



About This Guide

Who This Guide Is For

The Federal Emergency

Management Agency (FEMA) prepared this guide specifically for homeowners who want to know how to protect their houses from flooding. As a homeowner, you need clear information about the options available to you and straightforward guidance that will help you make decisions. This guide gives you both, in a form designed for readers who have little or no knowledge about flood protection methods or building construction techniques.

If you are an engineer, an architect, a construction contractor, or someone with skills in those fields, you may want to ask FEMA for copies of technical manuals that cover design and construction in greater detail. For example, all of the flood protection methods described in this guide are described in depth in *Engineering Principles and Practices for Retrofitting Flood Prone Residential Buildings*, FEMA 259, a detailed design manual issued by FEMA in January 1995. If you would like to obtain copies of FEMA 259 or other FEMA documents referred to in this guide, call the FEMA Publications Service Center at 1-800-480-2520. See Appendix A for a list of documents concerning flood protection prepared by FEMA and other agencies and organizations.

How This Guide Can Help You

You should take steps to protect your house if it has been damaged by flooding or is in an area where flooding is likely to occur. But first, you need to know what methods are available, how they work, how much they may cost, and whether they will meet your specific needs. This guide covers all of those issues. It also explains flood hazards and how they can damage your house. Don't forget that flooding is only one of several natural hazards that may threaten your house. This guide includes maps that will help you determine whether your house is in an area where earthquakes or high winds occur, and it explains when your retrofitting project should include protection against these hazards.



DEFINITION

The Federal Emergency Management Agency (FEMA) is the independent Federal agency that administers the National Flood Insurance Program (NFIP). The NFIP is the Federal program, created by Congress in 1968, that makes flood insurance available in communities that adopt and enforce floodplain management ordinances or laws that meet the minimum requirements of the NFIP regulations.



DEFINITION

In this guide, the term **local officials** refers to the employees of your community who are responsible for floodplain management, permitting, building code enforcement, and building inspection. The responsibilities of local officials vary from one community to the next. In your community, you may need to work with one or more of the following: floodplain administrator, building official, city engineer, and planning and zoning administrator.

Your state and local governments probably have adopted building codes and other rules and regulations that you will need to know about. This guide points you in the right direction by explaining how your **local officials** can advise you. Regardless of the flood protection method you choose, you will probably need the help of a construction contractor and a design professional, such as an engineer or architect. This guide describes the types of services you can expect contractors and design professionals to provide.

How To Use This Guide

To get the most from this guide, you should first read Chapters 2, 3, and 4. Chapter 2 explains “retrofitting,” and, by describing how flood, wind, and earthquake forces can damage your house, it helps you understand how retrofitting works. Also in Chapter 2 is a discussion of Federal, State, and local financial assistance programs that may help pay for your retrofitting project. Chapter 3 provides short descriptions of the six flood protection methods covered by this guide. It gives you the information you will need as you begin to think about how to protect your house, including the approximate costs, advantages, and disadvantages of each method. Chapter 4 leads you through four steps that will help you decide which method is best for you. Chapter 4 also explains how to work with local officials, contractors, and design professionals.

When you finish Chapter 4, you will be ready to focus on one method. Then you can move to Chapter 5, 6, or 7, depending on your choice. Those chapters describe the methods in greater detail and include photographs and illustrations that show how the methods are applied. Chapter 8 explains how you can protect service equipment (utility systems; heating, cooling, and ventilating systems; and large appliances) in conjunction with the retrofitting method you have chosen.

As you read this guide, you will often find information in the margins of pages — definitions (like the one above), notes, and warnings. Each is identified by a special symbol:



DEFINITION — The meaning of a technical or other special term. Where a term is first used in the text, it is shown in bold type and the definition is provided in the margin. You can also find these and other definitions in Appendix B, *Glossary*.



NOTE — Supplemental information you may find helpful, including things to consider as you plan your retrofitting project, suggestions that can make the retrofitting process

easier, and the titles and sources of other publications related to flood protection and retrofitting.



WARNING — Critical information that will help you avoid mistakes that could result in dangerous conditions, violations of your community's ordinances or laws, and possibly delays and higher costs in your retrofitting project. Be sure to read these warnings. If you are unsure about what a specific warning means or what to do to avoid the problem it describes, consult your local officials. Chapter 4 tells you about working with local officials.

A final note before you begin Chapter 2: No guide or other document of this type can anticipate every retrofitting situation or every concern a homeowner may have about undertaking a retrofitting project. If you have questions that this guide does not answer, consult your local officials. They will usually have the information you need. If FEMA has set up a Disaster Field Office (DFO) in your area, in response to a Presidential declaration of a Major Disaster, members of the DFO Mitigation staff can answer questions and advise you. The staff members of the FEMA Regional Office for your state can also help (see Appendix C).



NOTE

Many government agencies, including FEMA, and non-profit organizations, maintain sites on the Internet where you can find information about flooding, high winds, earthquakes, and other hazards. Appendix A includes a partial list of sites that were operating at the time this guide was prepared.