2007

THE NATIONAL FLOOD INSURANCE PROGRAM IN CALIFORNIA

Quick Guide

California Department of Water Resources
Floodplain Management Branch

www.fpm.water.ca.gov

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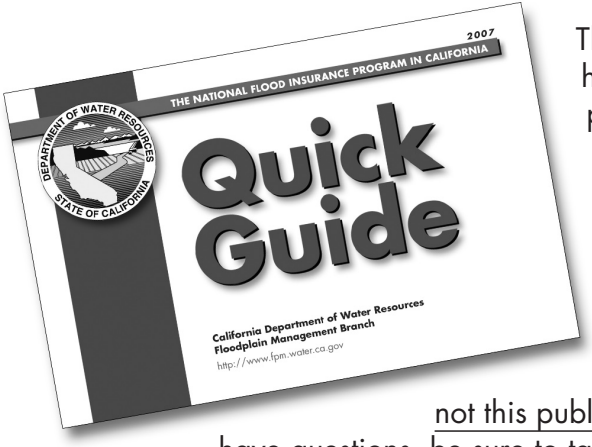
In association with:

ASFPM Association of State Floodplain Managers

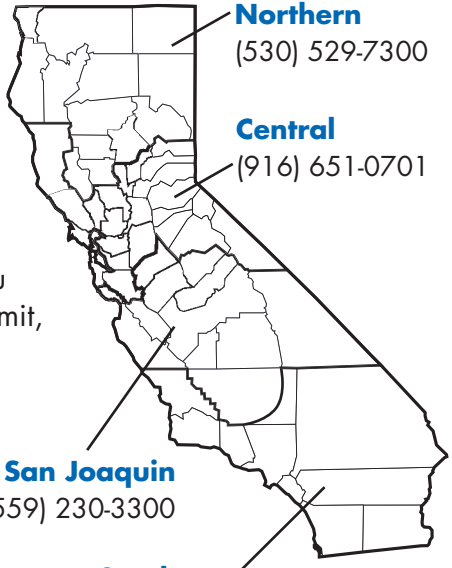
About This Guide



This **Quick Guide** will help you understand more about why and how communities in the State of California manage floodplains to protect people and property.

Flood-prone communities adopt ordinances that detail the rules and requirements for floodplain development. In case of conflict, that ordinance and not this publication, must be followed. If you have questions, be sure to talk with your local planning, permit, engineering, or floodplain management officials.

The California Department of Water Resources (DWR), Floodplain Management Branch, coordinates the National Flood Insurance Program in California (www.fpm.water.ca.gov). Call the Department at (916) 653-5791 and ask for the Floodplain Management Branch, or contact a DWR district office and ask for an NFIP program manager regarding questions or comments.



Introduction

The California Department of Water Resources, Floodplain Management Branch, is pleased to provide this **Quick Guide** to help our citizens understand what floodplain management is and why floodplain development is regulated.

Counties and local communities regulate the floodplain to:

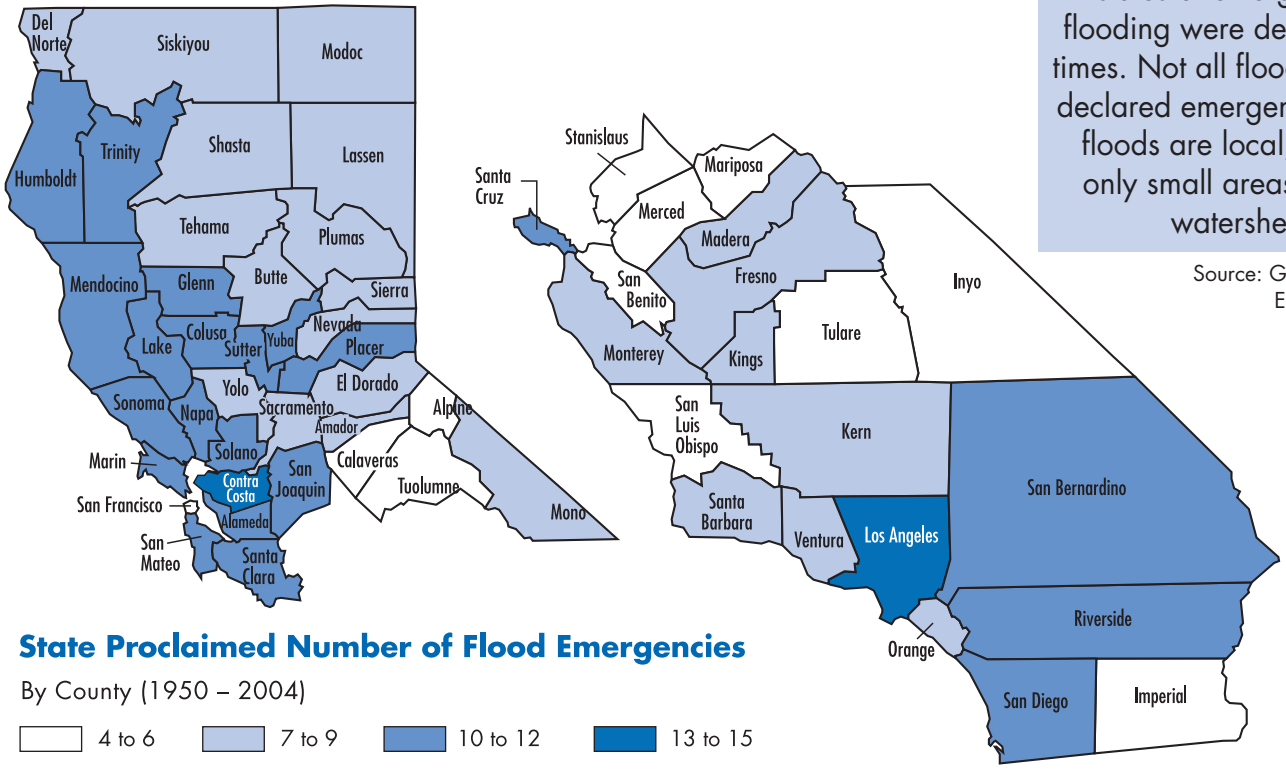
- **Protect** people and property
- **Ensure** that Federal flood insurance and disaster assistance are available
- **Save** tax dollars
- **Reduce** liability and law suits
- **Reduce** future flood losses

Floods have been, and continue to be, a destructive natural hazard in terms of economic loss to the citizens of California. Since 1978, Federal flood insurance policy holders in California have received over $474.2 million in claim payments. Even though that represents many insurance payments, most of the State's flood-prone property owners do not have flood insurance.

California Flood Emergencies

Between 1950 and 2004, states of emergency for flooding were declared 483 times. Not all flood events are declared emergencies– many floods are local, affecting only small areas or a few watersheds.

Source: Governor's Office of Emergency Services



State Proclaimed Number of Flood Emergencies

By County (1950 – 2004)

4 to 6 | 7 to 9 | 10 to 12 | 13 to 15

Why Do We Regulate the Floodplain?

- **To protect people and property.** Floodplain management is about building smart. It makes good sense. If we know part of our land will flood from time to time, we should make reasonable decisions to help protect our families, homes, and businesses.

- **To make sure that Federal flood insurance and disaster assistance are available.** If your home or business is in the floodplain, and Federal flood insurance isn't available, then you can't get some types of Federal financial assistance. Home mortgages will be hard to find and you won't be able to get some types of State and Federal loans and grants.

- **To save tax dollars.** Every flood disaster affects your community's budget. If we build smarter, we'll have fewer problems the next time the water rises. Remember, Federal disaster assistance isn't available for all floods. And even when the President declares a disaster, most of the time your community still has to pay a portion of the costs of evacuation, temporary housing, repair, and clean-up.

- **To avoid liability and law suits.** If we know an area is mapped as a floodplain and likely to flood, if we know people could be in danger, and if we know that buildings could be damaged, it makes sense to take reasonable protective steps when we develop and build.

- **To reduce future flood losses in California.** Development that complies with the minimum floodplain management requirements is better protected against major flood-related damage.

What is the National Flood Insurance Program?

The National Flood Insurance Program (NFIP) was created by Congress in 1968 to protect lives and property and to reduce the financial burden of providing disaster assistance. The NFIP is administered by the Federal Emergency Management Agency (FEMA). Nationwide, over 20,000 communities participate in the NFIP— nearly all of California's flood-prone communities participate.

