

Building Safety is Local

Week 3 – Prepare Your Community (May 15th – 21st)

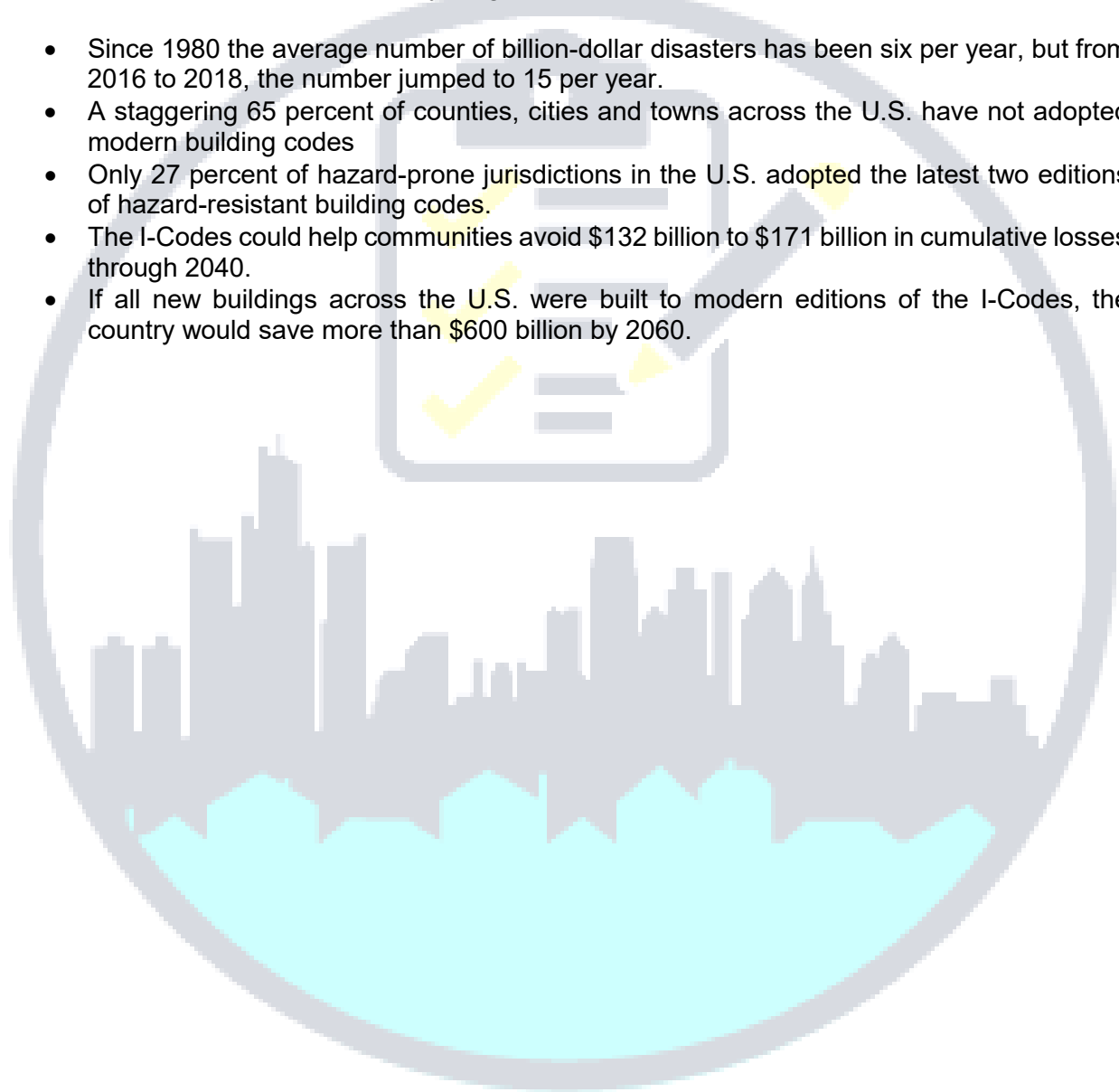
Week 3 of Building Safety Month focuses on how to protect your home and your community from disaster. Learn how building codes help to protect us against flooding, earthquakes, hurricanes and wildfire events. You'll also learn how to plan to help limit damage to buildings in your community. Safety Tips and Information is provided by the International Code Council. Go to www.buildingsafetymonth.org for more awareness about building safety. Join the Building Safety Month conversation – tag the International Code Council on social media and use #BuildingSafety365 to help spread the word!



