



STATE OF GEORGIA

# Flood Response Toolkit

2015



DEPARTMENT OF NATURAL RESOURCES  
Environmental Protection Division  
Floodplain Management Office  
[www.gadnr.org](http://www.gadnr.org)



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## About This Toolkit

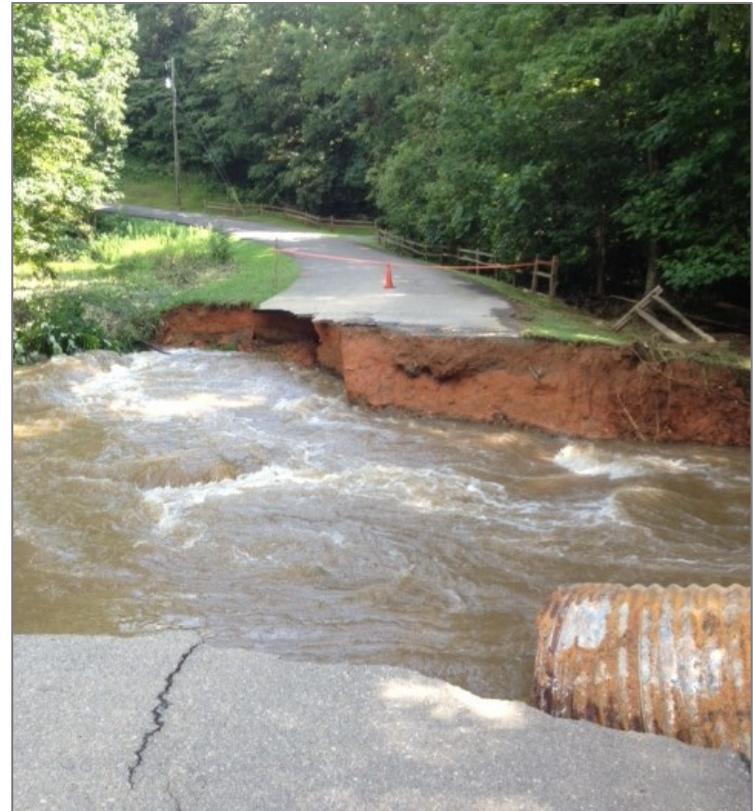
This Flood Response Toolkit was prepared by the Georgia Department of Natural Resources (GADNR), Environmental Protection Division, to help communities prepare for, respond to, and recover from flood emergencies. It is meant to be a quick reference guide designed to address steps to be taken *before*, *during*, and *after* the flood.

This toolkit is organized sequentially from identification of the flood threat through flood recovery.

Topics covered include:

- Planning and Preparing for a Flood
- Public Awareness and Outreach
- Safety Considerations
- Assessing Damages
- Cleaning up After the Flood
- Insurance Claims
- Federal Assistance
- Additional Resources

Comments and questions about this toolkit may be provided to Tom Shillock of the GADNR Environmental Protection Division by phone at (404) 651-8496 or by e-mail at [Tom.Shillock@dnr.state.ga.us](mailto:Tom.Shillock@dnr.state.ga.us).



**Figure 1.** A road washed out by flooding in Gilmer County, 2013.

Source: GEMA

*Cover photo: A flooded subdivision in north Georgia in September 2009. (Source: FEMA)*

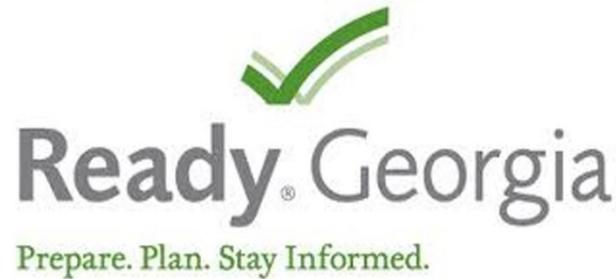
## Common Acronyms

The following acronyms are used throughout this toolkit:

- CDC Center for Disease Control and Prevention
- CRS Community Rating System
- FEMA Federal Emergency Management Agency
- FIRM Flood Insurance Rate Map
- FMA Flood Mitigation Assistance
- GADNR Georgia Department of Natural Resources
- GEMA Georgia Emergency Management Agency/Homeland Security
- GEOP Georgia Emergency Operations Plan
- HMA Hazard Mitigation Assistance
- ICC Increased Cost of Compliance
- NFIP National Flood Insurance Program
- NOAA National Oceanic and Atmospheric Administration
- NWS National Weather Service
- PA Public Assistance
- SFHA Special Flood Hazard Area
- SOC State Operations Center

# Section 2

# *Before the Flood*



## I. Flood Hazard Identification

Identifying your community's flood hazards is the first step in determining how best to reduce flood risk and respond to flood events. Flood hazard analysis and mapping is the basis for both mitigation efforts and Emergency Operations Plans. From an emergency planning perspective, flood hazard analysis and mapping help a planning team decide which hazards need special attention, what actions must be planned for, and which resources are likely to be needed.

Floods can occur anywhere. Even properties miles away from water can be subject to flooding. That's because it doesn't take a major body of water, or even a major storm, to cause a flood. The different types of flooding that occur in Georgia include:

- **Riverine flooding** occurs when water overtops the banks of a river or its tributaries. Tributaries include streams and brooks. Riverine flooding can last for several days or weeks.
- **Coastal flooding** commonly happens on larger rivers due to severe storms such as hurricanes. Contributing factors include tides, waves, and **storm surge**, which is the water combined with normal tides, pushed toward the shore by strong winds during a storm.
- **Shallow flooding** occurs in flat areas where a lack of channels means water cannot drain away easily. Shallow flooding problems fall into three categories: sheet flow, ponding, and urban drainage.
- **A flash flood** is a flood occurring in a watershed where the travel-time for the peak flow from one end of the watershed to the other is less than six hours. A large amount of rainfall over a short time span can result in flash flood conditions, as can dam and levee failures or sudden spills.
- **Dam or levee failures/overtopping** can result in severe flooding. When a dam fails or a levee fails or overtops, a large amount of water is suddenly released which can cause human casualties, destruction of property, flash flooding and environmental damage. Such failures can be the result of poor maintenance, inadequate design, or structural damage caused by a major flood.

### Definitions

A **flood** occurs from an overflow of inland or tidal waters from any source onto normally dry land.

**Flood damage** is any damage to a structure from surface water – whether that water originated from a body of water or not. Most homeowner insurance policies do not cover damage from floods.

## II. Flood Mapping and Defining Areas at Risk

Hazard identification requires knowledge and understanding of the extent and degree of flood risk present in the area. To ensure you are ready for a flood event, you need access to hydrological information for your area, historic and predictive flood maps, and knowledge of the areas and infrastructure that are at the greatest risk from flooding.

### National Flood Insurance Program (NFIP) Flood Maps

Most communities that participate in FEMA's NFIP have a **Flood Insurance Rate Map (FIRM)** and **Flood Insurance Study (FIS) report**. These maps and data are used for several purposes:

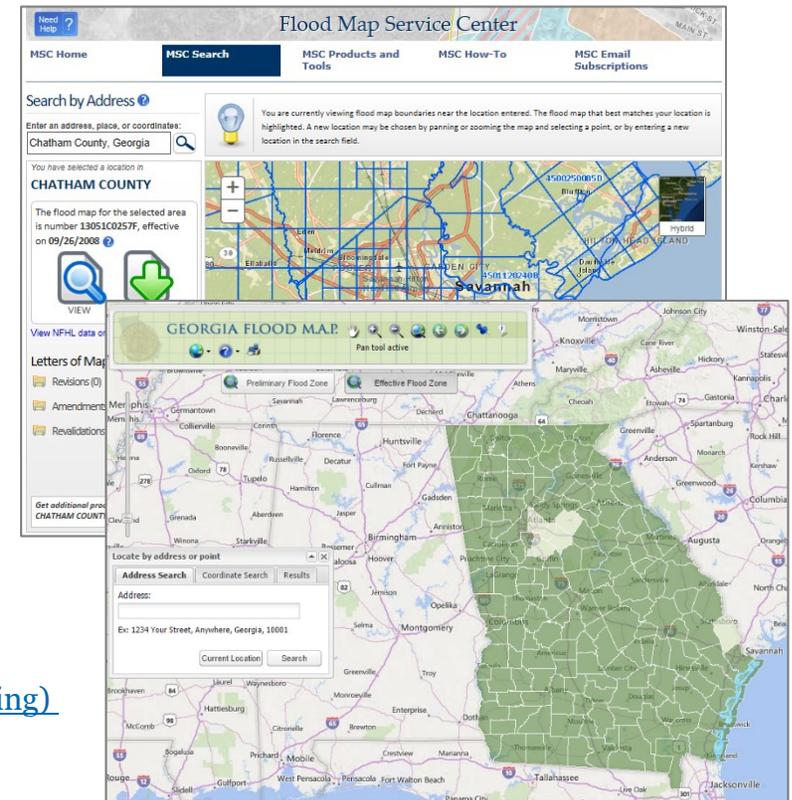
- Flood insurance agents use them for rating flood insurance policies.
- Communities use them to identify areas susceptible to flooding.
- Communities, states, and Federal agencies use them as the basis for regulating new floodplain development.
- Lenders and Federal agencies use them to determine when flood insurance must be purchased as a condition of a loan or financial assistance.

GADNR has partnered with FEMA to produce updated FIRMs and **non-regulatory flood risk products** (see page 7) for communities in Georgia as part of the [Georgia Flood M.A.P. \(Mapping, Assessment & Planning\) Program](#).

### Accessing Your Community's FIRM

Georgia community FIRMs can be accessed in these ways:

- The GADNR's [Georgia Flood M.A.P. viewer](#) allows users to view flood hazard data from the FIRM online and look up information by property address.
- [FEMA's Flood Map Service Center](#) allows users to view FIRM data online, access through [Google Earth](#) or FEMA's [GeoPlatform viewer](#), and download PDF map panels and GIS data.



**Figure 2.** The Georgia Flood M.A.P. Viewer and FEMA Flood Map Service Center interfaces.

## II. Flood Mapping and Defining Areas at Risk (cont.)

### What Is Shown on the FIRM?

The FIRM shows the areas susceptible to the 1% annual chance flood (often referred to as the “100-year flood” or as the “base flood”). These areas, also known as **Special Flood Hazard Areas (SFHAs)**, have at least a 1% chance of being flooded in any given year. The FIRM will sometimes show the 0.2% annual chance flood (“500-year flood”) as well. Property in the 1% annual chance flood hazard area has a 26% chance of flooding over the life of a 30-year mortgage.

Another important component of the FIRM is the **floodway**, which represents the portion of the floodplain that carries the majority of flood flow and often is associated with high velocity flows and debris impact. Floodways should be reserved for conveying water, and limited open-space uses such as parking and recreational areas.

Communities should take advantage of opportunities to remove existing structures from the floodway over time and restrict new structures from being constructed there. *Properties and transportation routes in the floodway are the infrastructure most at risk and should be evaluated closely.*

### Locally Identified Flood Hazard Areas

FIRMs are important tools to identify the most floodprone areas of your community. However, FIRMs serve as the basis for *Federal* flood insurance rates and requirements and development standards, and are not intended to show all localized flooding. Communities may have other sources of flood information that can complement the information on the FIRM. Non-regulatory flood risk products (discussed on the next page) can also help communities understand localized flood hazards.

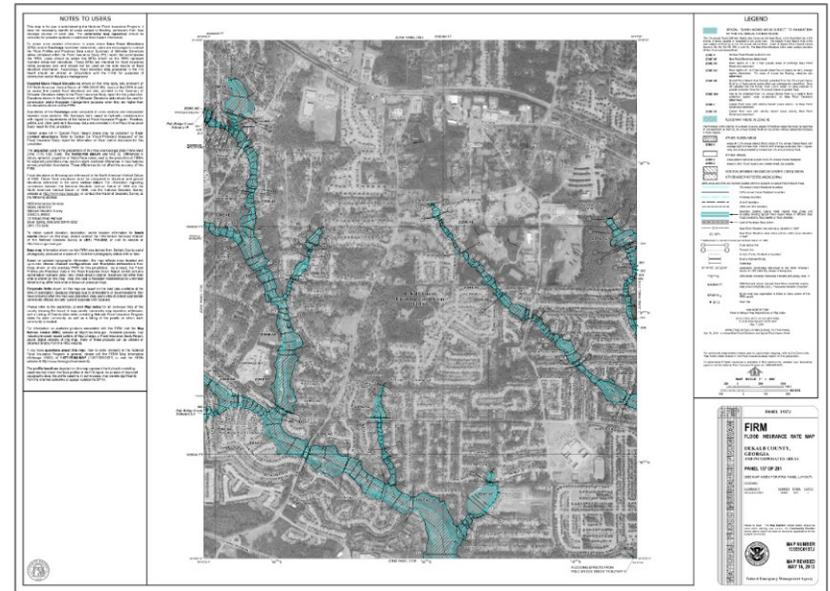


Figure 3. An example of a FIRM panel.