The NFIP is based on a mutual agreement between the Federal Government and communities. Communities that participate agree to regulate floodplain development according to certain criteria and standards. The partnership involves:

- **Flood hazard maps.** FEMA prepares maps that are used by communities, insurance agents, and others.
- **Flood insurance.** Property owners in participating communities are eligible to purchase Federal flood insurance for buildings and contents.
- **Regulations.** Communities must adopt and enforce minimum floodplain management regulations so that development, including buildings, is undertaken in ways that reduce exposure to flooding (see page 67).

To learn more about the NFIP, including your potential flood risk and the approximate cost of a flood insurance policy, go to FEMA's FloodSmart website www.floodsmart.gov/

Community Responsibilities

To participate in the National Flood Insurance Program, your community agrees to:

- **Adopt and enforce** a flood damage prevention ordinance.
- **Require** permits for all types of development in the floodplain (see page 25).
- **Assure** that building sites are reasonably safe from flooding.
- **Establish** Base Flood Elevations (BFE) where not determined by FEMA.
- **Require** new or substantially improved homes and manufactured homes to be elevated above the BFE.
- **Require** non-residential buildings to be elevated or floodproofed.
- **Determine** if damaged buildings are *substantially* damaged.
- **Conduct** field inspections and cite violations.
- **Require** surveyed elevation information to document compliance (see pages 34, 35, and 36).
- **Carefully consider** requests for variances.
- **Resolve** non-compliance and violations.
- **Advise and work** with FEMA and the State when updates to flood maps are needed.

National Flood Insurance Program

Flood Insurance: Property Owner's Best Protection

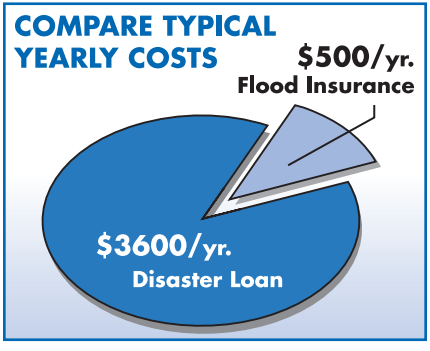
Who needs flood insurance? Federal flood insurance is required for all buildings in mapped Special Flood Hazard Areas (SFHAs) shown on FEMA's maps if they are financed by federally-backed loans or mortgages. All homeowners, business owners and renters in communities that participate in the NFIP may purchase Federal flood insurance on any building, even if outside of the mapped flood zone. If your home is in the mapped SFHA, you are five times more likely to be damaged by flood than by a major fire.

Not in a mapped floodplain? Unfortunately, it's often after a flood that many people discover that their home or business property insurance does NOT cover flood damage. Approximately 25% of all flood damage occurs in low risk zones, commonly described as being "outside the mapped flood zone."

Protected by a levee or dam? Even if you live in an area protected by levees or other flood control structures, there is a residual risk that those structures will be overtopped or fail. If your community's levee provides "100-year" flood protection, there is still a chance that a bigger flood will cause flooding.

What about disaster grants and loans? Federal disaster grants do not cover most losses and repayment of a disaster loan can cost many times more than the price of a flood insurance policy.

Want to know more? Learn more at www.floodsmart.gov.
To purchase a policy, call your insurance agent. To get the name of an agent in your community, call the NFIP's toll free number (888) 356-6329.



The NFIP's Community Rating System (CRS)

The NFIP's CRS gives "extra credit" to communities in the form of reduced flood insurance premiums. Communities must apply to the CRS and commit to implement and certify activities that contribute to reduced flood risk. Examples of actions your community can take to reduce the cost of your insurance premiums include:

- Preserve open space in the floodplain
- Enforce higher standards for safer development
- Undertake engineering studies and prepare flood maps
- Obtain grants to buy out or elevate houses or to floodproof businesses
- Maintain drainage systems
- Monitor flood conditions and issue warnings
- Inform people about flood hazards, flood insurance, and how to reduce flood damage

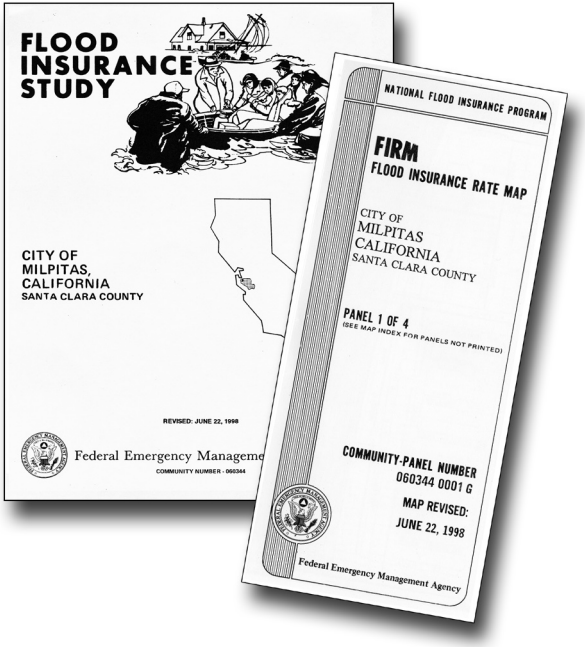
Community officials can request assistance from CRS specialists to help with the application process and prerequisites. Check the online CRS Resources Center (see page 67).

In 2006, Roseville, CA, became the nation's first community to be awarded the highest possible CRS rating. Property owners in Roseville's mapped Special Flood Hazard Area enjoy a 45% discount (10% in non-SFHA areas). Many other California communities participate in the CRS, with discounts from 5% to 25%.

CITY OF ROSEVILLE CALIFORNIA

Looking for FEMA Flood Map Information?

Enter the FEMA Flood Map Service Center at http://msc.fema.gov. Digital scans of flood maps can be downloaded or hardcopy maps can be ordered. Reach the Service Center by calling (800) 358-9616.

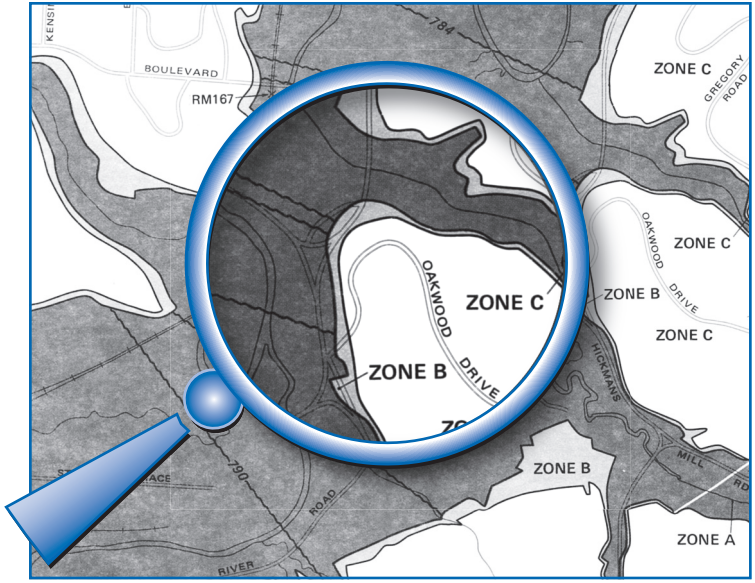


- FEMA prepares Flood Insurance Studies and Flood Insurance Rate Maps (FIRMs) for communities in California.
- Most FIRMs show Special Flood Hazard Areas (SFHAs, also called the "100-year floodplain") and floodways. Some FIRMs show floodplains delineated using approximation analyses (see page 17).
- Not all waterways have designated floodplains – but all waterways will flood, even though a floodplain study may not have been prepared.
- DWR and the State Reclamation Board also have flood map programs (see page 66).

Need a fast answer?

Visit your community's planning, engineering, or permit office where flood maps are available for viewing by the public.

