



Understanding and Managing Flood Risk: A Guide for Elected Officials

Volume I – The Essentials

2020

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Cover Photo: Reno City Council

It was standing room only at an Aug. 5, 2019, workshop of the Reno City Council, where a moratorium on new building in the Lemmon Valley area and an appeal of a jury ruling that named the city liable for damage to homes and property surrounding Swan Lake were weighed. Photo by Sam Gross and used with permission from the *Reno Gazette Journal*.

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February, 2020

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The Association of State Floodplain Managers, Inc. (ASFPM) published this *Guide* as part of its mission to promote education, policies and activities that mitigate current and future losses, costs and human suffering caused by flooding. Founded in 1977, the organization had over 18,000 members in 2019, including members in 37 state chapters. ASFPM supports professionals involved in floodplain management, flood hazard mitigation, flood preparedness and flood warning and recovery. Members represent local, state and federal government agencies, citizen groups, private consulting firms, academia, the insurance industry and lenders.

Suggested Citation:

Association of State Floodplain Managers. 2020. *Understanding and Managing Flood Risk: A Guide for Elected Officials Volume I- The Essentials*. 3 vols. Madison, WI. no.floods.org/ElectedOfficialsGuide.

Acknowledgements

We extend our genuine thanks to all the elected officials and professionals that shared their time through meetings, interviews, emails and phone calls for the preparation of this guide. This guide was funded in part by the ASFPM Foundation whose mission is to serve as the catalyst for ASFPM, its chapters and members in order to advance projects, education and policy initiatives that promote reduced flood risk and resilient communities. Funding was also provided by the Westfield Insurance Foundation in support of in-person interviews with elected officials around the country.

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Special appreciation is extended to the following individuals who assisted in the creation of this publication:

- James C. Schwab, FAICP, Urban Planner & Author, Jim Schwab Consulting LLC, Principal
- Rich Anderson, Ph.D, Energy Director, Senior Advisor, Mayors Water Council, US Conference of Mayors
- Jen Marcy, PMP, CFM, Project Director, Water Resources East, Atkins
- Meg Bartow, Executive Vice President, Director, Public & Risk Communication, Ogilvy
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- Chad Berginnis, CFM, Executive Director, ASFPM
- Larry Larson, P.E., CFM, Director Emeritus-Senior Policy Advisor, ASFPM
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- Julie A. Ufner, Associate Legislative Director of Environment, Energy and Land Use, National Association of Counties
- John Ryan-Henry, Resilience Specialist and Legal Advisor, Coastal States Organization
- Alexis Cunningham, NOAA Digital Coast Fellow, Coastal States Organization
- George Riedel, CFM, Donor Coordinator, ASFPM Foundation
- Eric S. Poole, Executive Director, Florida Counties Foundation
- Meredith R. Inderfurth, ASFPM Washington D.C. Liaison
- David R. Conrad, Consultant, Water Resources Policy, David R. Conrad Associates
- Hunter Merritt, Water Resources Planner, Sacramento District, U.S. Army Corps of Engineers

Thank you to the many local elected officials that agreed to be interviewed for this guide:

- Mayor John Allard, Roseville, California
- Mayor Brian Bagley, Longmont, Colorado
- Mayor Dennis Coombs (former), Longmont, Colorado
- Judge Ed Emmett, Harris County, Texas
- Mayor Matthew Hayek (former), Iowa City, Iowa
- Mayor Jerry Piasecki, Valley View, Ohio
- Senator Sue Rezin, Illinois' 38th District
- Mayor Jim Throgmorton, Iowa City, Iowa

Finally, this guide would not be possible without the dedication and creativity of staff at ASFPM:

- Beth Klusinske, Flood Science Center, Research Associate
- Dave Fowler, CFM, Flood Science Center, Senior Project Manager
- Michele Mihalovich, Public Information Officer
- Melissa Haig, MLIS, Flood Science Center, Research Librarian
- Jason Hochschild, Flood Science Center, IT & GIS Analyst
- Jeff Stone, CFM, Research & Development Manager

Please visit ASFPM's [Elected Officials Guide website](http://no.floods.org/ElectedOfficialsGuide) (no.floods.org/ElectedOfficialsGuide) to watch as mayors and elected officials from around the country talk about how they are leading flood risk reduction in their community. Also, explore historic publications and resources available to elected officials while learning about current and continually updated content. For any questions about the website and this companion guide, please contact ASFPM.



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Introduction to this *Guide*

This *Guide* is written specifically to help elected officials gain a comprehensive understanding of the range of choices that are available as they evaluate how to prepare for – and respond to – flood events in their communities. Elected officials, including mayors, council and commission members, judges and other board members, have a vested responsibility to protect and strengthen their communities. Senior administration and management staff share that responsibility and will benefit from reviewing the same information. In some respects, floodplain management may seem challenging because it has many moving parts. But fundamentally, it's about protecting people and property. This *Guide* walks you through the key information you need to fulfill that responsibility.

As an elected official who has ventured into this *Guide*, odds are you're giving some thought to your community's flood risks, and you are aware of your responsibility to protect public safety, general welfare, and the financial health of your community. Perhaps you and your colleagues are:

- Recovering from a flood and need to know how other elected officials have led their communities after floods
- Realizing your community hasn't experienced a flood in some time, and want to know more about risk and being prepared
- Meeting with constituents and media after a recent flood
- Preparing to vote on a development proposal and want to better understand the principles of floodplain management, including factors your staff should consider before issuing permits and approvals
- Evaluating the staff capacity and capability with regard to regulating flood hazard areas and preparing for and responding to flood events
- Considering ordinance changes to better guide development to reduce your community's exposure to flood damage
- Examining options for engineered and natural systems-based projects to mitigate the effects of flooding
- Looking to reduce the flood risk to municipal buildings and your community's infrastructure
- Considering risks posed to emergency responders during flood events due to concentrations of vulnerable populations and/or access to critical facilities

This *Guide* offers background information to help answer your questions and equip you to lead your community to greater resilience. After reading this *Guide*, you will be able to:

- Communicate the concepts of floodplain management to your colleagues and your constituents
- Understand the importance of your community's commitment to floodplain management and the National Flood Insurance Program
- Understand the critical responsibilities of the staff member assigned to fulfill the floodplain manager's responsibilities
- Relay the importance of citizens insuring their structures against flood damage before the next flood
- Make confident critical decisions regarding flood risk and floodplain management to help safeguard residents, businesses, and public infrastructure
- Determine how your community could customize its approach to flooding based on unique characteristics of geography and the watershed, finance, politics and previous successes
- Understand the steps to take before, during and after flood events to protect citizens and help with response and recovery
- Find additional resources to learn more about floodplain management

This *Guide* consists of three separate volumes. The present volume, Volume I, contains Sections A through C; Volume II contains Sections D through I; and Volume III contains case studies.

Volume I of this *Guide* gives you:

- Information on how to begin addressing flooding in your community, in Section A
- Lessons learned to help prepare your community for the next flood, in Section B
- Basic concepts of mitigating flood hazards, in Section B, including an introduction to financial resources that may be available
- Suggestions for communicating with citizens, in Section C

Volume II of this *Guide* gives you:

- Basic background information on the concepts involved in managing floodplains, in Sections D, E, and F, which describe the essentials of property protection, understanding flood risk, and flood insurance
- Advice on managing, maintaining and strengthening local floodplain management programs, in Sections G and H

A list of referenced documents, webpages and additional resources is in the Resources section, at the end of both Volume I and Volume II of this Guide. Most of the listed resources were prepared by ASFPM or the Federal Emergency Management Agency. You should also be aware that each state has a [National Flood Insurance Program State Coordinating Agency](#) you can contact for guidance. NFIP state coordinators, designated by governors, welcome your inquiries and are there to help resolve your local floodplain management challenges. Some ways that state coordinators support communities are described in Question 41.

Volume III of this *Guide* gives you case studies from a variety of communities nationwide that successfully tackled flood mitigation, including some interviews with the elected officials involved. We hope that their stories encourage you to develop your own personal and legislative approach to managing flood risk and improving public safety and property protection in your community.

Now is a good time to learn more about sustainable and resilient floodplain management.

The opportunity to provide protection for your citizens and businesses has never been greater. We must begin to make use of our floodplains in ways that are not only ecologically correct, but also ensure public safety and are acceptable to society as a whole. Wise floodplain management provides the means to address your flooding problems as well as create sustainable development for future generations.

Adapted from [ASFPM Overview](#) (accessed April 2019).

Common Terminology

ASFPM: The Association of State Floodplain Managers is an organization of professionals involved in floodplain management, flood hazard mitigation, National Flood Insurance Program (NFIP), and flood preparedness, warning and recovery. ASFPM is a respected voice in floodplain management practice and policy in the United States because it represents flood hazard specialists of local, state and federal governments, the research community, the insurance industry and the fields of engineering, hydrologic forecasting, emergency response, water resources and others.

Community: Communities are political subdivisions that have the authority to adopt and enforce land-use regulations. The term usually means incorporated cities, towns, and villages, unincorporated counties, parishes, and boroughs, and authorized tribal organizations.

CRS: FEMA's [Community Rating System](#) is a program that rewards communities that administer floodplain management programs that go above and beyond minimum standards. The benefits of reduced damage are acknowledged by reduced flood insurance premiums for policyholders in communities that participate in the CRS.