GADNR has created the [Flood Map Outreach Planning Guidebook for Local Governments](#) that provides suggested outreach activities and example materials for each phase of a mapping project. This guidebook can help you plan outreach activities in your community about the release of new FIRMs. The Guidebook can be found at [GeorgiaDFIRM.com](http://GeorgiaDFIRM.com).

## II. Flood Mapping and Defining Areas at Risk (cont.)

### Non-Regulatory Flood Risk Products

GADNR, in partnership with FEMA, also provides communities with **non-regulatory flood risk products**. These can include Flood Risk Maps, Flood Risk Reports, and Flood Risk Databases in GIS format containing datasets such as Flood Depth and Analysis Grids, Areas of Mitigation Interest, [Changes Since Last FIRM](#), Flood Risk Assessments, and others for coastal areas.

Flood risk products can help community officials in planning efforts to reduce flood risk, communicate with the public, and create a dialogue with neighboring communities about ways to reduce future flood risk. For example, flood depth grids (examples below) can help you identify areas where culvert improvements or road elevation can help reduce flood impacts and ensure that evacuation routes will be accessible during a flood.

Flood risk products can be accessed through FEMA's [Flood Map Service Center](#) but are currently not available for all communities. To learn more about the types of flood risk products and their uses, visit FEMA's [Flood Risk Products page](#). For more information about the availability of products for your community, contact the GADNR.

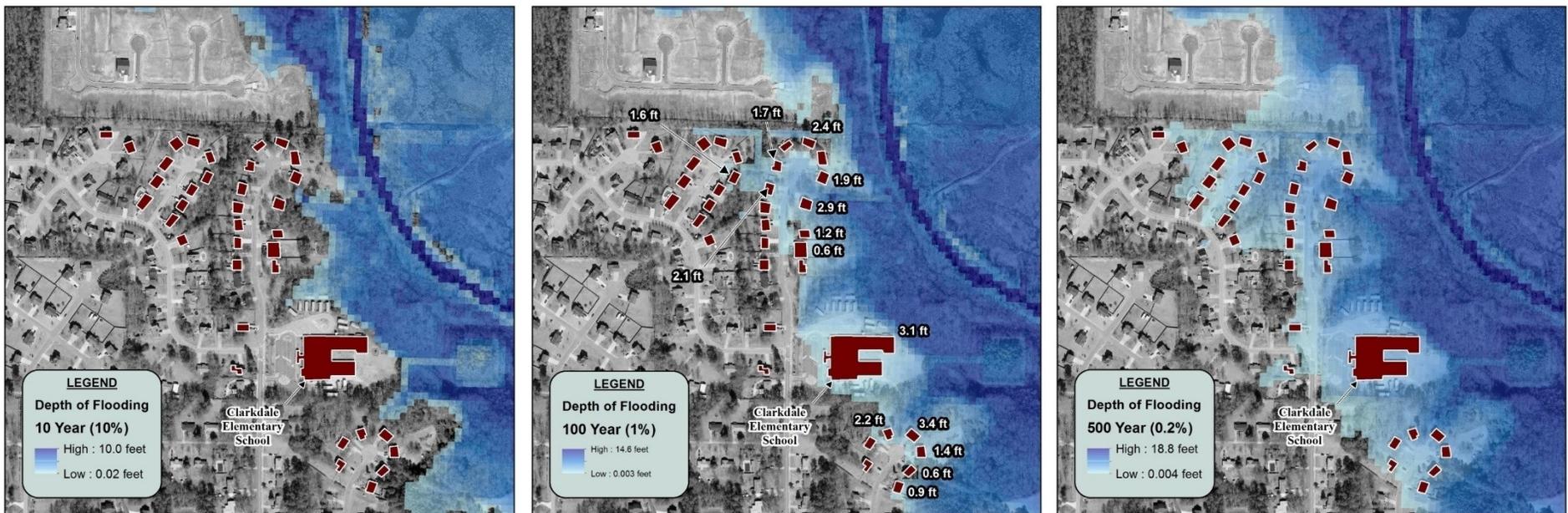


Figure 4. Flood depth grids for the 10%-, 1%-, and 0.2%-annual chance floods.

Source: GADNR

### III. Planning and Preparedness

#### Flood Response Stages

Flood preparedness and response is an ongoing process.

- It starts with **pre-flood** activities of recognizing flood hazards and planning for flood events through training and public outreach.
- At the **flood watch** stage, there should be an initial public notice and community checks for readiness.
- Once a **flood warning** is declared, there is a greater level of urgency. More critical decisions must be made, such as the need for emergency alerts and the issuance of evacuation orders.
- During the **flood event**, the focus shifts to tracking and managing emergency response and communications.
- Lastly, there are **post-flood** activities, which include public assistance, cleanup, rebuilding, and an evaluation of how the event was handled. Lessons learned can then be applied to improve the process for future flood events.

The sections that follow discuss each of these critical stages of emergency preparedness and response and the steps involved in each.



Figure 5. Flood response stages

### III. Planning and Preparedness (cont.)

#### The Flood Emergency Plan

Planning for emergencies ensures that emergency services, local authorities, state and Federal agencies, and other organizations better communicate and coordinate efforts, thus improving the effectiveness of the overall disaster response and reducing the level of effort required during the post-disaster recovery. This ensures that the duplication of tasks will not occur resulting in the unnecessary deployment of additional resources and that gaps in response are also avoided. (e.g., nobody takes responsibility for a necessary action)



**Figure 6.** Local, state, and Federal government agencies, and others participate in a planning exercise coordinated by GEMA.

Source: GEMA

Having a **Flood Emergency Plan** helps reduce the risk to the health and safety of citizens, the damage caused by flooding, and the overall disruption to your community caused by future floods.

The plan will help you ensure that the experience and lessons learned during past flood events are preserved and can be drawn upon in the future.

Your plan may be a part of a more comprehensive multi-hazard plan that addresses a variety of hazards affecting your community. It may also be part of a multi-jurisdictional plan that outlines roles and responsibilities and coordination between agencies and communities in the region.

## III. Planning and Preparedness (cont.)

### Flood Emergency Plan, (cont.)

A Flood Emergency Plan (FEP) outlines the roles and responsibilities of all parties to be involved, actions to be taken, coordination arrangements and communication channels to be used prior to, during, and after a flood event. Specifically, the plan should include:

- Areas likely to flood and the extent and depth of flooding
- Frequency of occurrence (both historical and predicted or probable)
- Magnitude and intensity, seasonal pattern, speed of onset of floods
- Location of critical infrastructure at risk
- Spatial extent (either around the known location of the hazard or as an estimate for non-localized hazards)
- The location of flood defense resources (equipment, sandbags, etc.)
- Traffic and evacuation routes and corridors
- Communications and outreach channels to be used before, during, and after an event
- Clear roles and responsibilities for specific actions that must occur during a flood and a plan for continuity of operations

Dams and levees in your community that may be a significant hazard should also have an Emergency Action Plan (EAP) that is considered as part of your FEP. See page 22 for more information.

FEMA's publication [Developing and Maintaining Emergency Operations Plans \(Comprehensive Preparedness Guide 101\)](#) provides in-depth information about developing an emergency operations plan for your community.

### Georgia State Emergency Operations Plan

The [State of Georgia's Emergency Operations Plan](#) (GEOP) outlines how state agencies prepare for and respond to different types of natural and manmade disasters.

The GEOP is intended to support county and local emergency operations plans to ensure seamless integration of Federal and state resources with local resources when necessary.



### III. Planning and Preparedness (cont.)

#### Long-Term Preparedness

Once the types of risk are identified, there are different measures that can be taken to mitigate flood damage. The mitigation measures all have advantages and disadvantages.

The table below provides examples of possible mitigation tools.

Prevention:	Property Protection:	Emergency Services:	Structural Project:	Public Information:
<ul style="list-style-type: none"><li>•Planning and Zoning</li><li>•Open Space Preservation</li><li>•Floodplain development regulations</li><li>•Stormwater management</li><li>•Drainage system maintenance</li></ul>	<ul style="list-style-type: none"><li>•Acquisition</li><li>•Relocation</li><li>•Building Elevation</li><li>•Dry and Wet Floodproofing</li><li>•Sewer Backup Protection</li><li>•Flood Insurance</li></ul>	<ul style="list-style-type: none"><li>•Flood Warning</li><li>•Flood Response</li><li>•Critical Facility Protection</li><li>•Health and Safety Maintenance</li></ul>	<ul style="list-style-type: none"><li>•Reservoirs</li><li>•Levees/Floodwalls</li><li>•Enlarging culverts or bridge openings</li><li>•Diversions</li><li>•Storm Sewer</li><li>•Beach nourishment &amp; dune construction</li></ul>	<ul style="list-style-type: none"><li>•Outreach projects and events</li><li>•Real Estate Disclosure</li><li>•Library</li><li>•Technical Assistance</li><li>•Environmental Education</li><li>•Web based information and social media tools</li></ul>

**Table 1.** Potential measures to mitigate damage caused by flooding.

### III. Planning and Preparedness (cont.)

#### Sources for Financial Assistance

Communities may obtain assistance to reduce damages caused by flooding through FEMA's Flood Mitigation Assistance (FMA) Program. FMA funds are available to assist states and communities implement measures that reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insured under the NFIP. Three types of grants are available to both states and communities:

**Planning Grants** are available for preparation of Flood Mitigation Plans.

**Project Grants** are available for projects to reduce future flood damage, including elevating homes, and acquisition or relocation of NFIP-insured structures. Only NFIP-participating communities with approved Hazard Mitigation Plans can apply for FMA Project grants.

**Management Cost Grants** are available to states to help administer the FMA program and activities.

Forms of assistance to support emergency planning and preparedness are also available through the Georgia Community Development Block Grant Program and Rural U.S. Department of Agriculture (USDA) Development Grant program.

To be eligible for FMA Project funds, a community must be participating in the NFIP and have a hazard mitigation plan that meets FEMA requirements. GEMA provides a collection of [tools and resources](#) to assist communities in developing compliant plans.

#### For More Information:

[FEMA Flood Mitigation Assistance Program](#)

[GEMA Hazard Mitigation Assistance Grants page](#)

[Georgia Community Development Block Grant Program](#)

[Rural USDA Development Grants](#)

### Overview of Federal Assistance

Eligibility for some forms of Federal funding will be contingent on specific building and construction requirements. Be sure you and residents keep this in mind and carefully review eligibility requirements for funding programs you plan on applying for before starting any reconstruction efforts following a flood.

If the President issues a disaster declaration, **Federal funds** are allocated for mitigation projects within the area covered by the declaration. Among the possible uses are acquisition and demolition of flood damaged properties. While FEMA typically requires that a Benefit-Cost Analysis (BCA) be conducted for proposed mitigation projects, the BCA is waived for those involving **substantially damaged structures** (See page 40) that are located within a FEMA identified SFHA. For this reason, it is essential that a community's floodplain administrator be involved in the application process for hazard mitigation funding. This will ensure that an accurate determination of the property in relation to the SFHA is made and the necessary substantial damage declaration and worksheets are available to support the application.

Flood insurance policies also include extra coverage for substantially damaged structures through Increased Cost of Compliance (ICC) coverage, which pays up to \$30,000 for costs of elevating, relocating, or demolishing structures. See page 54 for more information about ICC.

### Benefit–Cost Analysis (BCA)

Before funding a hazard mitigation project, FEMA requires a BCA. BCA is the method by which the future benefits of a mitigation project are estimated and compared to its cost. The end result is a Benefit-Cost Ratio (BCR) which is derived from a project's total net benefits divided by its total project cost. The BCR is a numerical expression of the cost effectiveness of a project. A project is considered to be cost effective when the BCR is 1.0 or greater, indicating the benefits of a prospective hazard mitigation project are sufficient to justify the costs.

Visit [FEMA's website](#) to access the Mitigation Benefit-Cost Analysis Toolkit, which includes all of the FEMA BCA software, technical guides, and tools to conduct a BCA.

## IV. Public Awareness and Outreach

### Flood Awareness and Preparedness

Public awareness and outreach are powerful mitigation tools. Be it through outreach events, television or radio, websites and social media, or mailings, many methods and resources are available to help your community reach out to residents.

To ensure residents are prepared when a flood occurs, it is recommended you:

- Educate residents about the risk of flooding and what areas within your community are most vulnerable.
- Inform residents how they can take action to protect themselves and their property.
- Use multiple methods to share information about flood risk before, during, and after a flood event.