FIRMette: FEMA Flood Maps Online

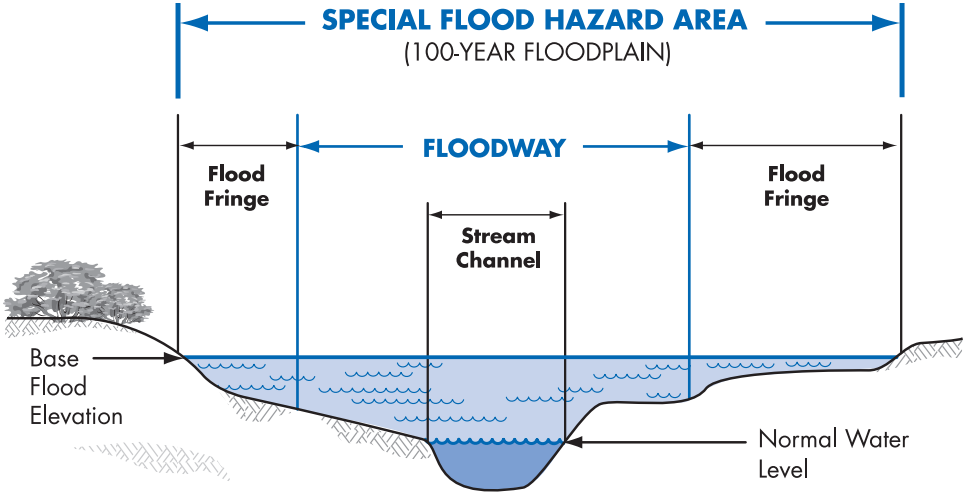


You can order paper maps or digital maps on CD-ROM.

You can find and print a portion of a FIRM by using online tools at http://msc.fema.gov

- Use "Product Search by Address" on the right OR click on "Product Catalog" at the top of the page, select "FEMA Issued Flood Maps", select the state, county and community, then click on "Find FEMA Issued Flood Maps"
- Click the "View" button to display the map panel and use "Zoom" to enlarge the map.
- Use the pan and zoom tools to find the specific area of interest – a miniature map on the left side of the screen shows a red box around the area you are viewing.
- Click the "Make a FIRMette" button and drag the pink translucent box over the area you wish to print.
- Select paper size and Adobe Acrobat (pdf) or Image File (tif).
- Your FIRMette will be displayed and you can print the map or save the file to your hard drive.

Understanding the Riverine Floodplain



For floodplains with Base Flood Elevations, the Flood Profile in the Flood Insurance Study shows water surface elevations for different frequency floods (see page 16).

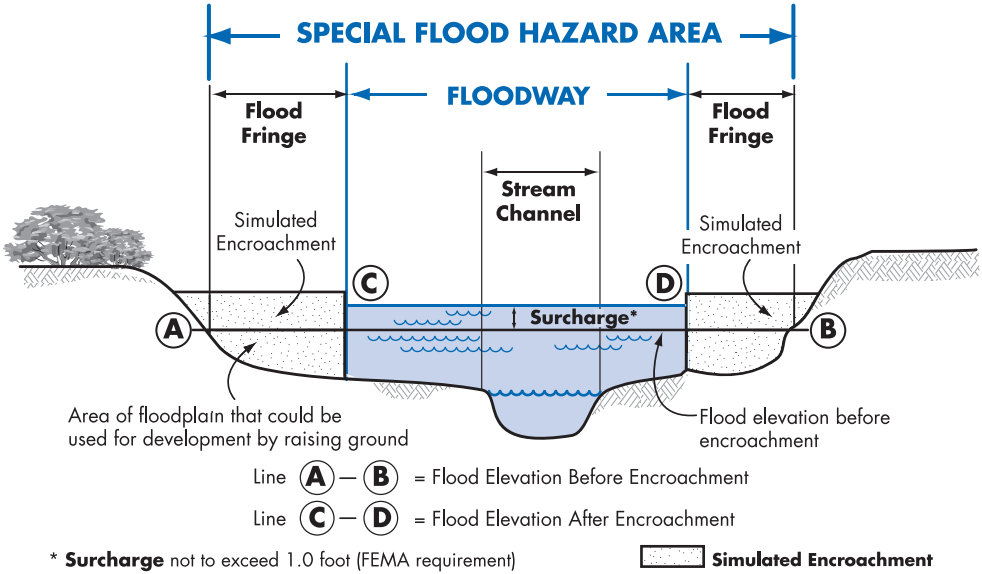
Terms and Definitions

The **Special Flood Hazard Area (SFHA)** is that portion of the floodplain subject to inundation by the base flood (100-year) and/or flood-related erosion hazards. SHFAs are shown on new format FIRMs as Zones A, AE, AH, AO, AR, and A99. Other format FIRMs may have numbered A Zones (A1-A30).

See page 12 to learn about the floodway, the area of the floodplain where floodwaters usually flow faster and deeper.

See page 7 to learn about flood insurance requirements in SFHAs.

Understanding the FEMA Floodway



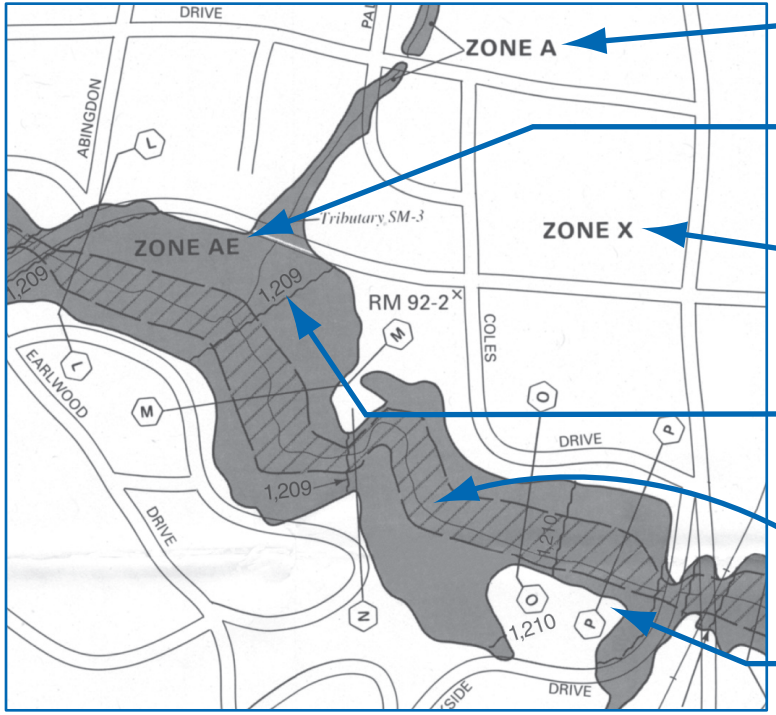
Terms and Definitions

The **Floodway** is the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to pass the base flood discharge without increasing flood depths.

Computer models of the floodplain are used to simulate "encroachment" or fill in the flood fringe in order to predict where and how much the base flood elevation would increase if the floodplain is allowed to be filled.

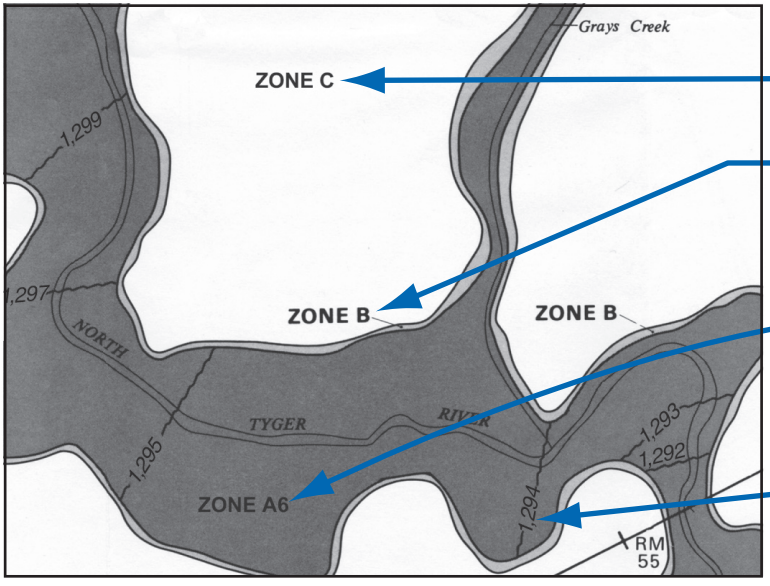
For any proposed floodway development, before a state or local floodplain permit can be issued, the applicant must provide evidence that "no rise" will occur (see page 38).
You will need an experienced registered professional engineer to make sure your proposed project won't increase flooding on other properties.

