



Argh!

I JUST FLOODED! NOW WHAT?

A Quick Guide to Help Missouri Residents Recover Smartly

About this Guide

What a mess!

Returning home after a flood is a shock. Flood muck is on everything. The smell is horrible. The cleanup and repairs ahead of you look overwhelming. However, taking the right steps and knowing the right people will make it easier and, most importantly, reduce the chances of this happening again. **Be smart!**

In the Show Me State, there are plenty of **experts to help you recover** smartly. They work for your state, your community, and volunteer groups. Don't be afraid to contact the experts and get their help. They want to help you.

There are also **programs and funding** available to protect your building from future flooding. Take advantage of these programs. Now is the time to make sure this doesn't happen again.

Smart recovery won't be easy. It won't happen quickly. But it's something you must do. You don't want to go through this again.

This guide was developed and funded jointly by the State Emergency Management Agency (SEMA) and the Federal Emergency Management Agency (FEMA). Questions, comments, and requests for additional copies should be directed to the Missouri State Emergency Management Agency at 573-526-9129.

Use this Guide. Follow the Steps. Recover Smartly!

Step One – Returning Home After the Flood

See page 1

Tips on clean up, debris removal, and getting help.

Step Two – Now What?

See page 13

Guidance on floodplain rules, permit requirements, and starting repairs.

Step Three – Make Sure It Doesn't Happen Again

See page 27

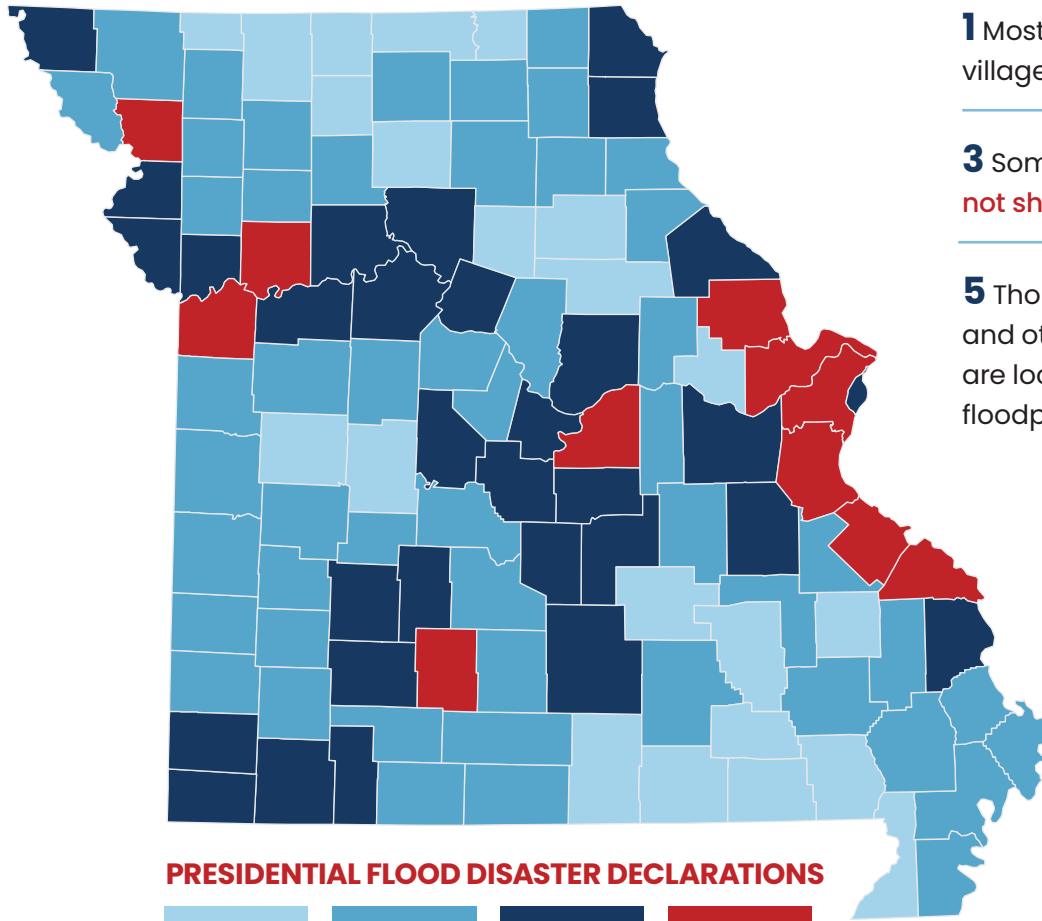
How to protect your building from future flooding, who to contact, and programs to help pay for it.

Appendix/Resources

See page 51

Examples of flood protection and all the organizations to help get it done.

Missouri Floodplain Facts



PRESIDENTIAL FLOOD DISASTER DECLARATIONS



Number of Declarations by County (1965-2016)

1 Most counties, cities, towns, and villages in Missouri have **flood risk**.

2 **Most Floodplains** are shown on Flood Insurance Rate Maps.

3 Some flood risk areas **are not shown** on the flood maps.

4 Floods can and **DO** extend beyond the mapped flood risk area.

5 Thousands of buildings and other structures are located in **high risk** floodplains.

6 **84 counties** and **597 municipalities** in Missouri have adopted floodplain regulations and joined the National Flood Insurance Program.

Did You Know?

- Dangerous floods occur often in Missouri.
- Floods can impact small streams and just a few homes or large river systems and entire communities.
- Only a small percentage of floods are declared Federal disasters.

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Step One – After the Flood

Return Home Safely

Flooding is, by far, the deadliest natural hazard in Missouri. Unfortunately, more than 80% of flood deaths in Missouri occur in vehicles. If you evacuated your home, return only when authorities indicate it is safe and have provided instructions.

GETTING TO YOUR HOME:

- The road you normally use may have been damaged by the flood.
- Avoid driving through flooded areas and standing water. As little as six inches can cause a vehicle to float. It is easy to lose control.
- Never (**ever!**) drive around barriers.
- Don't expect barriers to block off flooded low-water crossings or bridges, because floodwaters in Missouri often rise so quickly authorities cannot close a road in time.
- Some motorists never see the high water until it's too late due to poor visibility from darkness or heavy rain. Be alert for high water whenever heavy rain or flash flooding is forecast. Slow down when visibility is limited.
- Don't drive if you don't have to when flash flooding is occurring in your area.
- Be aware of areas where floodwaters have receded. Roads may have weakened and could collapse under the weight of a car.
- **Turn Around – Don't Drown!**



Step One – After the Flood

Be Smart! Before Doing Anything...

TAKE THESE SMART STEPS TOWARD RECOVERY

1 See that everyone is safe and out of danger. Remember new flood crests, falling debris, fire, or other hazards could still exist.

2 Contact friends or family to let them know you are okay.

3 If you have flood insurance, contact your insurance agent immediately. Give your name, address, and a phone number where you can be reached (see page 46).

4 Take pictures of the damage before beginning cleanup (see page 5).

5 Keep accurate records. List all cleanup and repair costs, flood-related living expenses, and actual losses, such as furniture, appliances, and clothing.

6 If you have insurance, an insurance adjuster will need to assess damage to the house. The owner should sign a proof-of-loss statement. Review it carefully. Ask questions if needed. Additional damage can be added when found.

7 Contact the Local Building Official to ensure permit requirements are met (see page 20).

8 Contact your State Hazard Mitigation Officer regarding programs and funds to protect your building from future damage (see page 28).



TAKE THESE SMART SAFETY PRECAUTIONS

- Wear sturdy shoes, rubber gloves, and eye protection during cleanup.
- If mold is present, wear a respirator that can filter mold spores. People with existing physical conditions should not enter the building, or check with physician first.
- **NEVER** mix chlorine bleach with ammonia or vinegar.
- Be sure your tetanus shot is up-to-date. Contact your local health department for more information.

Step One – After the Flood

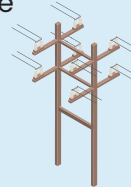


Entering Your Home

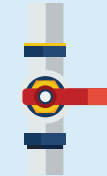
You want to get back to normal. But, even after the flood threat has ended, the conditions can remain dangerous. The steps you take now will make a difference.

WHAT TO DO WHEN YOU RETURN HOME

Watch for downed power lines and live wires. Make sure that electrical service is disconnected and/or turned off before entering any structure.



Turn off outside gas lines at the tank or meters. Let the building air out for several minutes to remove gas fumes before going inside.



Don't wade in floodwater. There are likely human waste and dangerous chemicals in that water!



Don't use matches, cigarette lighters, or any other open flame. Gas may be trapped inside. Use a flashlight to get around.



Be aware of the risk of electrocution. Do not touch electrical equipment if it is wet or if you are standing in water.



Have an expert check gas and electrical equipment.

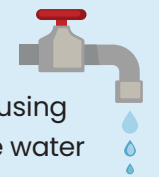


Don't use them until they have been checked for safety.

Clean and disinfect everything that became wet. Mud left from floodwater can contain sewage and chemicals.



Check with local officials to learn whether the community's water supply is safe to drink. If using a well, have the water tested.



Step One – After the Flood

Document the Damage. Photos, Photos, and More Photos!

Before starting with cleanup, you should first document the condition of the building. Photograph the inside and outside of all areas. These photos will help insurance adjusters, damage inspectors, and disaster assistance experts.



THE BASICS

- Any digital camera will be fine including the camera on your phone.
- If possible, take photos before you clean up after an event.
- Take photos of any items before you throw them away.
- Keep a list of each area or item you're photographing as you go around.
- Check the photo on the screen to make sure you've captured what you need.

WHAT PHOTOS TO TAKE:



- Take a photo of your **house number** or **mailbox** to confirm the location of the damage.
- Walk around the outside of the building. Photograph the front, sides, and back of the building, and fit the **entire side of the building into photo** if you can.
- Take closer photos of any **exterior damage**.
- Take photos of each **interior room**.
- Take different views and angles in **each room** to make sure you have the entire room.
- Photograph **any areas and items that were damaged**. Zoom in on specific details.
- When photographing appliances, make sure you capture **model and serial numbers**.


Step One – After the Flood


Debris Removal


Flood waters contain many contaminants... including dangerous chemicals and human waste! Anything that has been wet or damp can grow dangerous mold.

Some items will be ruined with just an inch of water (example: carpeting, wall board, and appliances). Deeper floods may add damage to ducts, furnace, air conditioner, sewage and well systems, utilities, and the building foundation. Ask your community about debris removal and collection.

See the next page for information on an excellent University of Missouri Extension guide on cleaning up after a flood.

 Wear protective clothing, including rubber gloves, rubber boots, and a mask.

Be careful when moving  furnishings or debris. They are waterlogged and heavy. Get help.

 Throw out items that absorb water and cannot be cleaned or disinfected (example: mattresses, carpeting, wood veneered furniture, stuffed animals and toys).

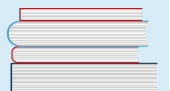
Throw out all food, beverages, and medicine exposed to flood waters and mud.



Clean and disinfect every surface. Scrub surfaces with hot water and heavy-duty cleaner, then disinfect with a solution of 1/4 cup chlorine bleach per gallon of water. This includes all kitchen wear (dishes, pans, utensils, etc.).



Photographs, books, and papers can be frozen and cleaned later by drying slowly and carefully (or take them to a professional).



Pump out flooded basements gradually (about one-third of the water per day) to avoid structural damage. If the water is pumped out completely in a short period of time, pressure from water-saturated soil on the outside could cause basement walls to collapse.



Get repair service for damaged wells, septic tanks, pits, and leaching systems as soon as possible. Damaged water and sewage systems are health hazards.



Step One – After the Flood

Drying Out

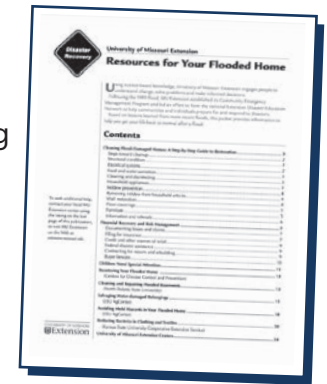
Before replacing anything, make sure building materials have had enough time to dry out. Failing to do so can leave your home infested with mold which will create health issues in the home for years to come.

There are no chemicals which can be sprayed on building materials that will permanently prevent mold growth. Chemicals such as bleach can slow the growth of existing mold, but nothing will keep the mold from returning to the wet materials. Therefore, building materials in the home must be dried down to 13% moisture or less before drywall and other coverings are reinstalled.

Buy a moisture meter. Moisture meters are relatively cheap (\$30 – \$50) and available at any home supply store. A moisture meter is worth the investment.

Wear gloves and wash your hands and face frequently, or use hand sanitizer if washing with water is not an option.

University of Missouri Extension has an excellent step-by-step guide to cleaning flood-damaged homes. The **free publication** covers electrical systems; repairing walls; cleaning furniture, flooring and floor coverings, bedding, and kitchen items; and controlling mold and mildew. The guide also includes financial advice on such topics as filing insurance claims, avoiding fraud, and hiring a contractor. There is also advice on coping with stress brought on by flooding. Call your local MU Extension Office. They can help! Copies of “**Resources for Your Flooded Home**” are available at MU Extension offices, disaster recovery centers, and online (<https://extension.missouri.edu/mp904>).



The publication Healthy Homes is also a good reference for cleaning up after a flood (https://www.hud.gov/sites/documents/REBUILD_HEALTHY_HOME.PDF). However, MU Extension should be the primary source of good advice for residents of MO!

Debris removal, cleanup, and drying out **do not** require a local permit. These activities should happen as quickly as possible when it is safe to return after a flood event. Mold grows quickly on damp items. To avoid mold growth, remember: **when in doubt, throw it out.**

Repairs to your home **will require a local permit.** Check with your local permit official before doing any repairs (see page 20).

**Cleanups
vs.
Repairs**

Step One – After the Flood

Who's Knocking at Your Door?

After a flood, expect a lot of visitors. **Government officials will never ask for money.**



INSURANCE

► Flood Insurance Adjuster

If you file a flood claim, you will receive a call and a visit from a flood insurance adjuster (see page 46).

► Other Insurance Adjusters

If you file a claim with homeowner's insurance or auto insurance, an adjuster will call or visit to assess damage.

► IMPORTANT INFORMATION!

No matter who knocks...always ask for an ID and always verify with local police. **NEVER** give out personal information, credit card numbers, or bank account information.

GOVERNMENT

► FEMA Inspector

If you apply for federal disaster assistance, a FEMA inspector may visit to assess damage. **Ask for a FEMA ID badge.**

► Government Officials

Officials may inspect buildings to make sure they are safe and to gather damage data. **Ask for an ID** and verify with local police.

