Wisconsin Flood Toolkit

Wisconsin
Department of Health Services
Division of Public Health
Bureau of Environmental and Occupational Health

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Introduction

Purpose

The purpose of this flood toolkit is to provide information to local governments, health departments, and citizens in Wisconsin about preparing for and responding to flood events. The toolkit focuses on providing background information, practical guidance, strategies, 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 residents affected by flood. Additional documents may be found in Appendix B, Additional Resources.

Background

Image Source: WICCI

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 runoff in low-lying flat areas or the overflowing of rivers and lakes. Routine annual flooding poses a danger to human life and safety, causes significant damage to property and infrastructure, and negatively affects the state's economy. From 1990 to 2008, Wisconsin experienced eight 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] Based on these data, preparing for flood events remains a priority for Wisconsin governmental units, citizens, and businesses.

Climate Trends

Long-term trend analysis of Wisconsin's climate indicates that the state is becoming warmer and wetter. Climate data has provided evidence that parts of southern and western Wisconsin have had an increase in annual precipitation of 7 inches above the 1950-2006 average. After analyzing historical climate data from 1950 to 2006 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 suggest that flooding may become much more likely, and more intense, in coming years.

These projections suggest that Wisconsin emergency planners may be faced with more precipitation, coming in more frequent and intense storms, and more runoff, especially during the winter when soil may be frozen.[3]

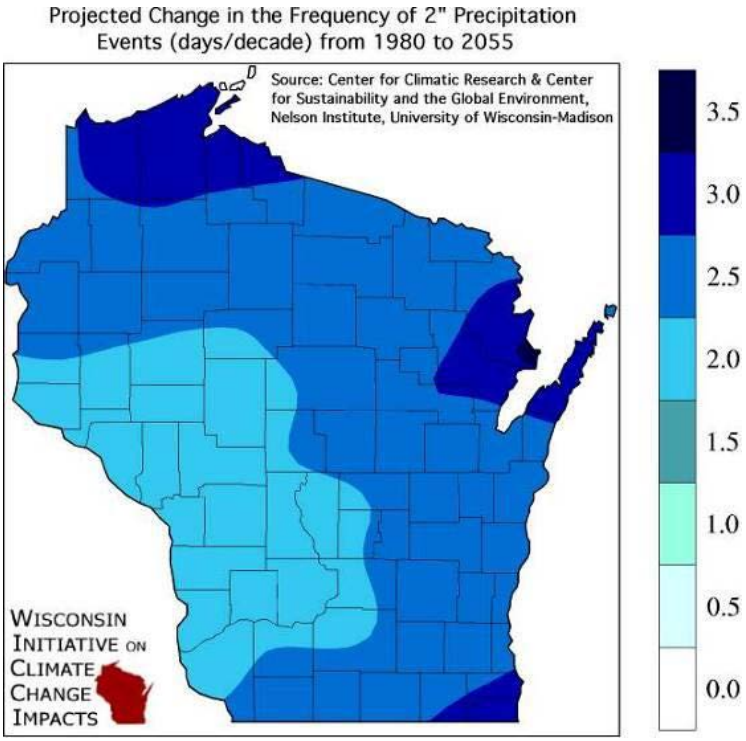


Image Source: WICCI

Health Impacts

These projections also suggest that Wisconsin may need to prepare for many more public health impacts due to flooding, including drowning, contaminated drinking water, damaged and dangerous property, and exposure to mold. Emergency planning must consider flooding needs, such as access to safe food and drinking water, safe use of electrical and heating appliances, and transportation out of flood zones.

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 agency during a flood event. However, when requested, state resources will be provided to assist and support the local response.

Image Source: Google

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

Septic System

A privately owned and operated home wastewater disposal system which includes: 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 determined to be free of coliform bacteria by a certified laboratory 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 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.

Guide 1: General Flood Information

Do NOT swim or bathe in rivers, streams, creeks, or lakes in flooded areas!

Surface Water

For public beaches and access points to surface water, contact your local parks department or local health department for monitoring information at these sites. Additional information on recreational water testing can be found at the Wisconsin State Lab of Hygiene webpage.

Flood waters may contain many contaminants, such as:

- Sewage
- Fertilizer
- Manure
- Gasoline
- Pesticides
- Hazardous materials
- Large pieces of debris, such as tree limbs, boulders, metal objects, sharp objects like nails and glass, fence posts, etc.

