COBB COUNTY WATER SYSTEM

Stormwater Management

Flood Protection for Your Home or Business

When it comes to protecting your property from a flood event, there are many measures you can take before a flood occurs in order to be prepared. These include purchasing flood insurance; planning ahead about where and how you will move furniture out of harm's way; keeping materials like sandbags, plywood, plastic sheeting and lumber handy for emergency waterproofing; and clearing brush and debris away from storm drains and ditches so water can drain away from the structure.

There are also more permanent projects for protecting your property. Although such projects do not remove the flood insurance requirement for properties with federally regulated or insured mortgages that are located in the Special Flood Hazard Area (SFHA) (*the 1% annual chance or "100-year" floodplain as shown on the Cobb County Flood Insurance Rate Map)*, these projects can provide a level of protection for your property and bring you peace of mind. The technical limitations of the methods and the cost will help you determine the best project for your home or business. Other considerations might include such things as the appearance of the structure after retrofitting and any inconvenience resulting from retrofitting.

'**Retrofitting**' is any change made to an existing structure to reduce or eliminate the possibility of damage to that structure from flooding or other hazards.

Special Flood Hazard Areas
Properties located in a Special Flood Hazard Area (SFHA) have more than a 25% chance of flooding over the life of a 30-year mortgage. To minimize flood losses, properties in a SFHA are subject to specific development requirements. To learn more about the requirements within the SFHA, please contact the Cobb County Department of Community Development and Inspections Division at (707) 528-2501.

This guide explains in more detail the different ways that you, as a property owner or resident of a property located in an area of flood risk, can best protect your home or business from flooding and provides information on potential sources of financial assistance as well.

Ways to Protect Your Home or Business from Flooding

FLOOD INSURANCE: THE BEST PROTECTION

Being prepared for a flood includes having flood insurance. With floods, there is usually some resulting loss or damage of property. Unfortunately, homeowners' insurance policies do not cover flood damage. However, flood insurance coverage is available under the National Flood Insurance Program (NFIP) in participating communities such as Cobb County.

NATIONAL FLOOD INSURANCE PROGRAM

Many people think they don't need flood insurance because federal disaster assistance will bail them out. But floods are not always declared a federal disaster area and even when they are, aid is usually in the form of a loan, which must be paid back with interest. Flood insurance, on the other hand, pays for covered losses, and unlike loans, that money doesn't have to be paid back. For more information, visit http://www.FloodSmart.gov or call 1-877-336-2627.

THE NATURAL AND BENEFICIAL FUNCTIONS OF FLOODPLAINS

When portions of floodplains are preserved or restored to their natural state, they provide many benefits to both people and natural systems. Areas of open space and natural vegetation adjacent to floodplain areas increase aesthetics and recreational opportunities; reduce the number and severity of floods, help contain stormwater run-off, and minimize non-point water pollution.

DRAINAGE IMPROVEMENTS

There are property specific improvements that will limit the risk of localized flooding and many of the activities can be done for minimal cost. These activities include grading around the foundation so floodwater flows around and away from the structure, use of gutters and downspouts to reduce accumulation of water near the foundation, and use of drain pipes so rainwater drains away from the structure. It is also important to ensure all drains are functioning properly and are clear of brush or debris. This includes open and closed gutters, downspouts, and other drain pipes installed on the property. At a slightly larger scale, installation of a detention pond may be recommended to store excess stormwater and release it more slowly. Detention ponds can be a very effective method of addressing localized flooding conditions by reducing local flood levels and minimizing flood damages.

Keep in mind that all development in the floodplain requires a permit. For more information contact David Breaden, P.E., Cobb County Water System Stormwater Management Division by telephone at (770) 419-6435.

'WET FLOODPROOFING' is used to make uninhabited portions of your home or business resistant to flood damage and allow water to enter during flooding. The purpose of allowing water into uninhabited portions of the structure is to ensure that the interior and exterior hydrostatic pressures will be equal. Allowing these pressures to equalize greatly reduces the likelihood of wall failures and structural damage. No matter how small the effort, wet floodproofing can, in many instances, reduce flood damage to your property and its contents. In addition, wet floodproofing measures are often less costly than other types of retrofitting.

A common method of wet floodproofing is the installation of flood vents in the walls of a foundation when a structure is elevated on foundation walls to protect the habitable area of the structure from flood waters. This type of construction creates a crawlspace area beneath the structure and the vents in the foundation allow the water to flow through the crawlspace reducing the water pressure on the foundation walls. The reduction of pressure decreases the possibility of foundation failure and collapse. Keep in mind that wet floodproofing is not permitted in habitable areas of a structure.