How Codes Protect Against Disaster

According to the Federal Emergency Management Agency (FEMA), one of the most cost-effective ways to safeguard our citizens and our communities against disasters is to adopt and follow hazard-resistant building codes. When adopted and enforced, building codes can save lives, save billions of dollars and protect property for generations to come. Here are a few facts to consider:

- Since 1980 the average number of billion-dollar disasters has been six per year, but from 2016 to 2018, the number jumped to 15 per year.
- A staggering 65 percent of counties, cities and towns across the U.S. have not adopted modern building codes
- Only 27 percent of hazard-prone jurisdictions in the U.S. adopted the latest two editions of hazard-resistant building codes.
- The I-Codes could help communities avoid \$132 billion to \$171 billion in cumulative losses through 2040.
- If all new buildings across the U.S. were built to modern editions of the I-Codes, the country would save more than \$600 billion by 2060.



FEMA – The Case for Adopting Building Codes – November 2020 Publication

Adopt Modern Building Codes!

One of the most cost-effective ways to safeguard our communities against natural disasters is to adopt and follow hazard-resistant, building codes. Not only are casualties reduced, but the cost of building damage is also reduced during a natural disaster. Building codes also help communities get back on their feet faster by minimizing indirect costs such as business interruptions and lost income.

With hazard-resistant codes, buildings are constructed to withstand high-winds, flooding and earthquakes. A new FEMA study has made the impact of building codes on sustainability clear. The cost of not adopting building codes is too high.

FEMA has released its landmark study, “Building Codes Save: A Nationwide Study,” which shows that modern building codes, such as the International Building & Residential Code, lead to major reductions in property losses from natural disasters. The analysis, which was based on a database of 18 million actual buildings, the frequency of hazard events in each locality, and the type of building code in effect, showed that over a 20-year period cities and counties with modern building codes would avoid at least \$32 billion in losses from natural disasters, when compared to jurisdiction without modern building codes. The actual savings would be higher, when you consider that the study focused only on buildings constructed since 2000, which represent only 20% of the 100+ million buildings in the country, and it did not include “indirect losses” such as business interruptions, time of the job to rebuild, and tax revenues lost by local jurisdictions.

The FEMA report calculates losses from three types of natural hazards (earthquakes, flooding, and wind) for each state and Washington, D.C. For details, see www.fema.gov/building-codes-save.

The Good, the Bad and the Avoidable

Modern, building codes address many concerns, including public health and safety, resiliency, and affordability.

While local government officials, construction industry professionals, and many citizens are aware of this fact, currently, in the U.S. 65 % of counties, cities, and towns across the country have not adopted modern building codes. The people living in those places are bearing a dangerous, costly, and unnecessarily high level of risk in the face of natural disasters.

Many state, local, tribal, and territorial jurisdictions across the country can break the cycle of destruction by adopting modern, hazard-resistant building codes. This will buy down risk, which benefits local residents, communities, and leaders.

National Investment Strategy

To achieve our mission, we must address underserved communities most often suffering disproportionately during and after a disaster and proactively consider the impacts of future conditions.

Breaking the Chain of Destruction

Some states have broken the chain of destruction by adopting modern building codes that protect property and people during natural disasters. Florida and California, pioneers in this field, have had modern hazard-resistant building codes in place since the 1990s. Other states such as Virginia, New York, and Montana have followed suit, putting in place state-wide building codes that local jurisdictions are required to adopt.

Other states have broken the chain from the bottom up; that is, local jurisdictions have pushed the envelope with the adoption of hazard-resistant building codes and raised the bar on their home states to do the same. For example, Miami-Dade County, Florida raised the standards for roof construction and mandated the use of impact-resistant windows. The state incorporated these requirements into its mandatory state-wide code. Similarly, the City of San Antonio blazed a new trail in the state of Texas with the regular adoption of modern code updates, most recently the ICC 2018 International Building Code. Other local jurisdictions in Texas can provide a higher level of protection to their citizens and adopt modern building codes, too.

Many states still lack a state-wide modern building code that local jurisdictions are required to adopt. This includes many tornado-prone states in the southern/central part of the country and some other flood-prone states in the northern Midwest. These areas represent some of the greatest or best opportunities to strengthen U.S. communities in the face of natural disasters.

Hazard-Resistant Building Codes Are Affordable

The construction features that allow buildings to survive natural disasters are not expensive: on average they amount to 1%-2% of total building construction costs. For a 0.7% cost increase, a building will have the extra stiffness to withstand shaking during an earthquake. A 1% cost premium will provide the roof tie-downs, window covers and other features that help a house survive high winds during a hurricane. In addition, 1.2%-1.7% cost increase over standard construction costs will raise the ground floor, generating the “freeboard” needed to withstand most floods.