Local Public Health Department Contact Information:

Water Testing Information: http://www.slh.wisc.edu/environmental/microbiology/

Drinking Water Issues

Be sure to check with your local health department regarding well testing kits, well disinfection information, or available flooding resources.

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 whose well has been flooded should assume that flooded wells are contaminated.
- Do not drink or bathe in water from a private well that has been or is flooded.
- Wait until floodwaters have receded before sampling or disinfecting your well.
- To sample your water supply yourself, obtain a well water testing kit from your local public health department.
- If contamination is found, disinfect your well/water supply. See guide on Well Disinfection.
- Until the test results are known, follow these procedures to ensure safe drinking water:
  - Drink bottled water or water from a known, safe source.
  - If necessary, you can make water safe to drink by boiling it for five minutes.
- When in doubt, if the water is **CLOUDY, ODOROUS, COLORED - DO NOT DRINK THE WATER!**

Private sewage systems that are flooded are no longer reliable. Portable toilets or other facilities should be used.

Sewage may backflow from your septic or municipal system through floor drains, toilets, etc. Any affected areas, such as basements, must be cleaned and disinfected, as with a chlorine solution. Anything that cannot be cleaned should be thrown out.

→ Private Sewage Systems

For more information contact your local zoning office, code administrator, or sanitary inspection office.

Guide 2: Flood Preparedness

Secure your home:

- Contact your local health department to familiarize yourself with community emergency plans.
- Speak to your insurance company about flood coverage.
- List emergency numbers and contacts near phones.
- If you live in a flood zone, raise electrical components, furnace, and water heater above flood zone level.
- Install backflow valves for drains, toilets, and other sewer connections.
- Install sump pumps with backup power.

In case of a flood watch or warning:

- Gather emergency supplies (see next page).
- Stay informed – 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 water.** If water levels begin to rise, immediately seek 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 situation.
  - Collect important documents including ID cards, insurance cards, and medical records.
  - Map a safe evacuation route in advance.

In case of an ordered evacuation:

- Turn off the gas, electricity, and water.
- Disconnect appliances.
- Listen to evacuation orders and follow evacuation route.
  - Take emergency supplies, as outlined on the next page.
- Avoid flood zones and remain informed by listening to weather reports.

http://www.bt.cdc.gov/disasters/floods/readiness.asp
http://www.redcross.org/images/MEDIA_CustomProductCatalog/m4340128_Flood.pdf

ESSENTIAL MODERN SURVIVAL KIT

WATER
Potable water in suitable containers for immediate drink-ability, and a water filter for purifying after you run out of bottled water.

***Note: Have one gallon per person per day for at least three days.**

FOOD
High calorie foods such as high calorie energy bars or MRE (meals-ready-to-eat) are vital to maintain sufficient energy to keep going.

***Note: Pack at least a three-day supply of non-perishable food- and don't forget the manual can opener!**

EXTRA CLOTHING
Even if it's warm outside, if you get in trouble without extra clothes, hypothermia becomes a risk. Bring a stocking hat and rain jacket; and avoid cotton which is worthless when wet.

BODY WARMERS
Body warmers. Bring reflective "aluminized" space blanket or survival blanket to retain body heat, catalytic heater and bottled gas fuel.

SHELTER
Small tent, tarp with grommets, large plastic trash bag as poncho or expedient shelter roof.

SUNGLASSES
Good vision is essential. There are some great sunglasses out there that will enhance your vision, provide polarization for water or snow, and will prevent eye fatigue.

SANITATION
Toilet paper, hygiene products, soap, hand-towel and any other body care products you may need.

FIRST AID KIT
First aid kit. Keep at least the basics: band aids, sterile gauze, disinfectant, first aid manual, medical tape, medical scissors, disposable gloves, tweezers, cotton swabs and a thermometer.

EXTRA CASH
Extra cash will enable you to purchase the supplies you did not include and other necessary items. Although it may not be needed or deemed useless in the event of a major disaster, it is always good to keep some emergency cash on hand. A good amount to save is $50 for a disaster survival kit.

MEDICATIONS
Medications. There should be at least a seven-day supply of any prescription and non-prescription medications used by family members in your disaster survival kit.