FEMA: The Federal Emergency Management Agency is the government agency charged with coordinating the federal government's role in preparing for, preventing, mitigating the effects of, responding to, and recovering from domestic disasters, whether natural or man-made, including acts of terror. Among other responsibilities, FEMA administers the National Flood Insurance Program.

FIRM: Flood Insurance Rate Maps are official maps of communities on which FEMA delineates Special Flood Hazard Areas.

Floodplain: A floodplain is any area subject to flooding from any source, such as rivers, stream, bayous, lakes, reservoirs, the Great Lakes, the Gulf of Mexico, and the Atlantic and Pacific Oceans. Floodplains include areas subject to the following: catastrophic floods; periodic inundation by heavy rainfall or high tides; storm surges from hurricanes, nor'easters, and other coastal storms; dam failures; nuisance and local drainage flooding; and street flooding from inadequate stormwater drainage systems. Flooding may be exacerbated by riverine and coastal erosion; ground subsidence; sea level rise; changes in rainfall patterns; and development patterns that increase runoff from upland drainage areas.

Floodplain Management: Floodplain management is an overall program of actions taken to reduce flood damage, including such actions as adoption of regulations for development in floodplains, drainage improvements, planning for emergency and evacuations, and helping citizens and businesses understand flood risk and steps that can reduce vulnerability to flooding.

NFIP: The National Flood Insurance Program is a voluntary federal program enabling property owners in participating communities to purchase insurance against flood losses in exchange for community adoption and enforcement of minimum regulations that reduce future flood damage. Definitions used by the NFIP and the minimum land use and control regulations are spelled out in Title 44 of the Code of Federal Regulations, [Section 59.1](#) and [Section 60.3](#).

SFHA: The Special Flood Hazard Area mapped on FIRMs to show areas at risk of flooding from a flood of a specific size (called the 1-percent-annual chance flood) that is the basis for floodplain management in the U.S.

Section A. Flooding and Flood Risk in Your Community

Your community's exposure to flood risk is probably different from other communities in your state.

Understanding the vulnerability of your citizens and your built environment – homes, businesses, public buildings, parks, and infrastructure – is an important first step in working to minimize damage and impacts from the next flood.

Just as valuable is to identify and understand how undeveloped land is affected by flooding, so your community can decide how best to guide new development or redevelopment in those at-risk areas.



A technical assistance meeting in South Hutchinson, Kansas April 23, 2019 as mapping engineers met with the community to discuss projects that would reduce flood risk for the community. Photo by Steve Samuelson, CFM.

In *Volume II – Moving Beyond the Essentials* of this *Guide*, you'll learn the basic concepts of floodplain management, flood insurance, your community's responsibilities, and opportunities to reduce flood risk.

1. Where do I start?

A good first step is to ask your floodplain manager to help you collect local and historical flood facts. Check your local hazard mitigation plan (described in Question 8), ask staff in your planning, public works and roads departments, and talk to the emergency manager. Your professional staff is your primary source to learn about your community's flood risk:

- Someone on staff is designated as the floodplain manager (sometimes called the floodplain administrator). This designation was made when your community

joined the National Flood Insurance Program and probably is identified in your floodplain management regulations (see Question 38 about establishing and managing your floodplain management program).

- Staff in public works, engineering and utilities departments (or regional planning and drainage district personnel) may be aware of problem areas, especially areas subject to frequent flooding that aren't shown on flood maps.
- The local emergency manager can tell you about past flooding and whether existing emergency plans identify evacuation areas.

Prepare yourself with the answers to questions such as:

- How many buildings were damaged or destroyed by the last flood?
- Was anyone injured or killed by the flooding? What were the circumstances?
- How many businesses were flooded? How long did it take them to recover? Were any unable to reopen? How were employees affected?
- Were roads flooded? Bridges and culverts damaged or washed out?
- How many buildings in the floodplain were not damaged and was that because they are elevated?
- How many owners of damaged buildings were insured? Not insured?
- What was the impact on local government? Were critical facilities or other government-owned structures such as schools impacted? Were important resources unavailable?
- Were renters insured? Did they understand the importance of having flood insurance coverage for personal property?
- What was the average flood insurance claim payment? Do we have properties that have received multiple claims (sometimes called "repetitive loss properties")?
- Was there mold, mosquitoes, unsafe drinking water, debris or hazardous materials released that caused secondary health threats or problems?
- Have natural systems, such as wetlands that can absorb flooding, been impaired over time, leading to more flooding?
- Has there been a lot of development in the watershed above your community? Are downstream areas experiencing flooding more frequently, perhaps caused by the additional runoff from paved surfaces and buildings?
- Have grant programs or other financial incentives been used in the past to alter flood risk through property acquisition, elevation, or other forms of mitigation? Are any projects ongoing or contemplated?

2. How do I learn more about my community's flood risk?

Another great source of information about your community's flood hazard and risks is your hazard mitigation plan (see Question 8). Many communities develop these plans on their own or participate in multi-jurisdictional plans. These long-term strategies identify natural hazards and assess the potential impacts of those hazards. Importantly, the plans lay out risk reduction priorities, assess the capability to act, set an action plan for risk reduction, and form the basis of requests for mitigation grant funding. (Some grant programs are described in Question 10.)



City of Vacaville, CA - Hazard Mitigation Plan Open House.

Photo by Dynamic Planning & Science (2015).



Get involved in your community hazard mitigation plan process.

Ask your floodplain administrator, community planner, or emergency manager to show you how to access your community's hazard mitigation plan and when the next revision is scheduled. Governing bodies must formally adopt mitigation plans and each subsequent revision of the plans, which typically occurs every 5 years. You may want to participate in the next revision to better understand how actions are prioritized.

Hazard mitigation plans include descriptions of the impacts and overall vulnerabilities for each identified hazard. For flood hazards, this often involves overlaying flood hazard data onto property tax maps or other maps that show building locations. The results can be summarized at the community level, or down to the neighborhood and business district levels. Mitigation plans must also list the number and type of repetitively flooded properties, which is another indicator of flooding challenges. Reviewing maps in the mitigation plan, along with any information on the number and types of buildings at risk, gives you a good picture of your community's risk. Overlaying flood maps onto topographic (ground contour) maps allows you to identify where floodwater will be deep or shallow.

3. Why should I know which areas of my community may flood?

When you know which areas are shown as flood-prone on flood maps and which areas have experienced flooding (even if not shown on flood maps), your community is better prepared to:

- Regulate and guide new development to minimize risk (see Section G)
- Communicate risks to your citizens (see Section C)
- Plan for evacuations of people before the onset of flooding, mobilize resources to aid in rescues during flooding, plan to meet sheltering needs, and preposition recovery resources
- Identify public buildings and facilities, including bridges and culverts, that might be impacted, interrupting public services
- Consider and plan for recovery and redevelopment after damaging floods (see Section B)
- Identify opportunities to mitigate flood impacts (see Section B)

Flood risk isn't just about which areas might flood and how high might floodwater rise. Understanding the expected duration of flood events also informs community decisions and actions. Long-duration flooding that lasts days or several weeks creates different demands for shelters and housing than short-duration events that may last a few hours or just one or two tide cycles. Similarly, long-duration flooding may prevent access to some neighborhoods and may mean utility providers have to shut down water and sewer services.

It's easy to find and print your Flood Insurance Rate Map (FIRM) online.

See the Flood Insurance Study and all FIRMs for your community by visiting the [FEMA Flood Map Service Center](#) and click on <Search All Products.> Follow the instructions and select your state, county, and community. You may view, print and download flood maps, open an interactive flood map (if available) and view all studies and maps for your community. For more help, call 1-877-FEMA MAP.

To make a snapshot of a specific area, called a FIRMette, visit the same website and click on <Search by Address.> Then type in an address and search. You'll need to zoom in and pan around the map to find the area of interest. Then follow the instructions to make a FIRMette. Learn more by downloading the tutorial "[How to Print a FIRMette and Download a FIRM Panel.](#)"

4. What about my community's publicly owned buildings?

An often-overlooked element of flood risk is a community's own buildings. The first step, determining whether publicly owned buildings are vulnerable to flooding, may have been done as part of your community's hazard mitigation plan (see Question 8). That step involves reviewing the FIRM to see if publicly owned buildings are in or near the mapped

floodplain. Then you can work closely with your local floodplain managers, engineers and risk management advisors to determine if further action is required. Questions to ask include:



Flooded public library in Port Arthur, TX.
Photo courtesy of American Library Association.

- What depth of flooding around the building can be expected during flood events? What is the possible range of outcomes for different scenarios (1% annual-chance flood; 0.2% annual-chance flood)? Could floodwater get into the building? Has the building flooded before? Do we have data to support an estimate of damage costs if the building is flooded in the future?
- What is the required warning/evacuation time for staff and occupants? Are there safe access and egress routes to the building? Do first responders use the building during flood emergencies?
- Are there important documents, high-value equipment, historic artifacts or other irreplaceable items located in areas that could flood?
- What options do we have to keep water out of the building?
- Has the building been dry-floodproofed? If yes, do staff know about procedures for protection? Are the materials to implement dry floodproofing easily accessible? Has flood preparation been rehearsed?

Another critical aspect of risk management when public buildings are in mapped floodplains is insurance.

- Does your community's coverage through municipal insurance pools cover flood damage?
- Does the municipal insurance pool expect flood-prone buildings to be insured under the NFIP?
- If a building is not adequately insured for flood damage, what's the likely cost of repairs if flooding occurs?
- If insured with an NFIP policy, does the policy have enough coverage on the structure and contents (see Question 32 about flood insurance coverage)?