It's Not Just About Direct Costs

The indirect costs of recovering from disasters are also huge: business interruptions, lost personal income, outsize debt, homelessness, lost municipal tax receipts, etc. For these reasons, it can take years for communities to recover from natural disasters.

The Cost of Doing Nothing is Too High

Now that the FEMA study has made crystal clear the impact of building codes on economic sustainability, who can afford not to adopt them in our own communities?

Asking the Hard Questions?

- What is my community's contribution to the \$132 Billion in property loss reduction?
- How can we increase these savings to \$600 Billion by 2060?
 - All new buildings built to modern building codes.
 - Promote I-Code adoption.
 - Community support of I-Code adoption.

What will be OUR Legacy?

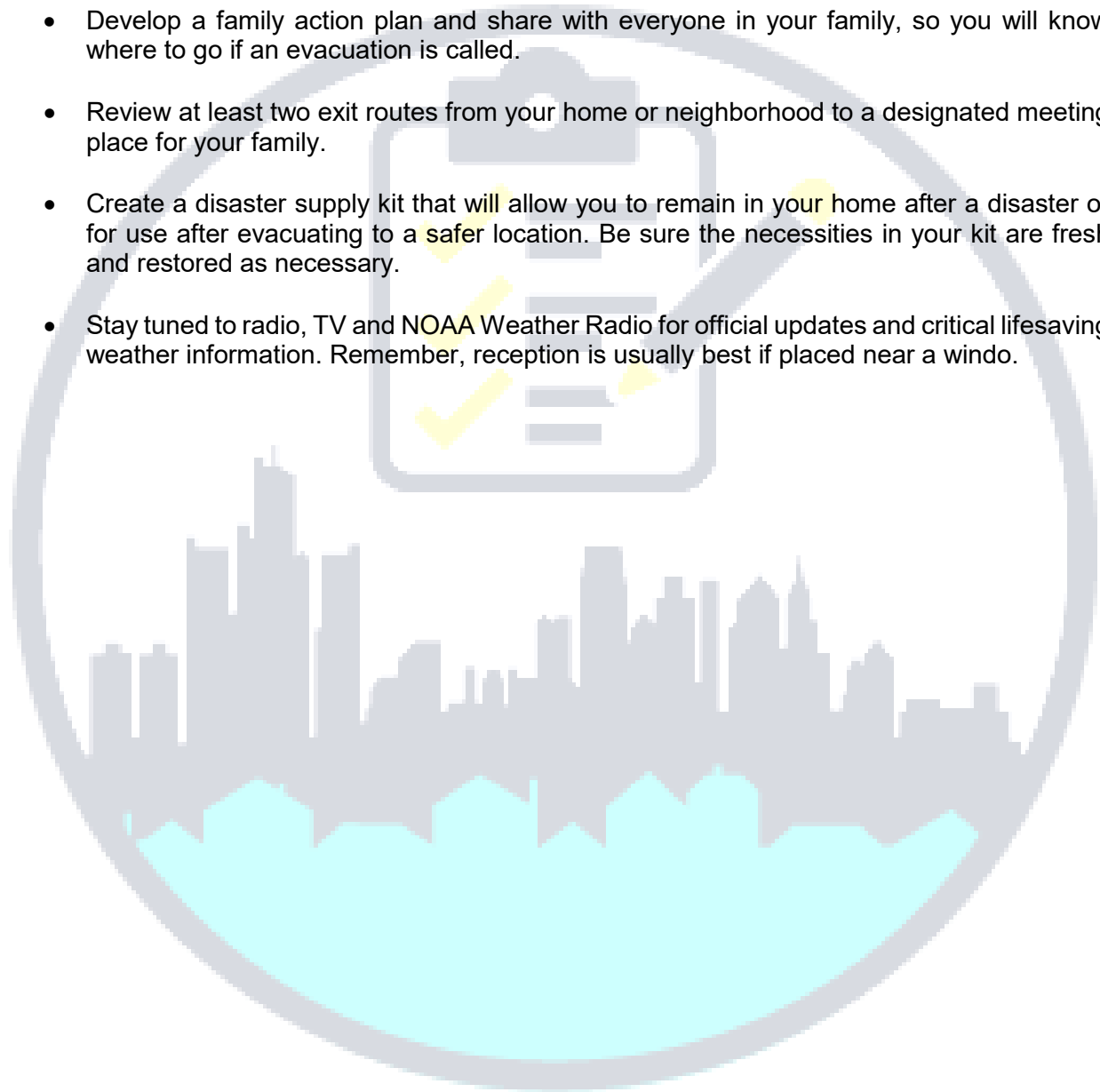
As stewards and members of our communities, we will be remembered for our actions in the face of the greatest challenges of our time. Prominent among these is being able to survive and rebound from natural disasters, which pose an escalating threat to life and property across the U.S. The evidence clearly points to the cost-effectiveness of modern building codes in strengthening disaster resilience. Achieving universal coverage of modern building codes is a big challenge.