MATCHES
'Strike Anywhere' matches, not the type that you must strike on the box. Store the matches in a water-tight case. Keeping a lighter and a fire starter in addition to matches are a good idea.

POCKET KNIFE
A multi-purpose tool with a knife is ideal.

MAP
Simply having a good map of the region you're in could get you out of trouble. Know how to read and navigate with maps.

COMPASS
A compass is ideal for establishing bearings while used in conjunction with a map. A GPS isn't so good for that.

FLASHLIGHT
And extra batteries. A LED flashlight, preferably a head-mounted style, is the best choice. Even though LED flashlight batteries last a considerable time, keep extras.

PERSONAL DOCS
Important personal documents like proof of address, insurance policies, birth certificates and passports should be stored together in an area with easy access in case of a natural disaster.

WEATHER RADIO
A small weather radio will keep you informed of the conditions outside and where to seek shelter or emergency personnel during and after a natural disaster.

CELL PHONE
And chargers. The towers may be down following a natural disaster, but emergency personnel will get them repaired fast for communication. Keep a cell phone with a wall and car charger handy.

SOURCES:

http://modernsurvivalblog.com/survival-kit/

http://www.idealhomegarden.com/home-improvement/disaster-survival-kit

http://en.wikipedia.org/wiki/Survival_kit

Guide 3: Disinfecting Your Well and Water System

DO NOT TURN ON THE PUMP!

☐ **Step 1:** Close the valves so you will bypass your water softener and any other water treatment equipment. A strong chlorine solution can damage this equipment. You should disinfect these devices separately following the manufacturer's instructions.

☐ **Step 2:** Calculate the amount of bleach needed for your well according to the following table:

Depth of Water	Diameter of Well					
	0.5 foot	**1 foot**	**2 feet**	**3 feet**	**4 feet**	**5 feet**
10 feet	1/2 cup	1-3/4 cups	7 cups	1 gal	1-3/4 gal	2-3/4 gal
20 feet	1 cup	3-1/2 cups	14 cups	2 gal	3-1/2 gal	5-1/2 gal
30 feet	1-1/2 cups	5-1/4 cups	1-1/4 gal	3 gal	5-1/4 gal	8-1/4 gal
40 feet	2 cups	7 cups	1-3/4 gal	4 gal	7 gal	11 gal
50 feet	2-1/2 cups	8-3/4 cups	2-1/4 gal	5 gal	8-3/4 gal	13-3/4 gal

Notes:

- Use only unscented household liquid chlorine bleach.
- Bleach concentrations can vary between 5% and 6%.
- Quantities given in this table are approximate and are rounded to the nearest practical measurement. Amounts given are calculated in accordance with reaching a chlorine concentration of 100 mg/L.

Key:

- gal: gallon
- 1 cup = 8 fluid ounces
- 1 gallon = 16 cups

http://www.cdc.gov/healthywater/emergency/safe_water/wells/disinfection_wells_bored.html

☐ **Step 3:** Using water from a known, safe source, add a volume of water – at least as great as the volume of water standing in the well – and the bleach into new, clean garbage cans or other comparable containers.

- When handling bleach, wear rubber hand and eye protection.

☐ **Step 4:** Turn off the power supply to the well, remove your well cap or seal, and note any issues with the well that may need repair.

- ☐ **Step 5:** Carefully pour the bleach solution down the well in one continuous pour.
- ☐ **Step 6:** Connect a new, clean hose to a nearby hose faucet and turn the electrical power back on.
- ☐ **Step 7:** Turn the water faucet on and recirculate the chlorinated solution through the hose and back to the well. Be sure you rinse the inside surface of the casing, all the way down to the bottom of the well.
- ☐ **Step 8:** Turn off the electrical power and drain both the pressure tank and the water heater. (Doing this will allow the water from these tanks to be totally replaced by the chlorinated solution.)
- ☐ **Step 9:** Turn the electrical power to the pump back on. Let the well water refill the pressure tank and water heater.
- ☐ **Step 10:** Turn on every water faucet, both inside and outside, until you can smell chlorine in each one.
- ☐ **Step 11:** Turn off every faucet, and allow the chlorine solution to remain in the well and plumbing system at least overnight, but preferably for 24 hours.
- ☐ **Step 12:** Flush the chlorine solution from the entire water system by using a hose connected to an outside faucet. Run the chlorinated water out of the system, but not into your septic system or into surface waters.
- ☐ **Step 13:** Keep running the water until you can no longer notice a smell of chlorine at any faucets.
- ☐ **Step 14:** Wait a few days, and then resample your well water to make sure it is bacteriologically safe to drink.