#### Outreach Works!

Research has proven that outreach projects work! In addition to educating residents, they make local decision makers more aware of the hazards and ways to reduce their impact.

The most successful outreach projects are locally designed and tailored to meet local conditions.



**Figure 7.** Attendees examine exhibits at a Georgia M.A.P. Discovery Meeting in the Lower Chattahoochee Watershed.

Source: Dewberry

## IV. Public Awareness and Outreach (cont.)

### Opportunities for Engagement

Information about flood risk and preparedness can be presented in a number of ways, including pamphlets and fact sheets, workshops, websites and social media tools, and radio/TV advertisements. The county fair or other local events can also serve as great opportunities to communicate flood risk and preparedness messages to the public. So can annual flood-focused outreach campaigns such as “[National Preparedness Month](#).”

A general flood awareness program includes methods of identifying hazards and ways to limit exposure and reduce future property damages. Awareness programs that are specifically targeted at new home buyers are particularly effective. Such programs should educate potential buyers on mitigation techniques and features to look for when considering the purchase of a home in a floodprone area.



**Figure 8.** Attendees participate in a Georgia M.A.P. Discovery Meeting in the Lower Chattahoochee Watershed.

Source: Dewberry

## IV. Public Awareness and Outreach (cont.)

### Web Resources

The resources listed below can help you communicate with your residents about flooding and ways to ensure their safety.

GEMA's [Ready Georgia preparedness website](#) has many resources that can be used to make your residents aware of the risk from flooding and other natural disasters and simple steps they can take to be prepared. These include:

- An [online toolkit](#) with helpful tips, ideas and outreach materials to help you plan a Ready Georgia outreach event for your community.
- The Ready Georgia [mobile app](#) (image below) includes geo-targeted severe weather and emergency alerts, maps providing live traffic information, information about open emergency shelters and evacuation routes, and more, for mobile devices.



The NFIP's [FloodSmart.gov](#) website offers many resources about flood risk and flood insurance, including a [Flood Outreach Toolkit](#) with customizable document templates you can tailor to your own community.

FEMA's [Ready.gov](#) preparedness website features a [Floods page](#) which provides many online resources about flood preparedness for the general public.

FEMA's [National Preparedness Community](#) provides toolkits and templates that can be used for outreach to different audiences about preparing for floods and other disasters. The community includes regional groups and forums for members to share their experiences and get answers to questions.



Figure 9. The Ready Georgia mobile app.

## IV. Public Awareness and Outreach (cont.)

### Social Media

The use of social media tools such as Facebook, Twitter, YouTube, and other platforms can be a powerful and effective way to communicate with your residents about many topics including flood risk, before, during, and after events. Consider creating a [Facebook](#) page and/or [Twitter](#) account for your community if you haven't already. [GEMA](#), [GADNR](#), and [FEMA](#) distribute tips about preparedness, the status of events, and other important information through social media. An easy and effective way to pass along information about preparedness and other flood-related topics to your residents is to simply repost/retweet messages from these organizations.

The [National Weather Service](#) (NWS) is also using social media to educate the public and share critical information about weather, water, and climate issues. Connect with the NWS and other organizations within the National Oceanic and Atmospheric Administration (NOAA) through NOAA's [Social Media webpage](#).

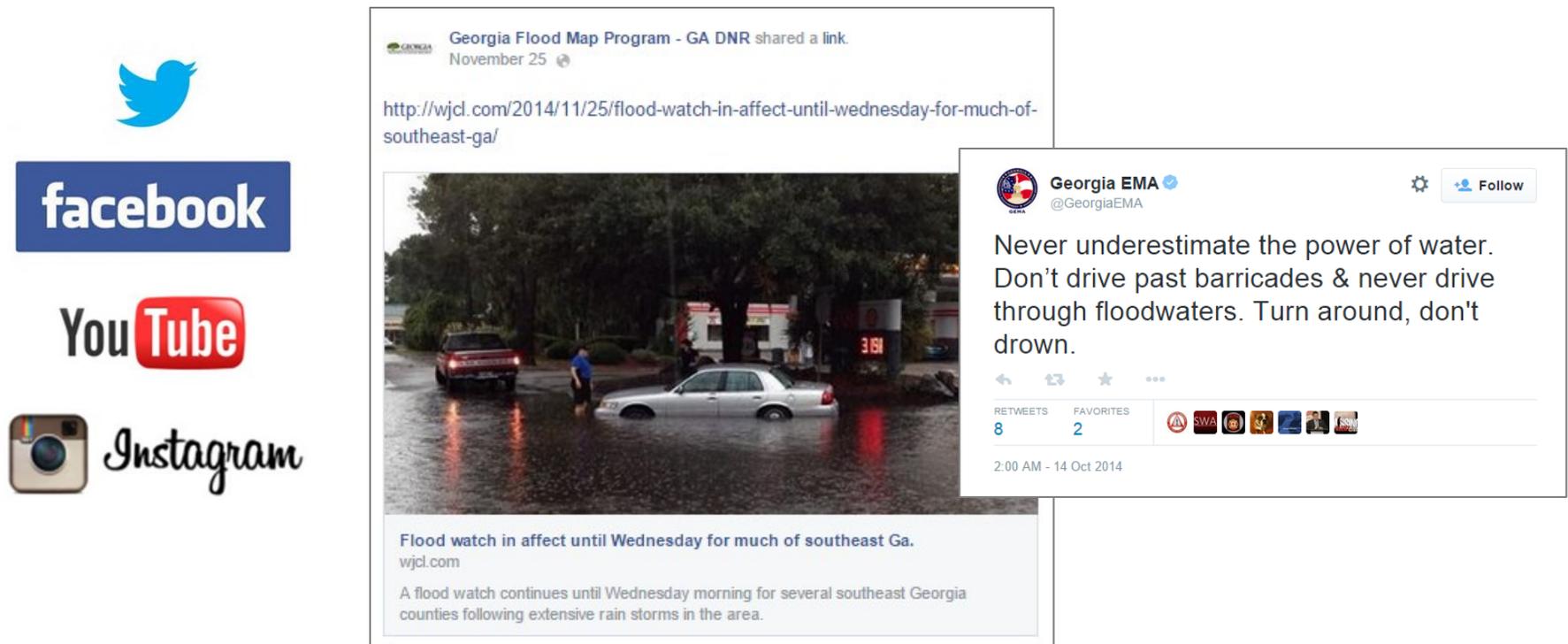


Figure 10. Social media messages from GADNR and GEMA.

## IV. Public Awareness and Outreach (cont.)

### Volunteers Make Your Community Stronger

Major floods can overwhelm your community's ability to respond to and recover from these events. Volunteers, either as part of a larger organization or as individuals, can make your community stronger and more resilient when a flood happens by allowing community staff to focus their efforts on the most critical, life threatening situations.

- [Praise & Preparedness](#) is a state-wide GEMA program that provides faith-based organizations with resources they can use to take action to prepare for disasters. The program promotes facility and congregant safety and ways for congregations to become involved in community disaster relief efforts, feeding and sheltering programs.
- [Georgia Voluntary Organizations Active in Disaster](#) (Georgia VOAD) enables voluntary organizations to work together effectively during disaster response activities in the state and can facilitate access for local emergency managers to much needed resources through its network.
- [Citizen Corps](#) harnesses the power of citizens at the local level through education, training, and volunteer service to make communities safer and better prepared to respond to disasters. [Georgia Citizen Corps](#) includes Community Emergency Response Teams (CERT) composed of local citizens who have been educated about disaster preparedness and response skills. These skills allow them to assist others following an event when professional responders are not immediately available to help.



Figure 11. What CERT can do for your community.

Source: FEMA

## V. Flood Forecasting

The first step in responding to a disaster is knowing that one is coming. NOAA continually develops more accurate forecasting systems as they deploy better sensors to measure key variables, employ better dynamic models, and expand their understanding of the causes of flood events.

### Flood Forecasting Resources

Increasing accuracy in flood forecasting is being achieved through the use of real-time precipitation and stream flow data. These data in conjunction with watershed models are used to forecast flow rates and water levels for periods ranging from a few hours to several days, depending on the size of the watershed or river basin.

- NOAA's [Advanced Hydrologic Predictive Service \(AHPS\)](#) provides river and flood forecasting information. The AHPS website has a suite of products to assist community leaders and emergency managers in making decisions about evacuating people and moving property before a flood occurs.
- The U.S. Geological Survey's (USGS) [Flood Inundation Mapping Program](#) can help local officials understand flood risk through real-time dynamic flood inundation mapping simulations. The [Flood Inundation Mapper](#) combines USGS flood inundation map libraries with real-time USGS river-level data and National Weather Service (NWS) flood forecasts into a tool that helps local officials and the public understand when and where it may flood, in order to prepare for and respond to flood events.

### Severe Storms and Hurricanes

The [NWS](#) provides many tools including [alerts and warnings](#), [forecast maps](#), [radar](#), and detailed [marine forecasts](#) for coastal areas to assist in monitoring severe storms. For hurricanes, the NWS [National Hurricane Center](#) serves as a comprehensive source of information, including forecasts and information about [storm surge](#). The National Hurricane Center will issue [Potential Storm Surge Flooding Maps](#) for areas along the Atlantic and Gulf coasts at risk of storm surge from a tropical cyclone.



**Figure 12.** Satellite image of Hurricane Floyd approaching the East Coast.

Source: National Aeronautics and Space Administration (NASA)

## VI. Flood Warnings

People at risk from disasters, whether natural or human in origin, can take actions that save lives, reduce losses, speed response, and reduce human suffering when they receive accurate warnings in a timely manner. Warnings are becoming much more useful as lead-time and reliability are improved. Your local Emergency Operations Plan and/or Standard Operating Procedures should include procedures for emergency warning dissemination. Consider using the outreach channels listed on page 34 to disseminate warning information.

The forecasting resources listed on page 19 of this guide provide flood warning information that you can integrate into your community's flood warning planning procedures.

The NWS's [Flood Warning Systems Manual](#) also provides guidance for communities who want to develop, implement, and operate a flood warning system.

[NOAA Weather Radio](#) is the best way to receive warnings from the NWS. NOAA Weather Radio is a nationwide network of radio stations broadcasting continuous weather information direct from a nearby NWS office. NOAA broadcasts warnings, watches, and forecasts and also broadcasts post-event information. NOAA Weather Radio requires a special radio receiver or scanner capable of picking up the signal. Broadcasts are found at (MHz): 162.400, 162.425, 162.450, 162.475, 162.500, 162.525, 162.550 (also known as channels 1 through 7).

Effective warnings should reach, in a timely fashion, every person at risk who needs and wants to be warned, no matter what they are doing or where they are located.

This means using not only government-owned systems such as NOAA Weather Radio and local sirens, but all privately owned systems such as radio, television, telephones, and the Internet to communicate warning information.





## VIII. Dam Safety

According to GADNR, Georgia has 5,555 dams of which 485 are classified as “Category 1” or “high-hazard” potential dams. The [Georgia Rules for Dam Safety](#) define high-hazard potential dams as those that in the case of failure would result in the probable loss of human life as well as property.

Georgia dam safety rules provide detailed permit application procedures, design standards, regular inspections and penalties for non-compliance. Additionally, as part of its Safe Dams Program, GADNR requires dam owners to develop **Emergency Action Plans (EAPs)** for high-hazard potential dams.

An EAP is a plan of action to reduce potential property damage and loss of lives in an area affected by a dam failure. An EAP should include a map of potential inundation areas, procedures for warning downstream emergency management authorities and other important information. EAPs help to inform a community’s Emergency Operations Plan on topics such as evacuation routes, location of shelters, and issuance of flood warnings. Make sure your community has developed EAPs for any community-owned high-hazard dams and has received a plan from owners of other dams as needed.



**Figure 14.** Lake Blackshear Dam on the Flint River during flooding from Tropical Storm Alberto, July 1994.

Source: GADNR

Like dams, levees can also breach or overtop during a large flood. Make sure you have an EAP for any levees that are at a high risk of failure or overtopping in your community. FEMA’s [Living with Levees page](#) provides more information about the risk from levees.

The resources below provide more information about dam safety and EAPs. For more information about Georgia’s Safe Dams program, contact the GADNR.

- [DamSafetyAction.org Georgia pages](#)
- [Association of State Dam Safety Officials](#)
- [Living with Dams: Know Your Risks brochure](#)
- [National Dam Safety Program](#)
- [Geospatial Dam Break, Rapid EAP Consequences and Hazards GIS Toolkit](#)
- [Federal Guidelines for Inundation Mapping of Flood Risk Associated with Dam Incidents and Failures](#)

## IX. The Community Rating System (CRS)

The NFIP's CRS program recognizes floodplain management and outreach activities performed by communities that exceed NFIP minimum standards. CRS, a voluntary program, recognizes these efforts by reducing the cost of flood insurance premiums by 5 to 45 percent for flood insurance policies in participating communities. CRS recognizes 109 activities organized into four categories: **Public Information (Outreach)**, **Mapping and Regulations**, **Flood Damage Reduction**, and **Warning and Response**. Communities can choose to undertake any or all of these activities.