Flood prone public buildings



Most communities with public buildings located in mapped floodplains are not aware of a significant consequence if those buildings are not insured for flood damage. If damaged by a flood event that is declared a major disaster, FEMA may withhold public assistance that would otherwise be available, in amounts up to \$500,000 on structural damage and \$500,000 on contents damage. Can your community afford what is equivalent to a \$1 million deductible – for each flood prone public building?

5. What are the economic benefits & costs for reducing flood risk?

For elected officials, the cost of flood mitigation can be a significant political issue. Constituents are often concerned about the upfront cost, and they may not fully appreciate future savings due to damage and costs avoided. Although flood mitigation saves money in the long term, the exact amount is often difficult to quantify. For this reason, many risk reduction savings are either not monetized or aren't factored into the bottom line for budget considerations. For some, mitigation can look like an expense rather than a savings or investment. That said, when the full benefits of hazard mitigation are identified, taxpayers and elected officials can come together to assist those in need and reduce off-budget taxpayer spending after future disasters.

The economic impacts of floods on individuals and property owners include lost wages (or job loss), lack of transportation, expenses for evacuation (temporary housing), and significant physical and mental health issues before, during and after flooding. Businesses are affected due to lost productivity as employees may be unable to get to work when roads are flooded or washed out, or because they are focused on repairing

damage to their homes. Impacts may be widespread when flooding shuts down utility networks.

Communities suffer overall as a result of flood damage. Local funds earmarked for other uses must instead go toward flood repair and recovery, and community resources (staff, equipment and infrastructure) must be focused on response and rescue, which also puts responders and utility workers at risk for injury and/or loss of life. Community infrastructure can be severely impacted, including the costliest elements such as water and wastewater treatment facilities and roads and bridges. Debris collection and landfill disposal, and other environmental cleanup, can be significant. The combined impacts on businesses, individuals and communities reduce local tax revenue (income, property, employment, etc.) in both the short and long term.

A major issue with flood risk is that the costs and benefits are borne by different parties; this is what economists call an “externality problem.” Builders and local governments may reap the benefits of developing in risky areas, but they do not incur all the future costs when homeowners must buy flood insurance and when homes are flooded. Instead, many of the costs fall on property owners, and often, the general taxpayer through disaster assistance programs.



Impacts to Small Business

According to FEMA’s 2015 [Business Infographic](#), almost “40-60 percent of small businesses never reopen their doors following a disaster,” and another 25 percent fail within one year. Similar statistics from the U.S. Small Business Administration indicate that over 90 percent of businesses fail within two years after being struck by a disaster.

Success Story Connection – Past Investments Saved Money

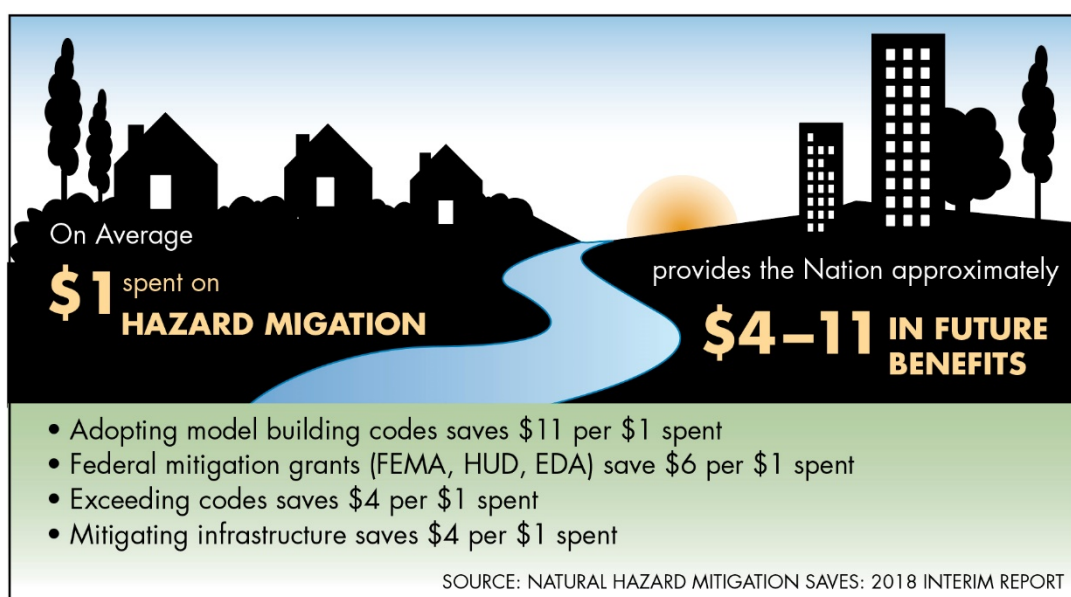


[The Left Hand Creek Flood Project saved Longmont, Colorado](#) an estimated \$22 million in losses avoided in the 2013 flood. “If we had not done that project, there would have been another thousand homes flooded,” said Dennis Coombs, former mayor of Longmont.

Seeing the benefits of investing in cost-effective flood mitigation may require a change in thinking. It is economically beneficial and will result in long-term community resilience to shift toward flood mitigation measures, and away from simply recovering or “getting back to normal” after floods. Mitigation in general, and nonstructural measures in particular, tend to be more cost-effective and sustainable long-term solutions than structural measures. Nonstructural measures include land-use planning and zoning, floodplain restoration and

elevating or removing property from harm's way. Structural measures include using levees, floodwalls and dams.

Nonstructural mitigation measures often have benefits beyond flood risk reduction and protection of public safety. Such measures can revitalize urban neighborhoods, improve the environment (primarily water quality), enhance or expand public spaces, and increase economic development (improving property values). According to a [report by the National Institute of Building Sciences](#), the economic benefits of hazard mitigation outweigh the costs by four to one (some research indicates the ratio is as high as five to one). The benefits of individual projects may vary.



Benefits of Open Space Recognized by the NFIP Community Rating System (CRS)



The NFIP Community Rating System, described in Question 43, rewards communities that administer floodplain management programs that go above and beyond the minimum standards of the NFIP. [In a 2013 study](#), savings associated with a one point increase in CRS credit under Activity 420 (Open Space Preservation) were estimated to average \$3,532 per community per year.

Section B. Preparing for and Recovering from Floods

While floods can certainly be devastating events, every post-flood scenario is also an opportunity to investigate what happened and work to eliminate or mitigate future damage. As an elected official, you are uniquely positioned to effect meaningful actions that can reduce future impacts.

You may have heard the term “hazard mitigation” and you may wonder what it means and how mitigation actions can reduce your community’s vulnerability to flood damage.

Flood and flood-related hazards have the potential to damage or destroy public and private property and disrupt your local economy and overall quality of life. While threats may never be fully eliminated, much can be done to lessen – to mitigate – future impacts. The concept and practice of reducing risks associated with known hazards is referred to as hazard mitigation.

Before you advocate for change, you’ll need to learn about your community’s situation (Question 2). You can examine photographs and videos, listen to real-world accounts of flooding and flood rescues, investigate damage scenarios, ask lots of questions of staff and constituents, research existing rules and regulations and review best practices in similarly situated communities.

This section answers some common questions elected officials have about hazard mitigation, what can be done before the next flood to lessen the impacts of flooding, and the types of projects many communities undertake.



FEMA Defines Hazard Mitigation

Hazard mitigation refers to any sustained action taken to reduce or eliminate the long term risk to human life and property from hazards.



Flood of Record Warning Sign, Squaw Creek, Kansas.

Photo by Steve Samuelson, CFM.

6. What is my community's legal responsibility and liability for mitigating flood risk?

Protecting public health, safety, and welfare is one of the fundamental duties of local government. Recognizing and managing floodplains and coastlines is part of the duty to protect people and property. Mitigating flood risk can be challenging, in part because of the common misconception that regulating development creates a direct conflict between the public safety duties of local government and the property rights of individuals.

Local governments mitigate flood risk by controlling land-use and development decisions. This is most often done through planning (comprehensive land use, zoning, special area plans) and development regulations and codes (floodplain management regulations, subdivision standards, and building codes). Regulations and codes are administered through permitting processes that are designed to prevent inappropriate construction or require proper construction or floodproofing of structures in areas prone to flooding (see Question 36 to learn more about requirements for buildings). It is important to note that these regulatory tools are also intended to minimize development or use of lands that will harm other people or properties by increasing flood risk.

Takings

Property owners file takings cases when they believe regulations or other government actions violate their constitutional property rights. The legal basis for these arguments can be found in the Fifth Amendment of the U.S. Constitution, which prohibits the government from taking private property for public use without just compensation. The interpretation of the courts through the years has clarified that the Fifth Amendment encompasses more than an outright physical appropriation of land. Under some circumstances, the courts have found that regulations may be so onerous that they effectively make the land useless to the property owner, and that this total deprivation of all beneficial uses is equivalent to physically taking the land. In such a situation, courts may require the governing body to either compensate the landowner or modify the regulation. However, courts have sided with local governments acting to prevent loss of life or property as not violating the takings clause. It is important to remember:



1. Communities have the legal power to manage coastal and inland floodplains, and
2. Courts may find that communities have the legal responsibility to do so and may actually be liable if they permit development that adversely impacts other properties.

ASFPM [*No Adverse Impact: Property Rights and Community Liability: The Legal Framework for Managing Watershed Development*](#)

The legal system in the U.S. has long recognized that when a community acts to prevent harm, it is fulfilling a critical duty to protect people and property. Courts throughout the nation, including the U.S. Supreme Court, have consistently ruled in favor of local governments acting to prevent loss of life or property, even when protective measures restrict the use of private property.

