Iowa
Flood Response Toolkit

2013

FEMA

IFSMA

DNR

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About This Toolkit

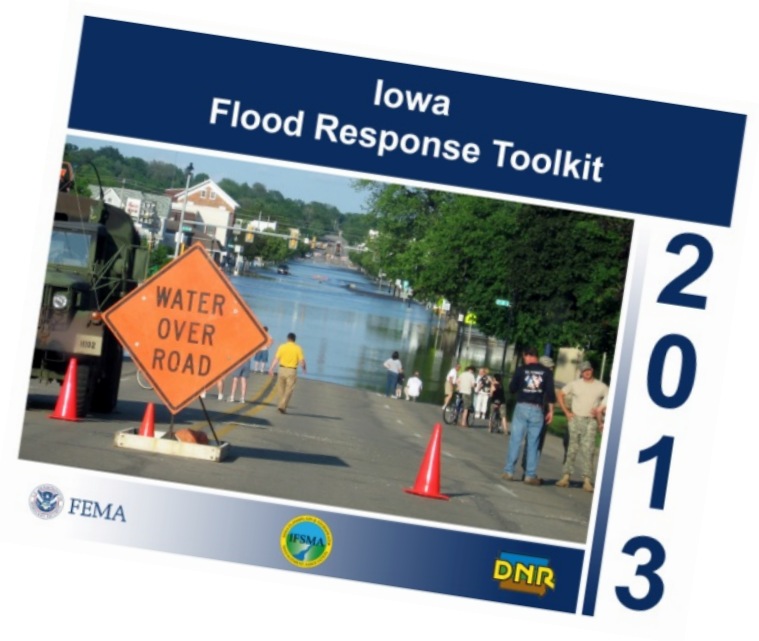
This **Toolkit** was prepared by the Iowa Floodplain and Stormwater Management Association (IFSMA) for the Iowa Department of Natural Resources (IDNR) to help communities prepare and respond to flood emergencies. It is meant to be a quick reference tool designed to address steps to be taken *before, during,* and *after* the flood.

Comments and questions on this toolkit may be sent to **MyIFSMA@gmail.com.**

Toolkit Objectives

This toolkit is organized sequentially from identification of the flood threat through flood recovery. It is designed to serve as a Quick Reference tool, complete with templates, references, and links to resources where more comprehensive information can be found. Click on the hyperlinked website resources and customizable templates provided as a part of this toolkit provided for your use. 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 available to Iowa Communities and their Residents



Common Abbreviations and Acronyms

The following terms are used widely throughout this toolkit:

- AHPS Advanced Hydrologic Predictive Service
- BFE Base Flood Elevation
- CDC Center for Disease Control
- EOC Emergency Operation Center
- EOP Emergency Operation Plan
- EMA Emergency Management Agency
- FEMA Federal Emergency Management Agency
- FIRM Flood Insurance Rate Map
- FMA Flood Mitigation Assistance
- HSEMD Iowa Homeland Security & Emergency Management
- HMA Hazard Mitigation Assistance
- IDNR Iowa Department of Natural Resources
- IFC Iowa Flood Center
- IFIS Iowa Flood Information System
- IFSMA Iowa Floodplain and Stormwater Management Association
- NFIP National Flood Insurance Program

Common Abbreviations and Acronyms, Cont.

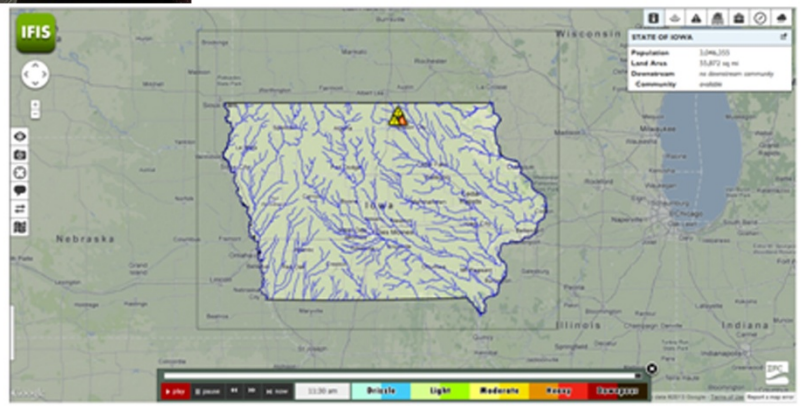
- NOAA National Oceanic and Atmospheric Administration
- NWS National Weather Service
- PA Public Assistance
- SFHA Special Flood Hazard Area

Before the Flood

Ready®

Prepare. Plan. Stay Informed.

NATIONAL WEATHER SERVICE



I. Flood Hazard Identification

Identifying your community's flood hazards is the first step needed when 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 (EOPs). From an emergency planning perspective, flood hazard analysis and mapping help a planning team decide which hazards merit 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. Anything from a rapid snow melt to a slow moving rainstorm can cause flooding.

Several factors determine the severity of floods, including rainfall intensity and duration.

- ***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.

- ***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 failure or sudden spills.

- ***Dam or levee failures/overtopping*** can result in severe flood events. When a dam fails or a levee fails or overtops, a large quantity of water is suddenly released with a great potential to cause human casualties, economic loss, and environmental damage. Such failures are often the result of poor maintenance, inadequate design, or structural damage caused by a major flood event.

Definitions:

A flood occurs when excess water from snowmelt or rainfall accumulates and overflows onto a river's bank or adjacent floodplains.

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 flood.

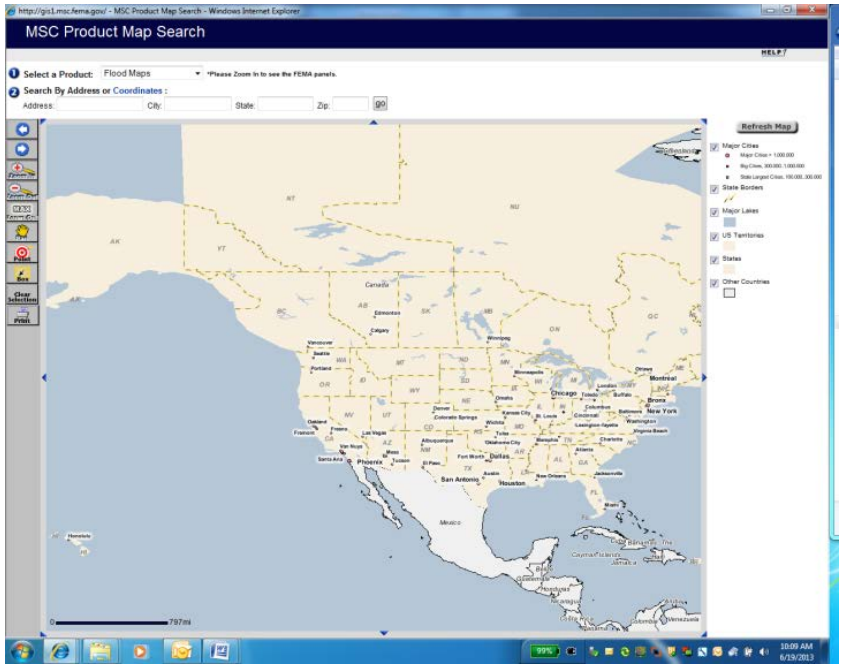
II. Flood Mapping and Defining Areas at Risk

Hazard identification requires a 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 communities and infrastructure that are at the greatest risk from flooding.