Guide 4: Re-entering Your Home

A home that is flooded might be contaminated with mold or sewage, which can cause health risks for your family. There might also be safety risks 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 home.

Avoid the Flood Zone

- Turn Around, Don't Drown®[6]: The Centers for Disease Control and Prevention (CDC) 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 near flood waters.
- **Two feet of rushing water can carry away most vehicles, and six inches can knock over an adult.**
- Stay out of areas that are barricaded or closed.

Natural Gas Safety

- **If you notice a natural gas odor when entering your home, do NOT enter. Immediately call your local utility company or fire department.**
- Have your furnace or gas appliance inspected by a professional repair person, and then have them relight the appliance or furnace.
- While waiting for your furnace to be relighted, do NOT use other heating sources, such as gas space heaters, grills, or other appliances, that can give off dangerous fumes.
- Carbon monoxide **produced by gas appliances is dangerous and can be fatal.** If using a portable generator, keep it outside and far away from the building. Breathing the exhaust fumes from a portable generator could result in death in minutes.

Electrical Safety

- **Never turn power on or off while standing in water.**
- 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.**

Water Damage

Image Source: Google

Note: Damaged or wet flooring, carpeting, furniture, drywall, insulation, etc., should be removed and disposed of to prevent mold growth. In case of water damage, contact your local public health department for a list of plumbers and a flood brochure.

- Buildings that have been flooded should be inspected by a building inspector for structural damage before re-occupancy.
- If your basement is flooded, don't rush to pump it out. 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. **Using electrical appliances while standing in water can cause 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.
- 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 public health department.

Guide 5: What to do with Food after a Flood

Type of Food	Proper Action after Flood
Baby formula	Use only pre-prepared, canned baby formula that requires no added water.
Food not in waterproof containers	Discard if they have come into contact with floodwaters.
Canned foods	Discard if damaged. (Undamaged, commercially canned foods can be saved if you remove the can labels, wash cans, and disinfect with one cup bleach to five gallons of water. Re-label 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 floodwaters.
Refrigerated or frozen food	Check food for spoilage by 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.

Guide 6: 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

1. Wash surfaces with soap and warm, clean water to remove dirt and debris.
2. Sanitize surfaces with a bleach solution (see below for instructions to make a bleach solution).

It is critical to read and follow the safety instructions on any product you use. Below are important safety guidelines when using sanitizing products:

- **WARNING: 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 cleaners – *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 to enter.

Cleaning and Sanitizing with Bleach

Use regular unscented 5% household bleach and follow the instructions in the attached charts.

Recommendations for Cleaning and Sanitizing Various Surfaces with Bleach and Water

Area or Item to be Cleaned	*Amount of Bleach and Water to Mix*		*Cleaning Steps*
	Bleach Amount	Water Amount	
Clean and Sanitize Food Cans and Surfaces			
Food surfaces that may have touched floodwaters (Examples: countertops, cups and plates, flatware) **Note: Throw away wooden cutting boards, infant toys, baby bottle nipples, and pacifiers.**	1 teaspoon	1 gallon	1. Wash with soap and warm, clean water. 2. Rinse with clean water. 3. Dip or rinse in a sanitizing solution of 1 teaspoon of bleach per 1 gallon of clean water. 4. Allow to air-dry.
Food cans that are not bulging, open, or damaged	1 cup	5 gallons	1. Remove can labels. 2. Wash cans with soap and warm, clean water. 3. Dip cans in mixture of 1 cup of bleach per 5 gallons of water. 4. Allow to air-dry. 5. Re-label cans with permanent marker.

Clean and Sanitize Other Household Surfaces and Items			
Surfaces that do not soak up water and that may have touched floodwaters **(Examples: floors, stoves, sinks, certain toys, countertops, and tools)**	1 cup	5 gallons	1. Clean surface with soap and warm, clean water. 2. Rinse with clean water. 3. Sanitize using a mixture of 1 cup of bleach to 5 gallons of water. 4. Allow to air-dry.
Clean Mold Growth From Hard Surfaces			
Mold growth on hard surfaces **(Examples: floors, walls, windows, stoves, sinks, certain toys, countertops, flatware, plates, and tools)**	1 cup	1 gallon	1. Mix 1 cup of bleach in 1 gallon of water. 2. Wash surfaces with the bleach/water mixture. 3. If surfaces are rough, scrub them with a stiff brush. 4. Rinse surfaces with clean water. 5. Allow to air-dry.