► Local Floodplain Administrator

If you live in a floodplain (see page 16), your community must determine if your structure is substantially damaged (see page 22). **Ask for an ID** and verify with local police, if needed.

OTHERS

► Scammers

Unfortunately, scammers are common after a disaster. Be cautious of anyone approaching you. See the warnings in the red box.

► Contractors

Be cautious of anyone who approaches you unsolicited. Don't hire anyone without verifying them first. Make sure you know the work plan and have a signed contract. Only pay after the work is done to your satisfaction.

► Volunteers, Non-profits, and Churches

Missourians want to help those in need. Many legitimate groups will offer help. But always verify (see the red box). Page 9-11 lists several legitimate volunteer groups.

► Gawkers

People are curious. Gawkers will drive by to look at the damage. Don't let them into your house.

Step One – After the Flood

What to Do If You Need Help or Have Special Needs

Many organizations in Missouri provide food, shelter, supplies, and cleanup assistance to individuals and families after a disaster. If you are affected by a flood, it is important to monitor news reports and other media sources for information about where to get emergency housing, food, first aid, clothing, and financial assistance. Missourians who are affected should also contact their County Emergency Management Agency or local officials on seeking assistance. See the Appendix of this guide for a full listing of resources by topic.

The three major organizations providing assistance include:



American Red Cross

THE RED CROSS ph: (866) 438-4636

The American Red Cross responds to thousands of emergencies every year. No other government agency or charity does more. The Red Cross goes wherever they're needed to make sure people have clean water, safe shelter, and hot meals when they need them most.

After the emergency response phase has been completed, the Red Cross can also help people recover and address lingering community needs including:

- Provide emergency financial assistance after a disaster,
- Distribute financial assistance for households that need extra help in the long-term, and
- Provide grants for community recovery services.

The Red Cross Locator is an easy-to-use tool that allows individuals to quickly locate nearby shelters or assistance during or after emergencies.

<https://www.redcross.org/get-help/disaster-relief-and-recovery-services/find-an-open-shelter.html>



Step One – After the Flood

THE SALVATION ARMY ph: (800) 725-2769

As one of the largest disaster-relief organizations in the country, The Salvation Army is ready with immediate response and recovery unique to the community affected. The Salvation Army is often among the first on the spot, providing flood relief. The Salvation Army provides mobile showers, bottled water, and a clean blanket to anyone in need. The Salvation Army can also provide temporary housing or help with stress or emotional trauma, if needed.



The Salvation Army also helps with long-term recovery, restoration, and rebuilding projects and the dispersal of financial help and donated goods. The Salvation Army will provide assistance as long as the community needs it. The Salvation Army is committed to accommodating all those in need without unlawful discrimination or harassment based on age, race, color, religion, sex, national origin, marital status, disability, citizenship, sexual orientation, gender identity, gender expression, or any other characteristic in accordance with capacity to help.

The Salvation Army location finder is an easy-to-use tool to find your local Salvation Army location: <https://www.salvationarmyusa.org/usn/contact/>

THE UNITED WAY 2-1-1 (dial 2-1-1 or 800-427-4626)

The United Way 2-1-1 of Missouri and Illinois is a 24/7 resource designed to connect those in need with helpful resources and agencies near you. United Way 2-1-1 partners with thousands of nonprofits to provide a network of assistance. The United 2-1-1 website has easy-to-use links for resources based on your zip code. These resources include:

- City/County Emergency Managers
- Disaster Recovery Organizations
- Disaster Recovery Services
- Disaster Shelters
- Special Needs Providers

Here is the link to the United Way 2-1-1 services search:

<https://mo211.myresourcedirectory.com/index.php/disaster>



Step One – After the Flood

Other volunteer and faith-based organizations:

MISSOURI CITIZENS CORP PROGRAM ph: (573) 526-9100

Missouri's Citizen Corps Program focuses on bringing together local community organizations and agencies to increase individual and citizen preparedness. Through the support of a local community Citizen Corps Council, Missourians have the opportunity to learn about emergency preparedness and the importance of volunteer service. Communities that develop effective Citizen Corps Councils can be more resilient when facing any kind of disaster.



GOVERNOR'S FAITH-BASED AND COMMUNITY SERVICE PARTNERSHIP FOR DISASTER RECOVERY

The mission of the Governor's Faith-Based and Community Service Partnership for Disaster Recovery is to aid Missourians' recovery process by developing and implementing a holistic approach to disaster recovery, maximizing public and private resources addressing human services, housing, infrastructure, community, and economic development issues. Members include hundreds of faith organizations and volunteer services. The inventory is organized by county and can be found here:

<https://sema.dps.mo.gov/docs/programs/Planning-Disaster-Recovery/GFBCSP/2013-LTRC-COAD-List.pdf>

CONTACT YOUR LOCAL EMERGENCY MANAGEMENT AGENCY

Your county or municipal emergency management director is the best source of information on local conditions and programs, along with assistance that may be available due to any recent federal disaster declaration. Here is the link to find your emergency manager:

https://sema.dps.mo.gov/recover/assistance_resources.php



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Step Two – Now What?

Know Your State and Local Floodplain Administrators

Recovery Superheroes!



STATE FLOODPLAIN MANAGERS

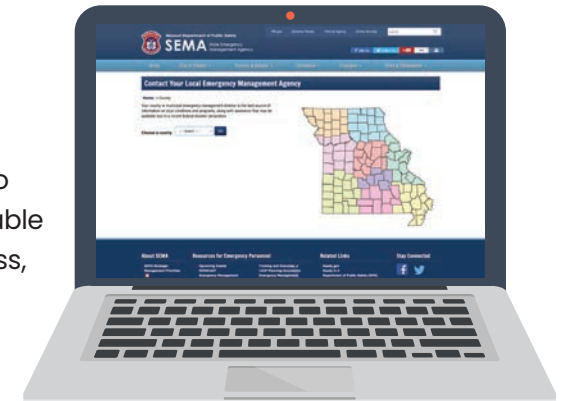
Floodplain programs in Missouri are administered by SEMA's Floodplain Management Section. The SEMA Floodplain Management staff are experts in flood regulations, flood mapping, and flood recovery programs. They have seen it all. Nobody in Missouri knows the flood recovery process better than them!

Make use of their skills!

<https://sema.dps.mo.gov/programs/floodplain/> ph: (573) 526-9129

LOCAL FLOODPLAIN ADMINISTRATOR

Missouri has some of the nation's best floodplain administrators. Your county or municipal floodplain administrator is the best source of information on local conditions and programs. They can also help with assistance that may be available after a flood. During the recovery process, you will need their help. They are key players to your success. **Get to know your local floodplain administrator.** Be nice to them!



An easy-to-use inventory of local floodplain managers and their contact information can be found on the SEMA website: <https://sema.dps.mo.gov/county/>

Step Two – Now What?

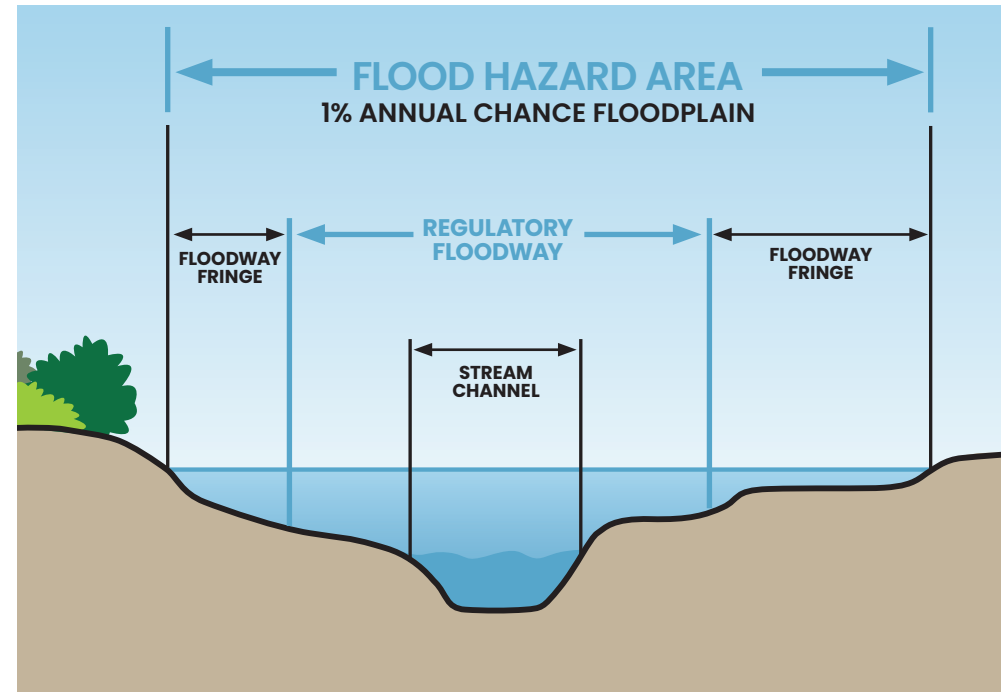
Understanding Streams, Rivers, and Their Floodplain Areas

All streams in Missouri have a floodplain. Some floodplain areas are more dangerous than others. In some areas, floods may be shallow or slow-moving water, while in other areas floods can be very deep or very fast. It is important to understand the flood conditions and the flood risk of any stream near you.

In Missouri, the flood risk area for most rivers and streams are shown on the FEMA floodplain maps (see page 16).

These maps often show the flood risk area, how high the water could get, and even the high-risk area closer to the stream called the floodway.

Within the floodway portion of the floodplain, water is often moving fast. It is the most dangerous area of the floodplain. Regardless of where you live, it is important to stay aware of your flood risk.



What is a 100-Year Flood?

Floodplain areas are typically defined and mapped based on the 100-year flood. The 100-year flood can also be called the base flood or 1% chance flood. **The flood height of a 100-year flood is called the Base Flood Elevation or "BFE"**. On average, there is a 1% chance of a flood this large happening any year. However, don't let the term 100-year flood fool you. Floods can and do occur any time. The 100-year flood can even occur more than once in a single year. Regardless of what it is called, it is a high-risk area.

Step Two – Now What?

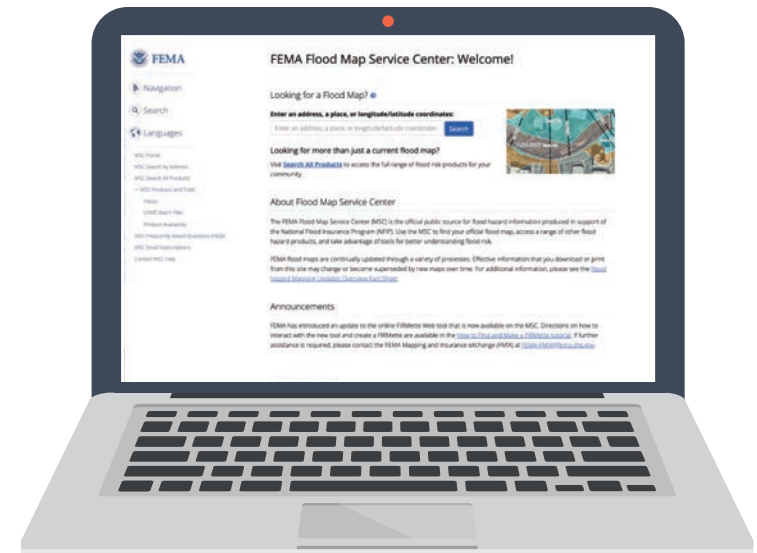
Am I “In” or “Out” of the Floodplain? Check the Floodplain Maps

If you have just flooded, there is a good chance you are in a mapped floodplain. However, it is a good idea to check the FEMA floodplain maps just to make sure.

The floodplain maps are called Flood Insurance Rate Maps (FIRMs), and they are the official floodplain maps for your community. They show the areas which are subject to inundation by the 1-percent-annual-chance flood event (also called the base or 100-year flood). Certain rules apply within these mapped floodplain areas.

On average, structures located within the mapped floodplain have nearly a 30% chance of flooding during the life of a standard 30-year mortgage.

Remember, properties located outside of the mapped floodplain are not guaranteed to be safe from flooding. Bigger floods can (and do) happen!



► **FEMA floodplain maps are available for free public viewing online at: msc.fema.gov/portal**

If needed, contact your local floodplain administrator to help you understand the local floodplain maps.

Step Two – Now What?



Floods Don't Read Maps

While the floodplain maps are a good reference, don't be fooled. Floods can't read maps. Floods don't always stop at the line on the map! In fact, they frequently go past the line on the map!

Major storms and flash floods can cause flooding that rises higher than the 100-year flood level shown on the maps.

In Missouri, large rainfall events are happening more often. These heavy rainfalls often happen in one small area, and flash flooding occurs.

Flash floods are a real problem in Missouri, and flash flood risks are often not shown on the floodplain maps. If you live in a valley or other low lying area, have a backup plan when heavy rainfall is predicted.

Be smart, be safe, and protect your home or business by building higher ([see page 49](#)).

What is the **Flood Protection Elevation**?

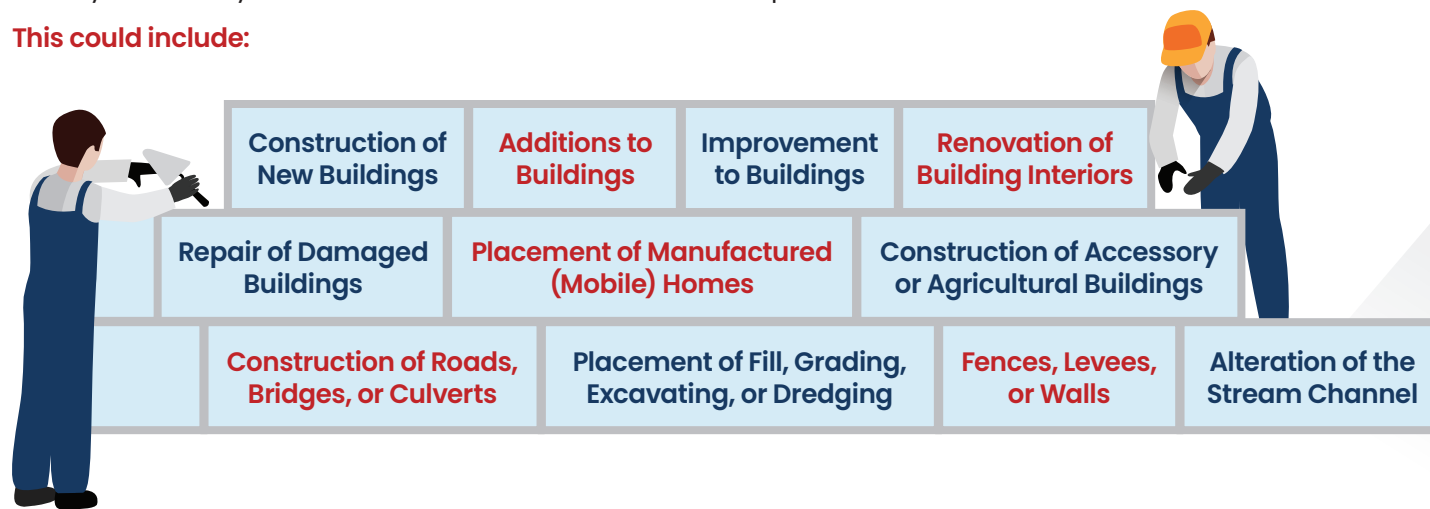
Most communities in Missouri have a designated height to which buildings in the floodplain must be protected. This height is typically the 100-year flood elevation plus an additional 1-2 feet of protection. **This level is called the Flood Protection Elevation.**

Step Two – Now What?

