Ashokan Watershed Stream Management Program

STREAM GUIDE

A HOMEOWNER'S GUIDE TO FLOOD PREPAREDNESS

Contents

Why Prepare for a Flood?

Natural disasters affect hundreds of thousands of people each year and can have long-term impacts on both lives and property. Flooding is the nation's most common natural disaster and one of the leading causes of weather-related deaths. This Stream Guide answers common questions about flood preparedness. Every resident in the Catskills should understand their flood risk and take steps now to prepare.

Floods can impact anyone who lives near a water body. Flood hazards such as property erosion and home inundation are risks to people who live near creeks, gullies, culverts, dry streambeds, or low-lying ground. The Catskills region is prone to flooding due to steep terrain and abundant precipitation. Water can accumulate rapidly in low-lying areas. Be aware if the road to your house crosses a stream. Bridges and culverts can become damaged or destroyed during floods, leaving residents of dead-end roads stranded until repairs are complete. Having a plan

Flooding in Mount Tremper following Tropical Storm Irene (2011).

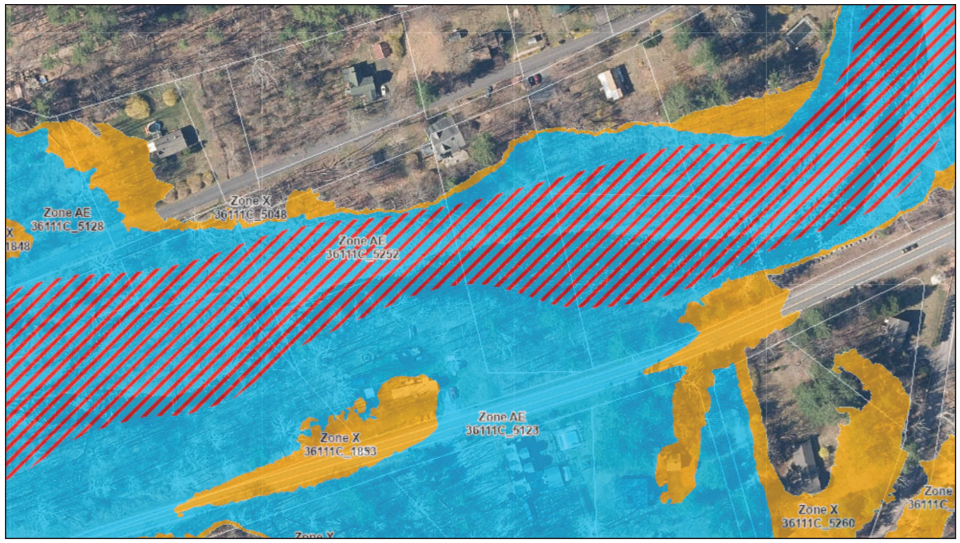
in place and supplies at the ready during a flood can make the difference between your safety and a life-threatening situation. It is important that every household is prepared because local responders and disaster-relief organizations may not be able to reach you right away.

FEMA recommends that households prepare to be self-sufficient for at least three days. This means being able to provide your own shelter, first aid, food, water, and sanitation.

What is the "100-Year Flood?"

The terms "100-year flood" or "100-year flood zone" are often used when discussing floods. A 100-year flood is a large magnitude flood that has a 1% chance of occurring or being exceeded in any given year based on historical data. Records indicate that flood magnitudes are increasing on average. This does not mean a 100-year flood will only occur once every 100 years. A better term to use (and one that floodplain managers use) is "1% annual chance flood." This is the term FEMA uses for regulations, planning, insurance, and mapping and is also known as the "base flood."

A "500-year flood" has a 0.2% chance of occurring in any given year and is known as the "0.2% annual chance flood." This is also considered a flood hazard zone and infrastructure in this zone is still at risk. According to the most recent New York State Climate Impact Assessment, the projected increase in extreme precipitation due to climate change is likely to heighten flood risks in the Catskill region. The likelihood of what we consider a 0.2% annual chance flood today could increase in the future according to these projections.



Flood Insurance Rate Map (FIRM) showing the Regulatory Floodway in red stripes, the 1% Annual Chance Flood Area in blue (100-year flood zone), and the 0.2% Annual Chance Flood Area (500-year flood zone) in orange.

What is the Difference Between a Flood and a Flash Flood?

