural or regional public transit systems
- Transit services for elderly or disabled individuals (County Elderly and Disabled Transportation Programs, Tribal Elderly Assistance Programs, local senior centers, local human services agencies)
- Private providers (cabs, Lyft/Uber, etc.)
- Neighbors, friends or relatives

Assemble a Disaster Emergency Kit

Gather the follow items if possible or call 211 or visit 211.org for available resources in your area:

- 3-day supply of water (one gallon of water per person, per day)
- 3-day supply of non-perishable food (and a manual can opener)
- Battery-operated radio and extra batteries
- Cell phone and charger
- Portable cell phone battery charger
- Flashlight and batteries
- First aid kit (bandages, gauze, tweezers, disinfectant, gloves, pain relievers, thermometer, etc.)
- Whistle to signal for help
- Dust mask
- Survival blanket (also known as a space blanket)
- Extra cash
- Pocket knife
- Wrench to turn off utilities
- Medications, hand sanitizer, moist towelettes, plastic ties, and garbage bags
- Local maps for evacuation
- Change of clothes (including rain jacket, gloves, hat, etc.)

Resources

- readywisconsin.wi.gov/make-a-plan/
- dhs.wisconsin.gov/climate



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Fixing Your Flooded Well

Well is flooded

You will need a safe source of water for several weeks while you fix your well.

When your well has been flooded, bacteria and other harmful organisms can get into your water. It will take time for the water to be safe to use again.

1

Use safe water for drinking, food preparation, and personal hygiene.

Use safe water for drinking, preparing food, brushing teeth, bathing, showering, and washing hands until your well water is tested and found to be free of bacteria. Do not use water or ice from your refrigerator or other appliances. Safe water includes bottled water, tap water that you boiled for one minute, or water from a well that was not flooded.



Wait until the well is no longer in contact with water.

This could take days to weeks.

Disinfect the well.

We recommend that you have your well disinfected by a [licensed well driller or pump installer](#). If you are unable to hire a professional, you can disinfect your own well using the steps in this [DNR publication](#) (See page 4). Pay close attention to all steps as this work may pose chemical exposure or electrical hazards.

2



Wait for disinfection to work.

This will take a week.

3

Test for total coliform and *E. coli* bacteria.

Contact your [local health department](#) for more information on testing. Be sure to use proper [sampling procedures](#) to avoid accidental sample contamination.



Wait for the test results.

This could take days to weeks.

Learn if the water is safe to use.

If the test results show that bacteria are absent, the water is safe to use for drinking, preparing food, and personal hygiene.

However, if bacteria are present, the water is not yet safe to use.

4

Learn what to do if your well still has bacteria on the next page.

Bacteria present

If your test results show that you still have bacteria in your well, you should follow these additional steps to make sure the water is safe before using it for drinking, cooking, and personal hygiene.

5

Continue to use safe water.

If total coliform AND *E. coli* are present:

Do not use the water for drinking, preparing food, brushing teeth, bathing, showering, or washing hands.

If total coliform are present, but *E. coli* are absent:

Do not use the water for drinking, preparing food, and brushing teeth. You can use the water for bathing, showering, and washing hands.

Talk to your doctor if you have specific health concerns or if you or a family member have diarrhea, nausea, vomiting, cramps, or fever that you believe is related to your well.

Have a confirmation sample tested for bacteria.

Collect another water sample and have it analyzed to confirm the results. Be sure to use the proper [sampling procedure](#).

6



Wait for the test results.

This could take days to weeks.

Take further actions if bacteria are still present.

You should have your well inspected by a [licensed well driller or pump installer](#). You may need to disinfect again or make repairs to your well or plumbing.

7

Resources

- To find information about licensed well drillers and pump installers, disinfection, local and Tribal health departments, and sampling procedures, visit: dhs.wisconsin.gov/flood/water.htm.
- To learn more about other common health concerns for private well owners, visit dhs.wisconsin.gov/water/hazards.htm.





RE-ENTERING YOUR HOME

A flooded home might be contaminated with mold or sewage, which can cause health risks for your family. There may be safety risks as well if your gas and electric service was interrupted. The following tips will help you avoid or reduce health and safety risks as you re-enter your flooded home.

Avoid the Flood Zone

- Turn around, don't drown. CDC (The Centers for Disease Control and Prevention) reports that half of all flood-related drowning occurs when a vehicle is driven into floodwaters. The next highest percentage is due to walking into or nearby floodwaters.
- Two feet of rushing water can carry away most vehicles. Six inches of water can knock over an adult.
- Stay out of areas that are barricaded or closed.