Are Permits Required in the Floodplain?

Most Missouri counties and communities require a floodplain or building permit for any activity which may disturb or alter the natural land in a floodplain.

This could include:



IMPORTANT INFORMATION!

YOU MUST GET ALL PERMITS BEFORE YOU WORK IN A FLOOD ZONE.

Step Two – Now What?

Understand the Basic Floodplain Rules

Before doing anything in a floodplain, check with your local floodplain administrator. Certain permit requirements exist. The majority of communities in Missouri have adopted local floodplain regulations and have joined the National Flood Insurance Program (NFIP). Most of the communities in Missouri have very similar floodplain rules. However, some communities have adopted higher standards.

The Basic Rules Are:

1 Any activity in the floodplain requires a permit. This can be new construction, repairs, or improvements to existing buildings, fences, filling, storage of materials, levees, walls, etc.

2 Developments in the floodplain cannot block or obstruct flood flows. Changes (for example fences, walls, or filling) cannot divert flood waters onto neighboring property.

3 All new residential buildings in the floodplain must be constructed so that the lowest floor (including basement) is at or above the flood protection elevation.

4 Lower areas (below the flood protection elevation) must be constructed of flood resistant materials; open to flood flows (flow-through); have no HVAC, electric, or plumbing; and be used only for building access, minimal storage, or parking.

5 Non-residential buildings can be elevated or floodproofed (made watertight). However, the work must be certified by an engineer.

6 Buildings which are damaged (or improved) more than 50% of the market value, must also be elevated or flood-proofed to the flood protection elevation. Do not make repairs until a local permit is issued for the work (See page 22).

Again...**always check** with your local permit official before doing any work in the floodplain.



SEMA
Website

The SEMA Floodplain Program website includes all of the resources needed for floodplain permitting:

- Floodplain Quick Guide
- FEMA Technical Bulletins
- Floodplain forms and templates
- Workshops and training

<https://sema.dps.mo.gov/programs/floodplain/>

Step Two – Now What?

Do I Need a Permit to Make Repairs?

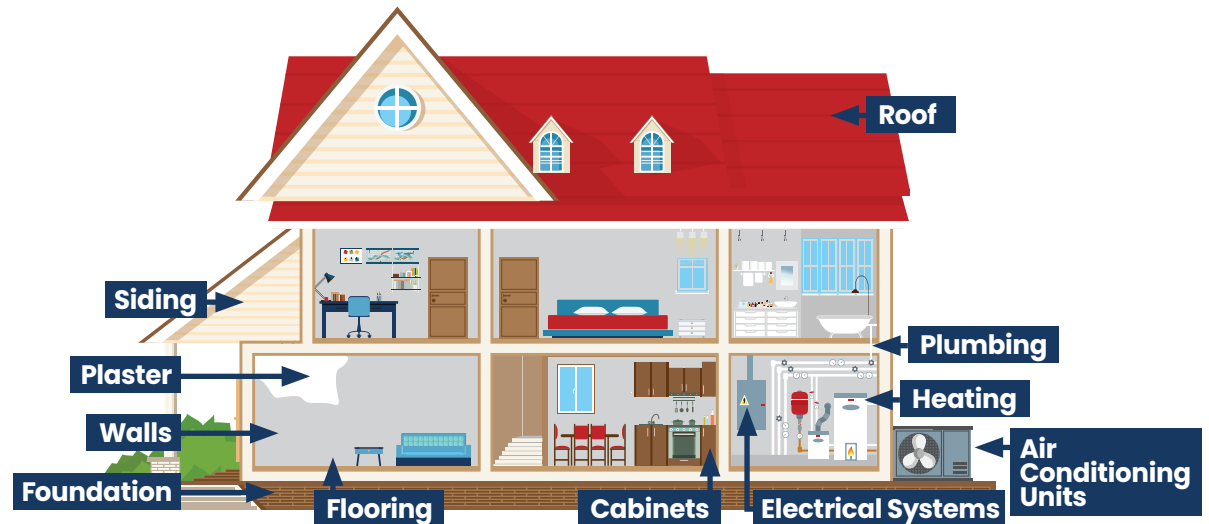
In a word: **Yes.**

All local floodplain management ordinances in the State of Missouri require permits for the repair or reconstruction of flood damaged structures. Check with your local permit official before doing any work.

Communities which participate in the National Flood Insurance Program (NFIP) are expected to enforce a floodplain management ordinance. In Missouri, some local ordinances may have additional permit steps.

Part of Floodplain Development Permit Application (only key parts shown)

Application No.: <u>01004</u>	Date: <u>MARCH 29, 2017</u>
Owner of Agent: <u>David & Sally Jones</u>	Builder: <u>ABC Builders, Inc.</u>
Date: <u>03-29-17</u>	
SITE DATA	
1. Street Address: _____	
2. Type of Development: Filling <input checked="" type="checkbox"/> Grading <input checked="" type="checkbox"/> Excavation <input type="checkbox"/> Minimum Improvement <input type="checkbox"/> Routine Maintenance <input type="checkbox"/> Substantial Improvement <input type="checkbox"/> New Construction <input type="checkbox"/> Other <input type="checkbox"/>	
5. Value of Improvement (fair market): \$ <u>N/A</u> Pre-Improvement/Assessed Value of Structure: \$ _____	
6. Is the Property Located in a Designated FLOODWAY? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
7. In designated Floodplain FRINGE or SFHA without Designated FLOODWAY? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
8. Elevation of the 1% Base Flood Elevation (ID source): <u>FEA (FHA)</u>	
9. Elevation of the Proposed Development Site: <u>FEI.S</u>	
12. Other Permits Required? Corps of Engineers 404 Permit: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Provided <input type="checkbox"/> State Dept of Natural Resources: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Provided <input type="checkbox"/>	
PERMIT APPROVAL / DENIAL	
Plans and Specifications Approved/Denied this <u>25th</u> Day of <u>June</u> , 20 <u>17</u>	
Signature of Property Owner or Agent: <u>David M. Jones</u>	Authorizing Official: <u>Robert Penney</u>



You **DON'T** need a permit for cleanup activities and temporary emergency repairs to prevent further damage.

This includes:

A. Removing and disposing of damaged contents, carpeting, wallboard, and insulation.

B. Hosing and scrubbing, or cleaning floors, walls, and ductwork.

C. Covering holes in roofs or walls and covering windows to prevent the weather from inflicting further damage.

D. Removing sagging ceilings, shoring up broken foundations, and other actions to make the building safe to enter.

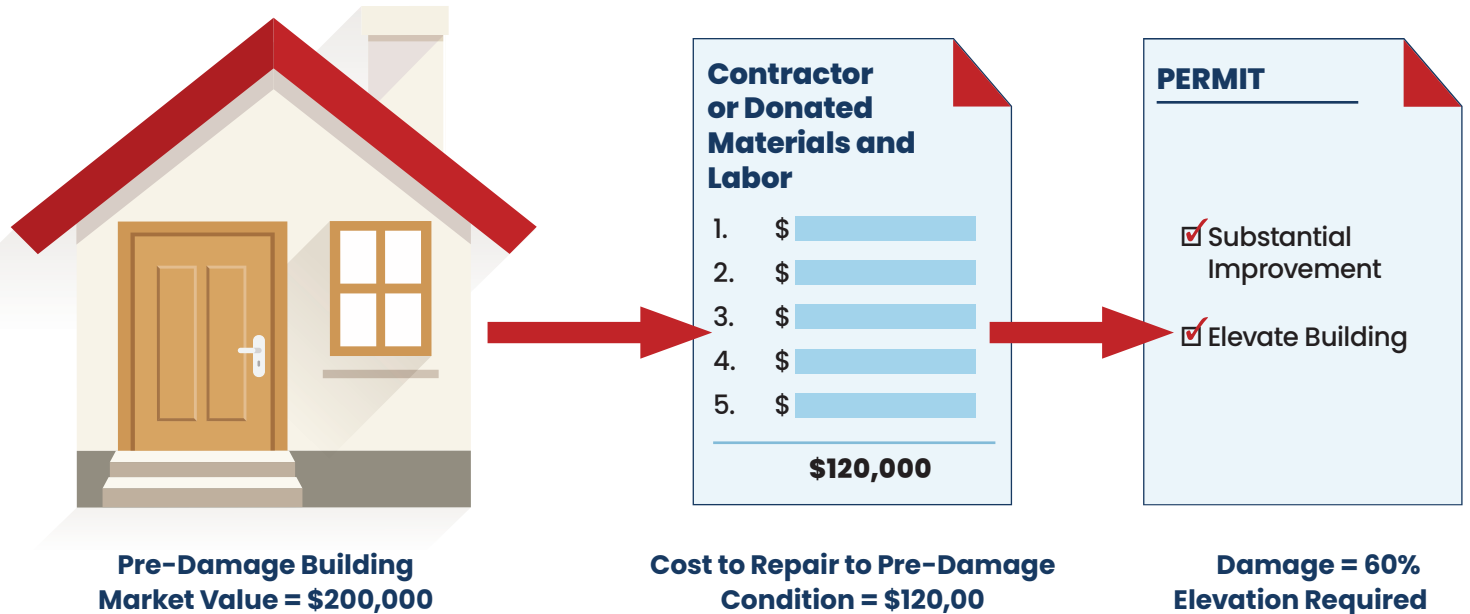
Step Two – Now What?

Repair of Damaged Buildings

Permits are required to repair damaged buildings, regardless of the cause – flood, fire, wind, earthquake or man-made.

Before a permit can be issued detailed estimates of the cost to repair a building to pre-damage conditions are required.

If the costs to repair the building are 50% or more of the pre-damage market value, the building is “substantially damaged” (see page 22).



Step Two – Now What?

Substantial Damage Regulations: The 50% Rule

Substantial damage is when the cost to repair the building is 50% or more of the building's pre-damaged market value.

If the building is found to be substantially damaged, the structure must be brought into compliance with the floodplain ordinance. In other words, the structure must now be protected from future flooding. This typically requires elevating the structure. In the worst cases, the structure may need to be demolished. Don't panic. There are programs to help you ([see page 40-41](#)).

HOW IS SUBSTANTIAL DAMAGE DETERMINED

The cost of repairs must be calculated for full repair to "pre-damaged" condition, even if the owner elects to do less. The total cost of repair includes structural and finish materials as well as labor. If local building codes require the structure to be repaired according to current codes, these additional costs must also be included in the full repair cost of the structure.

The market value is for the building only. The value of the land and exterior improvements (pool, landscaping, walkways, etc.) are excluded.

Cumulative Cost

Many communities track cumulative damages and improvements. Cumulative substantial damage or improvements occur at the point where the sum of the costs for multiple repairs or improvements equal 50% or more than the original market value of the building. Cumulative substantial damage is common after a building has been flooded several times.



HOW MUCH WATER = 50% DAMAGE?

Frame buildings typically take two or more feet of first floor flooding to be substantially damaged.

Manufactured homes can be substantially damaged with as little as a few inches of flooding.

Because these guidelines are not always true, it is best to always check with your local permit official.

Step Two – Now What?

You Got a Substantial Damage Letter. Now What?

If you received a letter from your local community notifying you that your home or business is substantially damaged, you probably have a lot of questions and may not be sure what to do next.

WHAT DOES THE SUBSTANTIAL DAMAGE LETTER MEAN?

- A notice that your home or business is substantially damaged means your structure was determined by the community to have a heavy amount of damage. This damage could be from any source (water, wind, fire, debris impact, and more). Your structure is likely below the required level of flood protection required by your community.
- The letter will **outline the actions you must take** to meet local regulations — which may require elevating, demolishing, or locating your home outside the high-risk flood area.

CAN I APPEAL THE SUBSTANTIAL DAMAGE DETERMINATION?

- If you disagree with the substantial damage determination, your community has an appeals process. You may be able to provide more detailed repair-cost estimates made by a contractor and a market value via a property appraisal.
- Your floodplain administrator or other official responsible for the determinations and appeals will review only information that is more detailed than that used to make the substantial damage determination. To appeal, you must have good documentation.

More questions? Get answers in FEMA’s publication “Answers to Questions About Substantially Damaged Buildings”: https://www.fema.gov/sites/default/files/2020-07/fema_p213_08232018.pdf

⇒ NOTICE ⇐

Because this building is located in a floodplain and was damaged by flooding, a damage assessment must be conducted by the (village or county).

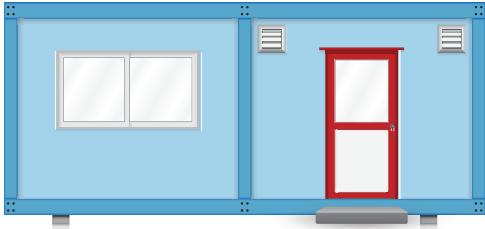
Before occupying this building or doing any repair work you must call the (village or county) Department of Zoning and Building Safety at (___) _____ to schedule an inspection.

Failure to obtain reconstruction approval may result in a penalty.

Step Two – Now What?

Temporary Occupancy – Can I Stay in a Substantially Damaged Home?

You might be able to stay in your substantially damaged home while making repairs. However, the rules can differ from community-to-community. Check first with your local official.



When a community allows temporary occupancy, the permit conditions will stipulate the specific types of repairs that can be made and a deadline when the work must be completed. No additional repairs or improvements are allowed.

Remember, temporary occupancy may buy some time and give you a place to stay, but a substantially damaged home **MUST** eventually be brought into compliance with the community's floodplain regulations. This means elevation, floodproofing, or demolition.

IS THERE FINANCIAL ASSISTANCE TO HELP BRING MY STRUCTURE INTO COMPLIANCE?

There may be. Your local community may be considering mitigation funding. If you have a National Flood Insurance Program policy, there may be additional funding to help you. See the next chapter of this guide for a description of mitigation alternatives

Temporary FEMA Housing

Temporary housing is occasionally provided by FEMA but:

- Only available **after a federally declared disaster**, and
- When **no other housing options are available** to qualifying survivors.