Disaster Preparedness

Having an evacuation and communication plan in place and an emergency supply kit on hand can help protect you and your loved ones. Review these simple, life saving tips and visit [Ready.gov](https://www.ready.gov) for specific tips on dealing with earthquakes, extreme heat, floods, home fires, hurricanes, tornados, wildfires and more.

- Develop a family action plan and share with everyone in your family, so you will know where to go if an evacuation is called.
- Review at least two exit routes from your home or neighborhood to a designated meeting place for your family.
- Create a disaster supply kit that will allow you to remain in your home after a disaster or for use after evacuating to a safer location. Be sure the necessities in your kit are fresh and restored as necessary.
- Stay tuned to radio, TV and NOAA Weather Radio for official updates and critical lifesaving weather information. Remember, reception is usually best if placed near a window.



Disaster Safety

IMPORTANT TIPS – To Remember For Disaster Safety and Mitigation

- Develop a family action plan and share with everyone in your family, so you will know where to go if an evacuation is called. Review at least two exit routes from your home or neighborhood to a designated meeting place for your family. Plan ahead for your pets as many shelters will not accept them.
- Create a disaster supply kit that will allow you to remain in your home after a disaster or for use after evacuating to a safer location. Be sure the necessities in your kit are fresh and restored as necessary.
- Stay tuned to radio, TV and NOAA Weather Radio for official updates and critical life-saving weather information. Remember, reception is usually best if placed near a window.
- Flooded roads could have significant dangers hidden by floodwaters. Never drive through floodwaters or on flooded roads. Do not attempt to cross a flowing stream. It takes only six inches of fast flowing water to sweep you off your feet and two feet of water to move an SUV-sized vehicle.
- If you live in a high wind or hurricane prone area and do not have tested and code approved shutters for protection from windborne debris, consider temporarily protecting your doors and windows by mounting exterior grade, 7/16" minimum thickness plywood and fastening it into place.
- Secure lawn furniture and any other loose outdoor items that can become windborne and can cause injury or damage during storms with high winds. Don't forget trash cans, grills toys and potted plants.
- Consider building or retrofitting to create a tornado safe room in your home. Follow ICC/NSSA 500 Standard for the Design and Construction of Storm Shelters for detailed construction information and to ensure you achieve the highest level of protection for your family.
- Use Surge Protective Devices (SPD) in your home to protect electronic appliances from all but the most severe electrical surges or direct strikes.
- In wildfire prone areas, remove fine (dead grass, leaves, etc.) and coarse fuels (dead twigs, branches, etc.) within 30 feet of a building to create a survivable space in case of wildfire. Be sure to remove dry leaf and pine litter from roofs, rain gutters, decks and walkways. Follow the International Code Council's International Wildland-Urban Interface Code for detailed requirements.
- Before winter sets in consider freeze protection for water piping and exterior faucets.

Safety First – Disaster Preparedness – Tips for Your Home and Family

Prepare Your House

There are many ways you can better prepare your house to withstand the effects of a natural disaster.

BEFORE A HURRICANE

- Long before storm season approaches install permanent protection for windows and doors with glazing.
- If your house does not have permanent shutters, plan to protect your windows and doors with glazing with the low-cost alternative of plywood panels. Install permanent fasteners long before storm warnings, so panels can be put in place quickly. Long before storm season approaches, cut 7/16" minimum thickness exterior grade plywood to fit each window and doors with glazing. Store the panels where you can easily access them during an emergency. Clearly mark each panel so you can quickly determine with window or door it covers. Visit www.flash.org for detailed instructions on how to use plywood for emergency board up.
- The roof of your house is very vulnerable to hurricane winds. Reinforce the connection between the roof and walls with hurricane straps and bracing to resist a hurricane's uplift.
- Reinforce double-entry front doors as well as garage doors.
- Clear away dead or weak tree branches that may break off and damage your house in high winds.
- Remove all outdoor furniture, lawn items, planters and other materials that could be picked up by high winds. These items can produce wind-borne debris that can break windows and sometimes tear openings into your house, letting in damaging rain and wind.