Source: CDC

Guide 7: Mold Cleanup with Bleach

Before you clean

Fungi (molds) need a source of moisture, a source of organic matter, and proper temperature. After a flood event, the floodwaters will have soaked carpeting, furniture, building materials (drywall, wood studs, flooring, etc.), creating a suitable environment for mold growth. These materials must be removed or completely dried out to prevent mold from growing. Areas inside your home that have poor air movement and retain moisture are likely areas for future mold growth. Remove any sources of moisture, and repair damage that may contribute to moisture.

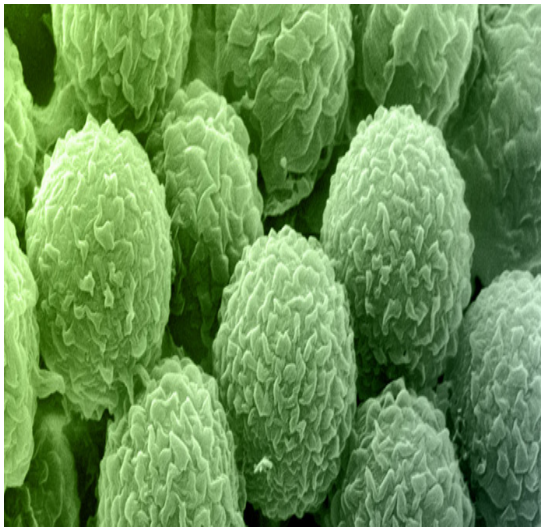


Image Source: Google

Image Source: FEMA

If I see mold in my home should it be tested?

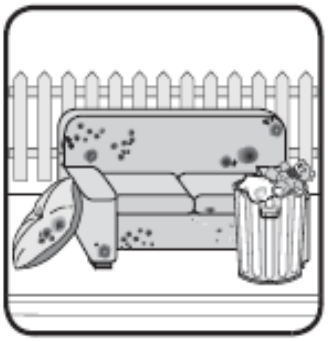
Testing for mold is generally not necessary. If you can **see and smell it**, you have a mold problem. In flood situations, mold growth may begin on the back side of wet drywall, between building substrates, or under wet carpeting. It may not be visible, but you may notice a musty or moldy smell. Elimination of wet, flood-damaged building materials, furnishings, and personal items will be necessary to prevent mold problems. If ongoing mold problems occur, it is recommended that you have a thorough inspection to determine the cause of the mold growth. The Wisconsin Department of Health Services recommends that you hire a consultant specializing in building assessments to evaluate your entire house.

How can I clean up mold in my home?

Occasionally, mold can be found in the bathroom - on a windowsill, shower curtain, or wall. This mold can be wiped off the surface with a damp cloth and cleaning agent (e.g., window or bathroom cleaner). Preventing mold growth requires controlling the moisture source. This may be as simple as using a dehumidifier or fixing a simple leak. **For larger mold problems (about 10 square feet), follow the instructions on the next pages.**

Get Rid of Mold

After a flood, mold will grow in your house. It can make you sick. You will need to clean your house.



Take things that were wet for 2 or more days outside.

Things that stayed wet for 2 days have mold growing on them even if you can't see it.

Take out stuff made of cloth, unless you can wash them in **hot** water. Also take out stuff 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).

Follow these steps:

- Never mix bleach with ammonia or other cleaners.
- Wear rubber boots, rubber gloves, goggles, and N-95 mask.
- Open windows and doors to get fresh air when you use bleach.
- Mix no more than 1 cup of bleach in 1 gallon of water.
- Wash the item with the bleach and water mixture.
- 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.

Recommendations from the Centers for Disease Control and Prevention

Image source: CDC

Step 1: **Preparation Phase** – What you need:

- 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
- 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)
    - Note: Bleach is typically not necessary to clean up mold, unless a sewage release occurred. In that 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 one gallon of water each
- Commercial grade HEPA vacuum
    - Do not use a home vacuum since it is not designed for this type of work. Contact your local health department to find out where to rent a HEPA vacuum in your area.
- Dehumidifier
    - Do not use a fan since it can cause mold spores to be released.