'DRY FLOODPROOFING' means sealing your business to prevent floodwaters from entering. Dry floodproofing is permitted **only for non-residential structures**. Making the building watertight requires sealing the walls with waterproof coatings, impermeable membranes, or supplemental layers of masonry or concrete. Also, doors, windows, and other openings below the expected flood level must be equipped with permanent or removable shields, and backflow valves must be installed in sewer lines and drains.

Most floodproofing is appropriate only where floodwaters are less than three feet deep, since walls and floors may collapse under higher water levels. A registered professional engineer or architect must prepare the building plans and certify the floodproofing measures, preferably using a FEMA Floodproofing Certificate form, which can be downloaded from FEMA's website at: https://fema-81-65-form.com/. Dry floodproofing reduces the flood risk to the building and its contents and may be less costly than other retrofitting methods. More information on non-residential floodproofing is available in FEMA's Technical Bulletin 3-93 which is available online at: https://www.fema.gov/sites/default/files/2020-07/nfip_t3_04011993_0.pdf.

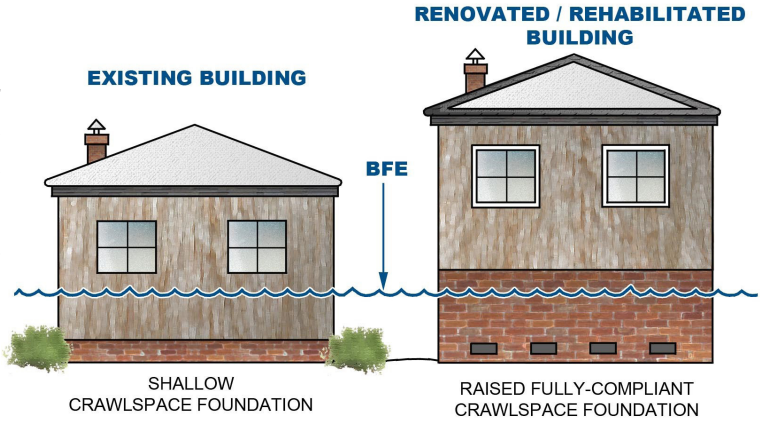
Base Flood Elevation (BFE): The water surface elevation resulting from a flood that has a 1-percent chance of occurring in any given year which is also known as the "100-year flood." BFEs are shown on the Flood Insurance Rate Map for your community.

BUILD A LEVEE around your property to hold back floodwaters. A possible technique in areas of shallow and moderate flooding depths with low velocity, this is a method of creating a barrier of compacted soil to keep the water away from a home or business. It can be one of the least expensive techniques, and it can be attractively landscaped. Its construction, however, requires great care, and there must be continued attention and maintenance to prevent its failure. Further, levees may require a large amount of space to install.

Note that development in the floodplain is heavily regulated, therefore a levee might not be allowed if you live in the SFHA particularly if it will cause an increase in flood hazard to other properties.

BUILD A FLOODWALL around your property to hold back floodwaters. This method is sometimes practical for areas with low to moderate flooding depths or velocities. As with levees, floodwalls are designed to keep the water away from the structure, but floodwalls are constructed of materials such as masonry block and reinforced concrete. They are more expensive than levees, but if properly designed, take up less space and do not require as much concern with continued inspection and maintenance. However, because some designs have openings for access to the house, they often require closures and human intervention to make sure shields are in place prior to flooding. As with levees, development in the floodplain is heavily regulated; therefore a floodwall might not be allowed if you live in the SFHA, particularly if it will cause an increase in flood hazard to other properties.

ELEVATE the structure so that the lowest floor is above the flood level. You can elevate the entire structure, including the floor, or leave the structure in its existing position and construct a new raised floor within the structure. The method used depends largely on construction type, foundation type, and flooding conditions. Although the cost of elevation may be high, there are many advantages, including:

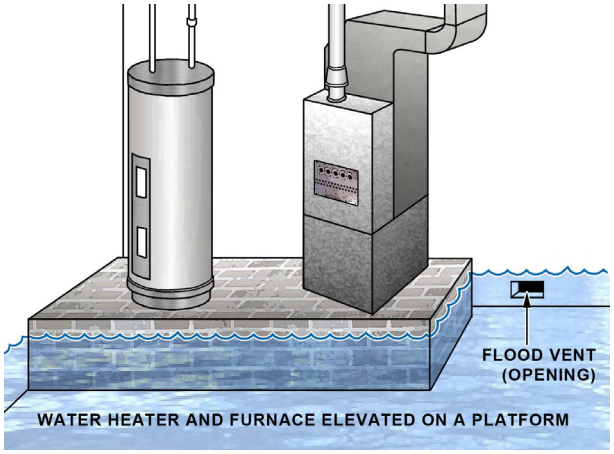


- Elevation reduces the flood risk to the home and its contents.
- Elevation to or above the BFE allows a substantially improved or substantially damaged home or business (see below) to be brought into compliance with the NFIP and local floodplain management ordinances.
- Except where a lower enclosed area is used for storage, elevation eliminates the need to move vulnerable contents to areas above the water level during flooding.