FEMA Flood Maps

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

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



FEMA FIRMs are essential tools used to identify the most flood prone areas of your community. These maps and your knowledge of localized flooding hot spots and choke points will help you be ready in the event of a flood.

Get copies of FIRMs and GIS Data at the FEMA Map Service Center
Toll free number 1-877-336-2627
www.msc.fema.gov

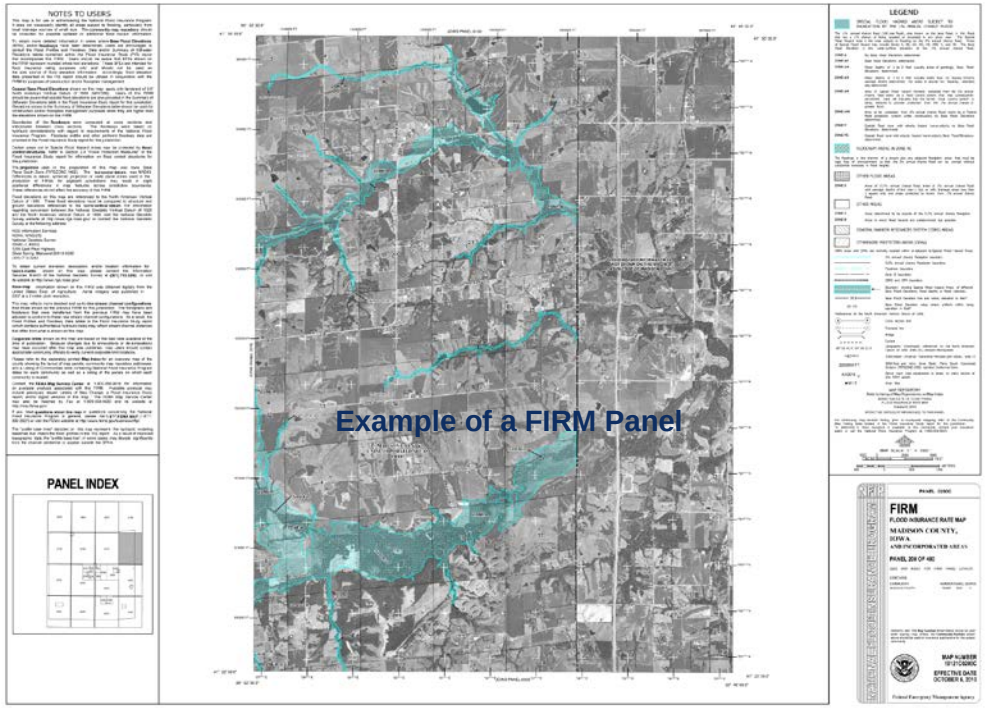
If not participating in the NFIP or un- mapped by FEMA, contact the IDNR and the FEMA Regional Office for assistance. Refer to the Resources Section of this Toolkit for contact information.

FEMA Flood Maps (cont.)

The FEMA FIRM shows the areas susceptible to the 1% annual chance flood (often referred to as the "100-year flood" or as the "base flood"). This is the area that has at least a 1% chance of being flooded in any given year The FEMA FIRM will sometimes show the 0.2% annual chance flood ("500-year flood") as well.

Property in the 1% flood hazard area has a 26% chance of flooding over the life of a 30-year mortgage. Similarly, property in the 0.2% flood hazard area has a 6% chance of flooding over the course of a 30-year period.

Another essential component of the FIRM is the floodway. This area represents the portion of the floodplain that carries the majority of the 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 within the floodway represent the most at risk infrastructure and should be evaluated closely*.



Example of a FIRM Panel

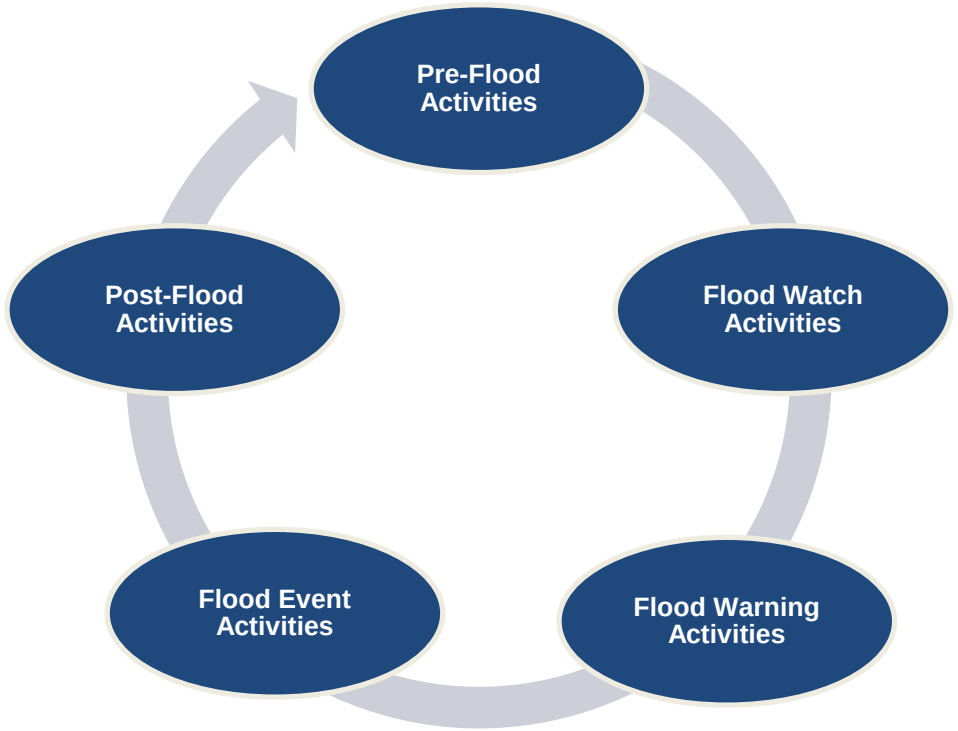
Locally Identified Special Hazard Areas

FEMA has a limited budget for mapping, so FIRMs typically do not show every flood problem that may exist in a community. In many areas, the FIRMs do not provide flood elevations, or map small watersheds or localized drainage problems. As such, communities can be a good source of supplemental flood information that often complements and clarifies that provided by the FIRM.

Flood Response Stages

Being prepared for a flood starts with planning. Flood mitigation 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.



