Residential uses and standards in a floodplain

When property owners discover their property is in a floodplain, a common reaction is to assume they cannot use or develop it. In some parts of the floodplain or in some communities, options for land use are very limited. In other situations, most uses are allowed, but the structures must be elevated or flood-proofed to maintain public safety and minimize risk of property damage during a flood.

Two key questions must be answered that affect what can be done to property in a floodplain:

1. **Floodway or flood fringe?** Is the property in a floodplain shown on a Flood Insurance Rate Map (FIRM) prepared by the Federal Emergency Management Agency (FEMA)? If so, is the property in the floodway or the flood fringe? (See “What are the floodway and the flood fringe” information sheet #2.) Property in a floodway is subject to more use restrictions than property in a flood fringe.

2. **Local zoning?** What uses are allowed by the local zoning authority (city zoning if your property is within city limits; county zoning if it is in a rural area)? The standards discussed below are based on state and federal minimum standards. Your community will have zoning regulations according to zone, including low-density residential, high-density residential, commercial, industrial, and open space. The community can specify the allowable uses in each zone. In addition to the zoning use guidelines, your community may have building standards that are more restrictive than the state and federal minimums.

**What uses are allowed in the floodway and flood fringe of the floodplain?**

**Floodway uses**
- Open space uses and limited grading and earth moving may be permitted if they do not create an obstruction or cause any increase in the flood levels. Uses such as gardens, farming, parks, trails, or golf courses may be allowed depending on your zoning district.
- New structures, additions to existing structures, and substantial improvements to existing structures are prohibited.
- A structure built before the publication date of your community’s first FEMA floodplain map (pre-FIRM) is “grandfathered” with the following conditions:
  - A structure may continue to be used, repaired, and maintained, but no addition may be constructed.
  - If a structure is damaged (e.g., by fire, flood, tornado) by more than 50 percent of the pre-damage value, the structure may not be reconstructed.

**Flood fringe uses**
- The use must be allowed by the underlying zoning of the community.
- New structures and additions to existing structures must be elevated on fill (Figure 1).
- New structures and additions, after a conditional use permit is obtained, may use alternative elevation methods, if allowed by the regulations in that community. (See “Conditional Uses in the Floodplain” information sheet #6).
- Accessory structures (e.g., garages, sheds) may be constructed if properly elevated on fill or flood-proofed (for smaller, “minimal investment” structures). (See “Residential Accessory structures in the flood fringe” information sheet #5).

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Figure 1. Houses may be constructed in the flood fringe but must be properly elevated to maintain public safety and minimize damage risk during a flood.
A structure built before the publication date of your community’s first FEMA floodplain map (pre-FIRM) is “grandfathered” with the following conditions:

- A structure may continue to be used, repaired, and maintained, but additions must be elevated or properly flood-proofed in compliance with current community regulations.
- If a structure is damaged (e.g., by fire, flood, tornado) by more than 50 percent of the pre-damage value or if the cumulative additions and improvements are more than 50 percent of the original structure’s inflation-adjusted value, the entire structure would have to be reconstructed to comply with the community’s floodplain regulations (thus losing “grandfather” status).

What are the key building standards for residential structures in flood fringe?

If possible, build outside the floodplain, with your lowest floor (including basement) above the regulatory flood protection elevation (RFPE). This reduces your risk of flooding, and you will not be required to buy flood insurance. Also, if you build outside the high flood risk zone (the 1-percent chance or 100-year flood zone), preferred risk policy (PRP) flood insurance is available at a significantly reduced premium.

If you must build in the flood fringe, work with your community to ensure that all local regulations are addressed in your proposed building plan. NOTE: Local ordinances may be more restrictive.

The key building standards that meet state and federal law (Figure 1) include:

- No placement of fill is permitted in the floodway.
- Top (i.e., walking surface) of the lowest floor (including basement or crawl space) is at or above the RFPE.
- Fill is at 100-year flood elevation plus floodway stage increase, or higher, extending at least 15 feet horizontally from all sides of the structure.
- An “as built” survey is submitted to the zoning authority to verify that the development was built at the permitted elevation.
- Must meet all local ordinance requirements, including setback* requirements (i.e., from lot lines, and for shoreland management or wild and scenic rivers ordinances). Many communities also require that the access (driveway and access roads) elevation is no lower than 2 feet below the RFPE.

*Setbacks are typically measured from the ordinary high-water (OHW) level, which is the top of the bank of the channel on watercourses. The OHW is not the same as the 100-year floodplain elevation, serves a different purpose, and is usually at a lower elevation.

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**RFPE Formula**

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\text{RFPE} = \text{100 year flood elevation} + \text{stage increase due to floodway} + \text{freeboard (state requires 1 foot minimum)}
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**Equivalent Terms and Definitions**

**Base Flood Elevation (BFE)** – Same as the 1 percent annual chance flood elevation or the “100-year” flood elevation.

**Regulatory Flood Protection Elevation (RFPE)** – The RFPE is the 100-year flood (1 percent annual chance flood) elevation + stage increase due to establishing floodway + freeboard (Minnesota’s minimum is 1 foot). The lowest floor must be elevated so that the walking surface of that lowest floor is at the RFPE or higher.

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Figure 2. Key standards for structures in the flood fringe (picture not drawn to scale).