Most communities have already implemented activities that will earn credit under CRS. Additionally, in Georgia, communities are automatically awarded CRS credit points for activities related to freeboard, and other activities implemented as the result of certain Georgia state laws, regulations and standards.

Besides the cost savings on flood insurance policies, other program benefits include:

- Improved public safety through outreach, warning systems and other projects.
- The opportunity for a community to evaluate the effectiveness of its floodplain management program against other state and nationally recognized benchmarks.
- A reduction in flood damage and increased environmental protection.
- More knowledgeable residents and greater support for flood protection measures as the result of outreach activities.

### For More Information

[CRSresources.org](https://CRSresources.org)

[FEMA CRS Resources Center](#)

[FloodSmart CRS page](#)

[CRS Coordinator's Manual](#)



# Section 3

## *During the Flood*



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## I. Keeping Your Community Safe

### Public Safety Messaging

Helping your residents stay safe and out of harm's way should be your primary mission during a flood. The following key messages can be shared with affected residents.

#### When skies are clear:

- Gather emergency supplies - information about building an emergency supply kit is available through [Ready Georgia](#).

#### When a flood watch or warning is issued:

- Gather emergency supplies or pre-assembled emergency supply kit.
- Stay tuned to local radio or television station for updates.
- Sanitize sinks and tubs by using bleach. Then fill them and plastic soda bottles with clean water.
- Secure outdoor possessions (such as lawn furniture, grills and trash) by bringing them inside or tying them down.
- If evacuation appears necessary, turn off all utilities at the main power switch and close the main gas valve.

#### In pre-flood scenarios, before orders to evacuate are made, emphasize the following messages to residents:

- Do not ignore an evacuation order.
- If an order is given to evacuate, authorities will direct you to leave if you are in a low-lying area, or within the greatest potential path of the rising waters.
- Check the [Ready Georgia website](#) for information on preparing for flooding.

#### If ordered NOT to evacuate, advise residents to:

- Periodically check the Internet, radio or television for weather updates.
- Be prepared to evacuate to a shelter or to the home of a friend or family member if your home is damaged, or if you are instructed to do so by emergency personnel at a later date or time.

#### If a flood evacuation is ordered, advise residents to do the following:

- Take only essential items.
- Turn off the gas, electricity, and water if there is time.
- Do not leave pets behind.
- Disconnect appliances.
- Follow the designated evacuation routes and expect heavy traffic and detours.
- Do not attempt to drive or walk across creeks or flooded roads.
- Do not return until local authorities say it is safe.

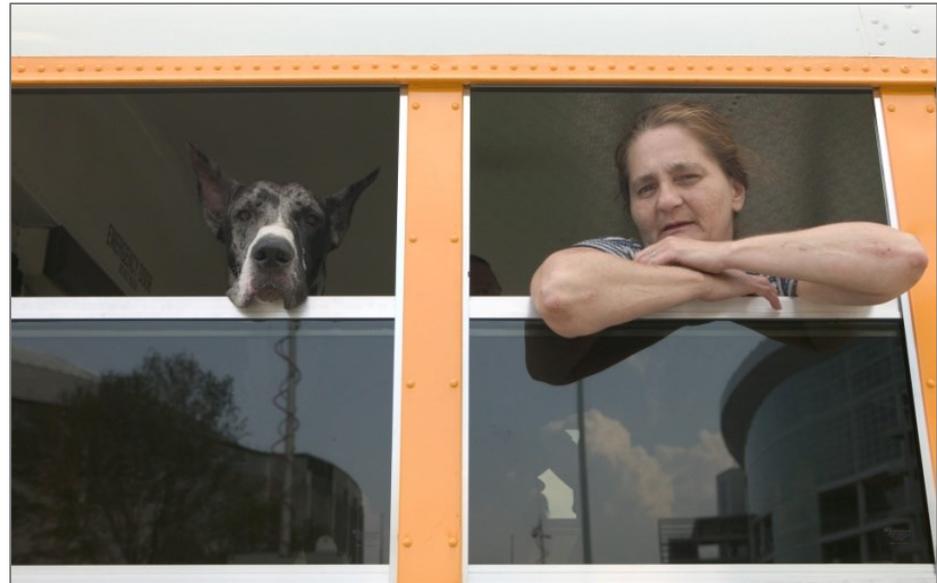
## I. Keeping Your Community Safe (cont.)

### Pet Safety

It is important that residents have a plan for their pets' safety before a flood occurs. If an evacuation order is given, **residents should not leave their pets behind**. Since public shelters may not allow animals inside, pet owners should plan in advance for shelter alternatives that will work for both them *and* their pets, such as loved ones or friends outside the area at risk or pet friendly hotels.

FEMA recommends that pet owners prepare a Ready kit for their pets for use during an emergency such as a flood; items which should be included are as follows:

- Pet food (At least a 3 day supply)
- Water (At least a 3 day supply specifically for pets)
- Medications
- Information on feeding schedules, medical conditions, behavior problems, and the name and phone number of the pet's veterinarian in case the pet needs to be fostered or boarded
- A pet carrier/kennel large enough for the pet to sleep in comfortably
- A copy of current vaccination records
- A clear and current photo of the pet with the owner
- A collar or harness with ID tag, rabies tag and a leash
- Sanitation items (pet litter and litter box, if appropriate; paper towels; plastic trash bags)
- Favorite toys



**Figure 15.** A woman and her pet await evacuation due to a disaster.

Source: FEMA

The resources below provide more information about keeping pets safe during a disaster.

- [Ready Georgia Pets page](#)
- [Ready.gov Caring for Animals page](#)
- Ready.gov [Preparing Your Pets for Emergencies Makes Sense](#) brochure
- [The Humane Society of United States](#)

## I. Keeping Your Community Safe (cont.)

### Livestock and Large Animal Safety

Farmers and other residents who keep large animals also need to have a plan for their animals when a flood occurs. Make sure they have the following information to ensure their animals' safety.

#### Planning for a Flood

Make sure your disaster plan includes your animals. The Humane Society of the United States provides information about [developing a farm disaster kit](#), [disaster preparedness information for farm animals](#) and [special precautions for livestock](#).

#### Evacuation and Safety Considerations

Above all else, *make sure that animals are evacuated from barns and enclosures if there is a possibility of floodwaters inundating the area.* Animals sometimes refuse to leave during a rapid rise of water and may drown if not evacuated before floodwaters arrive. Avoid leaving animals behind if possible. If there is no alternative:



**Figure 16.** A flooded pasture in Whitfield County.

Source: NOAA

- Provide access to food and clean water and the safest area possible.
- Do not rely on automatic watering systems since power may be lost.
- Be sure that herbicides, pesticides and treated seeds are not accessible to livestock, and are stored where floodwater will not contaminate feed or water.
- In broad, level floodplains where floodwaters are seldom deeper than 3 or 4 feet, you may need to construct mounds of soil on which livestock can stay.

More information is available through the [University of Georgia's College of Agricultural & Environmental Sciences](#).

The [Georgia Department of Agriculture](#) (GDA) has primary oversight of the safety and well-being of animals during disasters. This includes the development of guidelines for related emergency support operations. The GDA's Animal Industry Division can be reached by phone at (404) 656-3671.

[Handling Animals During Disasters](#), a template for local governments which supports [Emergency Support Function Annex #11](#) (Agriculture & Natural Resources) of the GEOP is also available as a planning resource for Georgia communities.

## I. Keeping Your Community Safe (cont.)

### Emergency Response Partners

It is critical to coordinate with local, state, Federal, military, and non-governmental agencies to preserve and protect critical facilities during a flood, and restore damaged/inaccessible/lost critical facilities as soon as possible. Some of those partners and examples of the support and coordination they can provide are provided in Table 2. The relevant coordinating state agency and Emergency Support Function (ESF) Annex of the GEOP that applies is also listed for further information, where applicable.

**Table 2.** Emergency Response Resources

Resource	Support Provided	Coordinating State Agency/Relevant ESF Annex
Investor-owned utility companies/Electric membership cooperatives	Protect and identify substations	<i>Georgia Environmental Finance Authority</i> <a href="#">ESF 12 (Energy)</a>
Public Safety Facilities	Coordinate law enforcement and public safety issues	<i>Georgia Department of Public Safety</i> <a href="#">ESF 13 (Public Safety &amp; Security)</a>
Public Health Facilities	Provide vaccines and health advisories	<i>Georgia Department of Public Health</i> <a href="#">ESF 8 (Public Health &amp; Medical Services)</a>
American Red Cross	Provide shelter information, feeding stations, clean up assistance and guidance	<i>Georgia Department of Human Services</i> <a href="#">ESF 6 (Mass Care &amp; Human Services)</a>
Humane Society	Assist with animal safety and rescue issues	<i>Georgia Department of Agriculture</i> <a href="#">ESF 11 (Agriculture &amp; Natural Resources)</a>
Community Emergency Response Teams (CERT)	Assist with a variety of emergency response activities	<i>Local Emergency Management Agencies</i>
Georgia National Guard	Levee patrols/construction, equipment operation, liaison to assist/advise emergency management staff	<i>Georgia Department of Defense</i> ; Requests from local officials processed through <a href="#">State Operations Center (SOC)</a>
Georgia Department of Transportation	Bridge and railroad inspections, debris removal	<i>Georgia Department of Transportation</i> <a href="#">ESF 1 (Transportation)</a>
U.S. Coast Guard (USCG)	River and ocean traffic and rescue	Coastal counties coordinate directly with USCG. Others may contact the <a href="#">State Warning Point</a> who will coordinate.
Georgia Voluntary Organizations Active in Disasters (VOAD)	Facilitate access to resources to assist in debris removal, mass care, transportation, and other support.	GEMA/HS VOAD Coordinator works in the Planning Branch of the <a href="#">SOC</a>

## I. Keeping Your Community Safe (cont.)

### Temporary Flood Protection Measures

Sandbagging, wrapping systems, and temporary flood barriers are all types of active mitigation. Active mitigation is a last resort and generally is the least reliable. These forms of mitigation are more prone to being incorrectly constructed due to unfamiliarity with the system, fatigued workers, and limited time.

#### **Sandbagging\***

- Sandbags are one of the most versatile and simple temporary emergency measures.
- Familiarize residents with Do's and Don'ts.
- Proper construction techniques and planning are important (See resources listed below).

#### **Temporary Flood Barriers\***

- Temporary flood barriers can be assembled relatively easily, moved into place, anchored, and filled with water or sand.
- Barriers must be sized for the site.
- Train responsible staff for proper deployment of barriers as well as proper storage and maintenance.

#### **Wrap Systems**

- Flood wrapping systems are temporary emergency measures.
- Consist of plastic or other synthetic waterproof sheeting material and used to seal a building to prevent water intrusion during the flood.
- Need to be anchored, stored, and repaired.

\*These systems should not be placed in the floodway or otherwise located such that they create an obstruction to flow that increases flood stages on other properties.



**Figure 17.** Volunteers help with sandbagging efforts along a levee.

Source: FEMA

### **U.S. Army Corps of Engineers – Sandbagging Resources**

[Sandbag Technique Video on YouTube](#)

[Sandbagging Techniques Slide Deck](#)

## II. Evacuation

The magnitude of an evacuation is determined by the type of emergency and relative threat to public health and safety.

There are four types of evacuations that communities should be prepared to execute. It is important to understand the different decisions and resources that determine which type of evacuation is appropriate at the time.

1. **Selected evacuation** – the evacuation of a specific building or small neighborhood.
2. **Staged evacuation** – the evacuation of multiple neighborhoods or an entire community, starting with the immediate impact zone first, then broadening to include adjacent areas as needed.
3. **Full-scale or mass evacuation** – an evacuation of an entire geographical area.
4. **Shelter-in-place** – taking shelter indoors, generally at the onset of an emergency to await evacuation orders; the act of not evacuating.



**Figure 18.** Flooded railroad crossing near Powder Springs in September 2009.

Source: U.S. Geological Survey

### Evacuation Considerations and Potential Tipping Points:

- What populations are at risk and what is their level of mobility?
- What evacuation routes exist and what are the conditions on those roadways?
- What critical facilities are at risk?
- Are current response activities underway and what capacity do emergency responders have to support efforts? (e.g., Search and Rescue)?
- What are the impending weather conditions?
- What mechanisms are available to disseminate warning to the public?
- How much lead time do you have?