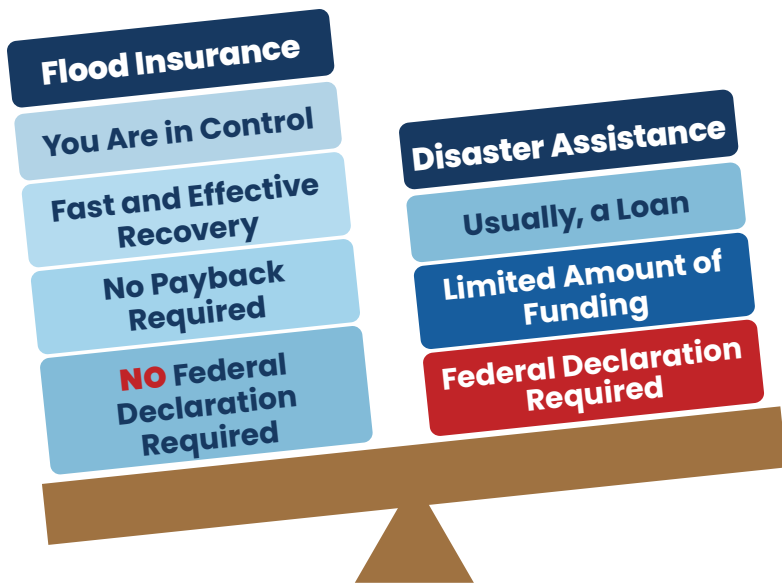
FEMA housing can include short-term rental assistance or longer term manufactured housing or RVs. These are **NOT** intended to be permanent housing.

Applicants must qualify, sign a FEMA agreement, and show progress trying to find permanent housing. Occupants will be asked to vacate the FEMA units if no progress is made finding permanent housing.

Step Two – Now What?

Disaster Assistance vs. Flood Insurance. Which is Better?

Spoiler Alert!
The Answer is Obvious.



FEDERAL FLOOD INSURANCE

is not a disaster-assistance program. It is insurance to help property owners recover more quickly after a loss.

Flood insurance through the National Flood Insurance Program can be purchased by most Missouri residents. Any licensed Missouri insurance agent can sell you a policy. Private flood insurance is also available in some cases. A flood insurance claim can be made for any flood event, large or small. A federal flood declaration is not required.

It is always best to have a flood insurance policy (see page 44).

FEDERAL DISASTER ASSISTANCE is only available after a federally declared disaster (and most floods in Missouri are not federally declared).

Most disaster assistance programs assist with immediate needs after an event (housing, clothing, and food). On average, disaster assistance payments are limited (often less than \$5,000). The disaster assistance funding is not meant to make repairs or help with long-term recovery from a flood.

Many forms of disaster assistance require that you obtain flood insurance to qualify. Federal laws also require that property in high flood-risk areas maintain continuous flood insurance. This will affect future owners.



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Step Three – Make Sure You Don't Flood Again

Know your SHMO (State Hazard Mitigation Officer)

The SHMO knows more about mitigation funding and mitigation activities than anyone in Missouri.

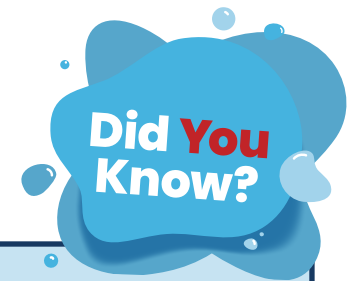
What is mitigation? Mitigation is taking the steps to make sure you don't flood again. (See the next page.)

The SHMO is the primary point of contact in Missouri to conduct mitigation planning, encourage mitigation projects, and fund mitigation.

The SHMO works closely with local officials in Missouri communities to prepare Hazard Mitigation Plans (HMP) so residents can be eligible for FEMA grants.

Once the plans are completed and the funding is approved, the projects can begin.

FEMA mitigation grants can be used for a wide variety of projects aimed at making sure you don't flood again. This may include elevation, floodproofing, relocation, levees, floodwalls, or buyouts.



According to a National Institute of Building Sciences report on mitigation, for every one dollar spent on mitigation, the homeowner will save six dollars in damages avoided.

GET STARTED:

1 Contact your local Emergency Management Officer and ask if your community has an approved mitigation plan.

2 If the community has a plan, encourage your community to apply for mitigation funding. The application process is not difficult. The SHMO (and many other people) can help your community along the way.

3 Call the SHMO and voice your interest in a mitigation project. The SHMO can give you advice and tips.

4 Don't give up. The process is not quick. It can take years but keep pushing! The rewards will be worth the effort.

The SHMO can be contacted at: **ph: (573) 526-9116 or (573) 526-9382**
https://sema.dps.mo.gov/programs/mitigation_management.php

Step Three – Make Sure You Don't Flood Again

What is Mitigation and Why Mitigate?

“Mitigation” simply means doing something to reduce or eliminate the risk of future damage. The aim of mitigation is to break the cycle of disaster damage, reconstruction, and repeated damage.

The perfect time to mitigate a building is now... before repairs are made. Often money is available to help you do this.

Mitigation Activities:



BUYOUT AND DEMOLITION
(Sell the structure to FEMA for the pre-damaged value.)



RELOCATION
(Move the structure to higher ground.)



ELEVATION
(Jack up the building to above the flood protection elevation.)



FLOODPROOFING
(Make the building watertight.)



LOCAL FLOOD REDUCTION PROJECTS
(Levees, floodwalls, detention basins, etc.)

**Missouri Association of
Council of Governments**

For community help with disaster recovery planning, mitigation planning, or grant preparation contact the Missouri Regional Planning Commission in your area. More information can be found at the Missouri Association of Council of Governments – ph (573) 634-5337 • <http://macog.org/>

Step Three – Make Sure You Don't Flood Again

Mitigation Program Requirements

All federally funded mitigation programs (see page 40-41) have the same basic requirements for participation.

1. The community must:

- Participate in the National Flood Insurance Program,
- Support the project, and
- Provide a cost share on the funding (usually 75% federal and 25% local). However, in some situations, the cost share can be as much as 90% federal and 10% local, or even 100% federal (see page 43).

2. The project itself must be:

- Cost effective,
- Technically feasible,
- Meet federal, state, and local permit requirements,
- Environmentally sound,
- Compatible with the Local Mitigation Plan,
- Supported by the community, and
- Selected from a competitive process.



Uphill Climb: Rhineland On Higher Ground

After the Great Flood of 1993, residents of Rhineland decided to move the town. They worked together to relocate the village uphill, farther from the Missouri River's waters.

Source: Missouriian Reporting **SAM MANAS**/Missourian

Mitigation Grants

Residents interested in mitigation grants must contact their local officials. Communities interested in mitigation projects must then apply to SEMA.

Contact the State Hazard Mitigation Office (SHMO) or your community Emergency Management Official.

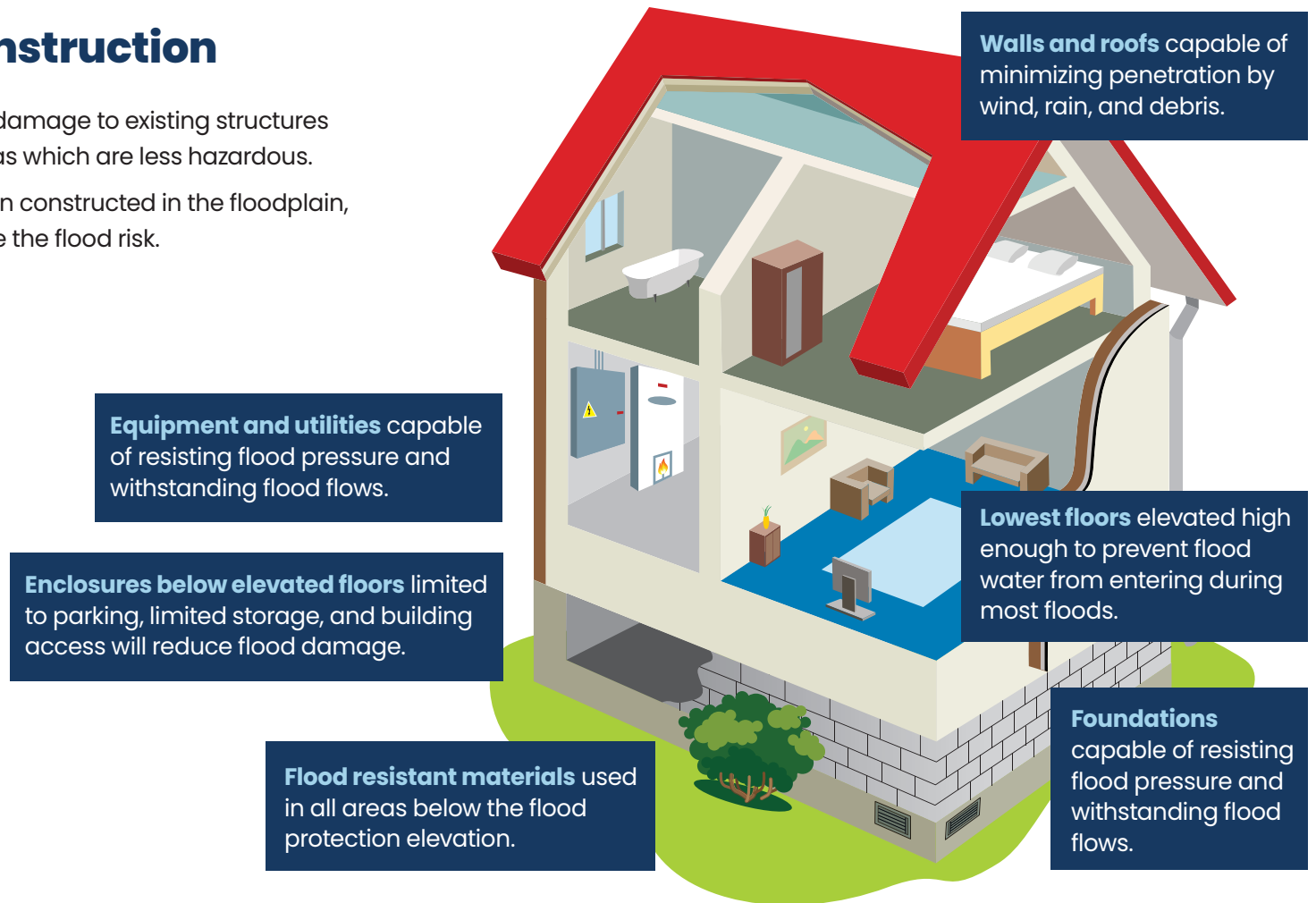
https://sema.dps.mo.gov/programs/mitigation_management.php

Step Three – Make Sure You Don't Flood Again

Flood Resistant Construction

Missouri has a goal to reduce flood damage to existing structures and guide new development to areas which are less hazardous.

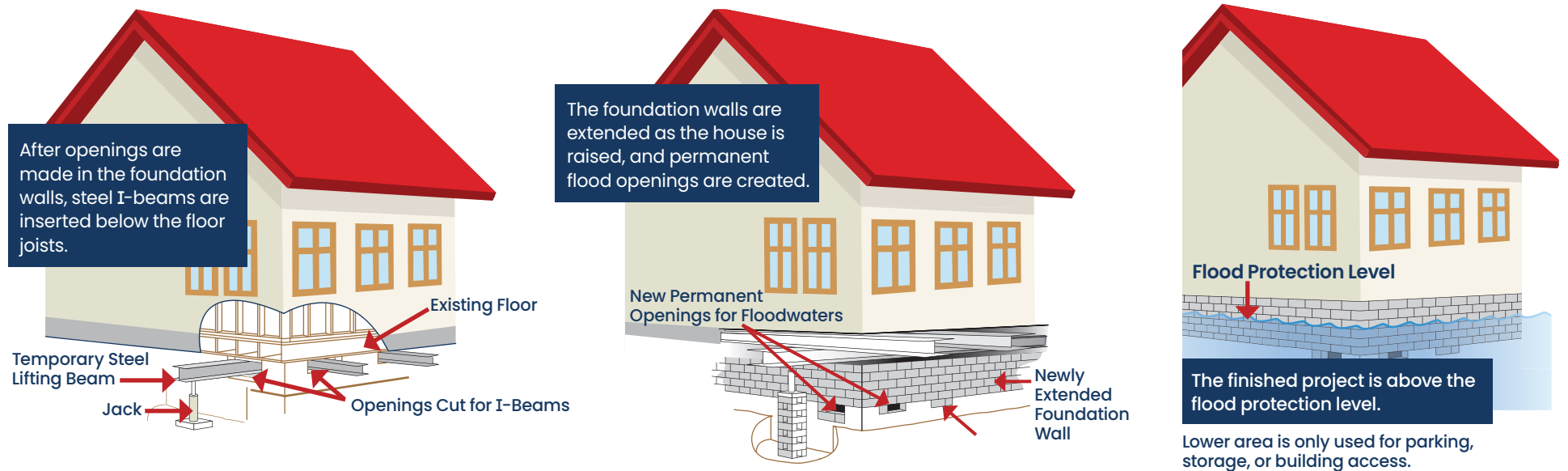
When buildings have previously been constructed in the floodplain, several steps can be taken to reduce the flood risk.



Step Three – Make Sure You Don't Flood Again

Elevating an Existing Building

Most buildings, regardless of being constructed on slab, crawl, or basement foundations can be elevated. It is only in rare circumstances when an existing building cannot be elevated. The basic procedure for elevating a building happens the same way regardless of foundation type.



