

CHECKLIST FOR MITIGATING OR AVOIDING FLOOD DAMAGE

It may not seem the case, but individuals are not powerless in influencing their potential exposure to catastrophes, such as floods. Property owners have a number of methods available to reduce or even avoid flood damage. This objective is possible by putting personal risk management activities into place. The actions an individual can take regarding his or her risk of facing a flood loss depend upon the following:

- a particular area's vulnerability to the flood hazard,
- the characteristics/features of the property owned by an individual,
- a particular community's zoning and building codes.

The activities mentioned in this article range from the simple and inexpensive up to actions that may extensively involve construction professionals (and their fees).

While this checklist can help a property owner identify the need for certain activities, it may be important to contact a professional builder, architect or contractor. Such experts are critical for determining the costs and benefits of each method. Of course, local authorities should be called for information on whether an action requires a building permit or, more importantly, whether a given job is permitted.

Flood Risk Considerations

- Call your local emergency management office, building department or floodplain management office for information about flooding. For more information, please refer to this Section, [Community Participation Eligibility National Flood Insurance Program](#).
- Ask to see a copy of your community's flood map.
- Determine if there is a projected flood elevation for your neighborhood.

This information will help you determine how much water is likely to be experienced during a flood.

Flood Insurance Considerations

Do you have flood insurance? If you live in a floodplain, you need flood insurance since this source of loss is excluded under regular Homeowners policies.

- Contact your agent about purchasing a policy from the National Flood Insurance Program (NFIP) from an insurer who participates in the Write Your Own program.

- Purchase flood insurance well before a flood happens since there is a 30-day waiting period from the time you apply for coverage.
- Determine the amount of coverage that is available for property in your community and purchase an adequate amount to protect your building and personal property.
- Call 1-800-638-6620 for more information or if your insurance agent is unable to write a flood policy. This NFIP Customer Service number provides instructions in English and Spanish and can assist callers with any questions concerning securing flood coverage.

Electrical System Considerations

Note that any electrical work should be done by a licensed electrician. Besides the critical step of making sure that a qualified person does any actual work, please consider the following:

- Determine whether the main electrical panel needs to be moved above potential flood waters. (Ideally, it should be at least 12" above the projected flood elevation for your home.)
- Determine whether the panel's height would comply with your local electrical code.
- Determine whether the property's electrical outlets and switches need to be moved above potential flood waters. (Ideally, they should be at least 12" above the projected flood elevation for your home.)
- Consider elevating electric service lines (at the point they enter your home) at least 12" above the projected flood elevation.
- Reduce the risk of shock or electrocution by connecting a ground fault interrupter (GFI) circuit in areas that could get wet.

Major Appliance Considerations

- Determine the vulnerability of the following to damage by flooding:
 - washer
 - dryer
 - water heater
 - air conditioners including compressors

- refrigerators
- freezers.
- Consider elevating any endangered appliance to 12” above the projected flood waters using masonry (such as cement blocks) or pressure-treated lumber.
- Consider moving appliances to a higher floor.
- Consider building a floodwall around the appliances.
- Consider moving the property inside a floodwall.

Furnace and Heating Considerations:

- Consider elevating a furnace to 12” above the projected floodwaters using masonry (such as cement blocks) or pressure-treated lumber.
- For a furnace that operates horizontally, consider suspending it from ceiling joists (if the joists are strong enough to hold the weight).
- Consider installing a draft-down furnace in the attic (if permitted by local codes).
- Consider locating heater vents above the projected flood elevation.
- If raising and relocating such equipment is not viable, consider erecting a proper (typically masonry) flood wall around the heating unit.

Note that it’s critical to make sure that any work is done according to any applicable code.

Fuel Tank Considerations

Fuel tanks are prone to tipping over or floating during floods, which can result in fuel spills, fuel fires, substantially more costly clean-up expenses, more complex clean-up methods and serious environmental hazards. In order to mitigate or avoid these dangers, a property owner should:

- Determine whether any fuel tank is adequately anchored.
- Consider securely anchoring any fuel tank to the floor.
- Locate any vents and fill line openings above projected flood levels.

- If applicable, get the written permission of the propane company to anchor any propane tanks.
- If applicable, ask whether the company will anchor their propane tank.
- Be sure all work conforms to state and local building codes.

Floor Drain And Sewer Line Considerations

- Consider installing a floor drain if it is economically feasible.
- Consider purchasing pumping equipment.
- If you own pumping equipment, keep it well maintained.
- Be certain that the floor drain is clear so that water flows through it properly.
- Keep floor areas clear of any material that might clog the floor drain.
- Consider installing a float plug into a floor drain which, if the floor drain pipe backs up, the float will rise and plug the drain.
- Consider installing a backflow valve into your sewer system which, if flood waters enter the sewer system and cause sewage to back up, the backflow valve will prevent it from entering your home.
- Have any interior or exterior backflow valve installed by a licensed plumber.
- Check with your building department for permit requirements.

Other Considerations

There are other methods that can be used to reduce or avoid flood damage. Naturally, such methods range from simple to complex (and expensive). While cost is always a factor, these various, additional actions are worth consideration:

- build a drainage system around the property
- seal openings such as low windows
- build levees
- build exterior floodwalls around basement doors and windows wells

- develop an efficient plan for moving expensive property and equipment to higher floors or to another location
- have an inspector check your property and land for drainage or other problems and then correct them
- fortify and waterproof exterior walls
- elevate buildings above projected flood levels, and
- relocate buildings away from floodplains.

Dealing With High-Cost Methods

When expensive flood mitigation options are recommended, it may make them easier to finance if the work can be done over time, in phases. Again it is critical, before any method is used, that the property owner secure any required permits, get the help of a qualified professional and make sure that the completed action meets any applicable codes.