## II. Evacuation (cont.)

### Evacuation Routes and Traffic Considerations:

- Limited capacity of highway system during floods
- Availability of routes to higher ground and the low points in the area that might flood and block safe passage
- Traffic speed (peak/off-peak hours)
- Road closures

Access the Georgia Department of Transportation (DOT) 511 system by phone or [website](#) for real-time traffic information.



**Figure 19.** Memorial Bridge connecting the City of Albany and Dougherty County reopens following flooding in 1994.

Source: The Albany Herald (Copyright 2015)

### Preparing Residents to Evacuate

Provide these tips to residents to make sure they're ready to evacuate if and when the time comes.

- Fill your vehicle fuel tank.
- If you don't have a vehicle, make arrangements with friends or family for transportation.
- Double check your [emergency plan](#) and the items in your [emergency kit](#) to make sure you're not forgetting anything.
- If you have a pet or other animals in your care, [make sure your plan includes them](#); many shelters do not accept animals.
- Monitor the radio, television, or web for updates. Follow instructions issued by local officials – evacuate immediately if ordered to do so.
- If you are evacuated, do not return until local authorities say it is safe.

## II. Evacuation (cont.)

### Evacuation of Populations with Functional or Special Needs

Be sure you have a plan to assist your residents with functional or special needs in evacuating. This includes individuals who are deaf; blind/have low vision; or cognitive, mental or mobility related disabilities; persons in need of medical assistance; those who use service animals; children; the frail elderly; and those whose primary language is not English.

- The [Georgia Emergency Preparedness Coalition for Individuals with Disabilities and Older Adults](#) provides subject matter expertise to emergency managers to ensure that their emergency plans take into account the needs of people with disabilities and older adults. The Coalition has developed the [State of Georgia Functional and Access Needs Support Services Toolkit](#) for use by local officials.
- The Coastal Georgia Functional and Medical Needs Registry is maintained by health departments in coastal Georgia and is made up of residents who may require transport and medical assistance during a hurricane evacuation and have no other resources such as family, friends, or neighbors who can help them. Residents must apply to be included on the registry by contacting their [county health department](#).
- [Disability.gov](#), the Federal government website for information on disability programs and services provides many resources to help communities be inclusive of people with disabilities when planning for emergencies.



**Figure 20.** An evacuated child naps at the Albany High School Red Cross shelter following flooding in 1994.

Source: The Albany Herald (Copyright 2015)

### Hurricane Evacuation

Resources that can help communities with the evacuation of residents in coastal areas due to hurricane threats are provided on page 21 of this guide.

### III. Keeping Your Community Informed

During the flood, tracking and managing emergency response and communications are the primary concerns. It is vital to inform the community during the flood through public messages.

There are two fundamental goals when communicating during a crisis such as a flood.

**GOAL #1:** *Ease concern*

**GOAL #2:** *Provide guidance on how to respond*

#### **Staying on Message**

Once the message and goals are established, the challenge becomes one of delivery and ensuring that messages are heard. Consistency in the message will aid in achieving goals.

#### **Delivering Accurate and Timely Information**

During a dire situation, the temptation to release information prematurely is great. Don't release information prematurely. Slow down and verify information before release; inaccuracy creates rumors, uncertainty, and distrust.

#### **Avoiding Communication Mistakes:**

- 1) First do no harm. Your words have consequences-be sure they're the right ones.
- 2) Be direct. Tell your residents what action they need to take and be prepared to explain why.
- 3) Know what you want to say. Say it... then say it again.
- 4) Use everyday language.
- 5) Do not use acronyms.
- 6) Never say anything you are not willing to see printed on tomorrow's front page.
- 7) Don't make promises you cannot keep.
- 8) Don't use "No Comment." You'll look like you have something to hide.
- 9) Don't get angry.
- 10) Don't speculate, guess, or assume. When you don't know something, say so.

*Communication in a Crisis: Risk Communication Guidelines for Public Officials.* US Department of Health and Human Services

### III. Keeping Your Community Informed (cont.)

#### Public Notification During a Flood

Floods can often occur with little advance warning. During a flood, the public must be provided with timely updates regarding:

- Water levels and their implications for a flood event
- Levee and dam conditions
- Short-term and long-term weather forecasts
- Any other immediate flood-related threat that might exist
- Road closures
- Evacuation information

It is helpful to have a local notification protocol to distribute information to the media and the public. Possible communications channels include:

- Media (TV, Radio, Newspapers)
- Internet, including Social Media
- [Georgia State Warning Point](#) (GEMA)
- Outdoor Warning Siren System (OWSS)
- Fire and Police Vehicle Loudspeakers
- Reverse 9-1-1 System
- Private emergency communications services, such as [CodeRED](#)
- Neighborhood Watch and other community support programs
- [Integrated Public Alert & Warning System](#) (IPAWS) [Includes access to the [Emergency Alert System](#), [Wireless Emergency Alerts](#), [NOAA Weather Radio All Hazards](#) transmitters broadcast, and other public alerting systems from a single interface.]

Turn Around Don't Drown™



- NEVER drive through flooded roads – they may be washed out!
- Passenger cars may float in only 18 to 24 inches of water!
- It takes only 6 inches of running water to knock you off your feet!

### III. Keeping Your Community Informed (cont.)

#### Temporary Shelter

The need for temporary shelter during or after a flood will depend on the severity of the event. In ideal cases, community sheltering should last no longer than two weeks; however in catastrophic conditions, sheltering for longer periods of time may be needed.

Local governments should factor in the number of people with functional or special needs who may need transportation to shelters or other assistance upon arrival at shelters (see page 32) when developing their Emergency Operations Plan.

Georgia's [State Mass Care Shelter Plan](#), ESF Annex 6 of the GEOP, is available as a planning resource for Georgia communities. The [Georgia Hurricane Evacuation Study](#) also provides information about shelter options in Georgia coastal communities.

Both [FEMA](#) and the [American Red Cross](#) provide resources for the public to help find shelter locations in the event of a disaster.



**Figure 21.** Residents gather at a disaster relief center in Albany during the 1994 floods.

Source: The Albany Herald (Copyright 2015)

# Section 4

## *After the Flood*



## After the Flood

This section of the toolkit covers the steps and procedures that your community should follow **after** a flood. It is important to remember that all repair and redevelopment within the floodplain must be completed according to the standards in your floodplain management ordinance.

After a flood, a community has two primary responsibilities:

1. Directing the immediate use of community resources to deal with the emergency; and
2. Directing the community's longer-term recovery effort.

This section provides information to help you in fulfilling these two very important responsibilities.



**Figure 22.** Tank trucks are used to help clean a portion of a flood-affected building at the Atlanta Waste Water System.

Source: FEMA

## I. Safety Considerations for You and Your Residents

Even as floodwaters begin to recede, many dangers can still exist for you and the residents of your community, including both physical dangers and emotional stress.

You can customize the template fact sheet '[Keeping Safe After a Flood](#)' to help your residents understand these dangers. Consider using the following distribution methods:

- Share these messages with local media outlets such as newspapers and radio stations;
- Post the brochure in a prominent location on your community's website;
- Post messages from the fact sheet periodically via your community's social media accounts, including Facebook and Twitter;
- Print out copies and provide to emergency management or other community staff who are canvassing neighborhoods for direct distribution to residents;
- Keep copies available in your community's municipal offices for residents to take home with them.

### Get More Information

Consider including the resources below on your website or sharing them through social media in the days following the flood.

- [Ready.gov's Floods page](#) has information about staying safe after the flood, including health and safety tips, and clean up.
- The CDC provides [precautions for reentering a flooded home](#).
- The University of Georgia College of Agricultural & Environmental Services also has [safety information for returning to a flooded home](#) and [coping with emotional stress after a flood](#).

## II. Meeting NFIP Requirements After a Flood

After any disaster you can expect everyone to want you to respond quickly and efficiently, without regard to other priorities. You will have to take on emergency post-disaster responsibilities, often at the expense of not performing your normal duties. There may be pressure from the public and elected officials to waive normal procedures and regulations in order to help people return to their homes and businesses as fast as possible. However, it is essential that you have adequate procedures in place to ensure full and fair enforcement of your floodplain management regulations during this time of stress, confusion and controversy.



**Figure 23.** A DeKalb County resident discusses his home's flood damage with County and FEMA officials.

Source: FEMA

### Emergency Repairs and Cleanup

You may allow certain cleanup and temporary emergency repairs to proceed without a permit including:

- Removal and disposal of flood-damaged contents and carpeting as well as non-structural elements such as wallboard and insulation.
- Hosing, scrubbing or cleaning floors, walls, ductwork, etc.
- Patching holes in roofs or walls and covering windows to prevent weather from inflicting further damage.
- Making the building safe to enter by removing sagging ceilings, shoring up broken foundations, and other actions.

***Keep in mind:*** Structural alterations such as removing floors or studs, or replacing a furnace are not allowed without a permit.

## II. Meeting NFIP Requirements After a Flood (cont.)

### Determining Repair and Rebuilding Standards

All repair and redevelopment within the floodplain must be completed according to the standards in your floodplain management regulations. This means you must identify the infrastructure within your regulated floodplain and be prepared to assess damages and ensure proper permits are obtained and development standards are met.

- Properties that are in a regulated floodplain may be subject to minimum elevation or [floodproofing](#) requirements.
- Properties that are NOT in a floodplain are not subject to elevation and floodproofing requirements.

Buildings in the floodplain that are “substantially damaged” (see definition in sidebar) must be brought into compliance with state and local floodplain management regulations.

- In Georgia, a residential building damaged to 50% or more of its pre-flood market value must have its lowest floor (including basement) elevated at least one foot above the 1% annual chance flood elevation. Commercial buildings must be elevated or floodproofed to one foot above the 1% annual chance flood elevation.
- Local regulations may be more restrictive than state regulations. For example, a community may require substantially-damaged buildings to be elevated or floodproofed to one foot above the 0.2% annual chance flood elevation.

To help cover the costs of meeting state and local requirements, the NFIP makes available [Increased Cost of Compliance \(ICC\)](#) coverage for all new and renewed standard flood insurance policies. For substantially damaged structures, policyholders can receive up to \$30,000 to cover structure elevation, relocation, demolition, or for non-residential buildings, floodproofing. FEMA has developed the brochure, [Increased Cost of Compliance Coverage: How You Can Benefit](#), which you may wish to distribute to your residents following a flood. More information about ICC coverage is also provided on page 54.

#### Key Definition: “Substantial Damage”

At a minimum, substantial damage is a formal determination, made by a community, that the cost to repair a damaged building to its “before damage” condition would be 50% or more of the market value of the structure before the damage occurred. A community may choose to use a more restrictive standard.

Whether a building is in the 1% annual chance floodplain and whether it is substantially damaged are important distinctions when a community is in a county that is included in a Federal disaster declaration and mitigation funds are appropriated for elevating, moving, or demolishing flood-damaged buildings.

See page 46 for more information on how to determine if a building has been substantially damaged.

## II. Meeting NFIP Requirements After a Flood (cont.)

### Permit Requirements

As soon as possible after the flood, you should contact the GADNR and FEMA Region IV to review regulatory requirements for repair and reconstruction of flood damaged structures, and to see if there are any new guidance documents or data from claims adjusters.

You must require floodplain development permits for repair of damaged buildings located in your regulated floodplain and determine if those buildings have been “**substantially damaged.**”

A permit is needed for each building in your regulated floodplain where repairs will involve removing, altering or replacing the roof, walls, siding, wallboard, plaster, insulation, paneling, cabinets, flooring, electrical system, plumbing, heating or air conditioning. **A permit is required regardless of whether or not the repairs rise to the level of substantial damage.** These repair/reconstruction projects must meet the requirements of any applicable building code and your floodplain management ordinance.

The requirement for a permit cannot be waived, although your governing board may opt to waive permit fees.

Keep in mind - your community must not reduce or ignore the NFIP substantial damage requirement. To do so would jeopardize your community's standing in the NFIP.

If your community has not adopted a building code, a **building permit** is not required to repair a flood-damaged structure. However, any community that participates in the NFIP is required to issue a **floodplain development permit** to repair a flood-damaged building.

### III. Performing a Building Condition Survey

#### Initial Building Condition Survey

Before allowing residents to re-occupy flood damaged structures, you may want to perform a **building condition survey**. A building condition survey is conducted after a flood to determine:

- If any building is in too dangerous a condition to be re-entered without a thorough safety inspection.
- Which buildings will need a building permit before they can be repaired or re-occupied.

Here are some things to keep in mind when performing a building condition survey:

- **High water marks**, which can serve as a valuable record of the flood, should be recorded and marked with spray paint or another method on telephone poles, trees, etc.
- Prepare/print **work maps** of the floodplain that show buildings, addresses and elevation contour lines.
- If possible, the **survey team** should include a building inspector, a utility specialist or fire department staff member, and one person to record information. Utility or fire department staff should focus on identifying hazards that need immediate attention. The building inspector is responsible for making an initial determination on the condition of the structure.
- The building condition survey is conducted from *outside all buildings*. A basic condition form should be created for each structure including notes of any condition issues identified during the assessment.
- A photo should be taken of each building, showing any damage that is visible from outside.