- Elevation may reduce flood insurance premiums.
- Elevation techniques are well known, and qualified contractors are usually readily available.
- Elevation does not require the additional land that may be needed for the construction of levees or floodwalls.

PROTECTION OF UTILITIES

Damage to utility systems is one of the most common losses suffered by home and business owners during flooding. Fortunately, protection of utility systems is one of the easiest and least expensive retrofitting methods to accomplish. Cost effective measures that can be taken to retrofit existing systems include: elevating air-conditioning units on a brick pad, moving the main electrical switch box and main gas/water connections, and creating a shield to divert water away from utilities and appliances.



WATER HEATER AND FURNACE ELEVATED ON A PLATFORM

- Where the flood protection level is not too high, a furnace, water heater or other heavy appliance can be raised on a platform inside the house to protect it from low-level flooding. The appliance can be placed on concrete blocks or a wooden platform supported by concrete blocks. Appliances such as washers and dryers must be secured such that they will not vibrate off the blocks or platform during use.
- Another option to protect the furnace, water heater, and washer and dryer from shallow flooding is to build a low floodwall around them. A concrete or wooden wall 1 or 2 feet high can stop low-level flooding. The wall should be waterproofed with plastic sheeting or waterproofing compounds that can be purchased at hardware stores.

OTHER MITIGATION OPTIONS include demolishing the structure entirely or relocating the structure to another property, or to a higher point on the same property. In general, these options are more costly than those presented above; however, both options are allowable under the NFIP. Substantial Improvement and Substantial Damage Projects

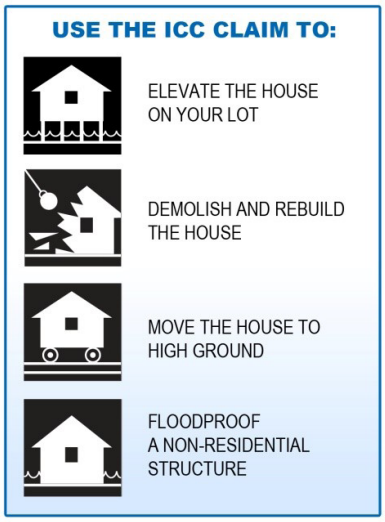
Substantial Improvement and Substantial Damage Projects

Under the NFIP, an improvement of a building (such as reconstruction, rehabilitation, or an addition) is considered a **substantial improvement** if the cost of the improvement equals or exceeds 50 percent of the fair market value of the building before the start of construction of the improvement. Similarly, damage to a building, regardless of the cause, is considered **substantial damage** if the cost of restoring the building to its before-damage condition would equal or exceed 50 percent of the fair market value of the building before the damage occurred. Of the retrofitting methods discussed above, only elevation is permitted for substantial improvement or substantial damage projects. For more information about substantially damaged buildings, refer to FEMA 213, *Answers to Questions about Substantially Damaged Buildings* available online at https://www.fema.gov/sites/default/files/2020-07/fema_p213_08232018.pdf.

Financial Assistance

FEMA and other Federal agencies have an array of financial assistance programs for States, communities, and individual property owners interested in mitigating the negative effects of flood hazards. You may be eligible to receive financial assistance through one or more of these programs that will help pay for some of these retrofitting projects. For more information, you can contact the Cobb County Stormwater Management Division by telephone at (770) 419-6435. You can also visit FEMA's website at http://www.fema.gov/hazard-mitigation-assistance.

One of the benefits provided by the NFIP is Increased Cost of Compliance (ICC) coverage. If your home or business is covered by a Standard Flood Insurance Policy (SFIP), is in the floodplain, and has been declared by your community to be substantially damaged or repetitively damaged by flood, ICC will help pay for certain types of retrofitting, including demolition. ICC coverage is available on most SFIPs.



Keep In Mind

Homeowners or business owners planning to use any of the techniques outlined here must contact the Cobb County Department of Community Development, Division of Development and Inspections for a permit. They can be reached by calling (770) 528-2051.

Remember that it is important to purchase flood insurance for your home, even if you retrofit your home or business. Also, flooding occurs in areas designated at moderate or minimal flood risk. FEMA recommends flood insurance coverage, even if it is not required by law or a lender.

All of the retrofitting methods described in this guide are discussed in depth in FEMA P-259, Engineering Principles and Practices for Retrofitting Flood-Prone Residential Structures. This document can be viewed online at https://www.fema.gov/media-library/assets/documents/3001.

Additional information is also available in FEMA P-312, Homeowner's Guide to Retrofitting - Six Ways to Protect Your Home. This document can be viewed online at https://www.fema.gov/media-library/assets/documents/480.