The Flood Emergency Response 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 has the advantage of ensuring that duplication of tasks will not occur resulting in the unnecessary deployment of additional resources and that gaps in response are also avoided (i.e. nobody takes responsibility for a necessary action.)

Having a flood emergency plan ensures that the experience and lessons learned during past and present flood events are preserved and can be drawn upon in the future.

Flood Emergency Response Plan, (cont.)

What information should a Flood Emergency Plan cover?

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. The purpose of planning for flood emergencies is to reduce the risk to health and life and the damage caused by flooding. Local plans should describe how flood hazard threats are identified. 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 duration, seasonal pattern, speed of onset
- 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
- Warning mechanisms

An Emergency Responder Plan template is available on FEMA's website.

Agency Coordination

During a flood event, local government, first responders, and state and federal agencies work together to reduce the loss of life and property. Section 29C of the Iowa Code provides the authority and lists the responsibilities of the Iowa Department of Homeland Security and Emergency Management.

Long-Term Preparedness

Once the types of risk are identified, there are multiple measures to mitigate flooding damages. They all have advantages and disadvantages.

In the table below, there are some examples of possible mitigation tools.

Prevention:	Property Protection:	Emergency Services:	Structural Project:	Public Information:
• Planning and Zoning • Open Space Preservation • Floodplain development regulations • Storm water management • Drainage system maintenance	• Acquisition • Relocation • Building Elevation • Dry and Wet Floodproofing • Sewer Backup Protection • Flood Insurance	• Flood Warning • Flood Response • Critical Facility Protection • Health and Safety Maintenance	• Reservoirs • Levees/Floodwalls • Enlarging culverts or bridge openings • Diversions • Storm Sewer	• Outreach Projects • Real Estate Disclosure • Library • Technical Assistance • Environmental Education • Web based information and social media tools

Sources for 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 in implementing 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 Flood 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 Iowa Community Block Grant Program and Rural USDA Development Grant program.

Get more information:

FEMA Flood Mitigation Assistance Program

Iowa Hazard Mitigation Assistance Grant Program

Iowa Community Development Block Grant Program

Rural USDA Development Grants

IV. Public Awareness and Outreach

Flood Awareness and Preparedness

Public Awareness and Outreach are powerful mitigation tools. Be it through your community's website, outreach events, or mailings, there are many methods and resources available to help the community reach out to its 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

Opportunities for Engagement

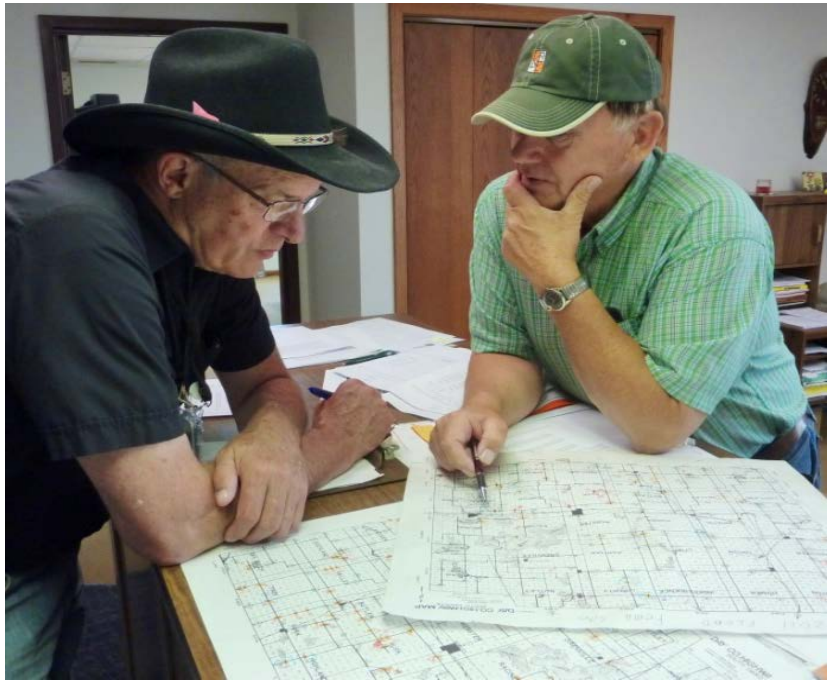
Information about flood risk and preparedness can be presented in a number of ways; pamphlets and other literature, workshops, websites and social media tools, and radio/TV advertisements. The county fair or other local events can serve as effective mechanisms for delivering flood risk and preparedness messages. So can annual flood-focused outreach campaigns during "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.

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.



Web Resources

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

***Iowa Be Ready**: Iowa Homeland Security & Emergency Management*

The Iowa Be Ready website has many documents that you can distribute to your residents to make them aware of flood risk and simple steps they can take to be prepared for floods and other disasters. These include

- Are You Prepared? A Guide to Emergency Preparedness
- Floods & Flash Floods: A Guide for Your Safety
- Prepare Your School: Crisis Kits for Teachers and Administrators

The site also has templates for families to create their own emergency plans and an emergency supply kit checklist.

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

FloodSmart.gov, the NFIP's official 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. The American Red Cross also provides supplemental information for preparedness for flooding on their website.