**Figure 24.** A high water mark sign on the Rome Area History Museum Building in Rome.

Source: National Weather Service

#### High Water Marks

By posting high water mark signs in your community, you can help build awareness and motivate residents to reduce their flood risk. Communities can also receive CRS credit points for this activity. The [Know Your Line initiative](#) was started by FEMA and other Federal agencies to help communities raise awareness using high water marks. To learn more, visit [FEMA's website](#).

### III. Performing a Building Condition Survey (cont.)

- Any structure that appears to be fully/partially collapsed or appears to be in danger of imminent collapse should be marked with a red placard. Yellow placards should be placed on structures that are structurally sound but require any type of repair. Green placards are placed on structures that are unaffected. See the exhibits below for sample placards. Templates of these placards are available [here](#).

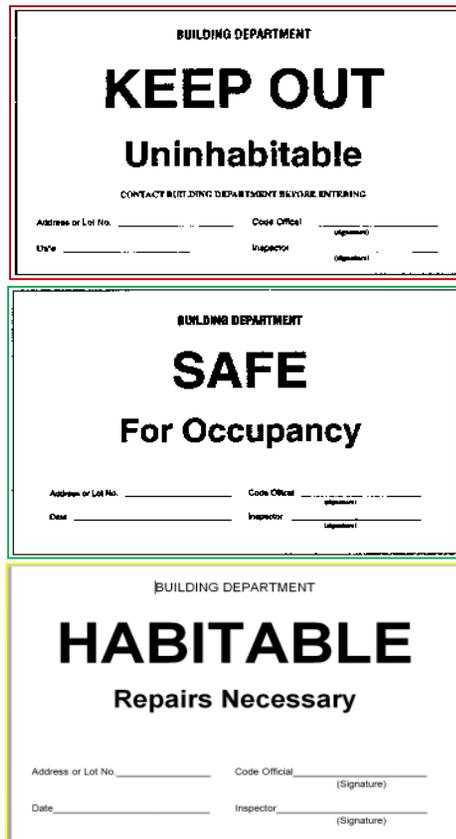


Figure 26. Sample placards for assessed structures.



Figure 25. Officials assess the flood damage in a mobile home community in Austell.

Source: FEMA

#### Notifying Property Owners

Upon completing the initial building condition survey, you'll need to send a letter to the owner of *every property surveyed*. This letter should identify what activities can and cannot proceed without a permit and share helpful resources and reference materials on flood recovery. Each letter should include the building's address and the owner's name. If the property owner name and address cannot be located, this letter can be posted on the property. Use [this letter template](#) as a guideline. You may also wish to include a copy of the FEMA/Red Cross publication, [Repairing Your Flooded Home](#), available for download or for order directly from FEMA or the Red Cross, with each letter.

## IV. Assessing Damages to Buildings in the Floodplain

### Preliminary Damage Assessments

Placing placards on buildings is the first step in a *multi-step process* of determining damage. The next step is to perform a more complete assessment of each flooded property to review needed repairs and detail the extent of the damage to each structure.

How these next steps are undertaken will largely depend on the resources available within your community.

*Smaller communities* with limited professional permit staff will typically complete their assessment of the permit applications for repairs as they are received.

*Larger communities* with dedicated professional permit staff may conduct door-to-door inspections to assess damage and monitor restoration and rebuilding efforts over time. On-site preliminary damage assessments may be done using a checklist tailored to your community [[View sample checklist](#)] or by using the [Substantial Damage Estimator \(SDE\) Tool](#) developed by FEMA discussed on page 47. Keep in mind that the purpose of the door-to-door damage assessment is to help guide rebuilding efforts. Actual rebuilding requirements and where applicable, the declaration of substantial damage, will be based on repair/reconstruction estimates prepared and signed by a licensed contractor (and validated by your community-see guidance on Page 46).

***A word of caution*** - It is your community's responsibility to ensure that any substantially damaged buildings are brought into full compliance with your community's floodplain management regulations per NFIP requirements.

Be on the lookout for major repairs/reconstruction proceeding within your community's SFHA without a permit.

### Considerations for Small Communities

Smaller communities without, or with limited, professional permit staff will face challenges in meeting the demands from residents eager to restore flood-damaged property. Where conducting a complete assessment of each flooded property is not feasible, you may choose to evaluate permits and rebuilding estimates as they are received as opposed to playing an active role in conducting preliminary damage assessments.

## IV. Assessing Damages to Buildings in the Floodplain (cont.)

### Considerations and Precautions

Regardless of which approach you use to perform damage assessments:

- Follow accepted safety guidelines when performing any inspections.
- Be sure to record the address and Property Identification Number of all damaged structures.
- Take plenty of photographs of damaged buildings. Where applicable, take photographs when placing placards and again when estimating extent of damage.
- Establish procedures for providing completed inspection reports to residents along with information on permitting and repair.
- Establish a process that will ensure all owners are treated in a consistent manner. This is especially important if you have large numbers of buildings that have sustained substantial damage during a single event.
- Explain ICC coverage in existing flood insurance policies and where buildings may be eligible for state or Federal buy-out.
- If the flooding was widespread, you will likely need more people to perform survey and inspection work. See page 59 for suggestions on staff assistance that may be available to support recovery efforts.



**Figure 27.** Officials review damage in Austell following the September 2009 floods.

Source: FEMA

#### Inspection Safety

- Obtain a tetanus shot
- Use a respirator mask
- Carry a flashlight, gloves, and antiseptic
- Carry a first aid kit

## IV. Assessing Damages to Buildings in the Floodplain (cont.)

### Substantial Damage

As mentioned above, observance of the substantial damage rule is a mandatory minimum requirement of the NFIP. Two key points apply:

- The damage can be from any cause – flood, fire, wind, rain, or other natural or human-induced hazard.
- The rule applies to all buildings in the SFHA, regardless of whether the building is covered by flood insurance.
- Substantially damaged buildings are treated as new construction and brought into compliance with state and local floodplain management regulations.

**Basic Rule:** Substantial damage is determined regardless of the actual cost to the owner. You must calculate the true cost of bringing the building back to its pre-damage condition using qualified labor and materials obtained at market prices.

### Repair Costs

The substantial damage formula is as follows unless the community has chosen to adopt a higher standard.

$$\frac{\text{Cost to repair}}{\text{Pre-damage market value of the building}} = \geq 50 \text{ percent of market value}$$

Examples of higher standards include:

- Requiring that all or specified damages are counted towards the substantial damage determination over a set period of time (e.g. multiple years)
- Lowering the threshold to less than 50% of the market value (e.g., 40%)

The cost to repair the structure must be calculated for full repair to the building's before-damage condition, even if the owner elects to do less. It must also include the cost of any improvements the owner has opted to include during the repair project.

Even if your community does not prepare its own cost-to-repair estimates, you need to review the estimate submitted by the permit applicant. You can validate applicant estimates by using building code valuation tables published by major building code groups or FEMA's [Substantial Damage Estimator Tool](#) discussed on the next page.

## IV. Assessing Damages to Buildings in the Floodplain (cont.)

### Substantial Damage Precautions

Disagreements over the total list of needed repairs and their costs are not uncommon because owners have a great incentive to show less damage than actually occurred to avoid the cost of bringing the building into compliance.

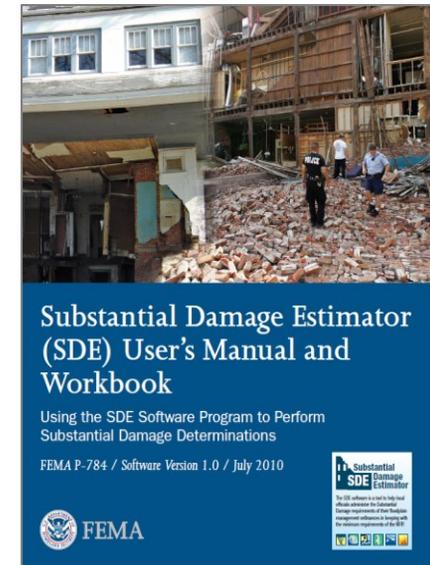
- Some property owners will submit repair estimates that do not include labor costs, because they intend to do the repairs themselves. However, even for homeowners doing their own repair, the repair estimate is based on the fair market value of both labor and materials. If materials are donated, use the market value of the material. As a rule of thumb, some communities estimate the labor value as equal to market value of materials.
- Some property owners may seek bids for repair from contractors with the condition that the bids come in at less than 50% of the building's pre-flood value. So, you need to be prepared to deny a floodplain development permit application if the cost of repair appears to be suspiciously low.

Be prepared to help the owner find financial assistance to meet the extra cost to comply with floodplain management requirements. If there is a disaster declaration, there may be sources of financial assistance as discussed on page 55-56. If the owner had flood insurance and the building was substantially damaged, ICC coverage will help (see page 54).

Detailed guidance on substantial damage is provided in FEMA's [Substantial Improvement/Damage Desk Reference](#).

### Substantial Damage Estimator (SDE) Tool

The SDE tool was developed by FEMA to assist state and local officials in estimating building value and costs to repair residential and non-residential buildings after natural disasters. SDE damage assessments use predetermined repair values of each element of a structure to estimate total damage to a structure. This repair estimate is then compared to the assessed value to reach the percent damage the structure has sustained. The SDE software and user guide can be downloaded at no cost through [FEMA's online library](#). Best practices for using the SDE are also available [online](#).



## V. Restoring Flood Damaged Property

### Permits and Record Keeping

After a flood, community officials are faced with the dilemma of how to restore the lives, homes and business of their residents, and the community services on which they depend, quickly without repeating past mistakes and putting them back in harm's way. Observance of the permitting requirements included in your floodplain management ordinance will help ensure that rebuilding efforts proceed in a manner that will minimize future flood damage.

As noted in the *Permit Requirements* section on page 41, you must require floodplain development permits for repair of damaged buildings located in your regulated floodplain and determine if those buildings have been “**substantially damaged**.” A permit is needed for each building where repairs will involve removing, altering or replacing the roof, walls, siding, wallboard, plaster, insulation, paneling, cabinets, flooring, electrical system, plumbing, heating or air conditioning. These repair/reconstruction projects must meet the requirements of any applicable building code and your floodplain management ordinance.

If a permit is required, residents should be given the necessary forms, and told which types of activities, if any, they can proceed with before the permit is issued. You should keep the following records for each property on file in your permitting office:

- Building condition survey notice to owner
- Initial inspection checklist
- Permit application
- Repair/reconstruction estimate
- Substantial damage worksheets and supporting appraisals
- Inspection records
- Certificate of occupancy
- FEMA Elevation or Floodproofing Certificate if the building is required to be elevated or floodproofed

#### Record Keeping

Eligibility for some forms of Federal funding will be contingent on a substantial damage declaration and specific building and construction requirements. Be sure you and the affected owner keep careful records to ensure funding eligibility.

## V. Restoring Flood Damaged Property (cont.)

### Rebuilding Safer and Stronger

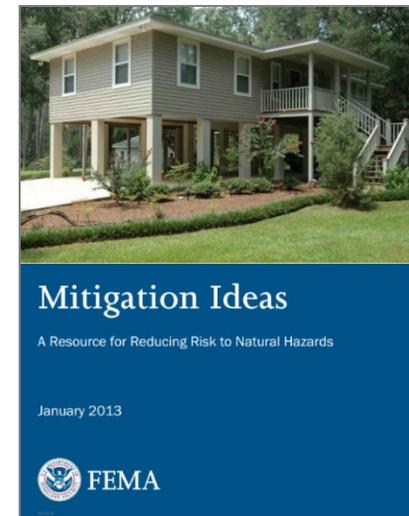
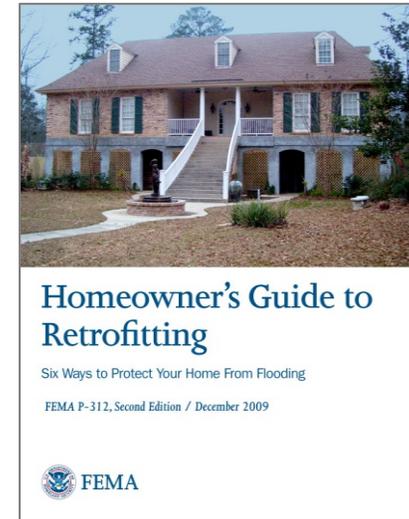
Floods create a window of opportunity to increase awareness of flood risk. Use this opportunity to encourage your residents to build back safer and stronger. While buildings that sustain substantial damage must be elevated (or floodproofed if it is a non-residential building) to at least one foot above the 1% annual chance flood and meet other applicable local ordinance requirements, it doesn't have to stop there. Seize the opportunity to encourage property owners to elevate utilities and other mechanical devices or even their home higher than the required elevation to keep them safe from future flooding. The following resources will help you and your residents build back safer and stronger.