BEFORE A FLOOD

- Stock up on building materials such as plywood, plastic sheeting, hammer, nails, saw, pry bar, shovels and sandbags. In the case of an emergency, you will be better off already having these items on hand.
- Prevent electrical damage by raising the level of electrical components (fuse and circuit breaker boxes, meters, switches and outlets). This can save you from the expense of replacing a flood-damaged system, and it will help prevent fires caused by short circuits. Remember that a licensed contractor should do this work.

BEFORE AN EARTHQUAKE

- Brace overhead light fixtures.
- Repair any defective electrical or gas connections.
- Secure your water heater by strapping it to wall studs or bolting it to the floor (this can prevent a possible gas leak and provide a convenient source of clean water after an earthquake).
- Also, other large appliances that are connected to water and/or gas lines should be secured.
- Repair cracks in foundations and ceilings.
- Bolt your house to its foundation.

BEFORE A WILDFIRE

- Install smoke detectors on every level of your house, in every bedroom, and in hallways leading to bedrooms.
- Use fire-resistant materials when building or renovating. Most importantly, use tile or flame-retardant shingles on your roof.
- Keep vegetation, yard debris and any other combustible materials at least 30 feet away from your house.
- Plant trees away from your house at a distance greater than their mature height. If you do have trees close to your home, trim them to a height of 8 to 10 feet and keep them free of dead or dying wood.
- Use stone walls, swimming pools or patios to create a shield safety zone between vegetation and your house.
- Avoid planting shrubs near your house. Instead, try alternatives like a fountain or rock garden.
- Clear rain gutters of dead limbs, needles and other debris.

Prepare Your Family

Although no one can prevent natural disasters from occurring, there are many things you can do to make the impact less devastating for your family.

Every home should have 3 key elements in place before a disaster strikes.

- Evacuation Plan
- Communication Plan
- Emergency Supply Kit

EVACUATION PLAN

In the event of an emergency such as a flood, wildfire, tornado or hurricane, you may be instructed to evacuate your house. Depending on the type of natural disaster, you may have to travel 20 to 50 miles to get your family to safety. Establish a “safety destination” (like a friend’s or relative’s house some distance away) and plan several different routes to get there so you can drive around roadblocks or hazards. Practice your plan and become familiar with each route so you will be better prepared.

You may need to turn off your gas, water and electricity before you evacuate. Each member of the household should learn when and how to do this.

COMMUNICATION PLAN

During an emergency it is usually easier to make long distance calls, so choose an out-of-state relative to be your family’s communication center.” Be sure that each member of your family knows the name and phone number for this person in case you are separated. By having everyone call on central person, it will be easier for you to check on each other and reunite after a disaster.

Teach every family member when and how to dial 9-1-1 for emergency assistance.

KNOW YOUR NEIGHBORS

Find out if any of your neighbors will need extra help during an emergency. The elderly, disabled and people with small children may need you to lend a helping hand

EMERGENCY SUPPLY KIT

Whether you are preparing for an earthquake, tornado, hurricane, flood or wildfire, you will need the following basic items in your kit:

- battery-operated radio and extra batteries
- one gallon of water per person per day for at least three days, for drinking and sanitation
- flashlight and extra batteries
- canned food
- first aid kit and manual
- prescription medications you take every day such as insulin, heart medicine and asthma inhalers
- non-prescription medications (aspirin or non-aspirin pain reliever) and dust masks
- large garbage bags and plastic ties for personal sanitation
- local maps
- infant formula and diapers
- portable container for important family documents
- cash or traveler's checks and change
- fire extinguisher
- matches in a waterproof container
- paper and pencil
- books, games, puzzles or other activities for children
- battery-operated lantern and extra batteries
- blankets
- hand-operated can opener
- durable shoes and change of clothes for each member of your family
- basic tools (wrench, hammer)
- utility gloves

Placing all items in a sturdy, closed container outside your home where it can be easily located. Restock food and water twice a year. For detailed information on an emergency preparedness kit, please visit Homeland Security website at www.ready.gov.

PET SUPPLY KIT

An emergency kit for your furry friends should include:

- food
- water
- bowl
- medication and medical records
- first aid kit (talk to your veterinarian about what is most appropriate for your pet's emergency medical needs)
- collar with ID tag, harness or leash

- crate or other pet carrier
- sanitation (pet litter and litter box, newspapers, plastic trash bags)
- a picture of you and your pet together
- favorite toys, treats or bedding
- blanket
- name and phone number of your veterinarian

Place all items in a sturdy, closed container outside your home where it can be easily located. Restock food and water twice a year.