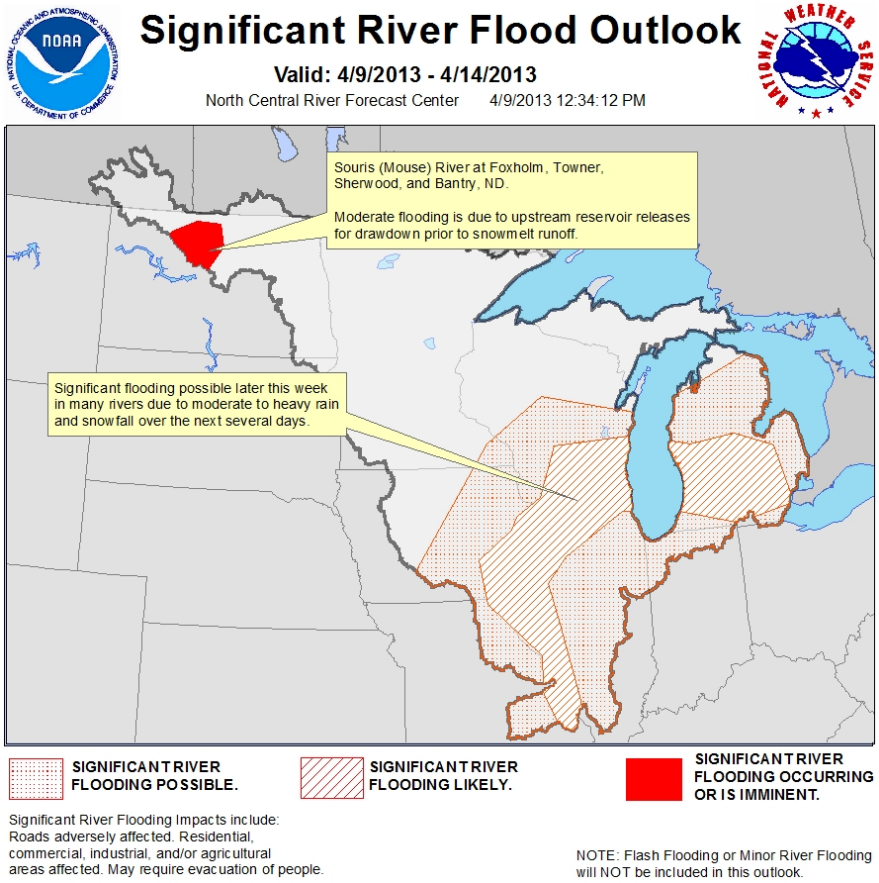
Social Media

The use of social media tools (Facebook, Twitter, You Tube, etc.) can be a powerful and effective way to communicate with your residents about many topics, including flood risk, before, during and after events. Consider developing a Facebook page and/or Twitter account for your community if you haven't already. FEMA and Be Ready Iowa have Facebook and Twitter accounts through which they frequently distribute tips about preparedness. An easy and effective way to pass along information about preparedness to your residents is to repost/retweet ready-made messages from these organizations.

V. Flood Forecasting

The first step in responding to a disaster is knowing that one is coming. Scientists at the National Oceanic and Atmospheric Administration (NOAA), the Iowa Flood Center, and other organizations are continually developing more accurate warning systems as they deploy better sensors to measure key variables, employ better dynamic models, and expand their understanding of the causes of disasters.

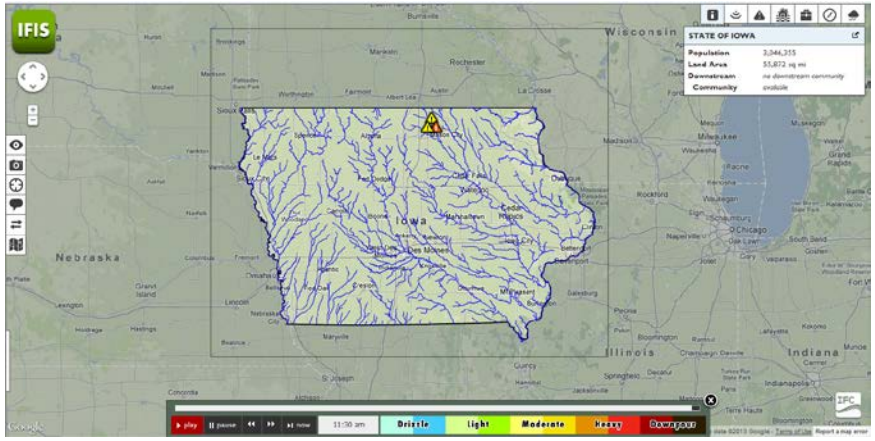
Increasing accuracy in flood forecasting is being achieved through the use of real-time precipitation and stream flow data. These data in conjunction with watershed models are used to forecast flow rates and water levels for periods ranging from a few hours to several days, depending on the size of the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



Flood Forecasting Resources

NOAA's Advanced Hydrologic Predictive Service (AHPS) provides river and flood forecasting information. The ACHS has a suite of graphical internet products to assist community leaders and emergency managers in making decisions about evacuating people and moving property before a flood occurs.

The Iowa Flood Center (IFC) at the University of Iowa is working to provide accurate, state-of–the-science-based information to help better understand flood risk. The IFC's goal is to improve flood monitoring and prediction capabilities in Iowa, while also developing strategies to help mitigate and prevent flood damage in the future.



Screen capture from the Iowa Flood Information System (IFIS)

The IFC provides real time flood information through the Iowa Flood Information System (IFIS). IFIS is an easy-to-use, Google maps-based online application. The system provides real-time information for more than 1,000 Iowa communities on:

- Watershed characteristics
- Stream levels
- Local rainfall
- Predicted flood levels

Advanced Hydrologic Prediction Service (AHPS)
Developed by NOAA's National Weather Service

Iowa Flood Information System (IFIS)
Developed by the Iowa Flood Center

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 to society as lead-time and reliability are improved and as society devises ways to respond effectively. Your local emergency operations plan and/or Standard Operating Procedures (SOPs) should include procedures for emergency warning dissemination.

The resources available from NOAA and the IFC listed on page 17 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.

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.

Such broad distribution means utilizing not only government-owned systems such as NOAA Weather Radio and local sirens, but all privately owned systems such as radio, television, pagers, telephones, the Internet, and printed media.

NOAA Weather Radio is the best way to receive warnings from the National Weather Service (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, and 162.550 (also known as channels 1 through 7).

Another potential resource that should be considered is your local radio station. It can be employed to keep citizens informed throughout the course of preparing for a flood and while a flood is occurring. Your local radio station can serve as an invaluable resource to share information about road closures, available resources such as sandbags and shelters, and provide updates.

VII. 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 19 creditable activities organized under four categories: **Public Information**, **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 the CRS. Additionally, in Iowa, communities are automatically awarded CRS credit points for freeboard, and other activities implemented as the result of certain Iowa state laws, regulations and standards.

Besides the savings on flood insurance policies, other 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.

The Iowa CRS Toolkit

The IDNR in partnership with IFSMA has developed a CRS Toolkit to help Iowa communities determine whether the CRS program may be a good fit for them. The toolkit answers many questions about CRS, including how to join the program, which credited activities may be a good fit for a community, and what the level of effort may be for the community to participate in the CRS Program.

For more information about the Iowa CRS Toolkit, contact **MyIFSMA@gmail.com**

During the Flood

I. Keeping Your Community Safe

Public Safety Messaging

Helping your residents stay safe and out of harm's way should be your primary mission. The following are key messages to share with residents who might be impacted.

When a flood watch or warning is issued:

- Gather emergency supplies - information about building an emergency supply kit is available through Ready.gov and the Iowa Be Ready website .
- 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.
- Turn off all utilities at the main power switch and close the main gas valve if evacuation appears necessary.

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 Iowa Be Ready 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 their home is damaged, or if they are instructed to do so by emergency personnel at a later date or time.

If a flood evacuation is ordered advise residents to:

- Take only essential items.
- Turn off the gas, electricity, and water if there is time.
- 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.

Pet Safety

It is essential that residents have a plan for their pets' safety before a flood occurs. The resources below provide essential information about pet safety during a disaster.

- Ready.gov Caring for Animals page
- Ready.gov Preparing Your Pets for Emergencies Makes Sense brochure
- American Kennel Club
- The Humane Society of United States

If an evacuation order is given, residents should not leave their pets behind. FEMA recommends that pet owners prepare shelter kits for their pets; items which should be included are as follows:

- A clear and current photo of the pet with the owner.
- An extra collar, leash, and/or harness that fits.
- Favorite toys.
- Pet food
- Any medications and special diets for the pets.
- Information on feeding schedules, medical conditions, behavior problems, and the name and 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.