FEMA P-312, [The Homeowner's Guide to Retrofitting: Six Ways to Protect Your Home From Flooding](#) is a valuable resource that can be used by residents to learn how to rebuild safer in order to avoid future flood losses. FEMA's [Building Science Homepage](#) has many additional resources to help you and your residents build safer following a flood.

The FEMA publication [Mitigation Ideas: A Resource for Reducing Risk from Natural Hazards](#) is available to help communities identify and evaluate potential mitigation actions for reducing risk from natural hazards and disasters, including floods.

The Georgia Department of Community Affairs' [Best Practices Guidebook for Community Disaster Resilience](#) provides best practices for community resiliency related to floods, severe-storms, and other hazards. The Department has also developed [disaster resilient building code appendices](#) for the International Building Code (IBC) and the International Residential Building Code (IRC) for use in whole or in part by local jurisdictions.

GEMA features [mitigation success stories](#) from communities across the state related to reducing the risk from floods and other disasters. FEMA also manages a nationwide [Mitigation Best Practices Portfolio](#).



## V. Restoring Flood Damaged Property (cont.)

### Helping Your Residents Find Reliable Contractors

Following disasters, building contractors can be your best ally when telling a resident why things have to be done a certain way. They also can help encourage your residents to retrofit homes and businesses and take additional steps to protect themselves from the next flood. However, in some cases, dishonest or unqualified contractors may sometimes offer disaster victims cut rates or special deals. Your community may want to control this by requiring that certain construction and reconstruction work be done by qualified and licensed people.

The State of Georgia's [Construction Industry Licensing Board](#) licenses electricians, mechanical contractors (heating, ventilation and air conditioning), and plumbers. The state's [Board of Residential and General Contractors](#) licenses general contractors. You can provide your residents with a list of licensed sub-contractors. You can also provide handouts with guidance on how to select contractors using [this template fact sheet](#).

### Monitoring Rebuilding Efforts

As rebuilding efforts proceed:

- Conduct periodic field inspections during construction to ensure that development complies with issued permits.
- Work with builders and property owners to correct deficiencies and violations.
- Check for unpermitted development.
- Ensure you receive “as-built” surveyed elevation data (e.g., FEMA’s *Elevation Certificate*). This will be important for verification purposes by FEMA and/or the State that you have complied with the NFIP requirements and your own floodplain management ordinance. It will also be important documentation to support ICC claims.



**Figure 28.** A contractor repairs a flooded home in Austell.

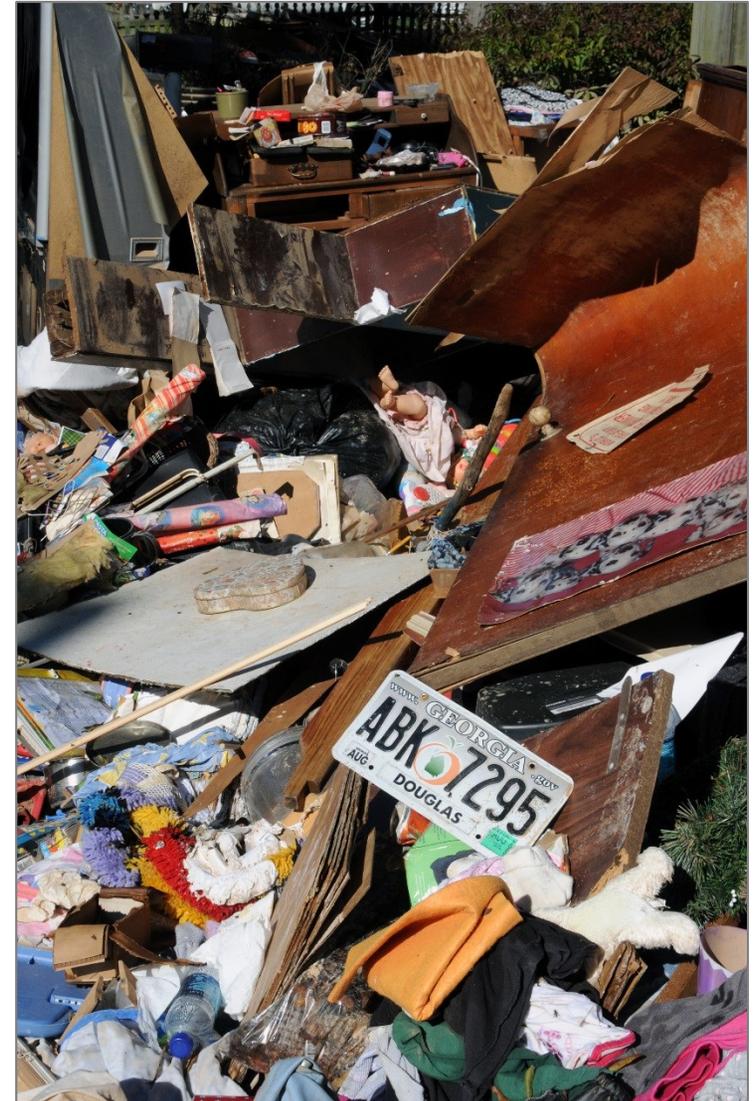
Source: FEMA

## VI. Cleaning Up After the Flood

### Federal Debris Removal Assistance

FEMA can provide communities with assistance to remove debris following a disaster in the form of [Public Assistance \(PA\) grants](#). FEMA publication FEMA-325 [Public Assistance: Debris Management Guide](#) provides helpful information about strategies and methods for debris collection and removal following a disaster and identifies criteria that applicants must meet in order to receive assistance under the PA grant program.

GEMA's [Public Assistance Division](#) manages the distribution of FEMA PA funds in the State of Georgia. More information on the program is available on page 57. FEMA's [Emergency Management Institute](#) also offers courses related to debris management planning and PA grants periodically.



**Figure 29.** A pile of debris in Douglas County.

Source: FEMA

## VI. Cleaning Up After the Flood (cont.)

### Resident Resources

Your residents will need information about how they can clean up their homes following a flood. The following resources can help provide the information they will need. Consider having copies available in your community office, adding links to these documents to your website, and sharing via social media. These documents can also be helpful for community officials to guide larger community cleanup efforts.

- FEMA's fact sheet [The ABC's of Returning to Flooded Buildings](#) has helpful information about flood clean up, including a suggested supply list, safety tips when re-entering flooded buildings, and more.
- The Red Cross/FEMA publication [Repairing Your Flooded Home](#) has several chapters devoted to home clean up.
- The [University of Georgia College of Agricultural & Environmental Services](#) provides guidance for flood cleanup and restoring vital services available in the publication [What to Do Before and After a Flood](#). Topics covered include:
  - [Flood-damaged electrical appliances](#)
  - [Floors and carpets](#)
  - [Clothing and linens](#)
  - [Wood furniture, woodwork and cabinets](#)
- The National Center for Healthy Housing has developed [Creating a Healthy Home: A Field Guide for Clean-Up of Flooded Homes](#).
- The U.S. Small Business Administration's [Disaster Cleanup](#) webpage includes resources to help businesses recover after a disaster.
- [Extension](#) provides number of resources about flood cleanup for residents in rural areas:
  - [Returning to a Farm After a Flood](#)
  - [Salvaging Flood-Damaged Agricultural Buildings](#)
  - [Managing Flooded Grain Bins](#)
  - [Salvaging Crops After Flooding](#)

### Cleaning and Restoration

Some communities require that a contractor certify that a building has been properly cleaned. This should be allowed only if the contractor is qualified to do so. Two organizations certify repair contractors. They can tell you who in your area is certified and what qualifications they have. They are the [Institute of Inspection Cleaning and Restoration Certification](#) (IICRC) and the [Restoration Industry Association](#) (RIA).

## VII. Flood Insurance and Claims

### Federal Flood Insurance

The NFIP offers flood insurance to homeowners, renters, and business owners if their community participates in the NFIP. If a community is participating in the NFIP, Federally-backed insurance coverage is available for any building or permanently anchored mobile home in that community and its contents.

#### **NFIP policies cover:**

- Most losses caused by surface flooding
- Costs for protecting property from flood damage, including moving and storing contents for up to 45 days
- Expenses for removing debris left from the flood

#### **NFIP policies do NOT cover:**

- Damage caused by high ground water, sewer backup, subsurface flows, or local drainage problems that are not considered a “general condition of flooding.” This includes damage from runoff from an uphill neighbor.
- Property located outside an insurable building (e.g., fences, driveways, docks, floodwalls, crops, and landscaping).
- Vehicles, trailers on wheels, and boats.
- Contents in the finished portion of a basement or underneath an elevated building.
- Animals.
- Money, valuable papers, and land values.
- Living expenses and lost income.

After a flood, your residents will likely have many questions about flood insurance coverage and filing claims. [FloodSmart.gov](http://FloodSmart.gov), the official website of the NFIP, is a comprehensive source of information about flood insurance. [FloodSmart’s Filing a Claim fact sheet](#) has step-by-step guidance for how to file a claim following a flood event. FloodSmart staff are also available to answer questions about flood insurance toll free by phone at 1-888-379-9531.

### Private Insurers

Flood insurance is also available from private insurers in areas where it is not available from the NFIP such as communities that do not participate in the NFIP. It is also available to supplement NFIP coverage. Premiums from private insurers are typically higher than those charged for current NFIP policies\*.

*\*Based on an assessment of non-NFIP flood insurance premiums conducted by Bender Consulting Services, Inc. and Dual Commercial, July 2014.*



## VII. Flood Insurance and Claims (cont.)

### Increased Cost of Compliance (ICC) Coverage

Increased Cost of Compliance (ICC) coverage is part of most standard flood insurance policies under the NFIP. ICC coverage provides residents with homes and businesses that have been substantially or repetitively damaged by flooding with up to \$30,000 to help cover the cost of bringing their buildings into compliance with the elevation requirements of their local floodplain management ordinance.

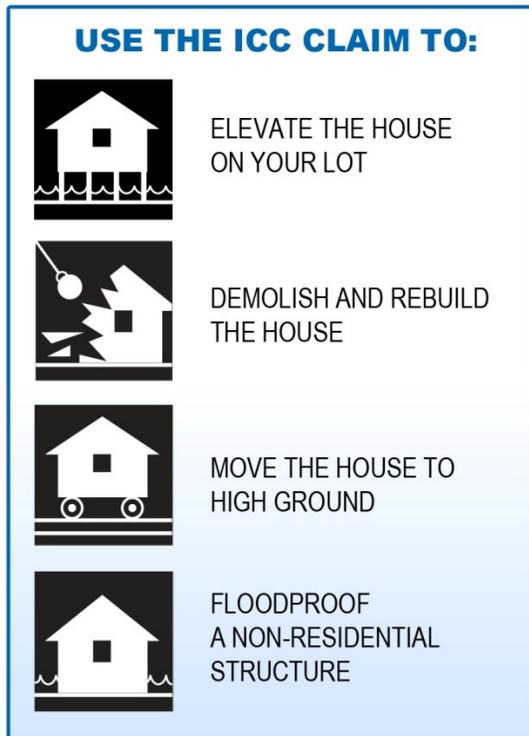


Figure 30. What can an ICC claim be used for?

An ICC claim can be filed only if the structure has been substantially or repetitively damaged by a flood. ICC coverage can be used for elevating, moving, or demolishing damaged structures that qualify for the coverage. More information on ICC coverage is available through FEMA's [ICC webpage](#). FEMA has also developed the brochure, [Increased Cost of Compliance Coverage: How You Can Benefit](#), which you may wish to distribute to your residents following a flood.

A community can “take assignment” of ICC coverage to pay for the cost of demolishing buildings, after purchasing the buildings with Community Development Block Grant (CDBG) or FEMA funds.

#### Repetitive Losses

For residents to be eligible to claim ICC funds in the “*repetitively damaged*” provision, your community must have a repetitive loss provision in its floodplain management ordinance and determine that the home or business was damaged by a flood two times in the past 10 years, where the cost of repairing the flood damage, on the average, equaled or exceeded 25 percent of its market value at the time of each flood. This is called “*repetitive damage*.” Additionally, there must have been flood insurance claim payments for each of the two flood losses.

## VIII. Applying for Assistance: Help for Your Residents

### General Eligibility for Federal Disaster Funds

Your community will most likely need to supplement its own resources with outside aid in order to recover from a flood. You should be familiar with the various state and Federal flood recovery assistance programs and their requirements *before* a flood occurs to be better able to respond to the needs of your community and its residents.