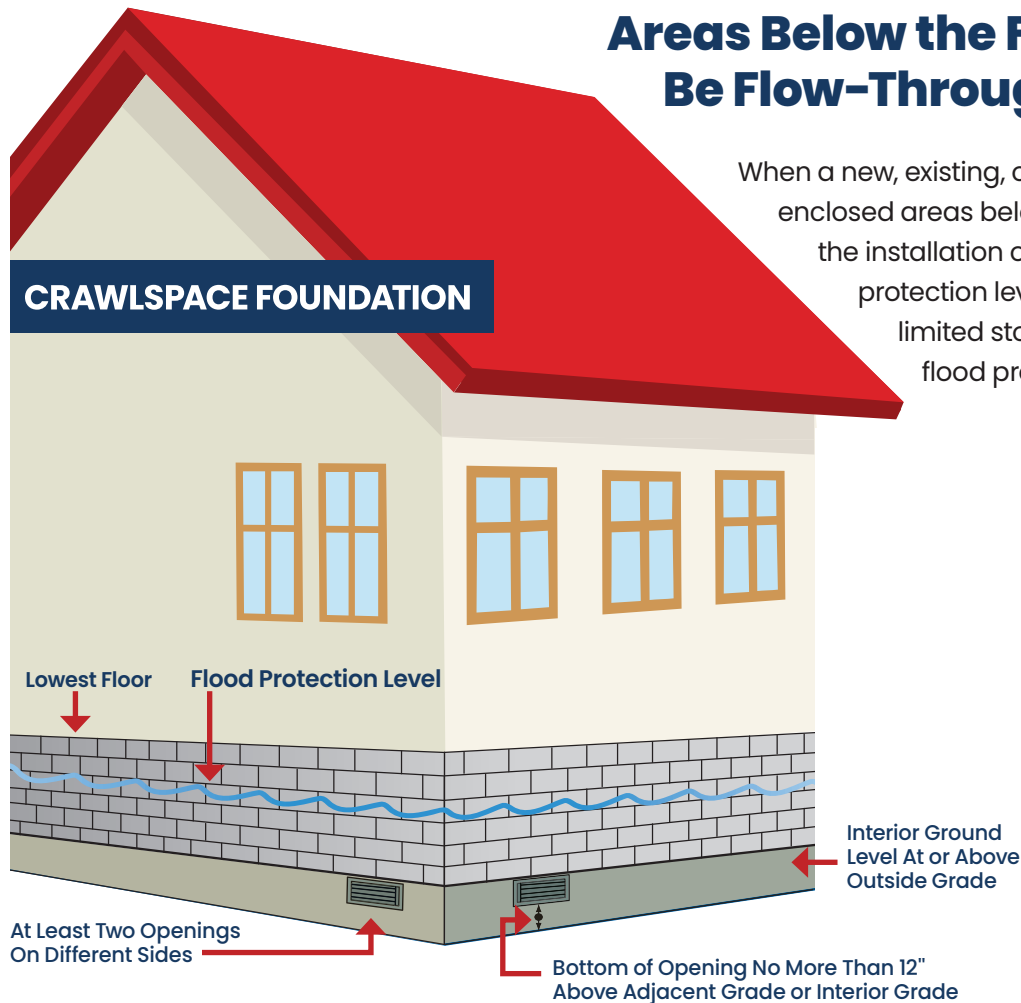
NOTE: Programs may be available to help offset the cost of elevating your structure ([see page 40-41](#)).

Citizens with a National Flood Insurance Program policy may be eligible for Increased Cost of Compliance payments ([see page 47-48](#)).

Step Three – Make Sure You Don't Flood Again

Areas Below the Flood Protection Level Must Be Flow-Through

When a new, existing, or substantially damaged home in the floodplain is elevated, any enclosed areas below the flood protection level must be open to flood flows. This requires the installation of flow-through openings. In addition, any area below the flood protection level must be built of flood resistant material and used only for parking, limited storage, and building access. Utilities must also be elevated above the flood protection level.



- Total net area of all openings is 1 sq. inch per sq. foot of enclosed area (measured on the outside).
- A 30' x 40' enclosure needs a total of 1,200 sq. inches of openings.
- If inserted as flood openings, typical air ventilation units must be permanently disabled in the open position to allow water to flow in and out.
- A typical air ventilation unit, with screen, provides 42 to 65 sq. inches of Opening. (Look for "net free area" stamp on unit.)

Flow Through Openings

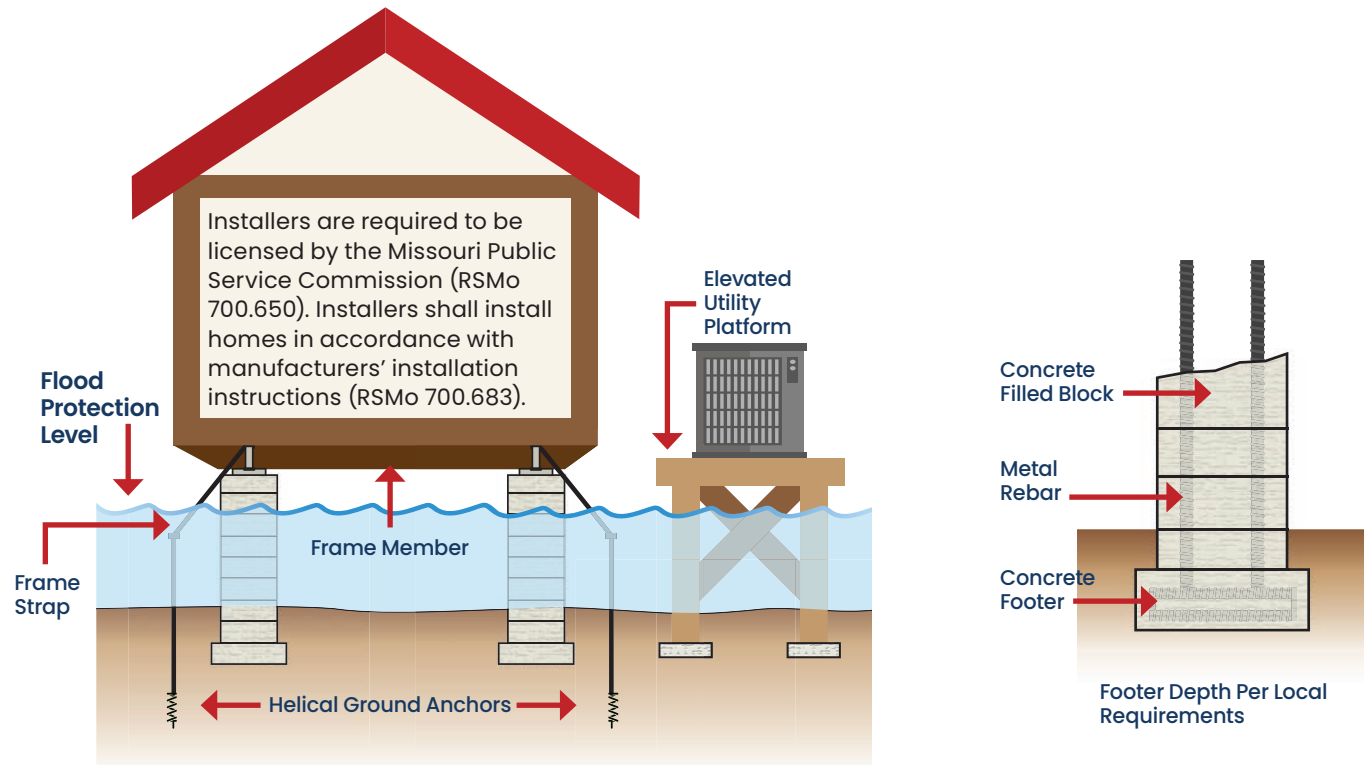
ALTERNATIVE: Engineered openings are acceptable **if certified** to allow adequate automatic inflow and outflow of floodwater.

Step Three – Make Sure You Don't Flood Again

What About Manufactured and Mobile Homes?

New or replacement manufactured homes located in the floodplain must also be elevated to the flood protection level. If the manufactured home is substantially damaged, it will need to be elevated or removed.

In addition, specific tie-down and anchoring requirements also apply to manufactured and mobile homes to protect against flotation, collapse, or lateral movement. Be sure a licensed installer is used.

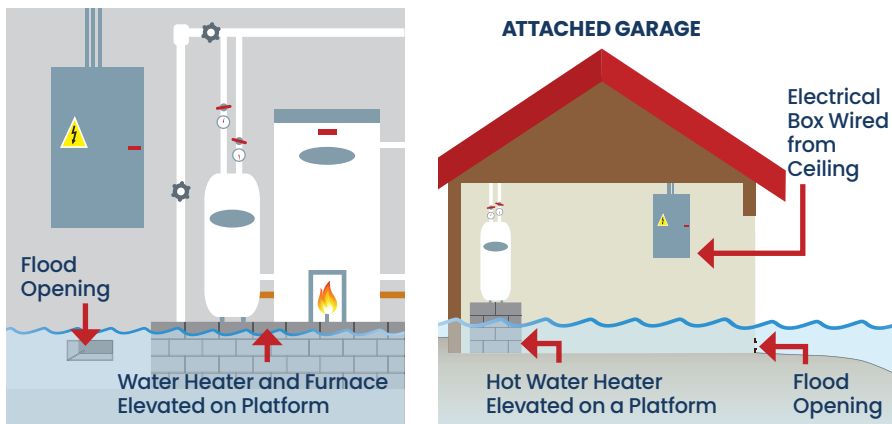


Step Three – Make Sure You Don't Flood Again

Utilities Inside the Building

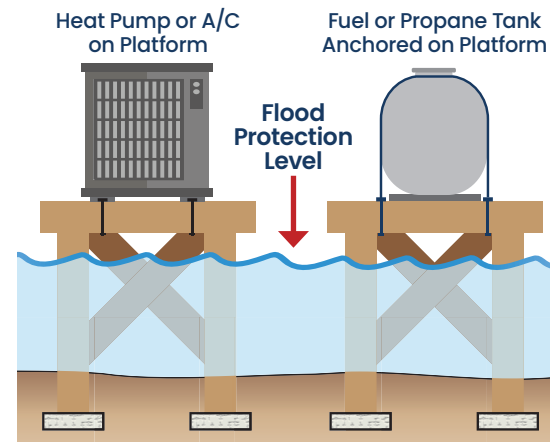
If a structure is substantially damaged, the utilities must also be protected from future flood damage. This means they must be elevated to the flood protection level.

The furnace, water heater, and electrical box must all be elevated on a platform or higher floor.



Utilities Outside the Building

Outside of the building, the air conditioner, septic or sewer system, and any fuel or propane tanks must also be protected from future flooding. This means elevated on a platform. In certain cases, existing septic systems may need to be redesigned to avoid discharge during a flood.



Fuel and propane tanks are very dangerous during floods. Tanks may explode or release hazardous contents during flooding. Even shallow flood water can cause buried tanks to float or rupture. For that reason, an engineer must certify that underground tanks are anchored and floodproofed. Tanks which are elevated on platforms or columns must be above the flood protection level and anchored.

Protecting Utilities

Many state and federal agencies have produced excellent guides on protecting utilities both inside and outside of buildings. Search online for “Protecting Building Utilities from Flooding” or “Fuel Tank Flood Hazards”. In addition, an excellent FEMA publication *Protecting Building Utilities from Flood Damage* (FEMA 348) is available at: https://www.fema.gov/pdf/fima/pbuffd_complete_book.pdf.

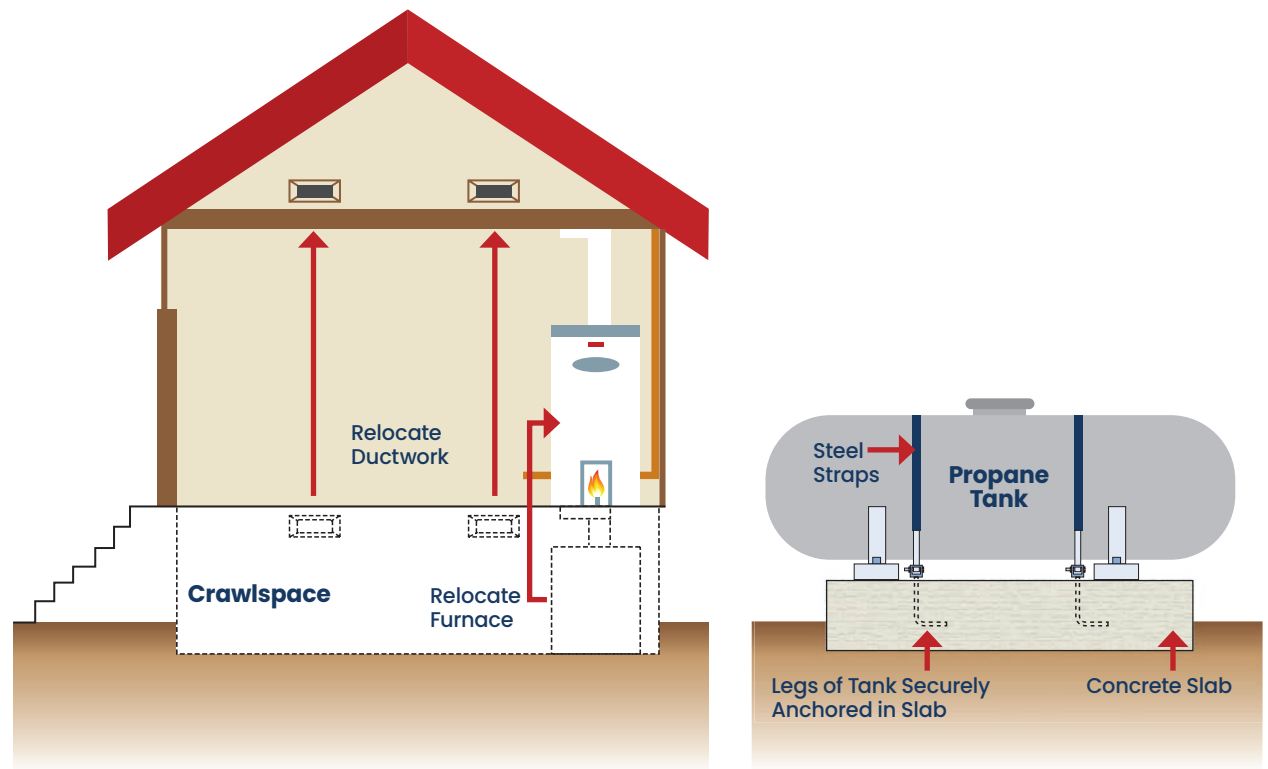
Step Three – Make Sure You Don't Flood Again

Some Flood Protections for Existing Homes are Easy and Low Cost

Low-cost steps can often be taken to add some flood protection to existing homes in the floodplain. This includes simple steps inside the building like moving fuse boxes, electrical panels, water heaters, furnaces, and ductwork out of the crawlspace or basement.

Outside of the home, anchoring heating oil or propane gas tanks will prevent flotation or lateral movement.

Most importantly...never store valuables or hazardous materials in a flood-prone basement or crawlspace.