Practice Natural Gas Safety

- Do not enter your home if you notice a natural gas odor. Immediately call your local utility company or fire department.
- Have your furnace and gas appliances inspected by a professional repair person. Have them re-light the appliance or furnace.
- While waiting for your furnace to be re-lit, do not use other heating sources, such as gas space heaters, grills, or other appliances that can give off dangerous fumes.
- Keep portable generators outside and at least 20 feet from structures, with exhaust pointing away from other people or homes. Gas appliances make carbon monoxide, which is dangerous and can be deadly.
- Read more about keeping your family safe from carbon monoxide in this factsheet available in [Español](#), [Hmoob](#) and [English](#).

Practice Electrical Safety

- Never turn power on or off while standing in water.
- After a flood, have your electrical system inspected by an electrical contractor or building inspector.
- Any electrical outlets that were submerged MUST be inspected for safety.
- If you have electrical problems, call your local utility company.
- Electrical appliances that were exposed to water must be completely dry before use. *Note:* Electrical motors that were submerged probably will not work (e.g., refrigerator motor).
- If you use electric heaters, be careful to place them away from items that can burn. Do not leave electric heaters unattended.

Cleanup After Water Damage

- Buildings that have been flooded should be inspected by a building inspector to verify structural damage before re-occupancy.
- If your basement is flooded, pump water out slowly. If you drain your basement too quickly, the pressure outside the walls will be greater than the pressure inside, which may cause the basement floor and walls to crack and collapse.
- Broken water pipes may have created puddles in your home. Do not use electrical appliances while standing in water because it can cause an electric shock or electrocution.
- If you receive a cut or puncture wound while cleaning your home, tetanus shots are available through your local public health department (dhs.wisconsin.gov/lh-depts/counties.htm).
- If you are on municipal water, run water faucets for at least five minutes before using water for drinking or food preparation. If a "boil water" notice is issued, follow any directions given by the Department of Natural Resources, the local utility company, or your local health department.
- Damaged or wet flooring, carpeting, furniture, drywall, insulation, etc. should be removed and disposed of to prevent mold growth.

What To Do with Food after a Flood

Type of Food	Proper Action after a Flood
Baby formula	Use only prepared, canned baby formula that requires no added water.
Food not in waterproof containers	Discard if they have come into contact with floodwater.
Canned foods	<ul style="list-style-type: none">• Discard if damaged.• Undamaged, commercially canned foods can be saved if you remove the can labels, wash cans, disinfect with one cup bleach to five gallons of water. Relabel cans, including expiration date, with a marker.
Screw-caps, snap-lids, crimped caps (soda pop bottles), twist caps, flip tops, and home canned foods	Discard if they have come into contact with floodwater.
Refrigerated or frozen food	<ul style="list-style-type: none">• Check food for spoilage by their odor and appearance.• Perishable foods left at room temperature for more than two hours should be thrown out.• Frozen food that has thawed should be thrown out.



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CLEANING WITH BLEACH SAFELY

Cleaning and sanitizing with bleach after an emergency

Cleaning and sanitizing your household after an emergency is important to help prevent the spread of illness and disease.

Using Cleaning and Sanitizing Products

- Wash surfaces with soap and warm, clean water to remove dirt and debris.
- Sanitize surfaces with a bleach solution (See below).
- It is critical to read and follow the safety instructions on any product you use. Below are important safety guidelines when using sanitizing products.
- Never mix bleach with ammonia or any other cleaner. This creates toxic gases that are dangerous and can cause serious injury. Ammonia is commonly found in window cleaner. Check the cleaner bottle to see if it contains ammonia.
- Wear rubber boots, gloves, and eye protection.
- If using bleach mixtures indoors, open windows and doors to allow fresh air inside.