FEMA Flood Insurance Rate Map (Riverine)



1. **Zone A** (unnumbered) is the 1%-annual-chance flood hazard area without BFEs.
2. **Zone AE** is the 100-year (1%-annual-chance) floodplain with BFEs (formerly called Zones A1- A30).
3. **Zone X** (shaded or unshaded) is other areas considered moderate or low risk (formerly Zone B or C).
4. **Base Flood Elevation (BFE)** is the water surface elevation of the base flood (rounded to whole feet).
5. The **Floodway** is the cross-hatched area.
6. **Cross Section** location (see page 16).

Old Format Flood Insurance Rate Map

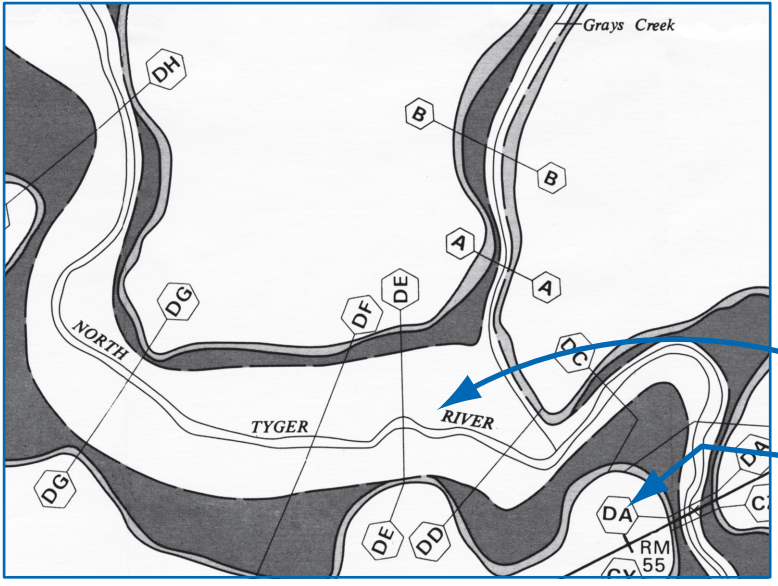


FLOOD HAZARD ZONES

1. **Zone C** (or Zone X) is all areas considered to be low risk.
2. **Zone B** (or shaded Zone X) is subject to flooding by the 500-year flood (0.2% annual chance), and other moderate risk areas.
3. **Zone A, Zones A1-A30** or **Zone AE** are subject to flooding by the base or 100-year flood (1%-annual-chance), and are considered high risk areas.
4. **Base Flood Elevation (BFE).** Water surface elevation of the base flood at specific locations.

FEMA prepares Flood Insurance Rate Maps (FIRMs) to show areas that are at high risk of flooding. These "old format" FIRMs, and companion Flood Boundary and Floodway Maps (next page), are being revised and digitized as part of FEMA's map modernization initiative (see page 22).

Old Format Flood Boundary and Floodway Map



Important

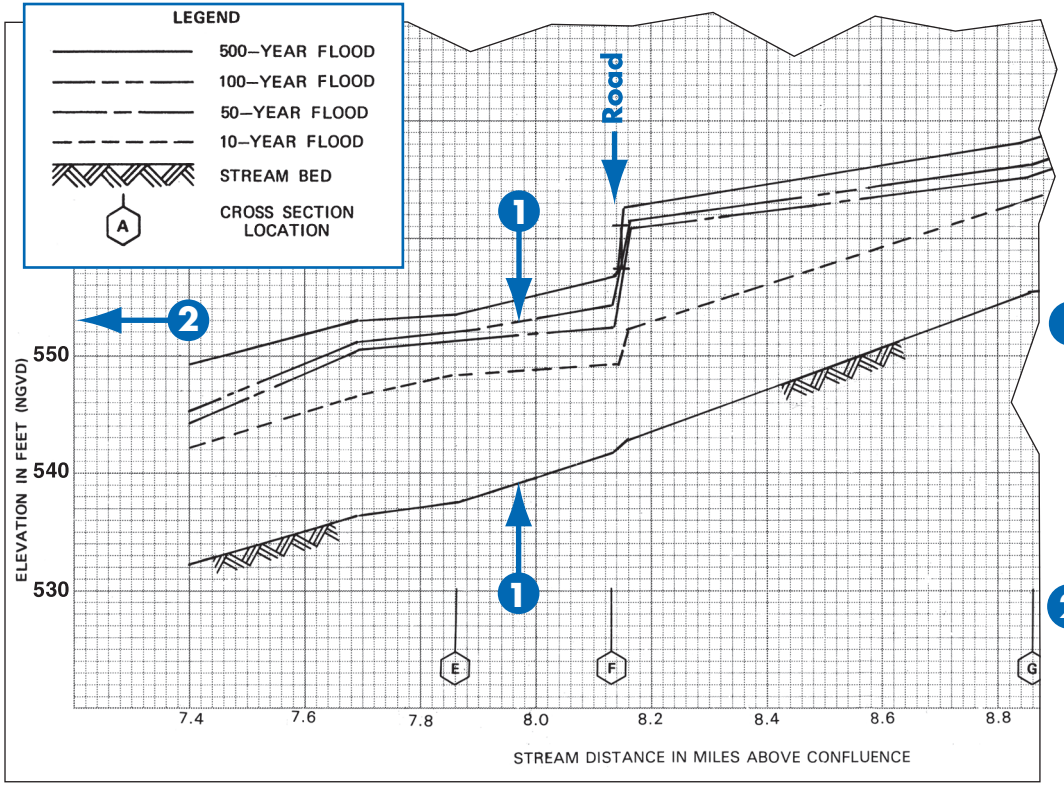
Information

Floodway maps do not show flood zones or BFEs. Check the companion FIRM for that information. Page 14 shows the FIRM that matches the map clip to the left.

1. **The Floodway** is the white area around the waterway centerline.
2. **Cross Section** location, where ground surveys determined the shape of the land and how constrictions such as bridges and culverts affect the flow of floodwater.

FEMA prepared Floodway maps as companions to many "old format" FIRMs. You should check to see if your project will be in the Floodway because additional engineering may be required (see page 38).

Use the Riverine Flood Profile to Determine BFEs



Flood profiles from Flood Insurance Study reports can be used to determine the BFE at a specific site. Profiles also show estimated water surface elevations for floods other than the 1%-annual-chance flood (100-year).

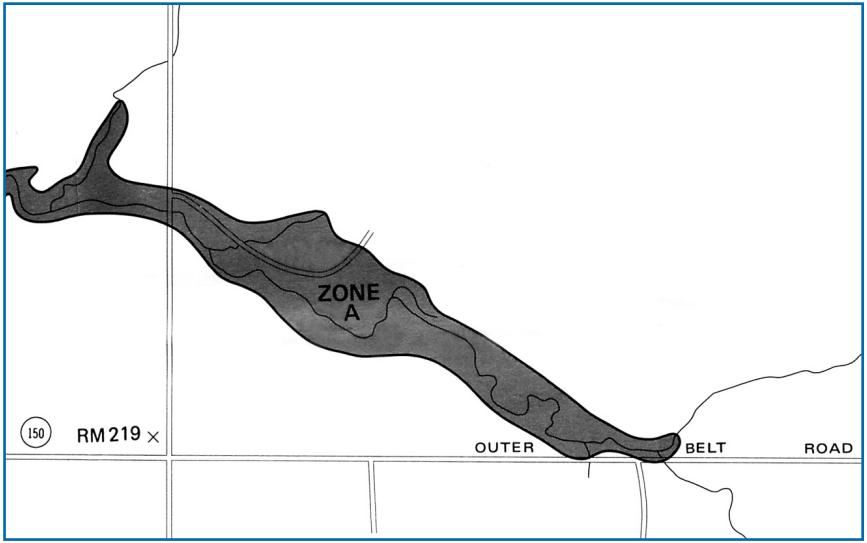
1. On the effective flood map, locate your site by measuring the distance, along the center-line of the stream channel, from a known point such as a road or cross section, for example, E or F.
2. Scale that distance on the Flood Profile and read up to the profile of interest, then across to determine the elevation.

Approximate Flood Zones and Unnumbered A Zones

If you need help determining the BFE in an unnumbered A Zone, check with your community's planning, engineering, or permit office, or the DWR Floodplain Management Branch (see page 1).