Are You Ready?

FEMA Publication September 2020 P-2064 – An In Depth Guide to Citizen Preparedness

Benefits of Planning Ahead

There are many benefits of planning ahead for disasters. The most important benefits are staying safe and helping yourself and your community recover.

People and families that plan for emergencies will:

- Help keep people safe.
- Limit property damage.
- Know what to do during and after a disaster.
- Better manage their savings.
- Support community preparedness.
- Help their community get back up and running after a disaster.

Take simple actions to protect against disaster helps you, your family, your community, and your country in important ways.

For Key Protective Actions for Specific Hazards visit the following:

- [Providing first care Until Help Arrives](#)
- [Emergency Financial First Aid Kit](#)
- [National Flood Insurance Program](#)
- [National Weather Service](#)
- [Safe Rooms for Tornadoes and Hurricanes](#)
- [N95 Respiratory Protection](#)
- [Make a Plan](#)
- [Safety Skills](#)
- [Build A Kit](#)
- [Water](#)
- [Financial Preparedness](#)
- [Mobile App](#)
- [Disasters and Emergencies](#)
- [Building Science](#)

For some options to get you started in supporting community disaster resilience:

- **Community Emergency Response Team (CERT) Program** ([Ready.gov/Cert](https://www.ready.gov/cert)). CERT programs teach you basic disaster response skills, such as fire safety and emergency medical operations.
- **Participate in Community Emergency Preparedness Planning.** ([FEMA.gov](https://www.fema.gov)). Many communities have local emergency preparedness councils that provide preparedness resources and plan for emergencies. To learn more, contact your local emergency manager.
- **Medical Reserve Corps** (aspr.hhs.gov/mrc). The Medical Reserve Corps is committed to improving the health, safety, and resiliency of local communities.
- **Neighborhood Watch** ([nnw.org](https://www.nnw.org)) and **Volunteers in Police Service** ([theiacp.org/VIPS](https://www.theiacp.org/VIPS)). Both programs empower the public to protect their community through volunteer crime prevention.