Livestock Safety

Farmers need to have a plan for larger animals when a flood event occurs. Make sure they have the following information to ensure their animals' safety.

Unconfined livestock can usually take care of themselves during floods. Do not let them become trapped in low-lying pens. 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 until floodwaters recede. Try to locate the mounds where they will not be washed away by fast-flowing water.

The safety precautions listed below can be taken for animals housed in barns during a flood. The most important thing to remember is to *be sure animals are evacuated before floodwaters enter barns and other enclosed livestock areas*. Animals sometimes refuse to leave during a rapid rise of water and may drown.

- Provide feed and water. Water is essential.
- If animals are housed with machinery, fasten bales of straw in front of sharp edges and protruding parts such as cutter bars or crank handles. (Do not use hay.) Try to cover wooden paddle wheels on combines or choppers, since these parts can be dangerous.
- Block off narrow passageways where animals would be unable to turn around. A few heavy animals in a narrow dead end can be dangerous both to themselves and the building.
- Be absolutely certain that herbicides, pesticides and treated seeds are not even remotely accessible to livestock, and are stored where floodwater will not contaminate livestock feed or water.
- Turn off electricity at the main switch. Livestock could damage electric fixtures, causing fires or electrocutions.

Source: North Dakota State University's Protecting Livestock During a Flood webpage

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. Below is a list of some of those partners and an example of some of the support and coordination they can provide. A template *Emergency Response Contacts* sheet is available for you to customize for your community.

Resource	Support Provided
Utility companies such as Alliant Energy, Mid- American Energy	Protect and identify transformer sites
Public Safety Facilities	Provide health advisories
Public Health Facilities	Provide vaccines
American Red Cross	Provide shelter information, feeding stations, clean up assistance and guidance
Humane Society	Assist with animal safety and rescue issues
Safeguard Iowa Partnership	Coordination of resources for private sector partners, liaison within county EOC and State EOC
Iowa Army/Air National Guard	Levee patrols, levee construction, equipment operation, liaison to assist and advise county EMA staff*
Department of Corrections	Launder National Guard uniforms, transport inmates
Department of Transportation	Bridge and railroad inspections, debris removal
Coast Guard	River traffic, river rescue

* All National Guard support *must* be requested through the State Emergency Operations Center

Temporary Flood Protection Measures

Sandbagging, wrapping systems, temporary flood barriers are all types of active mitigation. Active mitigation is a last resort and generally is the least reliable. They are more prone to being incorrectly erected 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.

*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 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.

U.S. Army Corps of Engineers – Sandbag Technique Video on YouTube: http://www.youtube.com/watch?v=-hQPAlFMVtM
Sandbag Technique Brochures:
http://www.nws.usace.army.mil/Portals/27/docs/emergency/NWD_Sandbag_Pamphlet.pdf
http://www.nwk.usace.army.mil/Portals/29/docs/emergencymanagement/sandbagshow.pdf
http://www.mvs.usace.army.mil/conops/emergency/sandbag.htm
http://www.fmglobal.com/assets/pdf/fmapprovals/2510.pdf

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 Iowa communities should be prepared to execute. It is imperative 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.*

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? (i.e. 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:

- Recognize that the capacity of highway system is limited during floods.
- Understand that the traffic speed varies between peak and off peak hours.
- Condition of community evacuation routes.
- Availability of routes to higher ground and knowing the low points in the area that might flood and block safe passage.
- Road Closures: Access Iowa Department of Transportation 511 by phone or Internet. Iowa's Department of Transportation has a website which deals with flood events.

Emergency Warning Dissemination:

- Local disaster warnings are issued in conjunction with the NWS.
- Administered via sirens, radio, television, the Internet, social media, mobile public-address systems, telephone trees, and door-to-door contacts.
- Posted signs can be used to identify risks at a particular site.
- Multiple or redundant warning systems are most effective.

Available Communications Channels:

- Media (TV, Radio, Newspapers)
- CodeRED
- Outdoor Warning Siren System (OWSS)
- NOAA Weather Radio All Hazards transmitters broadcast
- Internet, including Social Media
- Text messaging through mobile devices
- Telephones
- Mail

Iowa Flood/Road Information:

Flood Hotline (7 AM-9 PM daily): 1-866-452-8510 (Operator-assisted calls)

Iowa 511 Travel Info Phone Message: 1-800-288-1047

Iowa 511 Website

IDOT Flood Info Page

Iowa Homeland Security Page

Evacuation of Functional Needs Populations

Be sure you have a plan to assist your residents with functional or special needs in evacuating.

Functional Needs/Special Needs groups, as identified by the State of Iowa include: the deaf/hard of hearing; individuals who are blind/have low vision; people with cognitive, mental or mobility related disabilities; persons in need of medical assistance; those who use service animals; children; the frail elderly; and people whose primary language is not English. Incarcerated populations also require individualized attention during an evacuation. To obtain information on how and when to evacuate households that need additional assistance, contact:

- Department of Health and Human Services
- Iowa Department of Homeland Security and Emergency Management

Evacuation of Farmsteads and Livestock Safety

Evacuating livestock presents challenges for farmsteads of all sizes. For more information how to mitigate these challenges and other information related to livestock safety contact the Iowa Department of Homeland Security and Emergency Management Agriculture Liaison. More information about livestock safety during a flood is also available on page 23 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

Public Notification During a Flood

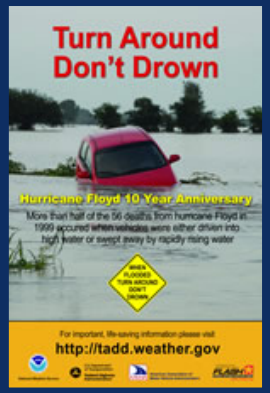
Floods can often occur with little advance warning. During a flood, the public must be provided with timely updates regarding:

- 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

It is helpful to have a notification protocol to distribute information to the public media. Other possible alert systems include:

- Emergency Siren System
- Emergency Alert System
- Reverse 9-1-1 System
- Fire and Police Vehicle Loudspeakers
- Neighborhood Watch and other community support programs

Turn Around Don't Drown ™
http://www.tadd.weather.gov



- 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!

Disaster Intelligence

Disaster intelligence refers to the tools and techniques that a jurisdiction employs to identify, collect, analyze, and disseminate information on the current and future outlooks for an event, such as a flood. This differs from a public notification in that it is raw information. This is the information that is used to make the decision for actions such as evacuations.

Information Needed and Resources

- Weather Forecast
- River Forecast
- Flood-Related Events (e.g., levee seepage, slumps, and boils)
- Obstructions/debris locations (log and/or ice jams)
- Traffic Information
- Maps of Staging Areas and Stockpiles

Public Security

Beyond the notifications during a flood, public security involves road closures, systematic utility shutdowns, and providing mass care.