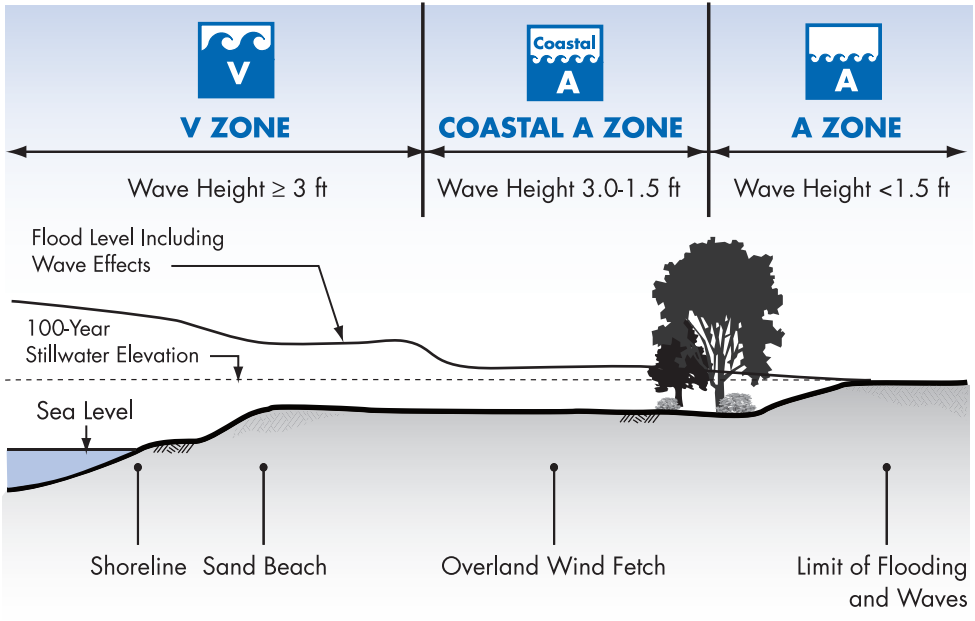
Check www.fpm.water.ca.gov– click "On-line Training", then click on "Development in Approximate A Zones".

The FEMA publication *Managing Floodplain Development in Approximate Zone A Areas* (FEMA 265) is useful for engineers and community officials.



Even if the estimated BFE indicates flooding might be only a foot or two deep, it is recommended that the lowest floor be at least 2 feet above the highest adjacent grade. Not only does this improve flood protection, but lower flood insurance premiums may apply.

Understanding the Coastal Floodplain



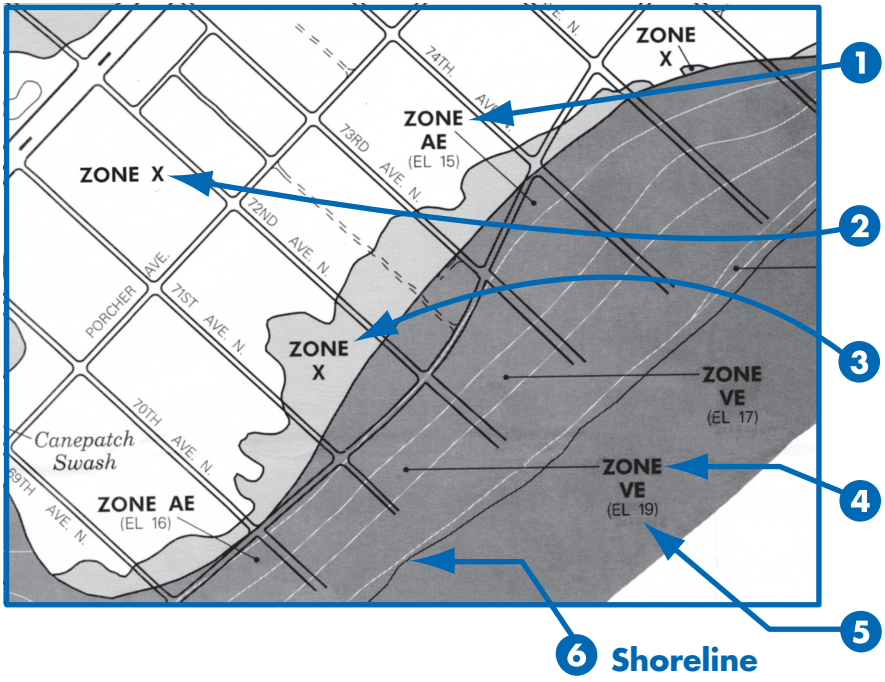
Coastal graphics from *Coastal Construction Manual* (FEMA 55-CD).

Terms and Definitions

The **Coastal High Hazard Area (V Zone)** is the Special Flood Hazard Area that extends from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high velocity wave action. The area is designated on the FIRM as Zone VE (or Zones V1– V30).

The term **Coastal A Zone** means the portion of the SFHA landward of the V Zone or landward of a shoreline that does not have a mapped V Zone. The principle sources of flooding are associated with astronomical tides, storm surges, seiches or tsunamis. Coastal A Zones may be subject to wave effects, velocity flows, erosion, scour, or combinations of these forces and may be treated as V Zones.

FEMA Flood Insurance Rate Map (Coastal)



COASTAL FLOOD HAZARD ZONES

Zone A and **Zone AE** are subject to flooding by the base or 100-year flood (1%-annual-chance), and waves less than 3 feet (formerly called Zones A1-A30).

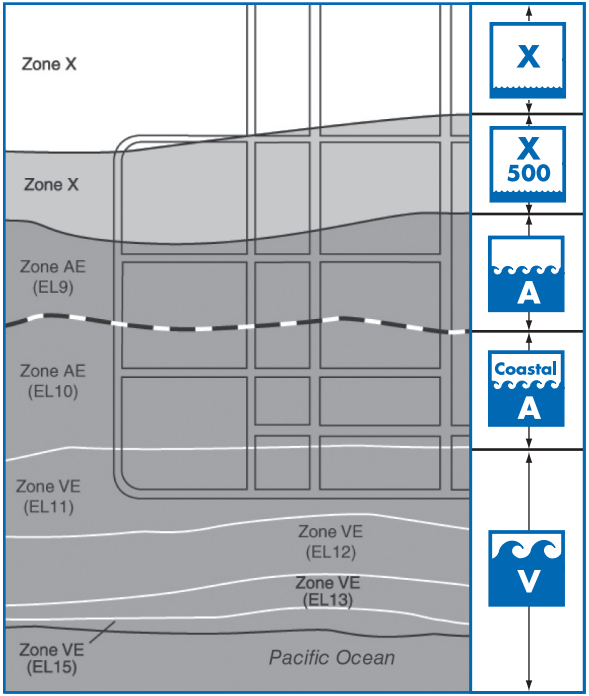
Unshaded Zone X is the area of minimal flood risk outside the 500-year floodplain, formerly called Zone C.

Shaded Zone X is subject to flooding by the 500-year flood (0.2% annual chance), formerly called Zone B.

Zone V and **Zone VE** are where waves are expected to be 3 feet or more.

Base Flood Elevation (BFE) is the estimated water surface elevation (in feet above datum).

The Coastal A Zone (CAZ)



For illustrative purposes only. Flood Insurance Rate Maps do not show the Coastal A Zone Boundary depicted in this example (heavy dashed line).

- Post-flood evaluations and laboratory tests confirm that breaking waves as small as 1.5 feet high cause damage to walls and foundations.
- The CAZ is not shown on FIRMs, but stillwater depths between 2 and 4 feet can support CAZ waves.
- V Zone construction methods are recommended in CAZs, including pile, post and column foundations and breakaway walls around enclosures.
- Where possible, exceed minimum V Zone construction requirements (for example, elevate above BFE).

Terms and Definitions

The **Coastal A Zone** (CAZ) is the area landward of a V Zone, or landward of an open coast without a mapped V Zone, where the principal source of flooding will be astronomical tides, storm surges, seiches or tsunamis, not riverine flooding. During base flood conditions, the potential for breaking wave heights between 1.5 feet and 3.0 feet will exist.

Alluvial Fan Flooding Requires Special Attention

Alluvial fan flood hazard areas are shown on FIRMs as AO Zones with a "depth number" and anticipated velocity. Special attention is required if buildings are proposed in these areas:

- Lowest floors must be elevated at least as high as the depth number above the highest adjacent grade (plus freeboard, if required).
- Buildings may be elevated on a fill pad or a raised foundation – fills and foundations must be designed by a qualified registered professional engineer to resist the anticipated flood depths, erosion, and velocities.
- Drainage and grading must prevent directing water, sediment and debris flows onto adjacent properties.

