



Appendix G

Retrofitting Checklist

Use this checklist when you follow the four steps described in this chapter. The information you record here will help you work with local officials, design professionals, and contractors. Use the decision-making matrices that follow this checklist to decide which retrofitting method is right for your home.

Step 1 – Determine the Hazards to Your Home	
<p>1. How long have you lived in your home?</p> <p>___ years</p>	
<p>2. Was your home ever flooded during that time?</p> <p>___ yes ___ no</p> <p>(If your answer is yes, go to question 3; if your answer is no, go to question 14.)</p>	
<p>3. How many times has your home been flooded? _____</p>	
<p>4. What were the dates of flooding?</p> <p>Flood #1 _____ Flood #4 _____</p> <p>Flood #2 _____ Flood #5 _____</p> <p>Flood #3 _____</p>	
<p><i>For each flood, answer questions 5 through 13 as best you can.</i></p>	

5. To your knowledge, were frequencies assigned to any of the floods (e.g., 2-percent-annual-chance flood, 1-percent-annual-chance flood)? If so, what were they?

Flood #1 _____

Flood #2 _____

Flood #3 _____

Flood #4 _____

Flood #5 _____

6. How high did the floodwaters rise in your home?

(If you can, state the height of the water above the lowest floor, including the basement floor.)

Flood #1 _____

Flood #4 _____

Flood #2 _____

Flood #5 _____

Flood #3 _____

7. About how long did your home remain flooded?

(You can give your answer in days, weeks, or months, as appropriate.)

Flood #1 _____

Flood #4 _____

Flood #2 _____

Flood #5 _____

Flood #3 _____

8. Did you have any warning before your home was flooded? If so, how much warning?

(You can give your answer in days or hours as appropriate.)

Flood #1 ___ No Warning ___ Warning _____ Days/Hours

Source of warning (news report, local officials, firsthand observation): _____

Flood #2 ___ No Warning ___ Warning _____ Days/Hours

Source of warning (news report, local officials, firsthand observation): _____

Flood #3 ___ No Warning ___ Warning _____ Days/Hours

Source of warning (news report, local officials, firsthand observation): _____

Flood #4 ___ No Warning ___ Warning _____ Days/Hours

Source of warning (news report, local officials, firsthand observation): _____

Flood #5 No Warning Warning _____ Days/Hours

Source of warning (news report, local officials, firsthand observation): _____

9. Did the floodwaters cause scour and/or erosion around your home or elsewhere on your lot? If so, describe the effects.

Flood #1 No Erosion/Scour Occurred Erosion/Scour Occurred

Description _____

Flood #2 No Erosion/Scour Occurred Erosion/Scour Occurred

Description _____

Flood #3 No Erosion/Scour Occurred Erosion/Scour Occurred

Description _____

Flood #4 No Erosion/Scour Occurred Erosion/Scour Occurred

Description _____

Flood #5 No Erosion/Scour Occurred Erosion/Scour Occurred

Description _____

10. Was your home damaged by wave action or the impact of ice or other floodborne debris? If so, describe the damage.

Flood #1 No Waves or Debris Waves Debris

Description of Damage _____

Flood #2 No Waves or Debris Waves Debris

Description of Damage _____

Flood #3 ___ No Waves or Debris ___ Waves ___ Debris Description of Damage _____ _____
Flood #4 ___ No Waves or Debris ___ Waves ___ Debris Description of Damage _____ _____
Flood #5 ___ No Waves or Debris ___ Waves ___ Debris Description of Damage _____ _____
11. How difficult and/or expensive was cleaning up after the floodwaters receded? (If you can, describe what you had to do to clean up both inside your home and around your lot, how long the cleanup took, and how much you spent on cleanup.)
Flood #1 Cleanup Description _____ _____ Cost \$ _____ Time _____
Flood #2 Cleanup Description _____ _____ Cost \$ _____ Time _____
Flood #3 Cleanup Description _____ _____ Cost \$ _____ Time _____
Flood #4 Cleanup Description _____ _____ Cost \$ _____ Time _____
Flood #5 Cleanup Description _____ _____ Cost \$ _____ Time _____

12. What was the total cost to repair all flood damage, not including the cleanup costs listed above?

Flood #1 \$ _____

Flood #4 \$ _____

Flood #2 \$ _____

Flood #5 \$ _____

Flood #3 \$ _____

13. What was the total value of all home contents (furnishings, belongings, etc.) damaged by flooding?

Flood #1 \$ _____

Flood #4 \$ _____

Flood #2 \$ _____

Flood #5 \$ _____

Flood #3 \$ _____

14. Is your home either in or near one of the shaded areas on the wind hazard map in Figure 4-1?
If you are not sure how to interpret Figure 4-1, your local officials and design professional can help you.

___ yes ___ no

15. Has your home ever been damaged by a hurricane or other high-wind event?

___ yes ___ no.

If your answer is yes, note how many times and describe both the damage and the repairs made.

16. Is your home either in or near one of the shaded areas on the earthquake hazard map in Figure 4-2? If you are not sure how to interpret Figure 4-2, your local officials and design professional can help you.

___ yes ___ no

17. Has your home ever been damaged by an earthquake?

___ yes ___ no.

If your answer is yes, note how many times and describe both the damage and the repairs made.

18. Has your home ever been damaged by other hazard events, such as fires or landslides?

___ yes ___ no.

If your answer is yes, note how many times and describe both the damage and the repairs made.