Cleaning and Sanitizing with Bleach

Use regular, unscented 5% household bleach and follow the instructions below:

Area or Item to be Cleaned	Amount of Bleach and Water to Mix		Cleaning Steps
	Amount of Bleach	Amount of Water	
<p>Food surfaces that may have touched flood water</p> <p>Examples: countertops, cups and plates, flatware.</p> <p>Note: Throw away wooden cutting boards, infant toys, baby bottle nipples, and pacifiers.</p>	1 teaspoon	1 gallon	<ul style="list-style-type: none"> Wash with soap and warm, clean water. Rinse with clean water. Dip or rinse in a sanitizing solution of 1 teaspoon of bleach per 1 gallon of clean water. Allow to air-dry.
<p>Food cans that are not bulging, open, or damaged</p>	1 cup	5 gallons	<ul style="list-style-type: none"> Remove can labels. Wash cans with soap and warm, clean water. Dip cans in mixture of 1 cup of bleach per 5 gallons of water. Allow to air-dry. Re-label cans with permanent marker.
<p>Surfaces that do not soak up water and that may have touched floodwater</p> <p>Examples: floors, stoves, sinks, certain toys, countertops, and tools.</p>	1 cup	5 gallons	<ul style="list-style-type: none"> Clean surface with soap and warm, clean water. Rinse with clean water. Sanitize using a mixture of 1 cup of bleach to 5 gallons of water. Allow to air-dry.
<p>Mold growth on hard surfaces</p> <p>Examples: floors, walls, windows, stoves, sinks, certain toys, countertops, flatware, plates, and tools.</p>	1 cup	1 gallon	<ul style="list-style-type: none"> Mix 1 cup of bleach in 1 gallon of water. Wash surfaces with the bleach-water mixture. If surfaces are rough, scrub them with a stiff brush. Rinse surfaces with clean water. Allow to air-dry.



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Mold Cleanup with Bleach

Directions for cleaning up mold after a flood

Before You Clean

Mold is a type of fungus that needs moisture, organic matter for food (like wood, paper, fabric, plants, etc.), oxygen, and a warm temperature to grow and thrive. After a home or building floods, the flood waters will have soaked carpeting, furniture, and building materials (drywall, wood studs, flooring, etc.), creating an ideal environment for mold growth.

These materials must be removed or completely dried out to prevent mold from growing, to prevent health impacts and structural damage to your home. Areas inside your home that have poor air movement and retain moisture are common places where mold grows. Remove moisture sources and repair damages promptly to avoid mold growth.

Testing for Mold

Testing for mold is generally not necessary. If you can **see and smell it**, you have a mold problem. In flood situations, mold growth may begin on the backside of wet drywall between building supports or under wet carpeting. It may not be visible, but you may notice a musty or moldy smell.

Disposing of wet, flood-damaged building materials, furnishings, and personal items are key to preventing mold problems. If ongoing mold problems occur, you should have a thorough inspection to determine the source of the mold growth. DHS recommends that you hire a consultant specializing in building assessments to evaluate your entire house.

Cleaning Up Mold

- Take items that were wet for two or more days outside. Items that are wet for two days have mold growing on them even if you can't see it.
- Take out things made of cloth, unless you can wash them in hot water. Also remove items that can't be cleaned easily like leather, paper, wood, and carpet.
- Use bleach to clean mold off hard things like floors, stoves, sinks, certain toys, countertops, flatware, plates, and tools.
- Never mix bleach with ammonia or other cleaners, it can create a toxic gas.
- Wear rubber boots, rubber gloves, goggles, and a respirator mask rated for protection from mold spores.
- Open windows and doors to get fresh air in while you use bleach.
- Mix no more than one cup of bleach in one gallon of water.
- Wash the item with the bleach and water.
- If the surface of the item is rough, scrub the surface with a stiff brush.
- Rinse the item with clean water.
- Dry the item or leave it out to dry.

Mold is often found in bathrooms on shower curtains, caulk, grout, windowsills, or walls. Mold on these surfaces can sometimes be wiped off with a damp cloth and a household cleaner. Preventing mold growth always requires controlling the moisture source. This may be as simple as using a dehumidifier, installing a fan that vents outside, or fixing a slow faucet leak.

For larger mold problems (about 10 square feet or more), follow these instructions:

1. Preparation Phase — Supplies

- Plastic sheets, at least 4 mm thick, to cover door openings, floors, and vents
- A breathing respirator that covers mouth and nose with HEPA cartridges
 - * This type of respirator provides appropriate protection from mold spores for the person wearing it, but does not protect people nearby from viruses like Covid.
- Three spray bottles/plant misters
- Paper towels or disposable rags
- Heavy duty plastic garbage bags
- General household cleaner (**without** ammonia)
- Regular household bleach (between 1% to 5% chlorine). Bleach is typically not necessary to clean up mold— unless a sewage is present. In this case, both mold and bacteria can be reduced by using a bleach solution as a final disinfecting rinse.
- Latex or rubber gloves and goggles
- A one-cup measuring container
- Three buckets that will hold at least a gallon of water each
- Commercial grade HEPA vacuum. Do not use a home vacuum since it is not designed for this type of work.
- Dehumidifier