Flood: When waterways such as rivers or streams overflow their banks because of rainwater or a rain-on-snow melt event. Floods are the most common natural disaster in the United States.

Flash Flood: A type of riverine flooding characterized by a rapid stream rise. Flash floods often develop quickly with little prior warning and are common in mountainous settings (like most Catskill hollows). Flash flooding is the leading cause of death in the United States for any weather-related disaster.

Flood Watch or Flash Flood Watch: Indicates flooding or flash flooding is possible within the designated watch area. When a watch is issued, be alert and ready to take action.

Flood Warning or Flash Flood Warning: Flooding or flash flooding has been reported or is about to happen. You should take necessary precautions (such as moving to higher ground) at once.

Is Flood Insurance Right for Me?

In 1968 Congress passed the National Flood Insurance Act, creating the National Flood Insurance Program. This program was intended to transfer the costs of private property flood losses from taxpayers to floodplain property owners through flood insurance premiums. Building on this, the National Flood Disaster Protection Act of 1973 requires every structure in the 100-year flood zone with a federally backed mortgage to have a flood insurance policy.

However, flood insurance for structures in the 500-year flood zone is also recommended. Moreover, approximately 40% of all flood insurance claims are made outside of mapped flood areas. Just because you are not located in a designated flood zone, doesn't mean you are completely safe. While flood insurance can be expensive, it is often the only disaster assistance that individuals will receive after a flood. For more information about flood insurance, visit https://www.floodsmart.gov/.

A Flood Insurance Rate Map (FIRM) is an official map created by FEMA to show the flood risk within a community. It is the primary tool for the National Flood Insurance Program (NFIP) and is used to determine where flood insurance is required, how much it will cost, and what building standards apply. All Catskill communities participate in NFIP. All FIRMs can be viewed for free by visiting the FEMA Map Service Center (https://msc.fema.gov/portal). FEMA has tutorials online (https://www.fema.gov/flood-maps) that show how to read a FIRM. You can seek assistance from a local floodplain administrator, certified floodplain manager, or stream management program, with reading and interpreting a map.

Having a plan in place and supplies at the ready during a flood can make the difference between your safety and a life-threatening situation. It is important that every household is prepared because local responders and disaster-relief organizations may not be able to reach you right away.

Be aware that these maps are made for insurance rating purposes and cannot show every conceivable risk. If you are interested in learning more detailed information, such as the flood depths on your property, reach out to your town's floodplain administrator for detailed information.

The Bridge Street Bridge in Phoenicia being overtopped by floodwaters as a result of Tropical Storm Irene (2011).

How Should I Prepare for a Flood?

Preparing for a flood is similar to preparing for many other natural disasters. The US Department of Homeland Security's (DHS) ready.gov website recommends creating a survival kit. The kit should at minimum include the following items:

- Water (one gallon per person per day for at least three days)
- Food (at least a three-day supply of non-perishable food for each household member)
- Battery powered or hand-crank radio (a NOAA weather radio if possible)
- Flashlight
- Extra batteries
- First aid kit
- Whistle (to signal for help)
- Dust mask (to help filter contaminated air)
- Duct tape and plastic sheeting (for sheltering in place)
- Moist towelettes, garbage bags and plastic ties (for personal sanitation)
- Wrench or pliers (to turn off utilities)
- Manual can opener
- Local maps
- Cell phone with chargers and a backup battery

Important papers and other valuables should be moved away from where floodwaters can reach. It may also be wise to invest in a waterproof safe.

Be sure to keep your vehicle's gas tank as full as possible (especially if floods are in the forecast) as it may not be possible to get to a gas station for days or even weeks following a flood. Consider keeping some of your emergency supplies (or a second kit) in the trunk of your vehicle.

You should also have a plan for where to go if you are forced to evacuate. Make arrangements with friends or relatives on higher ground to wait out a flood. Also know where your local disaster relief shelters are located. Make sure that every member of your family is familiar with the plan and knows what to do. Make arrangements or have a plan on what to do with your pets if you are forced to leave home.