Administrative and management decisions made by local governments must respect property rights and follow the law, but the courts have made it clear that property rights have limits. For example, both state and federal law acknowledge that property owners do not have the right to be a nuisance, violate the property rights of others (for example, by increasing flooding or erosion on other properties), trespass, be negligent, violate reasonable surface water use or riparian laws, or violate the public trust. The courts have also made it clear that preventing projects that could harm others cannot constitute a taking, since the alleged right being violated never existed.

As an elected official, you need to be aware that approving projects or activities that increase the risk of damage to other properties could expose your community to lawsuits. A common pitfall for local governments is that they allow development on a property to avoid a takings challenge by the property owner, only to be hit with a takings claim by neighbors on adjacent properties who are adversely impacted by the decision. Permitting development can damage neighboring properties when water or sediment “trespasses” on the properties without permission. Impacted owners can then sue their communities for issuing construction permits without due diligence. Nationwide, lawsuits by impacted neighbors are litigated as takings with a much higher success rate than takings claims over preventing development.

Common examples of development that should be examined to avoid causing damage to adjacent properties include:

- Residential or business development that increases flood elevations or erosion
- Development that increases impervious surfaces, which enhance storm flow velocity and volume



“Not all the uses an owner may make of his property are legitimate. When regulation prohibits wrongful uses, no compensation is required.”

– The Cato Institute

ASFPM No Adverse Impact: Property Rights and Community Liability: The Legal Framework for Managing Watershed Development

- Construction that channelizes storm flow and increases scour of surrounding properties
- Roads that block drainage pathways
- New or upgraded stormwater systems that increase flow downstream
- Structures that block watercourses, which increase flood levels or cause erosion
- Bridges built without adequate openings
- Flood control structures that increase flooding downstream, upstream or across the waterway

Legal do's and don'ts of floodplain management

Do:

- Clearly relate regulations to hazard prevention.
- Help landowners identify economic uses.
- Apply identical principles to your government's own activities.

Don't:

- Neglect your duty to manage the floodplain. A hands-off approach is the surest way to be successfully sued.
- Apply regulations inconsistently or arbitrarily or abuse your power.
- Interfere with landowners' rights to exclude trespass of others.
- Deny all economic uses. Consider using Transferable Development Rights in valuable, heavily regulated areas.

ASFPM *No Adverse Impact: Property Rights and Community Liability: The Legal Framework for Managing Watershed Development*

The best way to avoid losing in court is to avoid being sued in the first place. Working with landowners prior to development to identify the extent of property that can be developed without adverse impacts on neighbors helps alleviate conflict. This approach is less confrontational than traditional regulatory systems that dictate (often without discussion) when development is or is not allowed. Under this approach, both landowners and regulators have the opportunity to resolve their concerns.

While nothing can prevent all legal challenges, a sound, well-planned approach to floodplain and watershed management can help: 1) reduce the number of lawsuits filed against local government, and 2) greatly increase the chances that local government will win legal challenges arising from their floodplain management practices. ASFPM advocates using the No Adverse Impact approach, described in Question 42.



[ASFPM has produced numerous publications](#) intended not only to explain these legal issues more in-depth as it relates to flooding but also to highlight important case law that your community's legal counsel may find useful in defending against frivolous suits or being successful in your own enforcement efforts.

7. My constituents just want things to get back to “normal,” the way it was before the flood. Is that so bad?

While there is a natural human impulse, after a disaster, to think about the sunny, comfortable, pre-flood days, doing so ignores the obvious: that “normal” scenario put people and property at risk. You now know enough to break the cycle of “flood, rebuild at risk, and flood again.”

You can lead your community by engaging constituents to focus on what’s next and the process of recovering better by reducing vulnerability to future flooding. Of course, taking action can be a challenge given so many demands on elected officials, professional staff, and limited budgets.

Many effective mitigation measures are implemented at the community level, where decisions that regulate and control development are made. When you apply effective mitigation planning to your community’s approach to preparation and response to floods, and to recovery planning, you can reduce response needs and speed recovery. See Question 12 for examples of hazard mitigation initiatives and projects.

However, hazard mitigation can be akin to “tough love.” Encouraging your constituents to elevate their buildings higher than the minimum elevation required, set homes farther from the water, or participate in a buyout project is a challenge for even the most well-informed elected official. Sometimes the best solution is the harder choice. Balancing the long-term needs of your community against the short-term needs of individual residents can be particularly difficult when you count on residents for support on a multitude of other community priorities.

Success Story Connection



[Our success stories feature several communities](#) that went beyond simply repairing flood damage and tackled long-term flood resiliency.

8. What is a hazard mitigation plan and why does my community need one?

As a community formulates a comprehensive approach to reduce the impacts of hazards, a key means to accomplish this task is the development, adoption, and regular update of a local hazard mitigation plan. A hazard mitigation plan identifies hazards that may affect a community and develops estimates of people and property that are at risk. The most common hazards covered by mitigation plans are flooding (from all sources), high winds and tornadoes, earthquakes, and wildland fires. The plans establish community vision, guiding principles and specific actions designed to reduce current and future hazard vulnerabilities.

Hazard mitigation plans help communities:

- Protect life and property by identifying ongoing actions and possible new actions to reduce the potential for future damage and economic losses that result from natural hazards
- Qualify for grant funding, in the pre-disaster and post-disaster environment
- Speed recovery and redevelopment following future disasters
- Demonstrate a firm local commitment to hazard mitigation principles
- Comply with state and federal legislative requirements tied to local hazard mitigation planning



Does your community already have a mitigation plan?

Check with your floodplain administrator and emergency manager to find out if your community has a hazard mitigation plan, which may go by a different name or be included in a comprehensive plan. Many cities and towns participate in a multi jurisdictional planning initiative, typically led by counties.

Guidance for Floodplain Management and Hazard Mitigation Planning and Projects

ASFPM, FEMA and many states publish guidance for developing and updating mitigation plans and identifying mitigation projects:



- ASFPM [*NAI How-to Guide for Planning*](#)
- ASFPM [*NAI How-to Guide for Mitigation*](#)
- ASFPM [*NAI How-to Guide for Infrastructure*](#)
- NFIP [*CRS Coordinator's Manual*](#) (activity 510)
- [*FEMA Hazard Mitigation Assistance*](#)

9. What actions can we take now to prepare for the next flood?

You've probably heard that when it comes to flooding, "it's not **if** it will flood, but **when**." While it's true that many communities are lucky and haven't flooded in decades, flood maps are illustrations of probability.

Section E, The Basics of Flood Risk, explains the "base flood" used by FEMA to prepare Flood Insurance Rate Maps (FIRMs) and cautions that the term "100-year flood" should not be used because it is widely misinterpreted to mean "once every 100 years." If your community has buildings in the mapped floodplain, the probability those buildings will flood is one chance in 100 *in any given year*. So why not do what you can now, to get ready for that eventuality?



Kinnickinick River Flood Management Design Charrette for Public Comment at the Milwaukee County Wilson Park Open House. Photo by Bill Graffin, Milwaukee Metropolitan Sewerage District.

Plan Your Public Information Messages and Prepare Materials for the Public.

Section C describes six priority topic areas that may be appropriate for messages for your community. Once you know about your community's flood risk, you can craft those messages before the next flood occurs. Along with professional staff, you can learn about informational materials developed by others and tailor them to suit your community's needs, which likely include public safety, inspection and permit requirements, and information about recovering in ways to mitigate future damage.

Have Your Departments Evaluate Their Needs Should Widespread Flooding Occur.

Some [NFIP state coordinating offices](#) produce desk references and handbooks to help local officials charged with floodplain management prepare for and respond to flooding. After you determine if the scope of damage may exceed your community's capacity to perform safety and substantial damage inspections, you may want to pre-plan requesting mutual aid assistance.

Review Your Emergency Plans. An emergency operations plan (EOP) outlines how your community will respond to an emergency, such as a flood, mudslide or hurricane. Your EOP may be part of the county's plan, or there may be a regional plan for emergency response.

Review the EOP with your elected colleagues and department heads. You can ask the following questions to help inform your review:

- What is the role of elected officials, if any? Who is responsible for issuing official announcements, and are messages already drafted, waiting to be tailored for each incident?
- Are the resources and assets described in the EOP readily available, or are we dependent on others for certain assets? Who communicates our needs up the chain?
- Are the responsibilities assigned to our staff reasonable in light of current staffing? Are there key positions that are vacant, unfunded or under-funded?
- Is there potential for multiple or complicating hazards? For example, if an upstream hazardous materials manufacturing facility is flooded, how would that affect us?
- Are there any special considerations you should be aware of regarding utility services? What are the priorities of utility providers to shut off service to flood-prone areas and to return service to critical facilities or important areas?
- Has the plan been tested or executed recently, and are any updates needed to reflect lessons learned?



Some examples of state guidance include:

- [*Florida Floodplain Administrator's Post-disaster Toolkit*](#)
- [*Iowa Flood Response Toolkit*](#)
- [*Louisiana Floodplain Management Desk Reference*](#) (Chapter 27, Disaster Operations)

Review Your Hazard Mitigation Plan. Elected officials are required to approve hazard mitigation plans and each revision (usually every five years). However, annual reviews and status updates of high priority actions are critical to making certain that the plan is being actively implemented. You can gain important background information on your community's flood hazard and vulnerabilities by reviewing the data gathered to support the mitigation actions in your plan.