All requests for a Presidential Disaster Declaration must be made by the Governor of Georgia through the FEMA Regional office. Information from Georgia community officials that is used to inform this request is collected and consolidated by GEMA with support from other partners at the [State Operations Center](#). State and Federal officials conduct a [preliminary damage assessment \(PDA\)](#) to estimate the extent of the disaster and its impact on individuals and public facilities. This information is included in the Governor's request to show that the disaster is of such severity and magnitude that the response is beyond the capabilities of the state and local governments and that Federal assistance is necessary.



**Figure 31.** Flooded homes in north Georgia following heavy rain in September 2009.

Source: FEMA

Based on the Governor's request, the President may declare that a major disaster or emergency exists, thus activating an array of Federal programs to assist in the response and recovery effort. Not all programs, however, are activated for every disaster. The determination of which programs are activated is based on the needs found during damage assessment and any subsequent information discovered.

## VIII. Applying for Assistance: Help for Your Residents (cont.)

### Individual Assistance

For certain presidentially-declared disasters, FEMA will make available disaster assistance for individuals and families. This assistance can include money for rent, essential home repairs, personal property and other needs not covered by insurance. Flood victims can apply for individual assistance following a disaster in the following ways:

- Online or by mobile device at <http://www.disasterassistance.gov>
- Calling 1-800-621-FEMA or 1-800-462-7585 (TTY) for hearing and speech impaired
- Visiting a FEMA Disaster Recovery Center set up in the vicinity. (Locations will be posted [online](#).)

Answers to questions about the application process, including how to check on the status of an application, are available online through [FEMA's website](#).



**Figure 32.** A FEMA Individual Assistance Specialist assists a family at the Cobb County Disaster Recovery Center.

Source: FEMA



**Figure 33.** An SBA Disaster Recovery Specialist assists a resident at the Cobb County Disaster Recovery Center.

Source: FEMA

### Small Business Administration Disaster Loans

Options available for uninsured residents who have experienced property damage related to a presidentially declared disaster may include low-interest disaster loans from the U.S. Small Business Administration (SBA). SBA provides low-interest disaster loans to homeowners, renters, businesses of all sizes, and most private nonprofit organizations. SBA disaster loans can be used to repair or replace the following items damaged or destroyed in a declared disaster: real estate, personal property, machinery and equipment, and inventory and business assets. Homeowners may apply for up to \$200,000 to repair or replace their primary residence. Loans may be increased by up to 20 percent of the total amount of disaster damage to real estate to make improvements that lessen the risk of property damage by future disasters of the same kind. Residents with questions about disaster loans can call the SBA Customer Service Center at 1-800-659-2955 or visit the [SBA's website](#).

## IX. Applying for Assistance: Help for your Community

### Private Assistance

Private volunteer organizations such as the [American Red Cross](#), [Salvation Army](#), [United Way](#), and faith-based organizations are usually on the scene during or right after a flood. They provide assistance with immediate needs such as clothing, groceries, shelter, medical aid, and counseling. Some private organizations offer supplies or volunteers to help with the cleanup and rebuilding process. These services are usually provided free of charge regardless of a person's eligibility for government aid.

### Public Assistance for State, Tribal and Local Governments

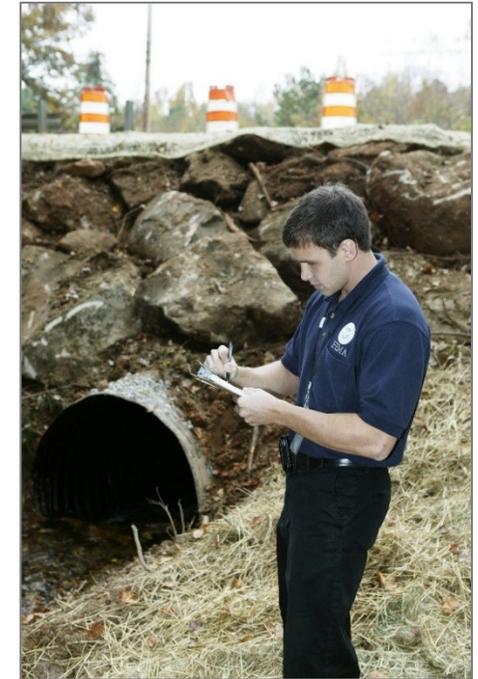
FEMA's Public Assistance (PA) grant program can provide assistance to communities so that they can quickly respond to and recover from major disasters. Through the PA program, FEMA provides supplemental Federal disaster grant assistance for:

- Debris removal
- Emergency protective measures
- Repair, replacement, or restoration of disaster-damaged, publicly-owned facilities
- Hazard mitigation measures enacted that protect against future events

GEMA's Public Assistance Division is responsible for administering Federal PA grant funds in Georgia. More information about the program is available on [GEMA's website](#) and through [FEMA](#).

### HUD Community Development Block Grant (CDBG) Program

The Department of Housing and Urban Development's (HUD's) Community Development Block Grant (CDBG) program includes [Disaster Recovery grants](#) to rebuild areas affected by disasters and to provide crucial seed money to start the recovery process. Since CDBG Disaster Recovery assistance may fund a broad range of recovery activities, HUD can help communities and neighborhoods that otherwise might not recover due to limited resources. Disaster Recovery grants are often used to supplement disaster programs of FEMA, the SBA, and the U.S. Army Corps of Engineers. The Georgia Department of Community Affairs (DCA) administers the CDBG program in Georgia. More information about the program is available through [the DCA's website](#).



**Figure 34.** A FEMA Public Assistance Specialist reviews repairs made to a corrugated pipe drain system in Gwinnett County.

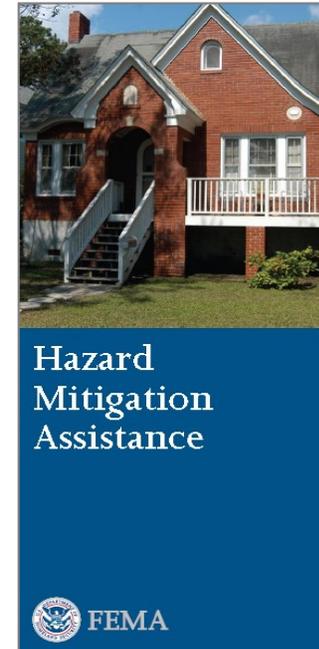
Source: FEMA/David Fine

## IX. Applying for Assistance: Help for your Community (cont.)

### FEMA Hazard Mitigation Assistance (HMA) Programs

FEMA's HMA programs can provide funds to States, and Tribal and local governments following a Presidential major disaster declaration for projects that reduce the risk to life and property from disasters. Programs within HMA include:

- **Hazard Mitigation Grant Program (HMGP)** - assists in implementing long-term hazard mitigation measures following disasters. Funding is available to implement projects in accordance with State, Tribal, and local priorities.
- **Pre-Disaster Mitigation (PDM)** - provides funds on an annual basis for hazard mitigation planning and the implementation of mitigation projects prior to a disaster.
- **Flood Mitigation Assistance (FMA)** - provides funds on an annual basis so that measures can be taken to reduce or eliminate risk of flood damage to buildings insured under the NFIP. **FMA now includes two former standalone programs:**
  - **Repetitive Flood Claims** - provides funds on an annual basis to reduce the risk of flood damage to individual properties insured under the NFIP that have had one or more claim payments for flood damages.
  - **Severe Repetitive Loss** - provides funds on an annual basis to reduce the risk of flood damage to residential structures insured under the NFIP that are qualified as severe repetitive loss structures.



FEMA's [Unified Hazard Mitigation Assistance Grant Programs fact sheet](#) includes a comparison of programs, eligible activities, and application information.

FEMA's [Hazard Mitigation Grant Program webpage](#) contains additional reference materials about the programs.

GEMA's [Hazard Mitigation Division](#) administers the HMA programs within the state and has staff dedicated to providing related technical assistance to state agencies and local governments.

## IX. Applying for Assistance: Help for Your Community

### Staff Assistance

If the disaster affected many properties, you likely will need more people to perform survey and inspection work. Staff assistance can come from:

- A mutual aid agreement with other communities. The Georgia Emergency Management Act gives local governments the authority to share resources with one another during a disaster that has been declared either locally or by the governor. More information, including a mutual aid agreement template and checklist is available on [GEMA's website](#).
- Your area building officials association, which may know of members available to help.

If there was a disaster declaration, you may be able to get temporary hires, with part of the cost reimbursed through PA grants or other funding. PA grants may also reimburse your community for inspectors to conduct building condition surveys and to determine if buildings are substantially damaged.

### Technical Assistance and Guidance

Many technical issues can arise during post-disaster permit operations. These sources can help:

- Call the GADNR and the FEMA Regional Office first. If there was a disaster declaration, they may be able to provide technical assistance staff or offer workshops to address issues.
- Ask your county health department or emergency manager for site-specific guidance on how to ensure that a building is fit for re-occupancy, well water is safe to drink, etc.



**Figure 35.** In the City of Ellijay, a woman looks at damage to her parents' business following Hurricane Ivan.

Source: FEMA

## X. After the Flood: Communicating with your Residents

After the flood, it will be important to communicate with your residents about critical issues related to recovery discussed earlier in this guide. Below is a summary of topics that are particularly important to communicate about with your residents. Consider issuing news releases, distributing information through your community’s website and social media accounts, and having printed materials available in your community office about these topics.

- Basic safety information. (See page 38)
- The substantial damage rule. (See page 40)
- Activities that do and do not need a permit. (See page 41)
- The need to include property protection measures as part of repairing homes or businesses. People need to recognize that “returning to normal” means returning to a building that will be damaged by another flood. (See page 49)
- The need for licensed contractors and information about how to select a contractor. (See page 50)
- Flood cleanup information. (See page 52)
- The uses of ICC flood insurance coverage. (See page 54)
- Federal and other assistance programs. (See pages 56 – 57)

### Georgia Resources

- [GADNR Floodplain Management in Georgia – Quick Guide](#)  
The GADNR’s Environmental Protection Division has a reference guide for local officials and floodplain administrators which provides an overview of the NFIP, what floodplain management is, and why floodplain development is regulated.
- [GADNR Georgia Flood M.A.P. Program](#)  
The GADNR’s Environmental Protection Division is creating accurate floodplain maps for Georgia’s communities through the Georgia Flood M.A.P. Program in partnership with the FEMA [Risk MAP program](#).
- [Georgia Emergency Management Agency \(GEMA\)](#)  
GEMA provides an all-hazards approach to homeland security, mitigation, preparedness, response, and recovery in order to protect life and property and prevent/reduce negative impacts of terrorism, floods, and other natural disasters in the State of Georgia.
- [Georgia Department of Community Affairs \(DCA\)](#)  
DCA partners with communities to help create a climate of success for Georgia’s families and business. DCA promotes and implements community and economic development, local government assistance, and safe and affordable housing.
- [Carl Vinson Institute of Government University of Georgia](#)  
The Institute provides education, assistance, research, policy analysis and publications to assist public officials in serving citizens in Georgia and throughout the world.
- [Emergency Management Association of Georgia \(EMAG\)](#)  
EMAG’s goals are to assist Georgia’s emergency managers in efforts to save lives and protect property from disasters and to serve as a policy advisory board to local emergency management agencies and the State.
- [Georgia Association of Floodplain Management \(GAFM\)](#)  
GAFM is an organization of professionals whose members share a common desire to forward the cause of sound floodplain management in the State of Georgia.
- The [Georgia Silver Jackets](#) team brings different agencies together to facilitate collaboration and leverage resources to reduce flood hazards. The team includes staff from the U.S. Army Corps of Engineers, GEMA, GADNR, FEMA, NWS, Federal Highway Administration, U.S. Environmental Protection Agency, and USGS.

### National Resources

- [FEMA 213: Answers to Questions About Substantially Damaged Buildings](#)
- [FEMA P-85: Protecting Manufactured Homes from Floods and Other Hazards](#)
- [FEMA 248: Unified National Program for Floodplain Management](#)
- [FEMA 209: Flood - Are You Protected From the Next Disaster](#)
- [FEMA 268: Protecting Floodplain Resources - A Guidebook for Communities](#)
- [FEMA P-348: Protecting Building Utilities from Flood Damage](#)
- [FEMA 480: National Flood Insurance Program, Floodplain Management Requirements, A Study Guide and Desk Reference for Local Officials](#)
- [FIA-15A: NFIP CRS Coordinator's Manual](#)
- [EMI IS-22 Are You Ready? An In-Depth Guide to Citizen Preparedness](#)
- [FEMA Risk MAP Program](#)
- [FEMA Flood Map Service Center](#)
- [Ready.gov](#)
- [FloodSmart.gov](#)
- [Association of State Floodplain Managers](#)



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