DHS also recommends adding additional emergency supplies based on individual needs such as:

- Prescription medications
- Non-prescription medications (such as pain relievers, antacids, etc.)
- Glasses and contact lens solution
- Infant formula, bottles, diapers, wipes, diaper rash cream
- Pet food and extra water for your pet
- Cash or traveler's checks
- Important family documents such as copies of insurance policies, identification and bank account records saved electronically or in a waterproof, portable container
- Sleeping bag or warm blanket for each person
- Complete change of clothing appropriate for your climate and sturdy shoes
- Household chlorine bleach and medicine dropper to disinfect water
- Fire extinguisher
- Matches in a waterproof container
- Feminine supplies and personal hygiene items
- Mess kits, paper cups, plates, paper towels and plastic utensils
- Paper and pencil
- Books, games, puzzles or other activities for children

Vehicles moved by floodwaters along Route 28 near Mount Tremper during Tropical Storm Irene (2011).

What is Flood Hazard Mitigation?

Mitigating the potential impacts of flooding is a vital component of being prepared. There is no way to fully prevent flood damage if you reside in a flood zone. However, there are ways to adapt your home or structure to be more resilient.

Flood hazard mitigation is a proactive approach to reduce the risk of flood damage. It involves a range of strategies and actions taken to minimize the impact of flooding events.

Types of mitigation for structures can include elevating structures, abandoning the first floor so that no living areas are on the first story, filling in a basement, installing flood openings to allow water to flow in and out, or sealing a structure to prevent water from entering. Relocating a structure outside of the flood hazard area may also be an option, but another form of relocation can be property owners choosing to pursue a buyout. A FEMA buyout is a voluntary program in which a local or state government, using federal grant funding from FEMA, purchases a property in a high-risk flood zone and removes it from the floodplain by demolishing structures and converting the land into permanent open space. Buyout programs are offered in many communities. Check with your town officials if you are interested in pursuing this option and to learn more about available funding assistance.

What Should I Do During a Flood?

If you are under a flood watch or warning, you should gather the supplies you previously stocked and listen/monitor closely to a local weather station for updates and potential evacuation orders. You should also turn off all utilities at the main power switch and close the main gas valve if evacuation appears necessary. Additionally, bring outdoor possessions, such as lawn furniture, grills and trash cans inside or tie them down securely.

Never ignore an evacuation order. If a flood warning is issued for your area or you are directed by authorities to evacuate the area, you should only take essential items with you.

Turn Around—Don't Drown!

The Centers for Disease Control reports that half of all flood-related drownings occur when people drive or walk into hazardous floodwaters. It takes six inches of moving water to knock an adult off their feet, and two feet of moving water to carry away a vehicle as big as a pickup truck.

Do not drive or walk through flood water, especially at night because depths can be deceiving. In mountainous regions, streams adjust their course during floods and erode roadways and bridges leaving gaps where roadways once existed under standing water. Small depths of fast-moving water can lift and carry even large vehicles. It is important to follow the designated evacuation routes.

If it is likely your home will flood, don't wait for an evacuation order, get out!

What Happens After a Flood?

After a flood, you should continue listening to a local weather station for updated information on road conditions. You should continue to heed road closures. Authorities will provide guidance on entrance into flood damaged structures. Even without obvious structural damage,

Stream Gages

The Coldbrook Stream Gage on the Esopus Creek provides real-time stream data that is used in river forecasts. The Official Forecast tab is helpful to understand potential flood impacts of incoming weather systems.

Visit:
https://water.noaa.gov/gauges/mtrn6

Water alerts can be set up for several stream gages in the Ashokan Watershed. A notification will be sent to your phone if a stream gage exceeds the level that you select. This is a powerful tool to understand current stream conditions.

Visit:
https://accounts.waterdata.usgs.gov/wateralert/

Stream gages are positioned throughout the Ashokan Watershed.

floodwater often becomes contaminated with sewage or chemicals. Gas leaks and live power lines can be deadly, but are not obvious at first glance.

When returning to a flood-impacted area, ensure water is safe to drink, cook with, or clean with. Authorities may ask you to boil water for a while after a flood. Utility companies often have downloadable software to update you on getting service back. Carbon monoxide poisoning is one of the leading causes of death after storms when areas are dealing with power outages. Never use a portable generator inside your home or garage.

All materials that have been soaked by floodwaters should be disposed of unless they can be thoroughly cleaned and dried within 24-48 hours. Thoroughly wash all walls, floors, closets, shelves, and non-porous contents of your home with a household cleaning solution or simple soap and water. Disinfect with a solution of one cup bleach to five gallons of water. Be careful about mixing household cleaners together as they can create toxic fumes. Replace all disposable filters in heating and cooling systems and any wet floorboards or insulation. Be sure to open all windows and doors to help aid the drying process. Use a dehumidifier if possible. If at any point it becomes apparent that mold is growing, have it removed immediately and replaced with dry materials.