Keep in mind that access to FEMA mitigation grant funding (Question 10) is tied to the hazard mitigation plan and actions. Your goal when reviewing the plan should be to think ahead and anticipate future, post-flood needs based on existing data, without the constraints of existing financial status, political conditions or financial limitations. What actions *might* your community want to take in the future, and where? Are those actions included in the plan?

10. What resources are available to help us prepare for and recover from the next flood?

Emergency managers focus on preparing for and responding to a wide range of emergencies. More than likely, you were briefed by your community's emergency manager (or the county's emergency manager) when you first took office. Your emergency manager is your first stop for questions about preparing for floods, what's available immediately following floods and the processes that are activated after the governor declares an emergency or disaster.

Solutions Exist to Support Flood Mitigation Investment. Funding flood mitigation is a challenge, but developing creative local solutions and exploring diverse financing sources to fund mitigation projects can ease the financial strain on communities. Existing federal and other governmental assistance programs can help ease the financial burden for homeowners and community leaders. Communities can leverage local resources to help cover costs as well.

When events exceed state and local capacities, governors ask the President to declare emergencies and major disasters, making available federal resources to help with recovery. Ask your emergency manager to brief you on these FEMA programs:

- [Individuals and Households Assistance Program](#): assistance for some expenses (medical and dental, child care, funeral and burial, essential household items, moving and storage, vehicle, and some clean-up supplies) and items not covered by insurance.
- [Public Assistance Program](#): debris removal, life-saving emergency protective measures, and the repair, replacement or restoration of disaster-damaged publicly owned facilities and the facilities of certain private non-profit

organizations; Public Assistance may include funding to mitigate the effects of future disaster (see Question 11 about Section 406 mitigation).

[State hazard mitigation officers](#) are typically located in state emergency management agencies. Similar to NFIP state coordinators, who work with communities to fulfill their responsibilities to the NFIP, state hazard mitigation officers are charged with maintaining awareness of mitigation planning and grant programs available from FEMA and other federal agencies, and helping communities access resources that support those efforts.

Other Federal Agency Mitigation Funds:

Federal agencies other than FEMA also administer programs that support hazard mitigation, including the U.S. Army Corps of Engineers, Department of Housing and Urban Development, Department of the Interior, Economic Development Administration and the Department of Agriculture. After some disasters, Congress authorizes special housing funding administered by HUD. Check with your [state hazard mitigation office](#) or visit the [American Planning Association's website](#) for more information on the mitigation initiatives of these agencies.



State and Private Mitigation Funds:

Some states have state-funded programs to support projects to reduce future flood damage. In recent years, some private foundations have become interested in supporting initiatives to deal with specific issues such as climate change and sea level rise (for example, [100 Resilient Cities](#), pioneered by the Rockefeller Foundation). Those funds are not detailed here, but stay aware of opportunities that may arise.

Local Mitigation Funds:

Cities and counties can raise money for flood mitigation themselves rather than relying solely on state or federal dollars. This allows communities to fill in funding gaps, match funds from the federal government (where matching is generally required), and help support state of the art flood mitigation projects. Ways to raise mitigation funds locally include stormwater utility fees or charges, general obligation bonds, catastrophe (disaster) bonds, special levies for a specific purpose (or project) and temporary tax rate increases.

Success Story Connection

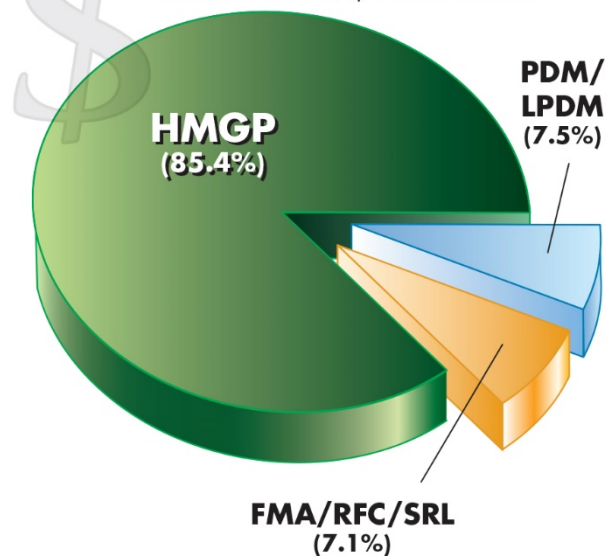


One year after Hurricane Harvey, [Harris County, Texas approved a \\$2.5 billion Flood Protection Bond Issue](#) in a special election. Judge Ed Emmett, Harris County's chief executive officer, explained the decision, saying, "A lot of the projects we're talking about – some of the buyouts [along creeks and tributaries], don't meet the federal government's cost-benefit analysis, so we're going to have to use local funds."

FEMA programs that are available to help implement mitigation projects are described briefly below. Some grant funds become available only after federal disaster declarations. Each grant program has its own rules. In general, communities and some non-profit entities can apply for grants. The types of projects eligible under each program vary somewhat, but generally include floodplain acquisition (buyouts), elevating-in-place, relocating buildings to higher ground, sewer backup protection, and retrofitting dry floodproofing of critical facilities, public buildings and historic buildings. Almost every project requires a non-federal cost share. Importantly, mitigation projects for which communities seek FEMA grant funding must be supported by locally adopted hazard mitigation plans (described in Question 8).

FEMA Mitigation Grant Funding (1988-2019)

Total: \$21.03 Billion
Federal Share: \$14.03 Billion



SOURCE: OpenFEMA Dataset: Hazard Mitigation Assistance Projects (accessed September 2019)

Flood Mitigation Assistance Program. [The FMA program](#) provides funding for projects and planning that reduce or eliminate long-term risk of damage to buildings and structures insured under the NFIP. FEMA encourages communities to focus on buildings that have been [flooded repetitively and those that have sustained severe repetitive losses](#), in part by lowering the non-federal cost share. Funding is appropriated by Congress annually.

Hazard Mitigation Grant Program. [The HMGP provides funding](#) after major disaster declarations to protect public or private property through various mitigation measures. States have the primary responsibility for prioritizing and selecting proposals submitted by eligible subgrantees, and for administering projects awarded funding. A formula based on the amount of certain types of federal disaster assistance determines the amount of HMGP funding available.

Pre-Disaster Mitigation Grant Program. [The PDM program](#) is designed to help states and others reduce overall risk to the population and structures from future hazard events, while also reducing reliance on federal funding in future disasters. This program awards planning and project grants and provides opportunities for raising public awareness about reducing future losses before disaster strikes. Prior to 2019, PDM grants were funded annually by congressional appropriations and awarded on a nationally competitive basis. As of early 2019, FEMA is writing rules to implement a statutory change to the funding level, which allocates 6 percent of total national disaster costs to PDM. The new program has been labeled Building Resilient Infrastructure and Communities (BRIC).

Success Story Connection



In response to a devastating flood in 2006, [Valley View, Ohio, used funds from the Hazard Mitigation Grant Program](#) to elevate nine structures and acquire one property. Since then, the village has participated for several years in the Pre-Disaster Mitigation and Flood Mitigation Assistance programs to fund additional elevations and acquisitions.



Climate-resilient Mitigation Activities

FEMA provides tools and guidance to help applicants seeking FEMA grant funding to support [climate-resilient mitigation activities](#). Eligible activities include aquifer storage and recovery, floodplain and stream restoration, flood diversion and storage, and green infrastructure. These activities can reduce flood damage and provide ancillary ecosystem benefits, such as drought mitigation and improved water and air quality.

11. How can the FEMA Public Assistance program be used to mitigate future damage?

After events are declared disasters by the president, FEMA Public Assistance funding is provided to state, tribal, territorial and local governments for many purposes, including restoration of public buildings, public utilities, recreational facilities, and roads and bridges. Public Assistance is also provided to qualifying private non-profit entities.

In addition to providing funds for permanent restorative work, the FEMA Public Assistance program can provide funding for mitigation, commonly referred to as Section 406 Mitigation. For damaged buildings, Section 406 funds can cover costs of upgrades to meet building codes and standards, and where codes are not adopted, upgrades that meet the hazard-resistant design provisions (flood, wind, earthquake) of the International Code Council's building codes and the American Society of Civil Engineers' standard ASCE 24, Flood Resistant Design and Construction.

Find out if your community's hazard mitigation plan identifies at-risk public buildings and undersized bridges and culverts. Even some preliminary consideration of what it would take to improve those facilities to better resist future flooding positions your community to work with FEMA to include mitigation in Public Assistance after the next flood. Examples of flood mitigation that can be accomplished, when determined to be feasible and cost-effective, include:

- Retrofit dry floodproofing of buildings and equipment that serves buildings, including pump stations and water treatment facilities
- Relocation of buildings or functions out of flood-prone areas
- Upsizing drainage culverts
- Replacing bridges with wider spans or adding erosion protection to existing bridges

12. What are some examples or types of mitigation actions and projects that we should consider?

Mitigation actions and projects vary greatly – they can be mundane or exciting, expensive or free, complicated and time-consuming or accomplished by changing a policy, regulation or procedure.

Through the mitigation planning process, described in Question 8, communities consider a wide range of possible actions and projects. Mitigation should be focused locally, and the success of your community's efforts to deal with flood hazards should not depend entirely on outside funding. Mitigation that works in your community may be different than what might work elsewhere.