Step Three – Make Sure You Don't Flood Again

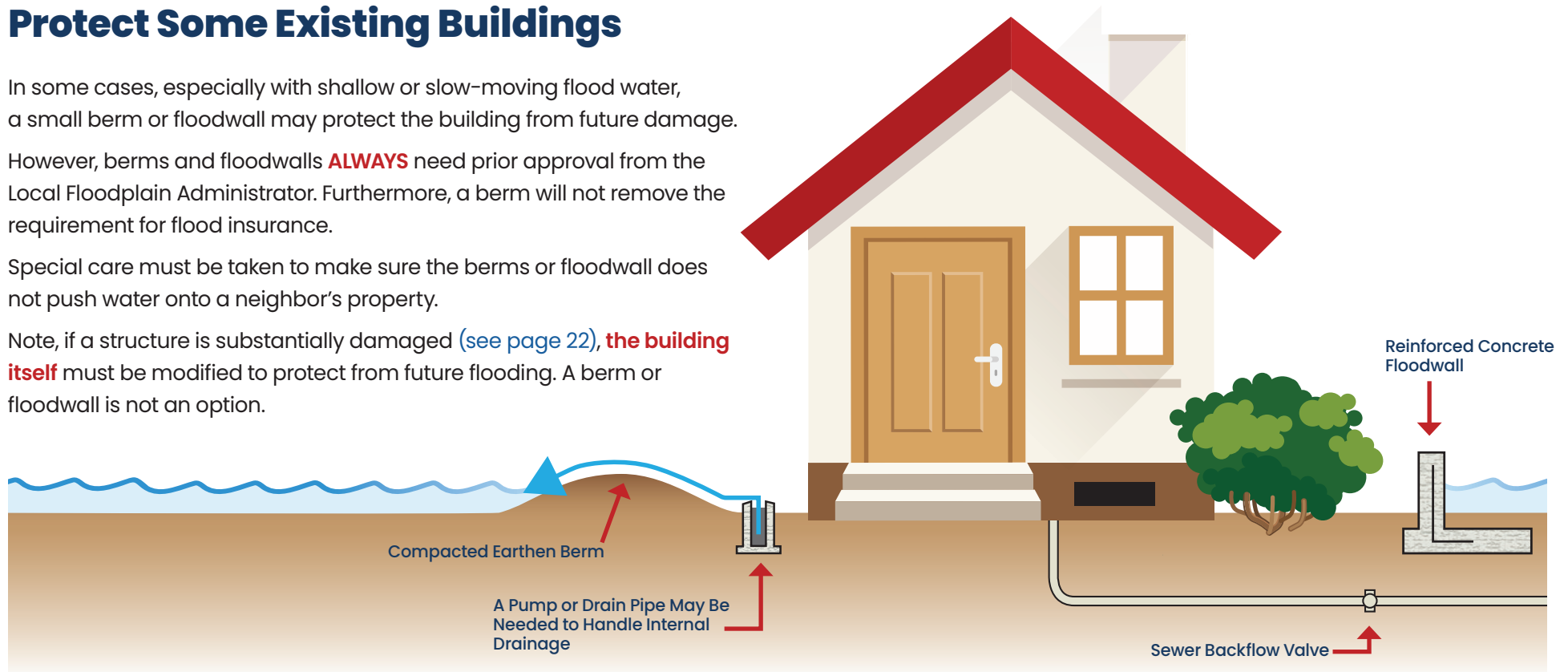
Small Berms or Floodwalls May Protect Some Existing Buildings

In some cases, especially with shallow or slow-moving flood water, a small berm or floodwall may protect the building from future damage.

However, berms and floodwalls **ALWAYS** need prior approval from the Local Floodplain Administrator. Furthermore, a berm will not remove the requirement for flood insurance.

Special care must be taken to make sure the berms or floodwall does not push water onto a neighbor's property.

Note, if a structure is substantially damaged (see page 22), **the building itself** must be modified to protect from future flooding. A berm or floodwall is not an option.



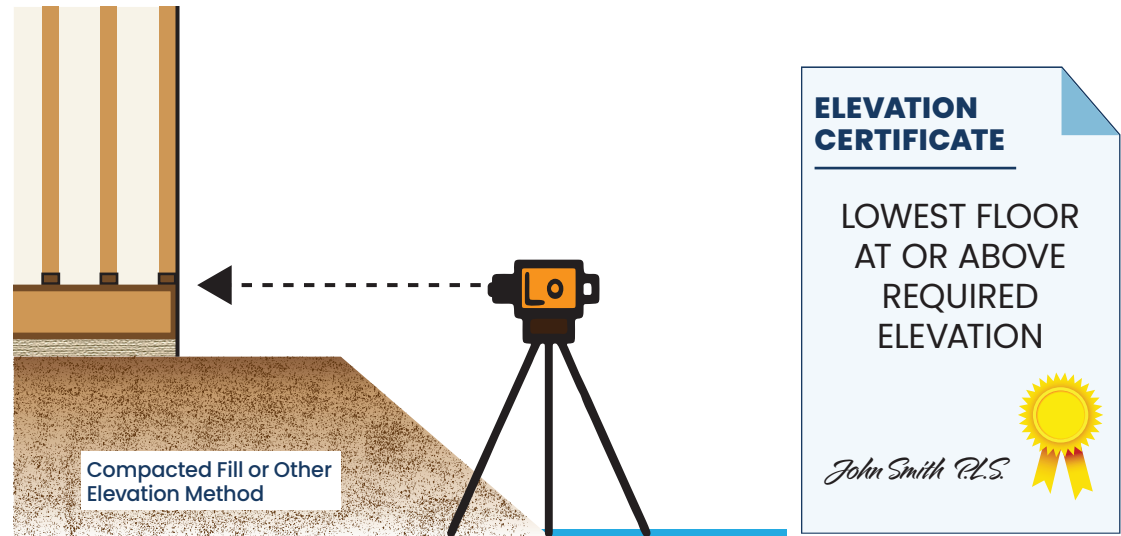
Step Three – Make Sure You Don't Flood Again

Get an Elevation

Surveyors can provide the elevation and site location information needed to keep you safe from flooding. The surveyor will establish elevations to show you exactly how high you need to go to be safe from flooding.

A surveyor is also required to sign the FEMA Elevation Certificate, which may be needed for certain types of mitigation funding. An elevation may also save money on flood insurance premiums.

Elevating a building will almost always require a surveyor ([see page 54](#)).



Step Three – Make Sure You Don't Flood Again

Big Flood Problems Need Bigger Solutions

When damages are extensive or if several structures are substantially damaged, the owners may not want to make repairs.

Many property owners in Missouri have simply decided to move out of the floodplain. In this case, a buyout or relocation project may be the best alternative. This type of mitigation gives much greater protection and, in most cases, a better return on investment.

Following floods, some communities purchase and remove damaged homes. The acquired land is then dedicated as public open space and can be used for recreation, wildlife habitat, or flood control.

The next few pages provide guidance on available mitigation programs and funding sources.



Step Three – Make Sure You Don't Flood Again

Federal Mitigation Programs and Funding

FEDERAL PROGRAMS

There are several FEMA programs available to protect your home from future flooding. All of these programs are administered by SEMA and your local community. An application must be submitted by an eligible city, county, special district, public school, university, or community college to be considered for funding. Applications from individuals cannot be accepted.

PROGRAM	PERCENT FEDERAL/ NON-FEDERAL COST SHARE
HMGP	Up to 75/25
BRIC	Up to 75/25 90/10 for small and impoverished communities
FMA	75/25 90/10 or 100% on repetitively flooded buildings.

BUILDING RESILIENT INFRASTRUCTURE AND COMMUNITIES (BRIC)

BRIC is a new FEMA program started in 2020. The goal of BRIC is to make communities safer and prevent disasters before they happen. BRIC is a competitive application process and funds are available every year. All projects must show that the flood reduction benefits outweigh the project cost. Funding can be used for flood mitigation projects such as buyouts, elevation, relocation, etc.



FLOOD MITIGATION ASSISTANCE (FMA)



The FMA program makes funds available on an annual basis to reduce or eliminate flood risk on buildings. FMA is only available for buildings which have a National Flood Insurance Program (NFIP) policy.

HAZARD MITIGATION GRANT PROGRAM (HMGP)



Funding from HMGP is only available after a federally declared disaster. HMGP can be used by communities to undertake long-term mitigation projects. Communities can also use the funding for traditional elevation or buyout projects. Projects must be done according to state and local priorities and be cost-beneficial.

► Further guidance on FEMA mitigation programs can be found on the FEMA mitigation website:

<https://www.fema.gov/grants/mitigation/floods>

Step Three – Make Sure You Don't Flood Again

Other Federal Grant or Loan Programs

U.S. SMALL BUSINESS ADMINISTRATION (SBA) DISASTER LOAN PROGRAM

The SBA provides low-interest disaster loans to businesses of all sizes, private nonprofit organizations, homeowners, and renters. SBA disaster loans can be used to repair or replace the following items damaged or destroyed in a declared disaster: real estate, personal property, machinery and equipment, and inventory and business assets.

Small Business Administration Contact

ph: (404) 331-0333 ext. 2177

<https://www.sba.gov/funding-programs/disaster-assistance>

U.S. DEPARTMENT OF AGRICULTURE (USDA), RURAL HOUSING SERVICE (RHS) HOUSING PRESERVATION GRANTS

The Housing Preservation Grant (HPG) program provides grants to sponsoring organizations for the repair or rehabilitation of low- and very low-income housing. The grants are competitive and are made available in areas where there is a concentration of need. Those assisted must own very low- or low-income housing, either as homeowners, landlords, or members of a cooperative. Very low income is defined as below 50% of the area median income (AMI); low income is between 50% and 80% of AMI.

<https://www.rd.usda.gov/programs-services/single-family-housing-programs/housing-preservation-grants>

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT (HUD) COMMUNITY DEVELOPMENT BLOCK GRANTS (CDBG)

The Community Development Block Grant Program supports community development activities to build stronger and more resilient communities. The program focuses on projects which improve the lives of residents, especially those with low and moderate income levels. These activities could include infrastructure improvement, economic development projects, public facilities, community centers, housing rehabilitation, public services, buyouts and acquisition, code enforcement, and homeowner assistance.

<https://www.hudexchange.info/programs/cdbg/>

Tax Relief for Flood Victims

Special tax law provisions may help taxpayers and businesses recover financially from the impact of a disaster, especially when the federal government declares their location to be a major disaster area. Depending on the circumstances, the Internal Revenue Service (IRS) may grant additional time to file returns and pay taxes. Both individuals and businesses in a federally declared disaster area can get a faster refund by claiming losses related to the disaster on the tax return for the previous year, usually by filing an amended return. The IRS also offers audio presentations on planning for disaster. These presentations discuss business continuity planning, insurance coverage, record keeping, and other tips to stay in business after a major disaster.

Step Three – Make Sure You Don't Flood Again

How Buyouts Work

Buyouts are the best way to reduce the risk of future disasters. FEMA does not buy houses directly from the property owners. Buyout projects are administered by the state and local communities. The state and local communities work together to identify areas where buyouts make the most sense. For this reason, individuals do not apply directly to FEMA or the state. Rather, residents work with their community to apply.

Property owners who want to sell their property will be given a fair price. It is a terrific opportunity for people who live on or near hazard areas and are tired of flood damage. It may be a rare opportunity to obtain funding and move to safer ground. A licensed appraiser hired by the community determines the **pre-damage** fair market value. In rare situations and when alternative housing is unavailable, residents can request additional funds to find comparable housing.



THE STEPS TO A BUYOUT:

- 1** An application for assistance is prepared by the community officials with input from those homeowners with destroyed or severely damaged properties.
- 2** The state receives and reviews the application and submits those deemed appropriate to FEMA for approval. FEMA reviews the applications to ensure they follow the rules, are environmentally sound, and are a cost-effective use of funds.
- 3** Once FEMA and the state give approval, the communities conduct the purchase and title transfer.
- 4** Buildings are then removed by the community, the land is cleared, and the vacant lot is preserved as open space.

Buyout projects can often require a great deal of education and community input. **They do not happen overnight.** The entire process can take months or years. However, once a homeowner accepts a buyout offer, the average closing takes about 45 days.

Step Three – Make Sure You Don't Flood Again

Help for Low Income or Disadvantaged Communities

Smaller or disadvantaged communities often do not have the staff or resources to complete the mitigation planning and mitigation application process.

Help is available.

SEMA can work with the community to find assistance. Often, a skilled grant manager can be funded to help with the mitigation project administration and oversight.

In addition, cost share funding for small or impoverished communities can be as much as 90% federally funded.

Local officials should contact SEMA for assistance.

Did You Know?

Small or impoverished communities may be eligible for 90% federal and 10% local cost share to complete mitigation projects! There are also sources to assist with the 10% local match. **Talk to your SHMO** (see page 28).



Step Three – Make Sure You Don't Flood Again

The Best Protection Is Flood Insurance

WHO SHOULD HAVE FLOOD INSURANCE? Flooding is usually not covered by a standard homeowner's insurance policy. If there is the slightest risk of flooding, a property owner should have flood insurance. Homeowners, businesses, and renters can purchase flood insurance on any building and its contents, even outside of the mapped floodplain.

WHO MUST HAVE FLOOD INSURANCE? Flood insurance is required for all building located in a mapped floodplain if they are financed by federally backed loans or mortgages.



WHO SELLS FLOOD INSURANCE? Any Missouri licensed insurance agent can sell you a policy. Private sector flood insurance may also be available.

NOT IN A MAPPED FLOOD ZONE? It makes no difference where your building is located on the flood map. Federal flood insurance is available to **anyone** who lives in a community participating in the National Flood Insurance Program (NFIP). In fact, 25% of all claims are paid outside of the mapped floodplain!

PROTECTED BY A LEVEE OR DAM? Flood control structures can and do fail. The failure can be by overtopping or collapse. For this reason, having flood insurance is a good idea. In many cases, flood insurance is cheaper on buildings behind a flood control structure.

WHAT ABOUT DISASTER ASSISTANCE? Federal disaster assistance is often only a small amount. In addition, disaster assistance is often a loan which can cost many times more than the cost of a flood policy ([see page 25](#)).

**WANT TO
KNOW MORE?**
**See the next
page!**

Step Three – Make Sure You Don't Flood Again

Got Flood Insurance? The **Fast Track** to Recovery

It's a fact. **Property owners with flood insurance recover much quicker** than those without flood insurance. With flood insurance, the damage claim is often paid within days of the event. Those without flood insurance often wait weeks, months, or even years to recover after a flood.

If you are in (or even near) a mapped floodplain, having a flood policy should be a priority!

Flood insurance is **available for property owners and renters** from National Flood Insurance Program (NFIP). With NFIP coverage, there is a 30-day waiting period before coverage goes into effect. **So don't wait. Now is the best time to buy flood insurance!** Contact your local insurance agency for more information.



National Flood Insurance also includes additional coverage to help cover the cost of floodproofing, relocating, elevating, or demolishing a structure which is substantially damaged. This coverage is called Increased Cost of Compliance ([see page 47-48](#)).

Some private companies also sell flood insurance. However, coverage and costs can vary widely with private flood insurance policies. Be sure and read the small print.

Additional information can be found online at www.floodsmart.gov or by calling **1-888-379-9531**.

Did You Know?