Step 2: **Mixing Phase**

- **Spray bottle #1:** Mix general household cleaner and water in a bucket; then transfer to spray bottle (follow manufacturer's instructions).
- **Spray bottle #2:** Add 1 cup bleach to every gallon of tap water in a bucket; then transfer to spray bottle.
    - Note: Bleach is necessary when there has been a gray (laundry) or black (sewage) water release. Use precautionary measures, such as gloves and eyewear, when handling bleach.
- **Spray Bottle #3:** Clean, warm water for rinsing.

WARNING: Do not mix bleach with household cleaners that contain ammonia. If ammonia is mixed with bleach, a toxic gas can form, causing serious injury or death.

Step 3: **Application and Cleaning Phase**

- Prepare the work area:
    - Seal off the room from the rest of the house with the plastic and tape.
    - Keep children and animals out of the work area.
    - Do not eat, drink, use gum/tobacco, or smoke at any time during cleaning.
    - Use a dehumidifier prior to, during, and after the cleanup to keep areas dry and prevent mold from reoccurring.

CAUTION: The bleach solution is irritating and harmful to the skin, eyes, and clothing. Avoid direct

contact with the bleach by wearing rubber gloves, respirator, and goggles during the entire mixing and cleaning process.

- Removing the mold:
  - **Removing visible mold** – Spray with general household cleaner (spray bottle #1). Start from the top and work down, changing towels frequently. Discard towels in 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.
  - **Removing mold and water** –Spray with bleach solution (spray bottle #2), wipe affected area of mold, 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 wiping with a clean towel.

Step 4: **Cleaning up the Work Area**

- Once the surface is dry to the touch, use the HEPA vacuum to remove allergens. Place HEPA vacuum bag into a garbage bag. Tightly tie the garbage bag and dispose of it as you would your everyday household garbage.
- Flush wastewater down a toilet, utility sink, or floor drain.
- Change out of your cleaning clothes and wash them separately from your family's 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/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 have adverse health effects on some individuals.

- **Note on Use of Ozone Air Cleaners:**

  Do not use ozone air cleaners to kill mold. Ozone air cleaners generate ozone: a known respiratory irritant. The U.S. Environmental Protection Agency (EPA) does not recommend using ozone-generating air cleaners for treating indoor mold problems. 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 Department of Agriculture, Trade, and Consumer Protection at 1-800-422-7128.

Guide 8: Suggested Talking Points about Floods

These talking points may be inserted into Message Maps for outreach broadcasts pre-flood, during the flood, and post-flood. See the example on the following page.

Pre-Flood Event Messages

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

During the Flood Event Messages

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

Post-Flood Event Messages

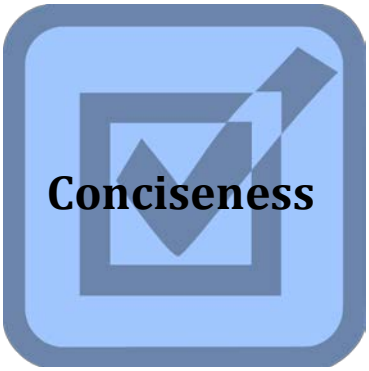
- Be sure the flood zone has been secured and hazardous conditions (e.g., downed power lines) have been eliminated.
- Before entering into any building, be sure the building has been inspected for structural integrity and that hazards (e.g., natural gas leaks) have been eliminated.
- Attempt to assess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

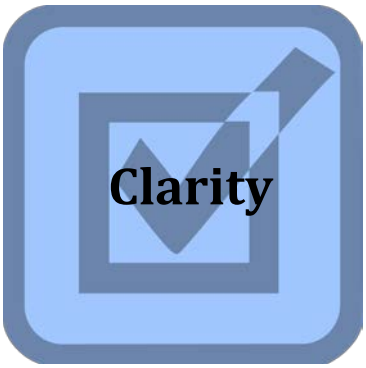
Guide 9: Message Maps during a Flood Event

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 a concise and straightforward fashion.