The NFIP CRS Coordinator's Manual describes six categories for mitigation actions and projects:

1. **Preventive activities** prevent flood problems from getting worse. The use and development of flood-prone areas is limited through planning, land acquisition or regulation. These activities are usually administered by building, zoning, planning and/or code enforcement offices. Section H describes several higher regulatory standards that fall into this category. Also in this category are open space preservation, stormwater management and drainage system maintenance, and setbacks.
2. **Property protection** activities are usually undertaken by communities or property owners on a building-by-building or parcel basis. You can think of these as actions that *move the people away from the flood*. The most well-known flood mitigation projects include acquisition (buyouts), elevation of buildings on compliant foundations, relocating buildings to higher ground, sewer backup protection, and retrofit dry floodproofing of critical facilities and public buildings.
3. **Natural resource protection** activities preserve or restore natural areas or the natural functions of floodplain and watershed areas. They may be implemented by a variety of agencies – primarily parks, recreation, and conservation agencies or organizations.
4. **Emergency services** measures are taken immediately before and during an emergency to minimize impacts. These measures are usually the responsibility of city or county emergency management staff and the owners or operators of

major or critical facilities. Examples include improved flood warning and pre-planning evacuations.

5. **Structural projects** keep flood waters away from an area using a levee, floodwall, dam, channel modifications or other flood control measure. They are usually designed by engineers and managed or maintained by public works staff. These can be categorized as actions that *move the flood away from people*.
6. **Public information** activities advise property owners, potential property owners, and visitors about hazards, ways to protect people and property from the hazards, and the natural and beneficial functions of local floodplains. They are usually implemented by a public information office.

Success Story Connection



[Our success stories feature several communities](#) that undertook a variety of flood mitigation projects, such as installing living shorelines, widening river channels, improving bridges, and acquiring or elevating property in harm's way.

13. What should we consider when looking at how some mitigation projects will affect our tax base?

As you contemplate various mitigation projects, you'll need to determine feasibility and effectiveness (does it conform to accepted engineering practices and requirements and is it a long-term or permanent solution) and you'll examine the benefits and costs. Most grant programs that support community-based mitigation projects require evidence that projects are cost-effective, which essentially is a determination that the overall benefits outweigh the costs of implementation. It's usually fairly easy to estimate costs, while identifying benefits is less straightforward.

State Hazard Mitigation Officers and Assistance



Many state hazard mitigation programs provide technical assistance to communities to help identify feasible projects and to develop the documentation to demonstrate cost effectiveness. Grant program guidance is the first place to look. FEMA publishes [Hazard Mitigation Assistance Guidance](#) for the grant programs described in Question 10.

Most buyout projects have multiple benefits – and costs – which should be considered:

- Benefit: Fewer families affected after future floods, reducing the need for public expenditures for evacuations, sheltering and temporary housing.
- Benefit: Repurposing the vacated land for public parks and recreational use, greenways, neighborhood gardens, wetlands mitigation, habitat restoration, stormwater management or reforestation projects. While some of these uses may be more successful when multiple, contiguous parcels are included in the project, some can be implemented on one or two lots. Over the past decade, many studies have looked at the benefits of open space, which, in some cases, adds to the value of nearby properties.
- Cost: Some grant programs require cost-sharing with non-federal funds. Many communities cover local cost-share requirements out of general funds, given the public benefits. Communities with stormwater utility programs may be able to justify using those funds. After damaging floods, sometimes the cost share is covered by the NFIP flood insurance coverage Increased Cost of Compliance (summarized in Question 33), and sometimes property owners agree to buyout offers that are reduced to account for the local cost share.
- Cost: Questions about how mitigation projects affect a community's tax base usually come up when communities consider buyout projects. Buyouts involve purchasing land, demolishing buildings, and removing paved surfaces to allow the vacated land to serve its floodplain functions. Although buyouts do remove taxable parcels from the tax rolls (see text box), doing nothing in the face of repetitive flooding or recent severe flooding can also cause property values to fall compared to homes on higher ground. Projects to help owners elevate their homes in place keep taxable property, but don't yield the range of benefits of buyouts.



Effects of climate change on real estate markets.

[A study released in early 2019](#) looked at the value of 2.5 million coastal properties in Massachusetts, Maine, New Hampshire and Rhode Island and estimated a total of \$402 million in lost property value between 2005 and 2017 associated with climate change and location in low-lying, flood-prone areas. When combined with the results of previous studies in 10 other coastal states, losses in housing values could be as high as \$15 billion.

- Cost: Unless a large enough area is bought out to allow termination of utilities and closing roads, public water and sewer service must continue and roads and sidewalks must be maintained.
- Cost: Depending on how the land is repurposed, there may be costs to maintain the vacated parcels by mowing and trash removal.

Success Story Connection



"We proceeded with the buyouts and took those off the tax rolls, but at the same time we were able to create new housing elsewhere that more than offset the losses in property taxes."

– [Former Iowa City Mayor Matthew Hayek](#)

Must Floodplain Buyouts Decrease Tax Revenue?

Research-based answers to this question were published in 2018 by the Wharton Risk Management and Decision Processes Center. [The study identified at least four potential strategies](#) to lower the tax burden of buyouts:



1. Offering financial incentives for buyout participants to resettle in the same municipality.
2. Building new housing developments in non-flood prone areas to accommodate displaced residents and to encourage them to stay in the jurisdiction.
3. Maximizing recreational benefits of properties post-buyout to increase local amenities and thus nearby property values.
4. Creating comprehensive pre-disaster/hazard mitigation plans that integrate with long-term land-use and adaptation planning to ensure buyouts are part of a strategy that brings value to the community.

Section C. Communicating with Citizens About Flooding

The leadership and communication skills you bring to your position as an elected official are the same skills you'll rely on to share what you learn from this *Guide*.

This section helps you begin thinking about the opportunities and responsibility to use your position to drive conversations about flood management, safety and resilience in your community.

Well-informed citizens make smarter decisions and support sound floodplain management practices.



Education and outreach tools can strengthen local floodplain management efforts. If everyone knew their flood risk, how to avoid problem areas, how to build wisely and how to protect themselves and their properties, flood losses would be greatly reduced. Reaching out and educating people has an impact.

ASFPM [*No Adverse Impact How-to Guide for Education and Outreach*](#)

14. What should I know when communicating with citizens about flooding?

Work with Your Floodplain Management Staff. Your floodplain management staff are great resources not just for understanding floodplain management, but for driving conversations about resilience. See Section G to learn what it takes to administer an effective floodplain management program.

Talk to them as you formulate ideas, projects and messages related to their area of expertise. Rely on their experience and knowledge to hone your message. They have probably interacted with the public as much as you have and may have insights that will inform your message.

Ask them for facts, data and graphics (pictures, videos, drawings, etc.) to support your message. And share credit with them when credit is due – remember, they're your go-to technical partners. And while you're talking to staff, find out if they



Leaders plan for flood mitigation. From left: Austin City Council members Ann Kitchen and Delia Garza as well as Mayor Steve Adler discuss South Austin issues Jan. 26 at a neighborhood forum at the Onion Creek Club.

Photo by Kelli Weldon, Community Impact Newspaper.

have the resources and authority to do what's expected of them, whether administering regulations, inspecting development or helping citizens after flood events.

Learn About Your Community's Flood Risk. An important first step in considering how to engage in conversations around flood risk is to understand your residents' current awareness of flood risk and how they think about your community's program. This is covered in more detail in Section A.

Unfortunately, many people view floodplain regulations as restrictions on the use of their land, without acknowledging that flood problems need attention and that how property is developed can make flooding worse. Helping citizens understand whether their properties are at risk and how flooding affects the entire community – and then building their understanding of options to reduce risk and protect public safety and property – should be primary objectives when formulating your messages.

The content in your final messages depends on your audience and your goals, whether you're looking to strengthen your community's floodplain management program, help overcome resistance to regulations, or encourage property owners to explore mitigation and buy insurance for financial protection. Whatever your goal, learning how flooding has affected your community in the past (see Question 2) will make it easier to talk to your constituents.

Prepare Materials for the Public. Messages are the heart of public outreach (see Section C). They are specific statements or directions that your community considers important for its audiences, which might include floodplain residents and businesses, those who live and work in areas behind levees and downstream of dams, and tourists who visit beaches and riverfront parks. Messages should either clearly state what action the audience should take, or provide basic information to tell people where to get additional information.



FEMA's Community Rating System (CRS) Coordinator's Manual

The [CRS Coordinator's Manual](#) provides sample messages and a variety of outreach projects to get your ideas rolling.

You should work with your community's floodplain manager and public information officer to tailor messages and outreach tactics to your community's needs.

Preparation of key materials before the next flood occurs may lighten the load on emergency managers and building safety inspectors, and help you get important information in the hands of citizens faster.

These materials may include templates and masters of handouts, mailers, press releases, videos, letters, building stickers, etc., designed to cover key messages to be disseminated before, during, and after a flood. An effective package will include the materials and the procedures for how they will be used or disseminated.

Some examples of pre-prepared materials described in the CRS Coordinator's Manual include:

- Citizen safety, including evacuation routes, shelter locations, and driving safety ([Turn Around Don't Drown](#)®)
- When it is safe to go back home and don't enter a flood-damaged building until it has been cleared by an inspector
- Owners must get permits before starting repairs
- Explanation of the substantial damage rule for floodplain buildings
- Mitigation opportunities during repairs
- Information on mitigation grant programs



15. Who is my audience?

In general, three groups of constituents have varied interests in your community's flood risk and floodplain management program: (1) property owners, tenants, businesses, organizations, and others; (2) real estate and insurance professionals; and (3) officials with other agencies.