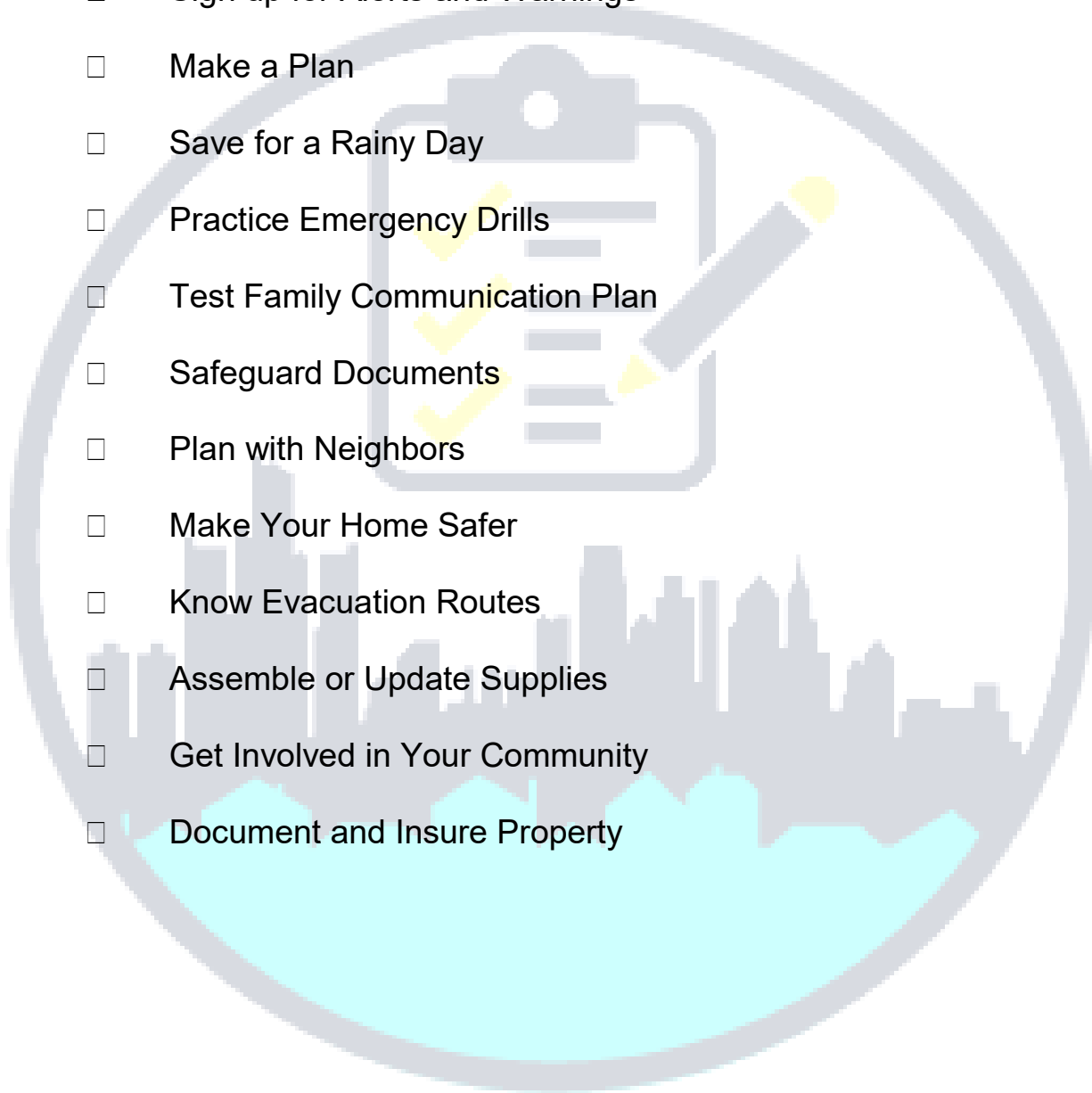
- **Fire Corps** (firecorps.org). Fire Corps lets community members volunteer their time and skills to local fire departments for non-emergencies.
- **American Red Cross** (redcross.org). Local American Red Cross chapters can help train you in CPR and first aid and volunteer to help mass care and sheltering operations.
- **Voluntary Organizations Active in Disaster (VOAD)** (nvoad.org). VOAD is a group of organizations that have made disaster-related work a priority and volunteer to help communities post-disaster.
- **Meals on Wheels America** (mealsonwheelsamerica.org). Meals on Wheels America gives meals and important disaster preparedness information to older adults through community nutrition programs.
- **Civil Air Patrol** (gocivilairpatrol.com). The Civil Air Patrol finds lost persons; gives comfort in times of disaster; and promotes science, technology, engineering, and mathematics (STEM) education.
- **American Radio Relay League** (arrl.org). The American Radio Relay League trains people interested in learning how to use ham radios.
- **You are the Help Until Help Arrives** (community.fema.gov/until-help-arrives). Until Help Arrives is a program that teaches simple life saving skills to use until emergency services come to help.
- **Youth Preparedness** (Ready.gov/kids). FEMA Youth Preparedness programs offers steps for young people to get involved in their community's preparedness.
- **Join or Start a Preparedness Project** (nationalservice.gov/serve). Learn how to find a need in your community, build a team to help, and complete your project.
- **Teach Others to be Prepared** (Ready.gov). Once you have prepared yourself and your family, become a leader in preparedness.
- **Make a Financial Donation** (FEMA.gov/volunteer-donate-responsibly). Support major disasters by donating cash or goods that may help meet the needs of your community in times of disaster.

Recovering from a disaster can be a slow process. If help is available knowing how to find it makes the process faster and less stressful.

- [Returning Home after a Disaster](#)
- [Coping with Disaster](#)
- File an Insurance Homeowners Claim
- [Federal Disaster Assistance](#)

12 Ways to Prepare

There are many ways to take action and prepare before a disaster occurs. The actions below include some of the most important ways to help yourself, your family, and your community increase your preparedness. Simple actions at home and in your neighborhood can make a big difference!

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- Sign up for Alerts and Warnings
 - Make a Plan
 - Save for a Rainy Day
 - Practice Emergency Drills
 - Test Family Communication Plan
 - Safeguard Documents
 - Plan with Neighbors
 - Make Your Home Safer
 - Know Evacuation Routes
 - Assemble or Update Supplies
 - Get Involved in Your Community
 - Document and Insure Property

Hazard Mitigation

Hazard mitigation is a defensive approach that reduces long-term risk to people and property from future disasters. According to Climate.gov, the impacts of climate-related hazards are already occurring, and they are projected to worsen in many regions around the world. Here are a few tips to consider before the next hazardous event:

- Visit Climate.gov to check how your exposure to five common climate-related hazards is projected to change over time.
- For earthquakes, start by anchoring or relocating top-heavy or large objects, securing fixtures, electronics and water heaters keeping a clear path to the exit and latching your cabinets.
- For flooding, store valuables in waterproof containers, flood-proof basements, elevate utilities above the BFE, install flood vents and use flood-resistant insulation and drywall.
- For wildfires, construct your roof with fire-resistant materials, create 30 feet of defensible space around your home, remove debris from roof and gutters and seal gaps around exterior walls and roof.
- For severe winds from tornados or hurricanes, protect windows and glass doors with storm shutters, reinforce garage doors, fortify your roof and remove rotting trees and limbs.