General guidelines to follow when creating a message map include:

- 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 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 6th to 8th 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.[4]
- Avoid unnecessary uses of the words no, not, never, nothing, and none.[5]





The following is a message map that could be used when addressing the general public regarding flood response and safety.

Main Message: "At this time, the City/County of_____ has experienced significant flooding. To help you and your loved ones stay safe during this event…"

Key Messages (3 key messages)	Supporting Information (3 items of supporting information for each key message)
Message 1: **Follow broadcasted evacuation guidance.**	**Supporting Information 1:** Listen to messages being broadcast by Emergency Management, your local news media, or your local governmental leaders regarding evacuation procedures.
	Supporting Information 2: Those living alone can be isolated and unaware of the dangers posed by flooding.
	Supporting Information 3: Check on your neighbors, friends, and relatives.
Message 2: **Stay out of flood waters, if at all possible.**	**Supporting Information 1:** Floodwaters may contain many contaminants, including bacteria, viruses, hazardous wastes, debris, and sharp objects.
	Supporting Information 2: Half of all flood-related drowning occurs when a vehicle is driven into floodwaters. Follow this advice: Turn Around, Don't Drown®.[5]
	Supporting Information 3: The next highest percentage of drowning is due to walking into or nearby floodwaters.
Message 3: **Don't attempt to save or salvage personal items during the flood.**	**Supporting Information 1:** Wait until flooding has receded before attempting to salvage belongings.
	Supporting Information 2: Don't attempt to enter the flood zone until authorities have declared the area safe.
	Supporting Information 3: Don't return to a flood-damaged home until it has been inspected for structural safety and hazards.

Appendix A: References

1 National Weather Service Weather Forecast Office, Milwaukee/Sullivan, WI. Floods and Flash Floods. (http://www.crh.noaa.gov/mkx/?n=flashfloodflyer)

2 National Weather Service. Hydrologic Information Center – Flood Loss Data. (http://www.nws.noaa.gov/hic/index.shtml)

3 Climate projections in this toolkit come from: Wisconsin's Changing Climate: Impacts and Adaptation. 2011. Wisconsin Initiative on Climate Change Impacts. Nelson Institute for Environmental Studies. UW-Madison and Wisconsin Department of Natural Resources, Madison, WI.

4 Covello VT. Message mapping. Accessed March 7, 2014 at: http://www.orau.gov/cdcynergy/erc/content/activeinformation/resources/Covello_message_mapping.pdf

5 National Weather Service. Turn Around Don't Drown®. (http://tadd.weather.gov/tadd-intro.shtml)

Appendix B: Additional Resources

Wisconsin Department of Health Services (DHS): Flood Hazards and Recovery

http://www.dhs.wisconsin.gov/flood/index.htm

DHS: West Nile Virus and Mosquito Bite Prevention

http://www.dhs.wisconsin.gov/communicable/ArboviralDiseases/WestNileVirus/Index.htm

Wisconsin Emergency Management, "Ready Wisconsin": Flooding

http://readywisconsin.wi.gov/flooding/default.asp

American Red Cross: Flood Safety

http://www.redcross.org/prepare/disaster/flood

American Red Cross: Flood Information in Other Languages

http://www.redcross.org/prepare/disaster-safety-library

American Red Cross: Flood Safety Checklist

http://www.redcross.org/images/MEDIA_CustomProductCatalog/m4340128_Flood.pdf

Federal Emergency Management Agency (FEMA)

http://www.fema.gov/

FEMA Spanish Language Portal

http://www.fema.gov/es/

Federal Centers for Disease Control and Prevention (CDC): Floods

http://emergency.cdc.gov/disasters/floods/

Federal Environmental Protection Agency (EPA): Flood Cleanup (Booklet)

http://www.epa.gov/iaq/flood/flood_booklet_en.pdf

Federal Environmental Protection Agency (EPA): Mold Guide

http://www.epa.gov/mold/pdfs/moldguide.pdf

Federal Environmental Protection Agency (EPA): National Stormwater Calculator

http://www.epa.gov/nrmrl/wswrd/wq/models/swc/

List of Wisconsin Local Public Health Departments

http://www.dhs.wisconsin.gov/localhealth/

List of Wisconsin Tribal Health Directors

http://www.dhs.wisconsin.gov/localhealth/

List of County Building, Code, and Zoning Officials

http://www.wccadm.com/staff_directory.htm