Red Cross has an online guide for repairing your home after a disaster with helpful tips and considerations (https://www.redcross.org/get-help/disaster-relief-and-recovery-services/disaster-clean-up.html).

Other Considerations

If you get your water from a well and the casing or cap were submerged during a flood, be sure to have the well water tested prior to using it as a drinking water supply. If your well is contaminated follow the instructions on disinfecting your well from the NYS Department of Health (https://www.health.ny.gov/publications/6562/index.html.

It may also be tempting to try to salvage as much food as possible, but be careful, especially if your home lost power. The USDA has a guide that can help you determine if a food item can be safely kept (https://www.fsis.usda.gov/food-safety/safe-food-handling-and-preparation/food-safety-basics).

The aftermath of a flood can be stressful, physically, financially, and emotionally. Do not be afraid to seek assistance from mental health professionals. Organizations like the Red Cross and local mental health associations often have counseling services available following natural disasters.

NY-Alert

Consider signing up for NY-Alert.

New Yorkers can subscribe for NY-Alert to receive critical information and emergency alerts on what is happening in their area. NY-Alert contains critical, emergency-related information including instructions and recommendations in real-time by emergency personnel. Information may include severe weather warnings, significant highway closures, hazardous material spills and other emergency conditions.

To sign up visit: https://alert.ny.gov/

Additional Resources

AWSMP

The AWSMP Stream Guide Factsheet Series provides resources for landowners to learn more about living in harmony with streams. "A Homeowner's Guide to Mitigating Flood Risk" goes into depth about how to read a flood map, and actions homeowners can take to protect their most valuable investment.
https://ashokanstreams.org/publications-resources/

NY EDEN

NY Extension Disaster Education Network (EDEN) is part of a network that provides education on preparing for and being resilient in the face of disasters. EDEN has information on numerous manmade and natural disasters (including floods).
https://eden.cce.cornell.edu

NYS Division of Homeland Security and Emergency Services

This New York State agency is charged with improving the readiness, response and recovery capabilities throughout New York State. Information on a number of natural and manmade disasters can be found on their website.
http://www.dhses.ny.gov/

NYS Department of Environmental Conservation, Floodplain Management Bureau

This office is tasked with regulating NYS's floodplains and has information on floodplain development permits and requirements following a flood.
http://www.dec.ny.gov/lands/24267.html

American Red Cross

Red Cross provides training and disaster relief services to Americans across the country.
http://www.redcross.org/

Floodsmart.gov

The official site of the National Flood Insurance Program (NFIP). Learn more about the program and how to purchase a flood insurance policy.
https://www.floodsmart.gov/

Ulster County Disaster Preparedness Guide

Ulster County, in conjunction with Cornell Cooperative Extension (CCE) of Ulster County, has developed a bank of resources to help you, your family, and your community prepare for potential weather-related disasters.
https://www.ulstercountyny.gov/be-prepared

Ulster County Project SAFE

This program is designed to improve emergency response for individuals with Autism, Down syndrome, Alzheimer's, and other cognitive or developmental conditions, as well as blindness and deafness/hearing loss. Participants can securely provide a name, address, behavioral considerations, emergency contacts, and preferred response approaches to the County's 911 dispatch system. When a registered individual is involved in an emergency, a distinct Project SAFE icon will notify dispatchers and first responders, allowing them to respond with greater awareness, sensitivity, and safety.
https://www.ulstercountyny.gov/Departments/Emergency-Services/Divisions/Emergency-Communications/Project-SAFE

Local Stream Management Program

Contact your local Stream Management Program in the Catskills for information on how to stabilize and protect streams and floodplains to mitigate flood damage.
https://catskillstreams.org

Town Website

Check your town's website for local flood mitigation plans, emergency announcements, and links to sign up for emergency alerts.

STREAM GUIDE

Flood Preparedness

The inundation in Boiceville (above) and destruction of a home (right) are examples of the devastation in the Catskills after Tropical Storm Irene in 2011. This Stream Guide answers common questions about flood preparedness. Every resident in the Catskills should understand their flood risk and take steps now to prepare.

Ashokan Watershed
Stream Management Program

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