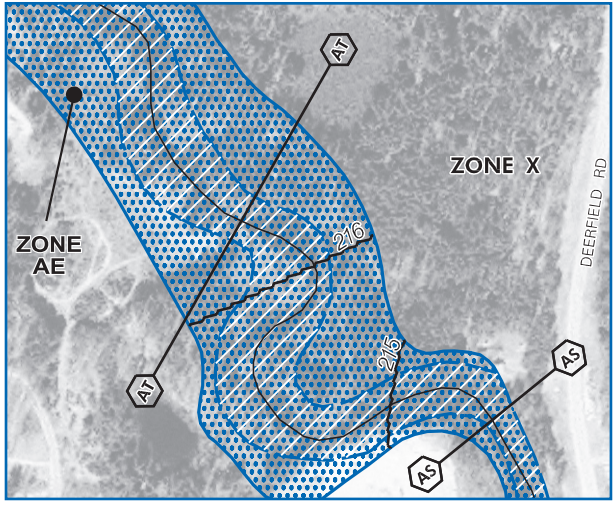
Some of California's mountains have alluvial fans at their base. Alluvial fans are a landform created where floodwaters rushing off the steep mountains spread out and deposit sand, cobble, and rocks.

Flood Map Modernization

DWR, FEMA, the U.S. Army Corps of Engineers, and California communities are cooperating to modernize the flood maps.

All new and revised flood maps will be designed to view digitally on a computer within a Geographic Information System (GIS) or as paper maps. Flood maps will be composites of base data, topographic data, and flood layers which can be overlain with parcel information or other data to more easily determine if a house or other property is or will be located in a Special Flood Hazard Area or Floodway.

DWR's new Awareness Floodplain Maps are prepared using approximate assessment procedures. The maps show potential flood risk areas (without flood depths) which have not been mapped by FEMA. To check for awareness floodplain maps in your area, click on "Mapping Program" at www.fpm.water.ca.gov/.



This map uses aerial photography (topographic layer not shown)

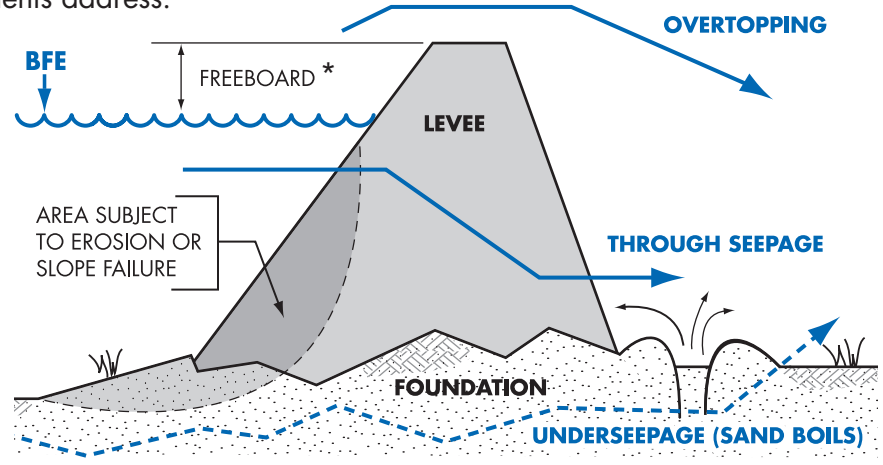
Learn more about FEMA's flood map modernization initiatives at http://www.fema.gov/plan/prevent/fhm.

Levee Certification for FEMA Flood Maps

Many levees are designed to protect land against flooding from the Base Flood. In order for FEMA to show those areas as outside of the Special Flood Hazard Area, communities and levee owners must certify that levees meet certain design criteria. Certification will present significant challenges during the map revision process.

Communities that have levees should determine whether certification will be required as soon as possible. Pursuant to FEMA's Procedural Memoranda 34 and 43, and as outlined in Federal regulations at 44 CFR Section 65.10, the documentation requirements address:

- Freeboard
- Closures
- Embankment protection for erosion
- Embankment and foundation stability
- Settlement
- Interior drainage and seepage
- Operation and maintenance plans
- Other site specific criteria



* Freeboard is the distance between the BFE and the top of the levee; for FEMA accreditation freeboard is usually 3 feet

Flood Map Revisions Issued by FEMA

1. **Letter of Map Amendment (LOMA)** is an official amendment to an effective FIRM that may be issued when a property owner provides additional technical information from a Land Surveyor or Civil Engineer, such as ground elevation relative to the BFE, SFHA, and the building. Lenders may waive the flood insurance requirement if the LOMA documents indicate that a building is on natural ground above the BFE.
2. **Letter of Map Revision (LOMR)** is an official revision to an effective FIRM that may be issued to change flood insurance risk zones, special flood hazard areas and floodway boundary delineations, BFEs, and/or other map features. Lenders may waive the insurance requirement if the approved map revision shows buildings to be outside of the SFHA.
3. **Letter of Map Revision Based on Fill (LOMR-F)** is an official revision to an effective FIRM that is issued to document FEMA's determination that a structure or parcel of land has been elevated by fill above the BFE, and therefore is no longer in the SFHA. Lenders may waive the insurance requirement if the LOMR-F shows that a building on fill is above the BFE.
4. **Physical Map Revision (LOMR PMR)** may be issued for major floodplain changes that require engineering analyses, such as bridges, culverts, channel changes, flood control measures, and large fills that change the BFE or floodway. Physical map revisions are also issued when a new study updates or improves the FIRM.
5. **Electronic Letter of Map Amendment (eLOMA)** is a web-based application for licensed Land Surveyors or Civil Engineers to submit simple LOMAs to FEMA.

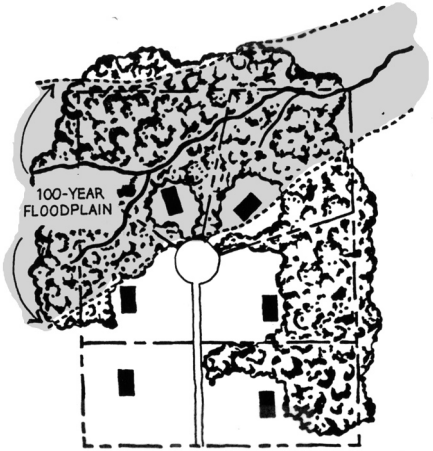
Check online at www.fema.gov/plan/prevent/fhm/ for more information about map revisions for different user groups, including homeowners, surveyors, engineers, and insurance professionals.

Activities Requiring Local Floodplain Permits

- Construction of new buildings
- Additions to existing buildings
- Substantial improvements of existing buildings
- Renovation of existing building interiors
- Repair of substantially damaged buildings
- Placement of manufactured (mobile) homes
- Subdivision of land
- Construction or placement of temporary buildings and accessory structures
- Construction of agricultural buildings
- Construction of roads, bridges, and culverts
- Placement of fill, grading, excavation, mining, and dredging
- Alteration of stream channels

You need local floodplain permits for **ALL** of these activities.
The State Reclamation Board also issues permits for Central Valley levee encroachments and development within its "designated floodways" (see page 66).

Safer Uses of the Floodplain

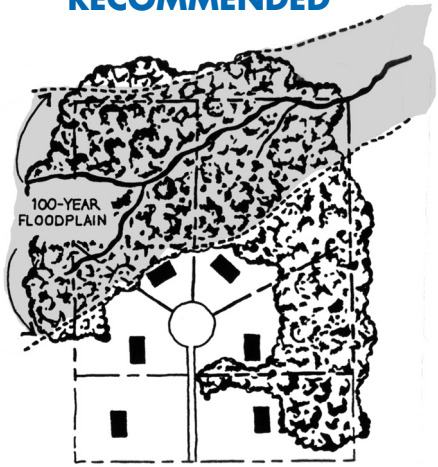


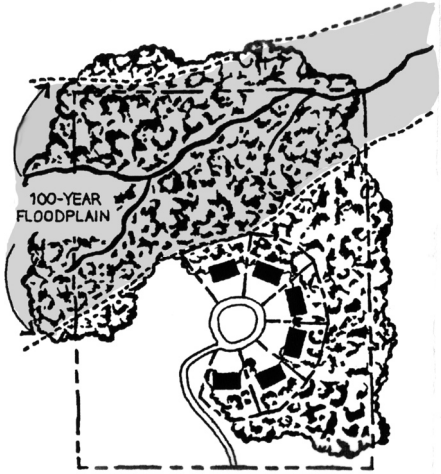
All land subdivided into lots, some homesites and lots partially or entirely in the floodplain.