How Flood Insurance Helped Missouri Homeowners in the Historic 2017 Flooding

- More than **\$64 million** was paid to policyholders.
- The average claim was more than **\$63,500** per policy.
- **\$19 million** was paid to policy holders even before the flood was federally declared.
- **26% of claims** were filed outside of the mapped floodplain area!

Step Three – Make Sure You Don't Flood Again

How to File a Flood Insurance Claim

1 Start Your Claim. Call your insurance agent or company immediately. Report your loss. An insurance adjuster will be assigned to work with you. Make sure your agent and the adjuster have your contact information.



2 Document Your Loss. Once it is safe to enter your home, make a list of damaged items and take photos of structural and contents damage on the inside and outside of the home (see page 5).



3 Start Clean Up. After taking photos, you should immediately start cleanup to prevent the growth and spread of mold (see page 7). Throw away flooded items that pose a health risk. When in doubt, pitch it out!



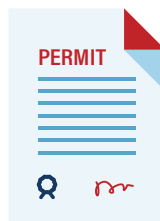
4 Work with Your Claims adjuster. The adjuster will set up a meeting to assess flood damages to your home. Check the adjuster's ID. Get your adjuster's contact information. Your adjuster is there to help you! Be sure and ask your adjuster any questions you may have about your policy coverage and payment. An adjuster will never ask for money.



5 Receive Payment. Review the adjuster's written damage estimate for accuracy. Your claim payment amount will be based on the documentation you provide and what's covered by your policy. It's your responsibility to submit information that supports your claim and to meet required deadlines. Sign a proof-of-loss statement only after you agree with your adjuster's estimate. If you have a loan, be sure and check with your mortgage company.



6 Contact Your Local Permit Official. Get permit approval from your local official before making any repairs to the home. This is very important! Ask about grants or loans to protect your building from future flooding (see page 40-41). Remember, your flood insurance policy may also include additional funding to protect from future flooding (see page 47).



7 Start Repairs. Get estimates from legitimate contractors. Beware of fly-by-night companies which often show up after a disaster. Get help from your local permit official. Check with your insurance agent before signing any cleaning, remediation, or maintenance agreement.



Step Three – Make Sure You Don't Flood Again

Take Advantage of Increased Cost of Compliance (ICC)

Hint: It's on your NFIP Flood Policy!

Most National Flood Insurance Program (NFIP) policies include additional coverage for the Increased Cost of Compliance (ICC). This ICC coverage is available to protect your building from future flooding. **ICC is the fastest form of mitigation.**

INCREASED COST OF COMPLIANCE (ICC):

- Provides up to **\$30,000** in addition to the flood insurance claim.
- Can be used to Floodproof, Relocate, Elevate, or Demolish (or any combination of these).
- Structure must be located in a floodplain.
- Structure must have a National Flood Insurance Policy in effect.
- Structure must be determined to be substantially damaged (or cumulatively damaged) by flooding beyond 50% of the value of when the damage occurred.

The two most common types of ICC mitigation used in Missouri are:

RELOCATION:

Relocating structures to higher ground is the safest way to protect against flooding and reduce the liability and cost to the community.

Relocating initially can be expensive, but in the long run it can be less expensive than repetitive flood damages or high flood insurance premiums.

ELEVATION:

Three methods to elevate:

1. constructing on crawlspace,
2. elevating on compacted fill, or
3. elevating on piles or piers.

Elevation method is dependent on the structure's condition, flood hazard, local floodplain regulations, and owner's financial condition. When elevating, it is essential for all utilities (air conditioner, water heater, furnace, etc.) to be elevated at or above the Flood Protection Elevation. See the elevation alternatives in the appendix of this guide for tips on the process and contractors.



ELEVATE
above the flood level required by your community.



RELOCATE
to a new site, preferably out of the floodplain.



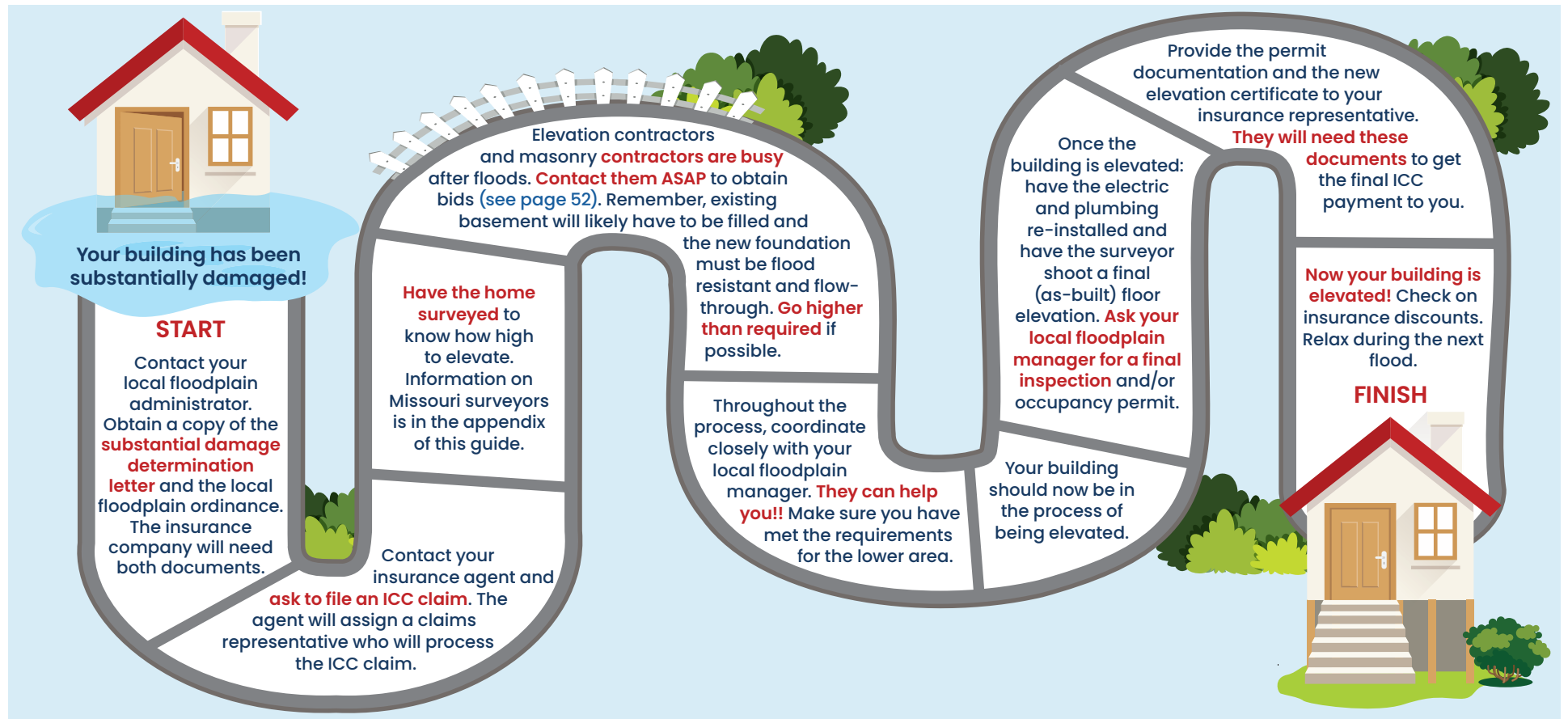
DEMOLISH
the building.



DRY FLOODPROOF
the building (primarily non-residential).

Step Three – Make Sure You Don't Flood Again

Filing an ICC Claim to Elevate a Building



Step Three – Make Sure You Don't Flood Again

Go Higher! The Importance of Freeboard

In Missouri, heavy rainfalls are happening more frequently. Flooding is getting worse. **More than 220,000 Missourians now live in areas with an increased risk of flooding.**

Building higher than required is just a smart decision. Building higher can make sure the building is better protected from:

- Old or outdated flood studies,
- Waves or debris which cause higher floods,
- Unpredictable flooding conditions caused by blocked bridges or culverts, and
- Increases in flood heights due to climate change or upstream development.

The cost of elevating a building a little higher outweighs the risk of increased flooding. On average, studies have shown that building a foot higher foundation will cost less than \$2,000. Going higher will quickly find savings in two ways:

1. when floods happen, the building is not damaged and
2. reduced cost in flood insurance, which is required by most lenders.

Going a foot or two higher is a VERY smart decision!

House A floods at 100-year flood.
House B with freeboard does not flood.





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Resources/Appendix

Elevation Contractors in Missouri

Elevation contractors are professionals at their job. They have experience and do the job quickly and correctly. In the past, some Missouri residents have tried to elevate homes themselves only to discover the home later settling, cracking, leaning, or, at least in one case, falling down and floating away during the next flood. Elevating a building can be tricky. It is best to hire a professional.

NOTE: The list of elevation and relocation contractors in this guide includes members of the International Association of Structural Movers or those who have done successful projects in Missouri. This list is not a complete listing, nor does it imply endorsement by the State of Missouri.

1. Louvier's Construction Inc.

*elevation only
1038 Urna Drive
St. Louis, MO 63301
ph: (636) 250-3189

2. Expert House Movers (EHM)

7144 Pershing Avenue
St. Louis, MO 63130
ph: (314) 727-2722

3. Balagna House Moving, Inc.

22401 East State Route 116
Farmington, IL 61531
Office ph: (309) 245-4486
Cell ph: (309) 338-3837

4. Ensor Movers, Inc.

63149 734 Rd
Brock, NE 68320
Office ph: (402) 868-3205
Cell ph: (402) 274-1156



Resources/Appendix

Relocation and Home Movers in Missouri

As the name implies, a structural mover is an individual or company that moves structures. While this may sound rather simple, successfully moving large, cumbersome, heavy, or weirdly shaped structures requires a professional. It is not something to be tried by the average person. Structural movers know the process and think things through very carefully. The International Association of Structural Movers (IASM) is the not-for-profit trade association for movers. The IASM website at www.iasm.org provides a listing of professional movers in Missouri.

EHM St. Louis

Contact: John Matyiko
7128 Washington Ave.
St. Louis, MO 63130 USA

Office ph: (314) 384-4210
Cell ph: (314) 616-3556

www.ehmmidwest.com

Jonassen Structural Movers

Contact: James Jonassen
PO Box 274
Hartville, MO 65667 USA

Office ph: (417) 259-7444

www.jonassenmovers.com



Resources/Appendix

Licensed Engineers in Missouri

A Licensed Engineer can provide a variety of services which may help you during the flood recovery process. Among other things, an engineer can help you determine the height your home should be elevated to keep it safe. An engineer can also design and certify a floodproofed structure.

To find a Licensed Engineer near you, contact:

Missouri Society of Professional Engineers

ph: (573) 636-4861

<https://mspe.org/>

Professional Land Surveyors in Missouri

Because of the special skills and complexities involved in surveying land, Missouri statutes limit the practice to only those surveyors licensed by the State of Missouri. Surveyors can provide the elevation and site location information needed to keep you safe from flooding. The surveyor will establish elevations to show you exactly how high you need to go to be safe from flooding. A surveyor is also required to sign the FEMA Elevation Certificate, which will likely be needed for mitigation funding.

To find a Professional Surveyor near you, contact:

Missouri Society of Professional Surveyors

ph: (573) 635-9446

<https://www.missourisurveyor.org/>

Architects in Missouri

Architects are professionals trained in the art and science of building design. Their work involves more than just the appearance of building. An architect can help develop the plans to make sure your structure is correctly designed to protect it against future flooding.

To find an Architect near you, contact:

American Institute of Architects – Missouri Chapter

ph: (573) 635-8555

<https://www.aia.org/home.asp>

Resources/Appendix

Elevating Existing Homes

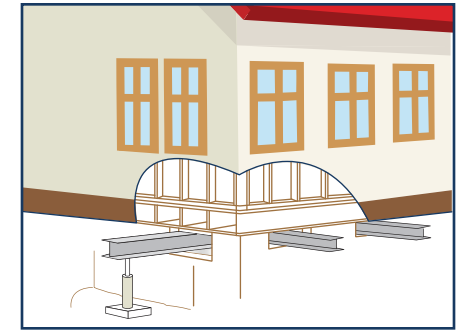
One of the most common ways to protect a building from future flooding is to raise the entire building above the flood protection elevation. Most houses can be elevated (slab, crawlspace, basement, etc.). Only in rare circumstances is elevation impossible.



Flooded home



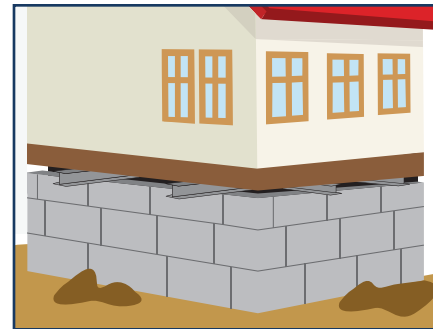
Ground around the foundation is excavated



I-beams are inserted under the structure.



Home is slowly raised by hydraulic jacks and temporary cribbing installed underneath.



House is elevated to the flood protection elevation and new foundation walls are poured.



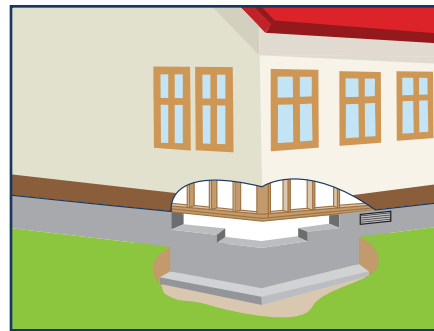
Finished foundation walls with flow-through openings. House is lowered down on to the new walls.

Properly elevating a home will avoid future flood losses and save money on flood insurance premiums. For more complete information on elevating an existing home, see FEMA Publication P-259. *Engineering Principles and Practices for Retrofitting Flood-Prone Residential Structures* (January 2012).

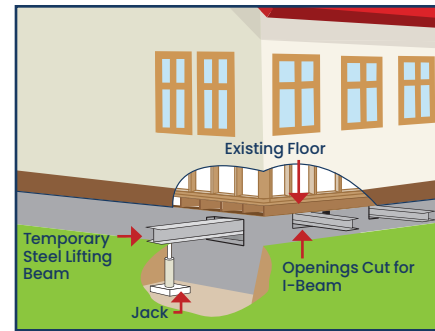
Resources/Appendix

Elevating Buildings Over a Crawlspace

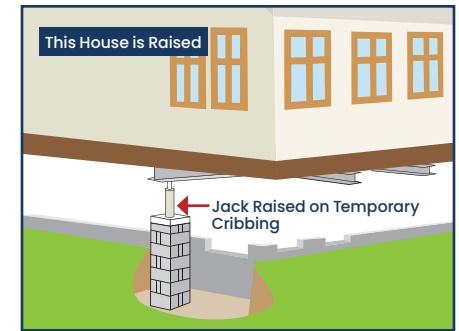
Buildings constructed over crawlspaces are generally the easiest and least expensive to elevate. The crawlspace allows for access in placing the steel beams underneath the building for lifting. In addition, most utilities are already on the first floor and will not need to be relocated.