Property Owners, Tenants, Businesses, Organizations, and Others. These constituents include homeowners, tenants, business owners, builders and developers, and special interest groups such as neighborhood associations, civic groups and environmental organizations. Their interests are personal and sometimes financial. Your messages need to relate flood protection to what matters to them. They'll have questions about the requirements and costs of complying with floodplain management regulations, effects on property appearance and value, saving money by reducing exposure to flooding, whether flood insurance is a good investment, which mitigation options will give them the best return on investment, what happens after a flood, the environmental impacts of floodplain development, and how the floodplain maps were created or can be changed.

Frequently overlooked populations vulnerable to impacts of flooding, with fewer resources to access assistance.

- Tenants renting property, particularly in multi-family housing
- Low-income residents with less access to flood risk information and fewer options for managing the risk
- Elderly in assisted living, nursing homes, etc.
- English as a Second Language residents and immigrant populations
- Tourists visiting waterfront and coastal locations
- Homeless residents



Center for Disease Control (CDC) [*Social Vulnerability Index*](#)

U.S. Climate Resilience Toolkit [*Social Vulnerability Index*](#)

Real Estate and Insurance Professionals. These professionals work with property owners and potential buyers. They may have questions or ideas for local government related to their observations and experiences. Even when sellers are not required to disclose flood damage or risk, real estate professionals can help potential buyers identify whether properties are in mapped floodplains. Insurance professionals are valuable allies who help owners understand and obtain flood insurance policies. After damaging floods, agents may help policyholders work with the claims adjusters who play a critical role in post-flood recovery. Unfortunately, misinformation about flood insurance availability is common, even among professionals (see Section F for basic information on flood insurance policies).

Officials with Other Agencies. Elected officials are often enlisted to support local floodplain managers and building officials in working with other agencies such as adjacent communities, regional planning districts, levee and drainage districts, state agencies and federal agencies. Building on others' knowledge and experience to help further your agenda involves listening, learning and asking for help. Remember, more things get done with willing partners, so use your communication skills to build a coalition to work toward solutions.

An effective education and outreach program can provide many benefits.

- When a flood warning is issued, people move things out of harm's way, evacuate in time and otherwise protect life and property.
- Homeowners and businesses retrofit or take other permanent flood protection actions.
- Developers stay away from high-hazard areas and areas needed to sustain natural floodplain functions, or plan to incorporate those areas as amenities.
- Prospective home buyers are aware of flood risks and make informed decisions before purchasing property, discouraging developers from building in flood hazard areas.
- Property owners choose to design new buildings to higher levels than required by codes.
- Property owners and tenants have flood insurance policies to protect their assets and provide financial assistance after future floods.
- Citizens demand local floodplain management programs that prevent problems from getting worse or adversely affecting others.



ASFPM [*No Adverse Impact How-to Guide for Education and Outreach*](#)

The more you can know about your audiences, the better. By making communication go both ways, that is, *hearing from* and *speaking to* your audience, you will learn more

about the issues facing your community. You may find it helpful to conduct a public survey, speak with other elected officials, review community complaints and inquiries about flooding, and hold listening sessions to help understand your audience's concerns. By anticipating your audience and their questions, you can work with your floodplain manager to prepare some answers ahead of time.

16. What are some good opportunities for timely engagement?

From the perspective of floodplain managers, it's important to plan ahead for three key times to communicate with citizens: before, during and after flooding.

You don't need a flood to make your point.

"Make your own event. Take advantage of groundbreaking or dedication ceremonies for flood control facilities, release of a new floodplain map, the presentation of a CRS plaque or an annual flood awareness week or month. A photo op of the mayor signing the proclamation for flood awareness week may draw the reporters and be a venue for your message."

ASFPM [*Building Public Support for Floodplain Management*](#)



The Collier County, FL [Floodplain Management website](#) shows this picture of the Board of County Commissioners presenting a FEMA CRS plaque to the contributing staff members, with a reminder that the CRS program saves the community a total of \$7.8 million in flood insurance premiums every year. What a great way to share the success with staff and inform the community about the financial success of the community's program! Accessed Feb. 8, 2019.

The following is adapted from the NFIP/CRS Update newsletter (December 2018/January 2019). Anyone interested in communication options and messages will benefit from reviewing the CRS materials (go to <https://crsresources.org/300-3/> and look for “330: Outreach Projects”).

Before the Next Flood – Ongoing Communications. Proactive communities send messages to the public well in advance of the next flood, so citizens don’t become complacent. People tend to think outreach should ramp up before hurricane season. Although that may be valid on the Gulf and Atlantic coasts and many areas east of the Mississippi affected as hurricanes and tropical storms move inland, most communities are vulnerable year-round. Look at the record of past flooding to see if your community has a “flood season,” and when it would make sense to distribute messages. Many governors and communities issue proclamations to designate flood awareness weeks. Keep in mind that most NFIP flood insurance policies don’t go into effect until 30 days after purchase.

Messages delivered before the next flood can range from dispelling myths about NFIP flood insurance (see Question 20 for many common myths), to safety on flooded roads ([Turn Around Don’t Drown®](#)), to property protection techniques and how owners and

tenants can gather information for insurance claims purposes. People who have not been flooded before tend to dismiss potential risk – how often have we heard some variation of “I’ve lived here for 20 years and it’s never flooded”? Reminding them of past events or flooding of nearby communities can drive home the point that flooding can happen along any body of water.

With help from your floodplain manager, you can tailor your message by identifying at-risk specific neighborhoods, roads and waterways. Informing citizens about the expected characteristics of local floods and letting them know what services they can or cannot expect from your local government can help decrease frustration during or after the next flood. Effective communication goes both ways, giving citizens the opportunity to let you know their concerns.

Montana Lt. Gov. Mike Cooney recommends flood insurance before spring snow melt.

Timing is everything when it comes to communicating flood risks and solutions.

In a [30-second video](#), which aired a month before the typical spring snow melt, Lt. Gov. Mike Cooney encouraged people to get flood insurance. The spot ran about 80 times in a two-week period, according to Traci Sears, Montana’s state floodplain manager. She reported an increase of 558 policies during this period, a significant increase for such a rural state with just over 1 million residents.

ASFPM [Hot Topics](#) (October 2018)

During the Next Flood. The National Weather Service keeps people informed about current conditions and forecasts, while local television stations compete to produce coverage and the latest information. Local media are assets to get your message out. Plan for regular press briefings and put out media releases to quash rumors, verify truths, remind citizens of specific actions they need to take, and show your response efforts.

Communities can take this a step farther and send messages that are specific to high-risk areas. For example, explaining why a particular neighborhood should expect more accumulation of water because of insufficient drainage, narrow channels or “choke points.” Especially when conditions change quickly, using social media such as Facebook, Twitter and similar platforms offers more flexibility and can be invaluable during events. Even when the power is out, people find ways to recharge phone batteries to stay connected.

After the Next Flood. Recovery after floods can be a little easier if citizens and community officials are better prepared beforehand. Even so, people faced with damaged homes and businesses can be overwhelmed by where to start. They’re most likely focused on just getting back to normal, without realizing there are ways to reduce exposure to future flooding. Those actions are called “mitigation.” See Section B for more about preparing for and recovering from floods. Question 7 will help you think through what to say when your constituents just want to get back to the way it was before the flood.

Communities can turn their websites into a one-stop shop for information on permit requirements, locations where utility repair crews are working, where people can pick up ice and water and tips on handling mold and mildew. What makes a successful recovery won’t be the same for everyone, so it will be important to get the right messages to the right people.



Informed elected officials are effective advocates.

When prepared with a solid understanding of the topics covered in this *Guide*, elected officials become effective advocates for flood safety, compliance with floodplain management regulations, post-flood recovery and the value of having flood insurance policies for financial protection. These messages can be shared in public meetings, one-on-ones with constituents, meet-and-greets, and when responding to media requests for interviews.

Property owners have responsibilities after buildings are damaged by flooding:

1. When buildings appear to have structural damage, obtain safety inspections by building officials or code enforcement officers before going into damaged structures. The safety inspection is not equivalent to a preliminary substantial damage determination.
2. Take photographs of all building damage and damaged contents.
3. If buildings are covered by NFIP flood insurance policies, contact insurance companies. Insurance companies will assign adjusters to inspect and prepare claim documentation. Owners must submit "Proof of Loss" information within 60 days of the flood event.
4. Seek emergency assistance by registering in person at Disaster Recovery Centers or [filing damage information on FEMA's website](#). Emergency assistance may also be available for tenants.
5. Apply for permits and provide documentation of damage and cost estimates to repair buildings to pre-damage condition. Detailed costs for repairs should be prepared and signed by licensed contractors.
6. Work closely with local officials and contractors to ensure permits are obtained before starting repairs.
7. Meet with local officials to determine requirements for bringing substantially damaged buildings into compliance with flood damage prevention ordinances and other applicable codes. This may involve elevating buildings on higher, compliant foundations or other mitigation measures.
8. Obtain and submit Elevation Certificates to document lowest floor elevations and other building characteristics.



Florida [Floodplain Administrator's Post-Disaster Toolkit](#)

17. How do I deliver my messages?

You'll use the same communication skills and methods to deliver your messages that you use every day with your constituents. Talking about disasters may not appeal to many, so stay positive when wording your messages: focus on lessons learned, actions that can improve the outcome and what has worked well in the past or in other communities. Explain how your community's floodplain management program and what you're advising citizens relates to what matters to your community members now, and what's important for your community's long-term resilience.