2. Mixing Phase

- **Spray bottle #1:** Mix general household cleaner and water in a bucket, then transfer to the spray bottle (follow manufacturer's instructions), and label the bottle. Remember not to mix bleach with household cleaners; if ammonia is mixed with bleach, a toxic gas can form.
- **Spray bottle #2:** Add 1 cup bleach to every gallon of tap water in a bucket, then transfer to the spray bottle, and label it. Bleach is necessary when water has come in contact with dirty laundry (gray water) or sewage (black water). Always use gloves and eye protection when handling bleach.
- **Spray Bottle #3:** Fill a spray bottle with clean, warm water for rinsing, and label it.

3. Application and Cleaning Phase

- The bleach solution is irritating and harmful to the skin, eyes, and clothing. Avoid direct contact with the bleach by wearing rubber gloves, a respirator, and goggles during the entire mixing and cleaning process.
- Prepare the work area:
 - Seal off the room from the rest of the house with the plastic sheet and tape.
 - Keep children and animals out of the work area.
 - Do not eat, drink, chew gum/tobacco, or smoke at any time during cleanup.
 - Use a dehumidifier before, during and after the cleanup to keep areas dry and prevent mold regrowth.
- Removing the mold.
 - To remove visible mold, spray the affected area with a general household cleaner (spray bottle #1). Start from the top and work down, changing towels frequently. Discard towels in a plastic bag. Rinse the same area with clean water on a damp towel or lightly spray with warm rinse water in a spray bottle (spray bottle

#3), and wipe with a clean towel. Repeat until all visible mold is gone.

- Spray a bleach solution (spray bottle #2) to remove mold and disinfect any surfaces touched by gray or black water, wipe the mold off the affected area, and let set for 15 minutes. Rinse the area with a damp towel using clean, warm water or by lightly spraying with warm rinse water in a spray bottle (spray bottle #3), and dry the area with a clean towel.

4. Cleaning Up the Work Area

- Once the surface is dry to the touch, use a HEPA vacuum to remove allergens. Place the HEPA vacuum bag into a garbage bag and dispose of it as you would normal garbage.
- Flush wastewater down a toilet, utility sink, or floor drain.
- Change out of your cleaning clothes and wash them separate from your other laundry.
- Wash hands and face.

At this point, you can apply paint or other coating to the surface. You may wish to use a paint or coating that contains a fungicide to prevent future mold growth. Be sure to follow the manufacturer's instructions and recommendations when using any mold-resistant paint or paint additive. Remember, these are also pesticides and may harm the health of certain people who are sensitive to chemicals.

Use of Ozone Air Cleaners

The U.S. Environmental Protection Agency (EPA) does not recommend using ozone-generating air cleaners for treating indoor mold problems. Ozone air cleaners generate ozone, which irritates your nose, throat and lungs. If a contractor recommends the use of an ozone-generating air cleaner to treat mold problems in your home, please file a complaint with the Wisconsin Department of Agriculture, Trade, and Consumer Protection at 1-800-422-7128.



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Talking Points for Flooding

Talking points and message maps for local health professionals

These talking points may be inserted into message maps for outreach before, during, and after floods.

Pre-Flood Messages

- Prepare a family plan and have emergency telephone numbers available.
- Assemble a disaster supply kit with enough food, water, and other supplies to last at least 72 hours.
- Secure a National Weather Service (NWS) Emergency Band Radio or portable radio. Have extra batteries on hand.
- Follow the guidance provided in flood warnings.

During Flood Messages

- Follow evacuation guidance.
- Stay out of floodwaters if possible. Floodwaters may contain bacterial contaminants, hazardous substances, and hidden debris or sharp objects.
- Don't travel through floodwaters if possible. Obey warning and road closed signs.
- Don't attempt to save household possessions during an evacuation. Wait until dangerous flood conditions have passed.

Post-Flood Event Messages

- Be sure the flood zone has been secured and that hazardous conditions (e.g., downed power lines) have been eliminated.
- Before entering any buildings, be sure that they have been inspected for structural integrity and that hazards (e.g., natural gas leaks) have been eliminated.
- Attempt to assess damage and losses and estimate value of damage to provide a community-wide damage assessment.
- Begin to assess areas and items that need cleanup and identify options quickly to minimize water damage and environmental contamination issues.