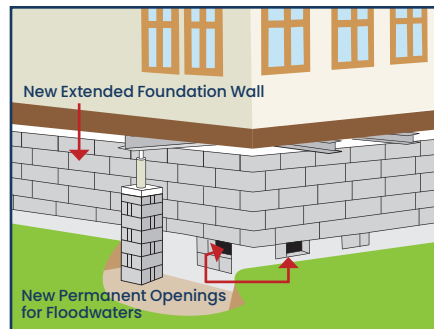
Existing building on a crawlspace



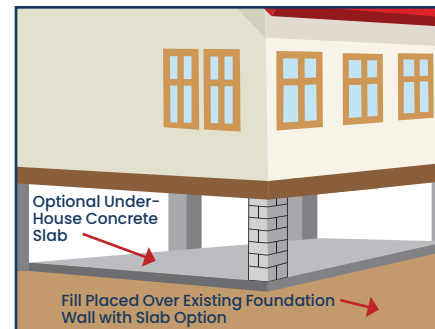
Steel I-beams are installed under the floor joists.



Jacks are used to raise the building to a flood safe elevation.



The foundation walls are extended as the house is raised, and permanent openings for floodwaters are created.

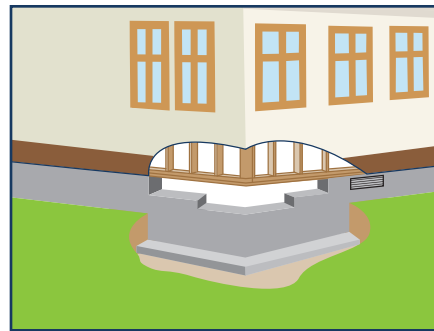


The finished product

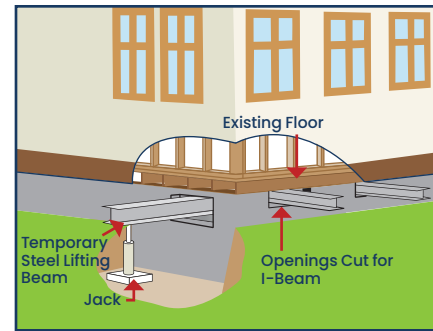
Building is elevated and anchored to the new foundation. The final product can either be elevated on a crawlspace foundation with flow-through openings (left) or on piers or columns (right).

Elevating Buildings over Basements

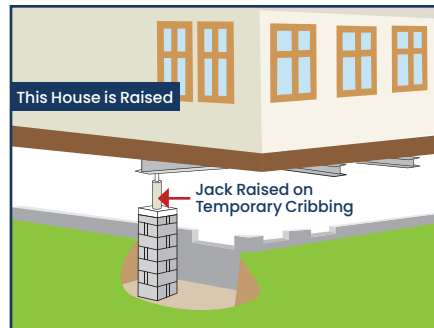
New buildings in the floodplain must have the lowest floor (including basement) elevated above the flood protection elevation. Therefore, existing basements will likely have to be backfilled. Buildings with basements are slightly more difficult to elevate because any mechanical and utility equipment in the basement must be relocated to a higher floor (above the flood level).



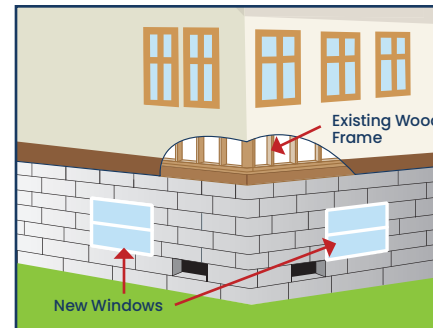
Existing building on a basement



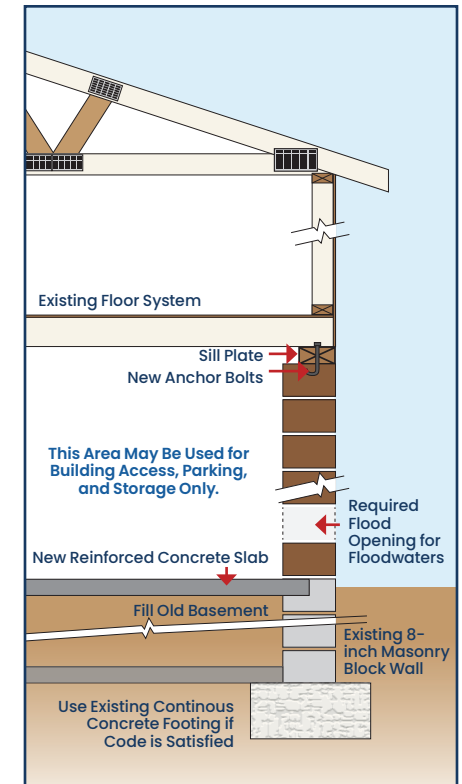
After openings are made in the foundation walls, steel I-beams are installed below the floor joists



Building is raised and basement backfilled.



New foundation with flow-through openings.

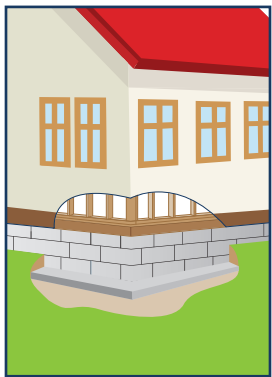


Note: Flood resistant materials and methods required below the flood protection elevation.

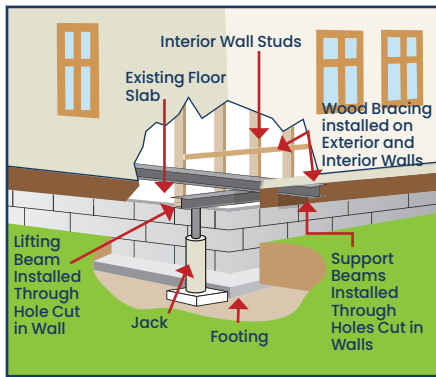
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Slab on Grade Buildings

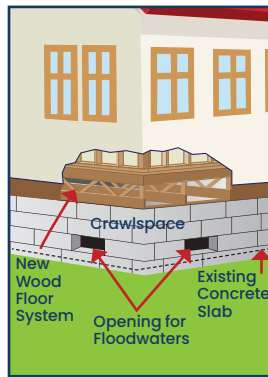
Slab-on-grade buildings can be the most difficult to raise. They can be raised with or without the slab. The new elevated first floor can be composed of wood or concrete. If the existing slab is to remain in place, the building must be detached from the slab, the structure must be raised separately from the slab, and a new floor system must be built along with an elevated foundation.



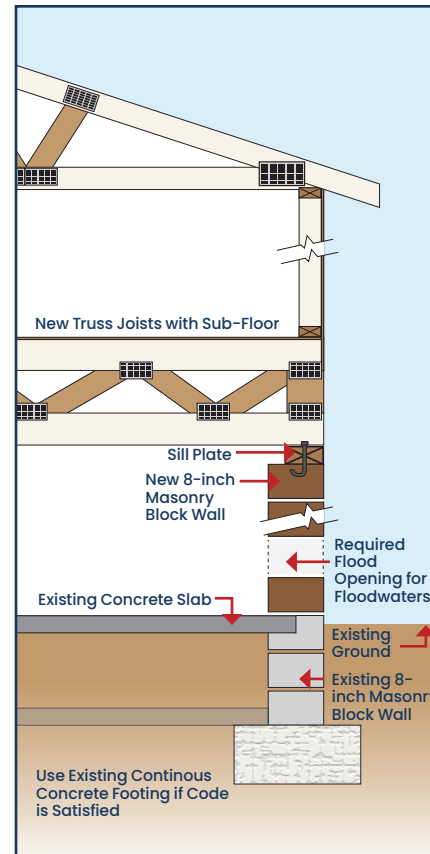
Existing slab-on-grade building.



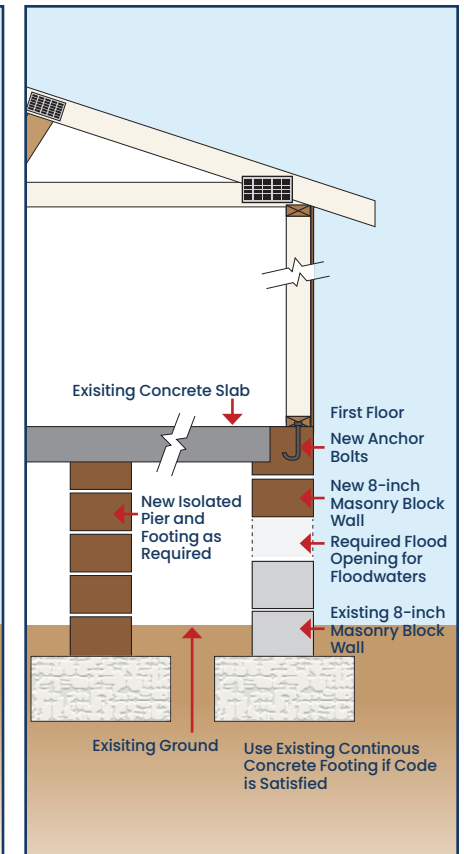
I-beams are installed below the building and it is raised to the flood protection elevation (either with or without the slab.)



New floor is above the flood protection elevation and new flow-through foundation is constructed.



Slab building is elevated with a new framed floor. The existing slab remains in place. Flow-through area is located below the new floor.



Slab building is elevated using the existing slab. Flow-through area is located below the elevated concrete slab.

Resources/Appendix

Additional Resources for Those Needing Help

The SEMA Recovery Assistance Page provides contact information for a wide variety of post-disaster needs.

Website: https://sema.dps.mo.gov/recover/assistance_resources.php

Low Interest Loans to Property Owners

• **U.S. Small Business Administration**

(www.sba.gov/)

The U.S. Small Business Administration (SBA) provides low-interest disaster loans to qualifying homeowners, renters, businesses of all sizes, and private, nonprofit organizations to repair or replace real estate, personal property, machinery & equipment, inventory, and business assets that have been damaged or destroyed in a declared disaster. View SBA's website for more information on low-interest loans.

General Assistance from Local Agencies, Including Housing and Food

• **American Red Cross**

(www.redcross.org/find-your-local-chapter.html)

• **Salvation Army Midland Division**

ph: (314) 646-3000 or (573) 442-3229

Serving all counties in Missouri **EXCEPT:** Andrew, Atchison, Buchanan, Cass, Clay, Holt, Jackson, Nodaway, Platte, and Ray.

• **Salvation Army Kansas and Western Missouri Division**

ph: (816) 756-1455

Serving Andrew, Atchison, Buchanan, Cass, Clay, Holt, Jackson, Nodaway, Platte, and Ray counties.

• **United Way 2-1-1** (www.211helps.org/)

• **Missouri Agency on Community Action**

(<https://www.communityaction.org/>)

Agriculture

• **Missouri Department of Agriculture**

(<https://agriculture.mo.gov/>)

ph: (573) 751-4211

For questions related to disaster assistance for Missouri agricultural operations.

Consumer Protection

• **Missouri Attorney General**

(<https://ago.mo.gov/civil-division/consumer>)

ph: (800) 392-8222

The Missouri Attorney General accepts consumer complaints about disaster-related scams and price gouging. For more information about how to protect yourself from becoming a victim of fraud, visit the SEMA "[Avoiding Scams & Fraud](https://sema.dps.mo.gov/recover/scams_and_fraud.php)" page. (https://sema.dps.mo.gov/recover/scams_and_fraud.php).

Resources/Appendix

Employment

- jobs.mo.gov

ph: (888) 728-JOBS (5627)

Resources for job seekers from the Missouri Division of Workforce Development.

- [Missouri Division of Employment Security](https://labor.mo.gov/DES) (<https://labor.mo.gov/DES>)

ph: (800) 788-4002 or (573) 751-3215

Disaster Unemployment Insurance is for [individuals not benefit-eligible under state unemployment insurance](https://labor.mo.gov/sites/labor/files/pubs_forms/M-INF-178-AI.pdf). (https://labor.mo.gov/sites/labor/files/pubs_forms/M-INF-178-AI.pdf)

Call or [email](mailto:esuiclaims@dolir.mo.gov) (esuiclaims@dolir.mo.gov) with questions.

Historic Buildings and Debris

- [Missouri Department of Natural Resources \(DNR\)](https://dnr.mo.gov/)

(<https://dnr.mo.gov/>)

ph: (800) 361-4827

DNR handles questions related to debris removal and historic buildings.

Insurance

- [Missouri Department of Insurance](https://insurance.mo.gov/)

(<https://insurance.mo.gov/>)

ph: (800) 726-7390 or (573) 751-4126

Questions about disaster insurance can be answered by the Consumer Protection Division

- [National Flood Insurance Program](http://www.fema.gov/flood-insurance)

(www.fema.gov/flood-insurance)

Mental Health, Elderly, and Disabilities

- [Center for Disease Control Prevention \(CDC\)](https://emergency.cdc.gov/)

(<https://emergency.cdc.gov/>)

- [Department of Mental Health](https://dmh.mo.gov/disaster-services) Click to locate the nearest Access Crisis Intervention (ACI) hotline.

(<https://dmh.mo.gov/disaster-services>)

- [Missouri Statewide Independent Living Council](https://mosilc.org/mo-centers-db/)

Locate the nearest Center for Independent Living.

(<https://mosilc.org/mo-centers-db/>)

- [Missouri Aging Information Network](https://health.mo.gov/seniors/aaa/)

Discover the many services available in Missouri for seniors, disabled adults, and family caregivers.

(<https://health.mo.gov/seniors/aaa/>)

- [Senior Living Disaster Resource Guide](http://www.seniorliving.org/research/disaster-preparedness/)

(www.seniorliving.org/research/disaster-preparedness/)

Taxes

- [Missouri Department of Revenue](https://dor.mo.gov/)

(<https://dor.mo.gov/>)

ph: (573) 751-3505

Call the Missouri Department of Revenue with questions about State of Missouri tax relief. Questions about federal tax relief should be directed to the [Internal Revenue Service](http://www.irs.gov/)

(www.irs.gov/) or

ph: (800) 829-1040.

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This booklet may be downloaded from the
Missouri State Emergency Management Agency
www.sema.dps.mo.gov/programs/floodplain/

or

Missouri Floodplain and Stormwater Managers Association
www.mfsma.org