- Road closures
- Turning off utilities
- Deploying the National Guard
- Security (keeping out looters)
- Vaccinations against water-borne diseases
- Providing necessary medicines to displaced persons

Temporary Shelter

During a disaster, emergency response starts local and ends local. In more significant events, the State of Iowa and even the federal government may participate in this activity, but will eventually transfer the response effort back to the locality.

Both FEMA and the American Red Cross have developed guidelines for sheltering.

FEMA Housing Portal

American Red Cross

Sheltering:

Sheltering is primarily a short term congregate living condition. The duration of this activity for a community depends on the severity and nature of the disaster. In ideal cases, community sheltering should last no longer than two weeks; however in catastrophic conditions, sheltering may extend up to sixty days (Catastrophic Housing Annex, FEMA 2012).

American Red Cross

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:

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

This section will provide information to aid you in fulfilling these two very important responsibilities.

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 use/customize the template fact sheet 'Keeping Safe After a Flood' to help your residents understand these dangers. Recommended distribution methods include:

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

Online Resources
The following online resources have additional information to help flood victims keep safe after a flood. Consider including links to this information on your website, or sharing them through social media in the days following the flood.

Ready.gov's Flood page has information about staying safe after the flood, including health and safety tips, and clean up.

The Centers for Disease Control (CDC) have several pages of information about staying safe and healthy following a flood. Topics covered include precautions when reentering a flooded home, food spoilage, mold, and other potential hazards.

II. Meeting NFIP Requirements After a Flood

Emergency Clean up

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.

Emergency Repairs and Cleanup

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

- Removing and disposing 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.
- Covering 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.*

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 Iowa, 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% flood elevation. Commercial buildings must be elevated or floodproofed to one foot above the 1% 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% 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. Information about ICC coverage is also provided on page 52.

What is "Substantial Damage"?

Substantial damage is a formal determination, made by a community floodplain manager, 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.

Whether a building is in the 1% floodplain and whether it is substantially damaged – are essential 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 43 for more information on how to determine if a building has been substantially damaged.

Permit Requirements

As soon as possible after the flood, you should contact the IDNR and FEMA Region VII 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 may 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.

Initial Building Condition Survey

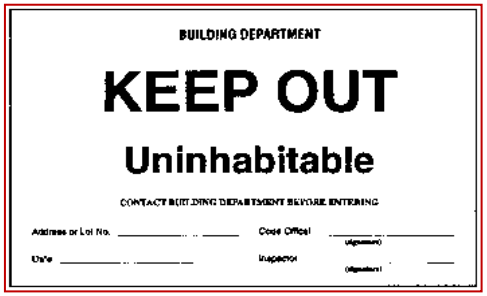
Before allowing residents to re-occupy flood damaged structures, you may want to perform a ***building condition survey***. A building condition survey is conducted after a flood to determine:

- If any building is in too dangerous a condition to be reentered 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.

- 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.



Notifying Property Owners

Upon completing the initial building condition survey, you'll need to send a letter to each owner of *every property surveyed*. This letter should identify what activities can and cannot proceed without a permit and share helpful links to 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) program developed by FEMA discussed on page 44. 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 43).

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 assessment.

Safety 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 pacing placards and again when estimating extent of damage
- Establish procedures for providing completed inspection reports to residents along with information on permitting and repair

Safety Guidelines

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

- 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 the 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.

Substantial Damage

As noted throughout this manual, 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.

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

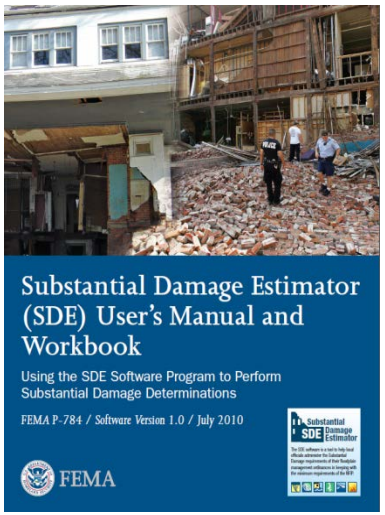
The cost to repair the structure must be calculated for full repair to the building's before damage condition, even if the owner elects to do less. It must also include the cost of any improvements the owner has opted to include during the repair project.

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 Program discussed in the section that follows.

Further guidance on methods of determining substantial damage can be found here.

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 53-54. If the owner had flood insurance and the building was substantially damaged, ICC coverage will help (see page 52).

Detailed guidance on substantial damage is provided in FEMA's Substantial Improvement/Damage Desk Reference.

Substantial Damage Estimator (SDE) Tool

The SDE software 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.

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 38, 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:

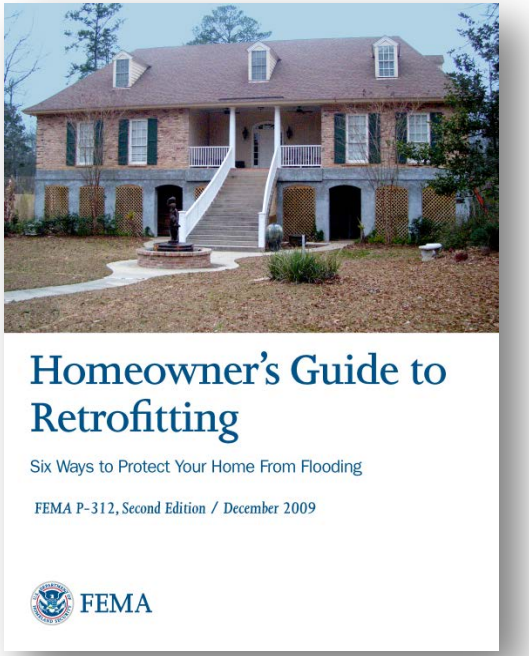
- Building condition survey notice to owner
- Initial inspection checklist
- Permit application
- Repair/reconstruction estimate
- Substantial damage worksheets and supporting appraisals
- Inspection records
- Certificate of occupancy
- FEMA Elevation or Floodproofing Certificate if the building is required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

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 voluntarily elect 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 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.

You can also learn about best practices that have been implemented by other communities during flood recovery through FEMA's Mitigation Best Practices search webpage or view FEMA's catalog of mitigation fact sheets.

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 Iowa licenses electricians, mechanical contractors (heating, ventilation and air conditioning), and plumbers. You can provide your residents with a list of licensed sub-contractors. General contractors are not required to be licensed in the state, though individual communities may elect to require licensing for general contractors. You can also provide handouts with guidance on how to select contractors using this template fact sheet.