MESSAGE MAPS DURING A FLOOD EVENT

Message mapping is one of the most important risk communication tools that public health agencies can employ. The goal of a message map is to convey important information in concise and easy-to-understand language.



General Guidelines for Completing a Message Map

- Stick to three key messages or one key message with three parts for each underlying concern or specific question.
- Keep key messages brief. The reader or listener should ideally spend less than 10 seconds per line.
- Develop messages that are easily understood by the target audience. (For communications with the general public, use a 5th grade readability level.)
- Place messages within a message set. The most important messages should occupy the first and last positions.
- Develop key messages that cite credible third parties.
- Use graphics and other visual aids to enhance key messages.
- Keep a positive tone. Messages should be solution-oriented and constructive. Try to balance negative messages with positive ones.
- Avoid unnecessary use of “absolute” words, such as no, not, never, nothing, and none.

FLOOD MESSAGE MAP

The following message map could be used when sharing flood response and safety information with the public.

Main message: “At this time, the city/county/Tribal Nation _____ has experienced significant flooding. To help you and your loved ones stay safe during this event...”

Key Messages <i>Three key messages</i>	Supporting Information <i>Three pieces of supporting information for each key message</i>
Message 1 Follow broadcasted evacuation guidance.	Supporting Info 1 Follow evacuation procedures and other instructions from emergency management, your local news media, or your local governmental leaders. Supporting Info 2 Those living alone can be isolated and unaware of the dangers posed by flooding. Find out what assistance they may need to evacuate in advance of a flood. Supporting Info 3
Message 2 Stay out of floodwaters if at all possible.	Supporting Info 1 Floodwaters may contain a variety of contaminants, including bacteria, viruses, hazardous waste, debris, and sharp objects. Supporting Info 2 Turn around, don't drown. Most flood-related drownings occur when a vehicle is driven into floodwaters. Supporting Info 3 The second leading cause of drownings is from people walking into or nearby floodwaters.
Message 3 Don't attempt to save or salvage personal belongings during a flood.	Supporting Info 1 Wait until the floodwaters have receded before attempting to salvage belongings. Supporting Info 2 Don't attempt to enter the flood zone until authorities have declared the area safe. Supporting Info 3 Don't return to a flood-damaged home until it has been inspected for structural safety and health hazards.



REFERENCES & RESOURCES

REFERENCES

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2. NOAA and National Weather Service: Hydrologic Information Center – Flood Loss Data. <https://www.weather.gov/water/>
3. Climate projections noted in this toolkit come from: 2021 Assessment Report: Wisconsin’s Changing Climate, Impacts and Solutions for a Warmer Climate. Wisconsin Initiative on Climate Change Impacts. University of Wisconsin-Madison Nelson Institute for Environmental Studies and Wisconsin Department of Natural Resources, Madison, WI. <https://uwmadison.app.box.com/s/qi5evkp4nac87chjmfxa6kn9840sh35>
4. Covello VT. Message mapping, Risk and Crisis Communication. <https://rcfp.pbworks.com/f/MessageMapping.pdf>.
5. Icons from The Noun Project

ADDITIONAL FLOOD RESOURCES

Wisconsin Department of Health Services (DHS): dhs.wisconsin.gov/flood

West Nile Virus and Mosquito Bite Prevention Website: dhs.wisconsin.gov/arboviral/westnilevirus.htm

List of Wisconsin Local Health Departments: dhs.wisconsin.gov/lh-depts/counties.htm

List of Wisconsin Tribal Health Directors: dhs.wisconsin.gov/lh-depts/contacts/tribal-health-directors.pdf

Ready Wisconsin: readywisconsin.wi.gov/flooding

American Red Cross Flood Safety: rdcrss.org/2bDQaTw

American Red Cross Flood Information in Other Languages: redcross.org/prepare/disaster-safety-library

American Red Cross Flood Safety Checklist: rdcrss.org/2bkZ7kg

Federal Emergency Management Agency: fema.gov

Federal Emergency Management Agency Spanish Language Portal: fema.gov/es

Centers for Disease Control and Prevention Flood Disasters: emergency.cdc.gov/disasters/floods

Environmental Protection Agency Flood Clean-Up Booklet: epa.gov/indoor-air-quality-iaq

Environmental Protection Agency Mold Guide: epa.gov/mold

Environmental Protection Agency National Stormwater Calculator: epa.gov/water-research/national-stormwater-calculator

List of County Building, Code, and Zoning Officials: wccadm.com