NOT RECOMMENDED

All land subdivided into lots, some lots partially in the floodplain, setbacks modified to keep homesites on high ground.

RECOMMENDED



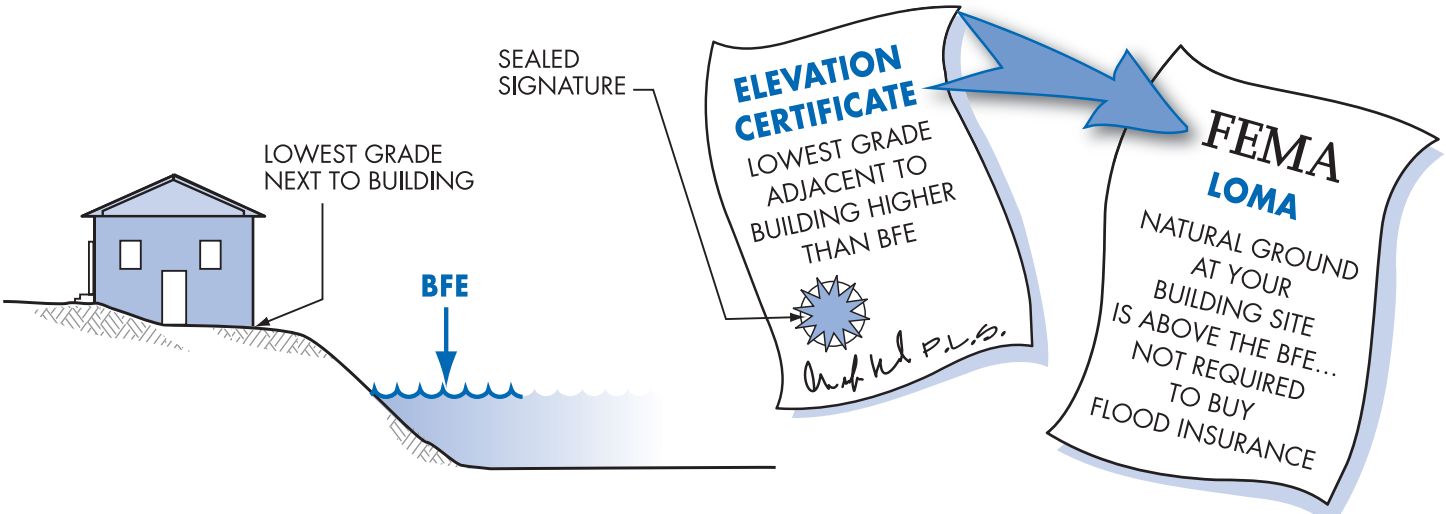


Floodplain land put into public/common open space, net density remains, lot sizes reduced and setbacks modified to keep homesites on high ground.

RECOMMENDED

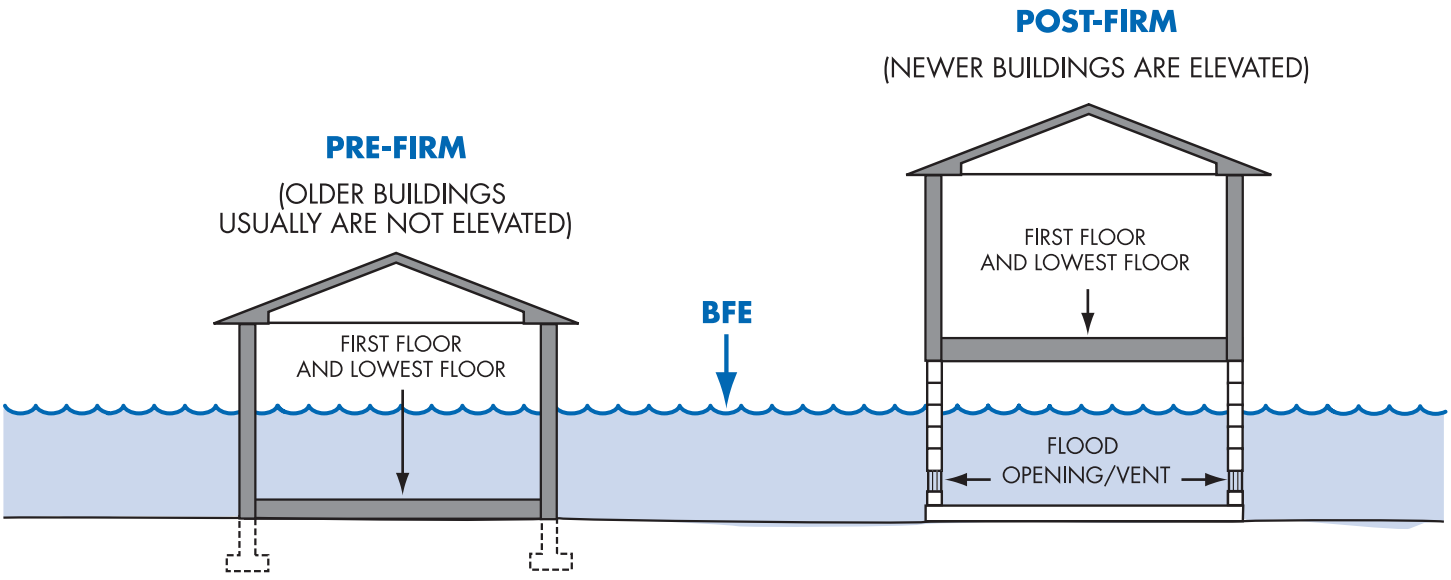
Let the floodplain do its job – if possible, keep it as natural open space. Other compatible uses: recreational areas, playgrounds, reforestation, parking, gardens, pasture, and created wetlands.

Is Your Building Site Higher than the BFE?



If your land is shown on the map as "in" the SFHA, but your building site is higher than the Base Flood Elevation (BFE)... get a Land Surveyor or Civil Engineer to complete a FEMA Elevation Certificate (EC). Submit a request for a Letter of Map Amendment to FEMA along with the EC to verify that your structure is above the BFE (see page 24). If FEMA approves your request, it will remove the mandatory Federal requirement to purchase flood insurance. Keep the certificate with your deed, it will help future buyers.

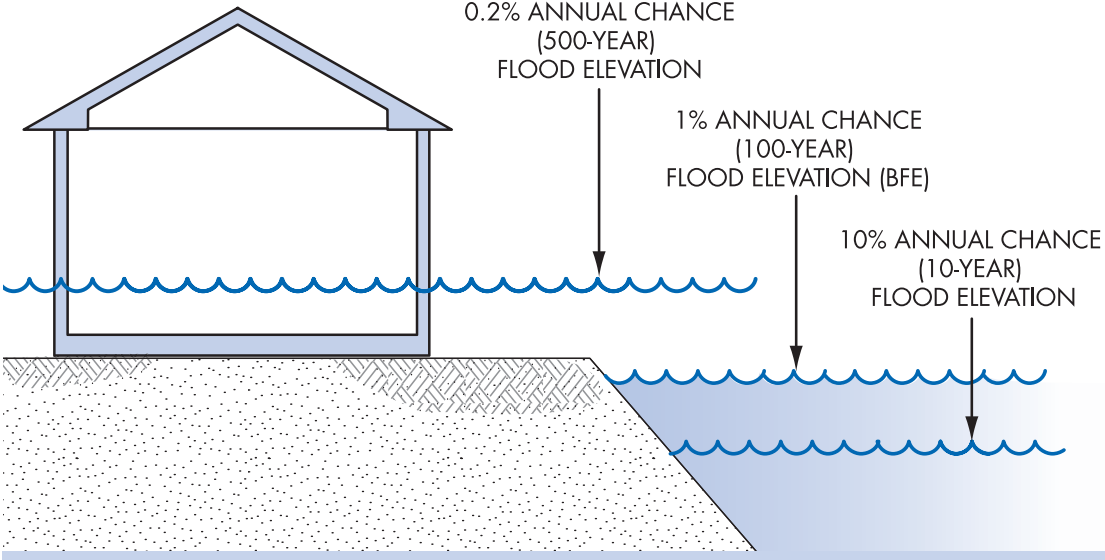
What is Meant by Pre-FIRM and Post-FIRM Structures?