For more information of Hazard Mitigation visit:

- [Tornado Safety and Recovery](#)
- [Earthquake Safety and Resources](#)
- [Hurricane Safety and Resources](#)
- [Flood Safety and Recovery](#)
- [Winter Safety Resources](#)

Mitigation is the effort to reduce the loss of life and property by lessening the impact of disasters. Stated plainly, mitigation can keep natural hazards, like flooding and hurricanes, from having catastrophic impacts.

Mitigation reduces a property's risk to future events and allows residents to return home more quickly, with less damage, after an event. While it may involve a larger initial investment, mitigation pays off in the long run. In fact, estimates indicate that on average, for every \$1 spent on mitigation, \$4 are saved from future losses.

Mitigation Options for Homeowners

There are a wide range of options for protecting your home from flood and wind events through mitigation. Be sure to consult with a licensed contractor and the local building department before making any structural changes to understand requirements and obtain any necessary permits.

Flood Mitigation Options

- Anywhere it rains, it can flood. Protect your investment in your home by purchasing flood insurance, even if you do not live in a high-risk flood zone.
- Elevate your home's lowest floor above the Base Flood Elevation (BFE). Elevating can lower flood insurance premiums and reduce the risk from increased future flood levels.
- Elevate or flood-proof HVAC and/or mechanical units, ductwork, electrical systems, and other utilities above the BFE to protect against flood damage and reduce repair costs.
- Install flood vents in foundation walls, garages and other enclosed areas. Flood vents reduce flood damage by allowing water to flow through and drain out.
- Use flood-resistant materials in areas of your home below the BFE, like replacing carpeting with tiles or using flood resistant insulation and gypsum wallboard (Sheetrock), to prevent water from doing major damage.
- Anchor any fuel tanks to the floor and make sure vents and fill line openings are above the BFE (this may require permission from your fuel provider). A fuel tank can tip over or float in a flood, spilling fuel and becoming a fire hazard.
- Install a backflow valve on your sewer system to prevent sewage back up in your home.
- Add waterproof veneer to exterior walls to prevent shallow flooding from damaging your home. Seal your basement walls with waterproofing compounds.

Wind Mitigation Options

- Install hurricane shutters to protect windows and glass doors.
- Gable end roofs are more susceptible to high wind than other roof types. If you have a gable end roof, add bracings to reinforce the roof.
- Consider fastening the roof to the walls with hurricane straps.
- Reinforce garage doors and double-entry doors to prevent failure under wind pressure. Garage doors can be reinforced with girts and by strengthening the glider wheel tracks. Double-entry doors can be reinforced with a heavy-duty dead bolt, adding slide bolts on one of the doors, and using long hinge attachments on the door and frame.
- Maintain your property. Anything from loose shingles to trees can become a windborne missile. The distance between your home and any tree should be greater than a full-grown tree's height.

General Protective Measures

Mitigation reduces or eliminates future losses, but you should also consider other measures to protect your family, your valuables, and your peace of mind.

- Have a go-kit and make an emergency plan. Instructions and templates are available from Ready.gov. Familiarize yourself with local emergency and evacuation plans.
- Consider purchasing a generator for your home that automatically turns on when the power goes out. If you install one, elevate it above the BFE.
- Store important documents and sentimental items like photographs above the BFE (preferably on an upper floor). Make copies of your photos and store them in more than one location.

Mitigation Requirements for Homeowners

If your local community official determines your home to be substantially or repetitively damaged by flood, you may be required to bring the structure into compliance with the community's local floodplain management ordinance. If that's the case, you may be able to utilize up to \$30,000 if you have a flood insurance policy issued through the National Flood Insurance Program (NFIP) which offers a coverage called Increased Cost of Compliance (ICC). ICC provides financial assistance to eligible policyholders to offset the costs to mitigate structures relatively faster than without having flood insurance. For more information, talk to your insurance agent.

For more information regarding Hazard Mitigation Assistance Program and Policy Guide visit [FEMA.gov](https://www.fema.gov). FEMA also provides grant funding for certain kinds of mitigation projects. For more grant assistance information visit [FEMA.gov](https://www.fema.gov).