Monitoring Rebuilding Efforts

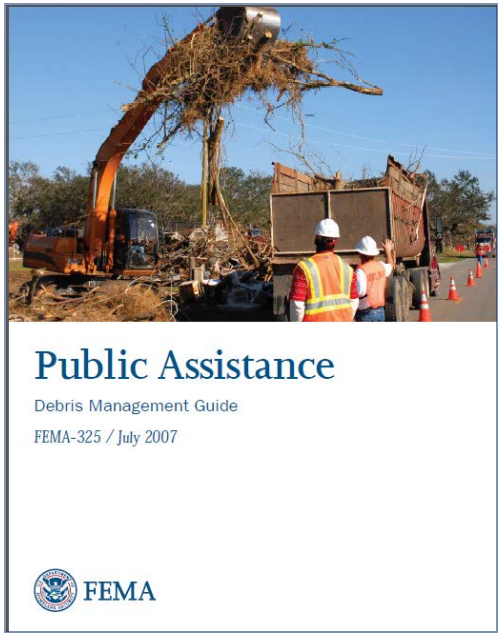
As rebuilding efforts proceed:

- 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.

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. More information on FEMA's Public Assistance grant program is available on page 56 and on FEMA's website.

FEMA's Emergency Management Institute periodically offers courses related to debris management planning and PA Grants.



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 outlets. 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, the need to document damage with photos, and more.

- The Red Cross/FEMA publication *Repairing Your Flooded Home* has several chapters devoted to home clean up.

- The Centers for Disease Control have several webpages addressing flood cleanup:

    - Reentering / Drying Out Your Home

    - Addressing Mold Following a Disaster

- The National Center for Healthy Housing has developed Creating a Healthy Home: A Field Guide for Clean-Up of Flooded Homes.

- The IDNR also has a number of fact sheets available about flood clean up for businesses and residents in rural areas:
  - Flood Cleanup for Businesses
  - DNR Guide to Flood Clean-Up in Rural Areas
  - Disposing of Flood-Deposited Sand, Silt and Debris on Farmland
  - Proper Management of Flooded Grain and Hay
  - What Should I Do When My Well Floods?

- The Iowa State Extension has post-disaster materials on many topics and can provide advice on technical matters.

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 International Institute for Cleaning and Restoration Certification (IICRC) and the Restoration Industry Association (RIA).

DNR Guide to

Flood Clean-Up in Rural Areas

Environmental Services Division | www.iowadnr.gov

Catastrophic floods have left an indelible mark on many rural Iowa landscapes. This guide was developed by the Iowa Department of Natural Resources (DNR) to aide Iowa farmers and rural residents in their clean-up activities. Following the guide will help Iowans in their recovery efforts and protect our natural resources at the same time.

Farm Flood Debris and Waste

Debris and waste on farms related to the floods may be disposed of on the farm. Prior to burying or burning farm flood-related debris or waste, contact the nearest DNR field office for details on restrictions.

Generally, dead farm animals, farm buildings, trees, brush and ashes may be buried on the farm where the debris or waste is located. Landscape waste (trees, brush, stumps) and other similar types of debris and damaged farm buildings may be burned on site, providing there is not a more restrictive local ordinance and all chemicals and asphalt shingles are removed. See below for more information.

Animal Carcasses

A fact sheet on disposal of a small number of animals can be found at www.iowadnr.gov/afo under AFO Resources. Options for emergency disposal of large numbers of animals include on-farm composting, rendering plants, landfills and burial. Some restrictions apply for burial in a catastrophic situation. Consult the local DNR field office for technical assistance. Check the DNR disaster recovery website for information on repairing fields with heavy sand or sediment deposits, scour holes, altered stream channels and private levees.

Burning in Rural Areas

During declared emergencies, tree and wood waste may be open burned in rural areas only. Standard discretion should be used. Prior to burying or burning farm flood-related debris or waste, contact the nearest DNR field office for details of restrictions. Burning should be done at centralized locations, but away from residential areas by at least one-fourth mile and under the supervision and control of the appropriate governmental officials. Burning should be done when weather conditions are favorable with respect to surrounding property.

However, hazardous waste such as tires, asphalt and asbestos cannot be burned. Because already demolished

Floods leave behind some nasty materials — acres of land covered with sand, chemical tanks and other debris. Fortunately, rural landowners have some options.

buildings often contain asbestos contamination, they should be land filled. If the asbestos material can be separated from the partially demolished buildings, the remainder of the building can be burned. However, a partially damaged structure that will be demolished or renovated may be subject to federal asbestos requirements, including an inspection, state notification, and asbestos removal and disposal. There are some exceptions. Contact the DNR for more information (see back).

Hazardous waste is defined by the U.S. Environmental Protection Agency under the Resource Conservation and Recovery Act (RCRA). Hazardous waste should be handled and disposed of according to RCRA requirements. Asbestos should be disposed of in a landfill. Tires should be reused or recycled. If disposed of in a landfill, tires must be processed. Find hazardous waste definitions and disposal requirements at www.epa.gov/rcraonline/.

More information on asbestos disposal can be found on the DNR disaster recovery website.

Pesticides

Pesticides should not go to the landfill for disposal. If pesticides in damaged containers are not sealable or usable, they should be sent back to the manufacturer, if possible. Or, they should be land applied at no more than the recommended rate.

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, 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 at 1-888-379-9531.

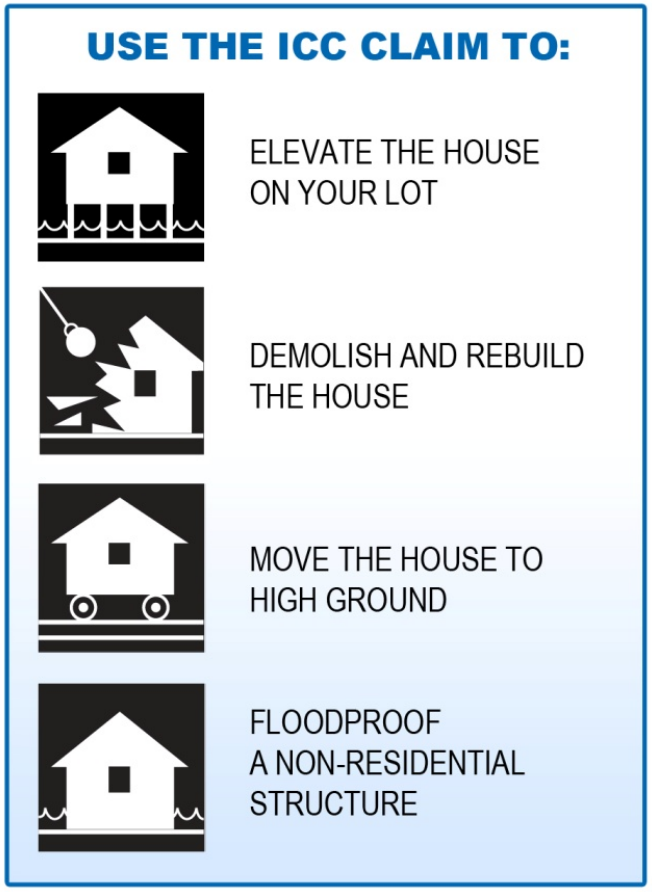
NATIONAL FLOOD INSURANCE PROGRAM

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

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.



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.

For residents to be eligible to claim ICC funds in "***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.

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 and questions of your community and its residents.