Step 2 – Inspect Your Home

Provide as much of the following information as you can about your home.

1. **When was your home built?** _____

2. **Construction type (see Section 3.2.1; check all that apply):**

___ frame ___ masonry veneer ___ masonry ___ manufactured home

3. **Foundation type (see Section 3.2.2; check all that apply):**

___ basement (subgrade on all sides) ___ walkout-on-grade basement ___ crawlspace

___ slab-on-grade ___ piers ___ posts/columns ___ piles

4. **Describe any other damage and repairs or other additions to your home other than those you described in Step 1. Other damages would include foundation settlement, dry rot, and termite damage.**

To answer questions 5 through 9, you will need to have at least a rough idea of the DFE for your retrofitting project. If you don't have enough information to answer these questions now, go to Step 3 and determine your DFE when you talk with your local official(s).

5. **Approximate difference between elevation of lowest floor (including basement) and design flood elevation (DFE) (see Figure 4-3):**

___ feet

6. **Interior utilities below the DFE (check all that apply):**

___ furnace ___ ductwork ___ hot water heater ___ electrical panel ___ electrical outlets

___ electrical switches ___ baseboard heaters ___ sump pumps ___ fuel tanks

other _____

7. Exterior utilities below the DFE (check all that apply):

air conditioning / heat pump compressor electric meter fuel tank

septic tank well gas meter

other _____

8. Major appliances below the DFE (check all that apply):

washer dryer refrigerator freezer

other _____

9. How many drains (such as sink, tub, and floor drains) and toilets are below the DFE? _____

Step 3 – Check with Your Local Officials

When you meet with your local official(s), be sure to discuss the issues below. Also, make note of the information you receive from the local officials. (You may find that you will need to talk with more than one person to get all the information you need.)

1. Explain your retrofitting needs, go over the information you recorded in Steps 1 and 2, and discuss any preferences you may have regarding the retrofitting methods described in Chapter 3.
2. Provide the official with photographs of your home and a copy of a plat map that shows the dimensions of your lot and the location of your home. If you do not have a plat map, ask how you can get one.
3. Ask whether your home is in the regulatory floodplain. If the answer is yes, ask what the BFE is at your home and whether your home is in the floodway or Coastal High Hazard Area (Zone V). Ask whether any restudies or revisions are underway that might provide updated flood hazard information for the area where your home is located. Also, ask for additional flood hazard information concerning characteristics such as flow velocity, the potential for wave action and debris flow, rates of rise and fall, warning time, and duration of inundation. This additional information may be useful to your design professional.
4. Ask whether your home is subject to your community's regulatory requirements concerning Substantially Damaged structures or whether the retrofitting measure you are considering would subject your home to Substantial Improvement requirements. (See the definitions of Substantial Improvement and Substantial Damage in Section 2.5 and Section 3.1.1)
5. Ask whether your home is subject to high winds, earthquakes, and other hazards, such as wildfires. Refer to the maps in Figures 4-1 and 4-2.
6. Ask whether your State and/or community enforces building codes or other regulations that could affect your retrofitting decision, including any floodplain management regulations more stringent than those required by the NFIP. For example, ask whether the State or community requires freeboard for flood protection measures.
7. In your discussion of building codes, ask whether retrofitting will require that you upgrade other components of your home (such as electrical and plumbing systems) to meet current code requirements.
8. Ask about the types of permits and fees that may be required in connection with the retrofitting methods you are considering.
9. Ask whether the official is aware of any Federal, State, or local historic preservation regulations that may affect your property. If necessary, have the official follow up with the SHPO (see Appendix E) to be sure that your retrofitting project is in compliance with all preservation laws.
10. Ask about Federal, State, and local programs that provide financial assistance for certain types of homeowner flood protection retrofitting projects. Ask whether you are eligible for assistance.
11. Go through the appropriate decision-making matrix (see Section 4.2) with the official and discuss any questions you may have about the advantages and disadvantages of the alternative retrofitting methods.
12. Ask for any guidance that local officials can provide to help you find a good contractor or design professional.

Step 4 – Consult a Design Professional and Retrofitting Contractor

Initial Meeting

1. Explain your retrofitting needs; go over the information you recorded in Steps 1 and 2; discuss the results of your meeting with your local official(s), including the decision-making matrix; and discuss any preferences you may have regarding retrofitting methods you selected in Step 3.
2. Verify that the design professional is licensed and registered in the State where the work will be done.
3. Verify that the contractor is licensed, bonded, and insured as required by State and local laws.
4. Ask for references and proof of proper bonds and insurance, including disability and workers' compensation.
5. Decide whether you, the design professional, or the contractor will be responsible for obtaining and managing the work of subcontractors and for obtaining all permits required by State and local agencies.
6. Schedule a site visit.

Site Visit

1. Ask the design professional or contractor to tell you about any characteristics of your home or lot that would affect your selection of a retrofitting method.
2. Once you decide on a retrofitting method, ask for a written estimate of the project cost and schedule.

Contract

1. If you are satisfied with the cost estimate and schedule, get a written, signed, and dated contract that describes the work to be done and that states the estimated cost, the payment schedule, and the start and completion dates of the work.
2. Ask whether the contractor will provide a warranty or guarantee for the work performed. Any warranty or guarantee should be written into the contract. The contract should state the terms of the warranty or guarantee, who is responsible for honoring it, and how long it will remain valid.

Notes