Avoid technical terms and avoid terms that are misleading and confusing. "Mitigation" (see Section B) and "100-year flood" (see Question 25) are important terms not used in everyday conversation, so be prepared to help people understand the concepts.

Talking Floodplain Management: How to Say it Better

From: ASFPM [Building Public Support for Floodplain Management](#)

What Not to Say	How to Say it Better
FEMA's map put you in the floodplain.	It took nature thousands of years to form this area to carry and store excess water. Then one day, your house was built in the middle of it. With this map, we can see better where the floodwaters are likely to go.
You have to comply. It's a federal requirement.	To protect you and your neighbors, our community adopted some rules... The rules look tough when you're dry, but after a flood people thank us for enforcing them.
There's a 1 in 100 chance you'll be flooded.	There's a good chance you'll be flooded. Maybe not today or tomorrow, but being in a floodplain means that you're much more likely to get flooded than if you were on higher ground.
I have no idea.	Let me put you in touch with the person responsible for that.

There's no need to reinvent the wheel. Many communities have already been through floods, and you can learn from their experiences and outreach materials. Here are a few ways to search for best practices and outreach projects in other communities:

- Read ASFPM's [Building Public Support for Floodplain Management Guidebook](#) and the [No Adverse Impact How-to Guide for Education & Outreach](#).
- Get in touch with your [state's association for floodplain managers](#).
- Attend a CRS users group (discussed in Question 43). Many CRS users groups meet quarterly, and communicating with the public is always a topic of interest.
- The [CRS Coordinator's Manual](#) is filled with ideas for outreach planning and implementation, and [Outreach Projects for Credit under the CRS](#) has very specific guidance you may find useful.
- Look on [FEMA Best Practices Portfolio website](#) for examples from other communities.

- Find a variety of tools [on this website prepared by *The Economist*](#), including memorable graphics and data, case studies, and lots of lessons learned.
- Call your [NFIP state coordinator](#) for assistance and guidance.
- Attend a state, regional or national conference on floodplain management to meet other practitioners.

With regard to television and print media, be sure to develop and inform your contacts at local television and radio stations, and the local papers. Many local reporters are generalists and appreciate the opportunity to learn more about topics of interest in the community. Hold background sessions or press briefings and keep reporters posted with fact sheets, emails, phone calls and frequent contacts. Write letters to the editor or offer to write an occasional column in the local paper.

Pictures of damage can draw attention in a story, but be sure to show how good practices such as elevating buildings higher work. Ask your staff to organize a press tour to visit areas where homes were built above the flood level. Encourage media to report on mitigation projects, such as removing homes from the floodplain or elevating homes on higher foundations. Look for opportunities to host an information table at festivals, neighborhood fairs, or farm shows.

18. What makes an effective outreach project?

Effective flood risk outreach projects have several attributes that make them successful:

- They get people interested first, and then provide relevant information or site-specific advice.
- They're short and interesting, have colorful graphics and photos.
- Presentations are delivered by enthusiastic, knowledgeable people.
- Messages are clear and unambiguous, and desired actions are spelled out using simple instructions.
- Information is geographically personalized and locally relevant.
- Source of information is viewed as credible, authoritative and relevant.
- Costs and benefits of various protection measures are outlined.

- Flood insurance is always recommended.
- They tie into or reinforce messages from other sources at the local level.

Effective outreach projects get the word out in ways that catch attention, whether through websites, blogs, podcasts, videos or to-the-point messaging on Twitter, Facebook or other social media platforms. Find out what your community is using for official messaging and how citizens interact with community officials. If your website gets only 10 hits a month, but the mayor's monthly podcast is heard by 300 people, the choice is obvious. Multiple approaches are most effective. Your public information officer and webmaster probably have ways to create a single message/graphic to post to multiple platforms at once.

Look for partners to help achieve your objectives.

Other public agencies, adjacent communities and private organizations may share your goals and may be happy to share your message. Use their platform, whether it be public speaking, newsletters or brochure distribution to help deliver your message as well.



Learn how floodplain management can be a mutual concern of stakeholders interested in recreation, fish and wildlife, water supply, water quality, urban redevelopment, economic development, housing improvement, agriculture, historic preservation, education, transportation and infrastructure by downloading ASFPM's [*Using Multi-Objective Management to Reduce Flood Losses in Your Watershed*](#).

19. What are some important messages I should consider?

Part of the answer to this question depends on when you're communicating (see Question 16 for suggested opportunities) and who your audience is (see Question 15 about typical audiences). Always work with your floodplain manager and emergency manager before issuing official statements. Choose a small number of high-priority messages rather than overloading citizens with many messages. For example:

- Find out if your property is in a mapped floodplain – check online or visit the permit office to view flood maps.
- Is your home or business in the mapped floodplain or an area that has flooded? Buy flood insurance for financial protection.

- Don't fill in the floodplain – water always takes the path of least resistance and filling in the floodplain can send floodwater onto your neighbor's property. Floodplain fill can also interfere with wetlands and groundwater infiltration.
- Don't dump in the creek – the house you flood may be your own.
- Building a new house? Go the extra step and elevate at least 3 feet above the minimum 1% annual chance flood elevation. Is there a mapped 0.2% annual chance floodplain (500-year, shown on FIRMs as shaded Zone X)? If yes, elevate above the elevation of that frequency flood. While better protecting your investment, lower annual flood insurance premiums will usually recover the added costs in a short time.
- Planning to add to or improve your home or business? You'll need a permit and should know about requirements before you get too far along in your planning.
- Floodplain regulations help reduce flood damage. Meeting the requirements may add to the cost of a project, but it's important that we follow our adopted rules. If we don't, we'll put people and property at risk, and we don't want that to happen. Our staff may be able to offer suggestions for affordable ways to satisfy the regulations.
- Was your home or business damaged? Call the building department for a safety inspection and be sure the power is turned off before you enter. Talk to the staff to find out what permits you'll need and what requirements apply.
- Your building was determined to be substantially damaged? Let's talk about the benefits of building back safer and stronger.

20. What should I know to dispel myths and counter common misconceptions about NFIP flood insurance?

Review the basics of NFIP flood insurance policies in Section F of this *Guide* and www.floodsmart.gov, where you can learn why property owners should buy and renew policies, what goes into the amount they'll pay, how they can pay less and what policyholders should do before and after floods. Some brief facts that will help you counter common myths you may hear or have to deal with from affected constituents are summarized here.

MYTH: I receive flood insurance through my homeowner's insurance.

FACT: Homeowner insurance policies do not normally cover flood damage. That is why the federal government backs the NFIP. You can purchase flood insurance through an insurance agent or company.

MYTH: My homeowner's insurance agent can tell me if I need flood insurance.

FACT: Not necessarily. Some insurance agents are not familiar with communities that participate in the NFIP or floodplain hazards. First, check with your community permit official about the flood risk in your area, including what's shown on maps and whether other areas have experienced flooding. Then talk to your agent about flood insurance coverage. For more information, go to www.fema.gov/national-flood-insurance-program or contact the NFIP call center at (800) 427-4661.

MYTH: Only those who live in a Special Flood Hazard Area can buy flood insurance.

FACT: Anyone can buy flood insurance if you live in a participating community, which must enforce floodplain ordinances and building requirements that meet or exceed FEMA guidelines. If your community does not participate in the NFIP, you can make a request for it to do so through your mayor, city council or county commissioner's office.

MYTH: It doesn't make sense to pay for flood insurance if you are in a low-risk flood zone.

FACT: People outside of high-risk flood zones shown on FEMA maps file more than 20 percent of all NFIP claims and receive one-third of federal disaster assistance for flooding. Flooding can occur on any low-lying land, even if not close to a stream, river, or shoreline. Flooding is the number one natural disaster in the United States. The NFIP's Preferred Risk Policy, available in Zone X, is very affordable. The annual premium may be as low as \$127 (plus fees) for \$20,000 building and \$8,000 contents.

MYTH: I don't need flood insurance if I can get disaster assistance from FEMA.

FACT: A flooding incident must be declared a federal disaster by the President before FEMA assistance becomes available. Federal disaster declarations are issued in less than 50 percent of flooding events. If a declaration is made, federal

disaster assistance typically is in the form of a low-interest disaster loan, which must be repaid. Any grants that may be provided are not enough to cover all losses. NFIP pays for covered damage even when major disasters are not declared, and may cover more of your losses.

MYTH: Even if my property did flood, it wouldn't be by much.

FACT: Just a few inches of water over the first floor can cost thousands of dollars to repair.

MYTH: You can't buy flood insurance right before or during a flood.

FACT: You can purchase flood insurance at any time, as long as your community participates in the NFIP. However, there is usually a 30-day waiting period after the premium payment before the policy becomes effective. Contact the NFIP call center at (800) 427-4661 if you are told you cannot purchase flood insurance.

MYTH: Flood insurance is only available for homeowners.

FACT: Most people who live in NFIP participating communities, including renters, condo owners and businesses, are eligible to purchase flood insurance. A maximum of \$250,000 of building coverage is available for single-family residential buildings; \$250,000 per unit for residential condominiums. The limit for contents coverage on all residential buildings is \$100,000, which is also available to renters. Commercial structures can be insured to a limit of \$500,000 for the building and \$500,000 for the contents.

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