All requests for a Presidential Disaster Declaration must be made by the Governor of the affected State. The Governor's request is made through the FEMA Regional Office. 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 effective response is beyond the capabilities of the State and the local governments and that Federal assistance is necessary.

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 that may be discovered.

Overview of Federal and State 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 prior to beginning any reconstruction efforts.

Also keep in mind, since FEMA funds are only available for properties that are in the SFHA and determined to be ***substantially damaged***, floodplain administrator involvement in the application for financial assistance process is essential. 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 for ICC or grant funds.

If the President issues a disaster declaration, **Federal funds** are made available for property demolitions and relocations. Eligibility for these funds is tied to the extent of damage (a structure must be Substantially Damaged) and the structure's location (the structure must be in the 1% flood hazard area).

State funds may be allocated to structures that are substantially damaged and are located outside of the 1% flood hazard area. State funds are typically allocated later than federal funds, and homeowners may elect to rebuild before state funds are available.

As outlined previously, flood insurance policies include extra coverage for substantially damaged structures through the ICC coverage, which pays up to $30,000 for costs of elevating, relocating, or demolishing.

Individual Assistance

For certain presidentially-declared disasters, FEMA will make available disaster assistance for individuals and families. This assistance can include money for rental assistance, 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 at http://www.disasterassistance.gov/
- Through a mobile device at m.fema.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.

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 rate 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, as verified by SBA, 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.

Private Assistance

Private volunteer agencies such as the American Red Cross, Salvation Army, United Way, and numerous 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 clean up and rebuilding process. These services are usually provided free of charge regardless of a person's eligibility for government aid.

IX. Applying for Assistance: Help for your Community

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 and recover from major disasters. Through the PA program, FEMA provides supplemental Federal disaster grant assistance for:

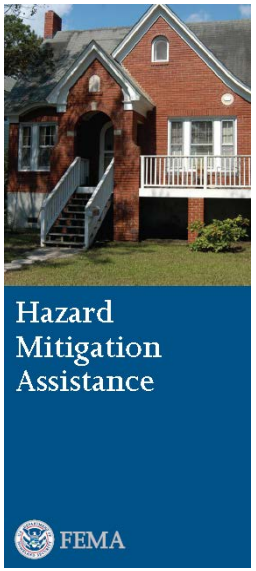
- Debris removal
- Emergency protective measures
- Repair, replacement, or restoration of disaster-damaged, publicly-owned facilities
- Hazard mitigation measures enacted during recovery that protect against future events

Additional information about the PA grant program is available through FEMA's website. Application forms are also available online.

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 Iowa Economic Development Authority (IEDA) administers the CDBG program in Iowa. More information about the program is available through their website.

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. The Iowa Department of Homeland Security also provides information about the HMA grant program on its website.

X. Other Forms of Assistance for Your Community

Technical Assistance

Many technical issues can arise during post-disaster permit operations, but you have many sources of assistance:

- Call the IDNR and the FEMA Regional Office first. If there was a disaster declaration, they may be able to provide technical assistance staff or workshops to address issues.
- The International Council of Building Officials (ICBO) has published *Disaster Mitigation: A Guide for Building Departments*. Subjects covered include guidelines for damage mitigation, disaster-response management, immediate response, mutual aid and inspections, working with the media, repair and recovery policies, and public information bulletins.
- 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.
- The Iowa State Extension has post-disaster materials on many topics and can provide advice on technical matters.

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 Iowa Mutual Aid Compact (IMAC) is an intrastate mutual aid agreement signed into law in 2002 that provides the mechanism for communities and emergency management commissions to share resources with one another during a disaster that has been declared either locally or by the governor. Membership in the compact is automatic for all political subdivisions. More information is available on the HSEMD website.

- Your area building officials association, which may know of members available to help.

If there was a disaster declaration, check with your emergency manager. 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.

XI. After the Flood: Communicating with your Residents

After the flood, it will be essential 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, Facebook, Twitter and other social media outlets, and having printed materials available in your community office about these topics.

- Basic safety information (See page 35)
- Activities that do and do not need a permit. (See page 38)
- The substantial damage rule. (See pages 43 - 44)
- The benefits of Increased Cost of Compliance flood insurance coverage (See pages 52)
- Federal and State grant programs. (See pages 54 – 55)
- The need for licensed contractors, if required in your community and information about how to select a contractor. (See page 47)
- Flood clean up information. (See page 49 - 50)
- 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 46)

Iowa Resources

- Iowa Department of Natural Resources (IDNR) (1-515-281-5918)
  - Floodplain Management Ready Reference
  - Floodplain Development Permits
    - The IDNR has underlying regulatory authority over most types of floodplain development. And so, in addition to the local floodplain development permit required from the NFIP participating community, a floodplain permit is also typically required from the IDNR for most types of development located in the floodplain. The IDNR has delegated a portion of this permit authority to a small percentage of NFIP participating communities.
  - Dam Safety
    - The IDNR is responsible for the state's dam safety program. IDNR staff review and approve the construction of new dams, maintain an inventory of existing dams that meet minimum size criteria and periodically inspect certain dams.
  - Floodplain Mapping
    - The IDNR, along with the Iowa Flood Center and other partners, is in the process of creating new, comprehensive, accurate floodplain maps for Iowa's cities and counties affected by the 2008 floods.
  - National Flood Insurance Program
    - The IDNR works with communities and counties to develop and administer local floodplain management programs, coordinates the NFIP, and assists FEMA and the Iowa Department of Homeland Security and Emergency Management in responding to flood disasters.

- Iowa Floodplain and Stormwater Management Association (IFSMA)
    - IFSMA is an organization of professionals whose members are involved in floodplain management, flood hazard mitigation, stormwater management, the NFIP, flood preparedness, and warning and recovery. IFSMA represents the interests of flood hazard specialists from local and state government, consulting engineers, the research community, insurance industry, and the residents of Iowa. IFSMA's members have skills and experience in the fields of engineering, hydrologic forecasting, community planning, enforcement, emergency response, water resources, and many others.

Resources (cont.)

- Iowa State Extension has a useful website that provides information to plan for and recover from a flood.

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 114: Design Manual for Retrofitting Flood-prone Residential Structures
- 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 416: Using GIS to Demonstrate Successful Floodplain Management
- FEMA 480: National Flood Insurance Program, Floodplain Management Requirements, A Study Guide and Desk Reference for Local Officials, Federal Emergency Management Agency
- FIA-15A: National Flood Insurance Program Community Rating System Coordinator's Manual
- EMI IS-22 Are You Ready? An In-Depth Guide to Citizen Preparedness
- NFIP Regulations (Parts 59, 60, 65 and 70)
- FEMA Map Service Center
- Ready.gov
- FloodSmart.gov
- Association of State Floodplain Managers

Prepared by

Dewberry

for

Iowa Department of Natural Resources
http://www.iowadnr.gov/

Iowa Floodplain and Stormwater Management Association
http://www.iowafloods.org/