A building is **Pre-FIRM** if it was built **before** the date of your community's first FIRM.
If built **after** that date, a building is **Post-FIRM**.

Improvements or repairs to Pre-FIRM buildings may require permits (see pages 53 through 58).

Nature Doesn't Read Flood Maps

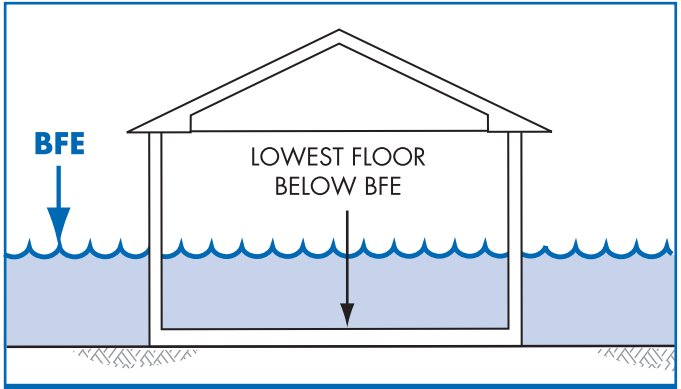


Important Information

Many people don't understand just how risky the floodplain can be. There is a greater than 26% chance that a non-elevated home in the SFHA will be damaged during a 30-year mortgage period. The chance that a major fire will occur during the same period is less than 5%!

CAUTION! Nature doesn't read the flood map! Major storms and flash floods can cause flooding that rises higher than the Base Flood Elevation (BFE). Consider safety – protect your home or business by building higher. See page 33 to see how this will save you money on flood insurance.

Think Carefully Before You Seek A Floodplain Variance



POST-FIRM BUILDING, NOT ELEVATED

INSURANCE $5,000+ PER YEAR

Very specific conditions related to the property (not the owner) must be satisfied to justify a variance:

- Good and sufficient cause
- Unique site conditions
- Non-economic hardship
- If in the floodway, no increase in flood level

A variance that allows construction below the BFE does not waive your lender's flood insurance requirement. Flood insurance will be very expensive – perhaps more than $5,000 per year (see page 33)!

Think carefully before seeking a variance to build below the Base Flood Elevation.
Not only will your property be more likely to suffer damage, but insurance will be very costly.

If your community has a pattern of issuing variances, sanctions could be imposed – costing you even more!

Some Key Floodplain Permit Review Steps

The Permit Reviewer has to Check Many Things. Some of the Key Questions are:

- Is the site near a watercourse?
- Is the site in the mapped FEMA or State Reclamation Board floodplain or floodway?
- Have other State and Federal permits been obtained?
- Is the site reasonably safe from flooding?
- Does the site plan show topography, Base Flood Elevation, and building location?
- Is substantial improvement of an older building proposed?
- Is an addition proposed?
- Will new buildings and utilities be elevated properly?
- Will manufactured homes be properly elevated and anchored?
- Do the plans show an appropriate and safe foundation?
- Will the owner/builder have to submit an as-built Elevation Certificate?

Carefully Complete the Permit Application

Owner's Name:
DAVID & SALLY JONES

Site Address, Tax #, Parcel #:
781 REED STREET, 400-33A-002

A. Description of Work

1. Proposed Development Description:

- ☑ New Construction
- ☐ Alteration or Repair
- ☑ Filling
- ☐ Grading
- ☐ Dredging
- ☐ Manufactured/Modular
- ☐ Logging
- ☐ Other

2. Size and Location of Development

SINGLE FAMILY (2,000 CY FILL);
FLOOD FRINGE OF DRY RIVER

3. Type of Construction

- ☑ New Residential
- ☐ New Non-Residential
- ☐ Addition
- ☐ Improvement
- ☐ Renovation
- ☑ Accessory structure
- ☐ Temporary

Community, Map, and Elevation Data:

1. Community No: 060243
2. Panel No: 125C
3. Zone AE
4. Base Flood Elevation 59.2
5. Required Lowest Floor Elevation (including basement) 60.2
6. If floodproofed, required floodproofing elevation N/A
7. Elevation to which all attendant utilities, including all heating, duct work, and electrical equipment will be installed or floodproofed: 60.2

Applicant's Signature: David M. Jones

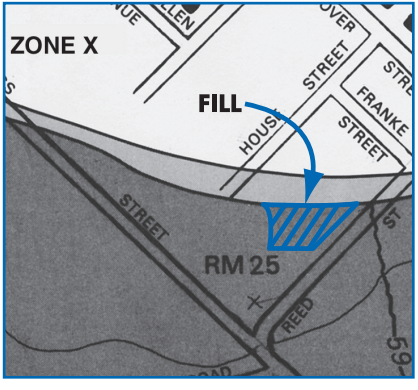
Part of a sample Floodplain Permit Application

(may vary by community)

Good information will lead to better construction and less exposure to future flood damage.

Important Information

You must get all permits **before** you do work in a floodplain.



Freeboard: Build Higher, Reduce Damage, Save on Insurance

DWR recommends that the lowest floor of all new buildings and substantially improved buildings be elevated at least two feet above the BFE. Remember, upstream development as well as uncertainty may result in higher future flood levels. Building higher protects your home and belongings, reduces damage, and lowers the cost of NFIP flood insurance.

The approximate annual costs for NFIP flood insurance on a post-FIRM home in an AE Zone with $250,000 coverage on the structure and $100,000 coverage on contents, are:

+3 ft and higher $485

+2 ft to +3 ft $550

+1 ft to +2 ft $725

BFE to +1 ft $1,230

BFE to –1 ft $5,385

–1 ft and lower.....Expensive! (submit to FEMA for rates)

Nearly one-third of all NFIP claims are paid on buildings outside of the SFHA (in shaded Zone X and unshaded Zone X areas). In these areas, less expensive "Preferred Risk" policies are available.

Important Information

NOTE: Flood insurance rates and various fees change from time to time. Rather than specific costs for insurance, these figures give a feel for how much difference just a foot or two can make.

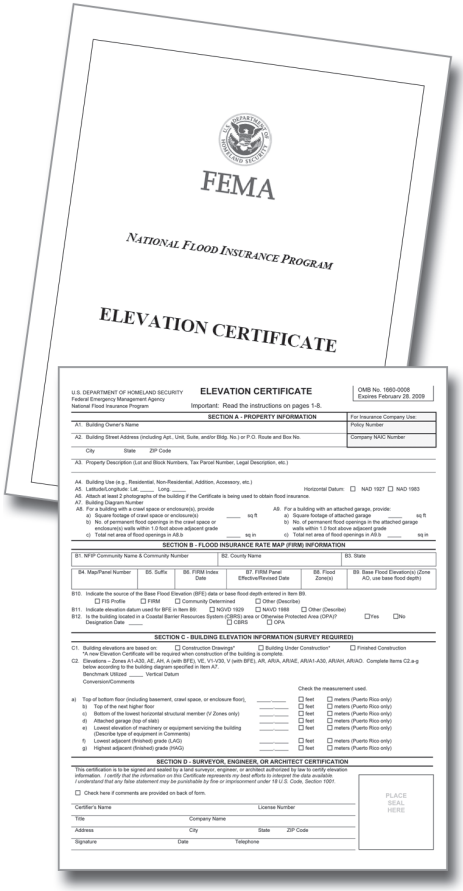
Remember! When building a new home, be sure the builder checks the floor elevation as part of the foundation inspection. An error of just 6 to 12 inches could more than double what you have to pay for NFIP flood insurance.

The community may be able to grant a variance, but the owner will probably still be required to buy insurance. Imagine trying to sell a house if the bank requires insurance that costs about $5,000 a year!

What is the Elevation Certificate and How is it Used?

- The Elevation Certificate (EC) is a FEMA form. Go to www.fema.gov/ and search for "Elevation Certificate."
- The EC must be completed and sealed by a Land Surveyor or Civil Engineer.
- A community official may complete the EC for sites in Approximate A Zones and AO Zones.
- It can be used to show that the grades of building sites are above the Base Flood Elevation (see page 27).
- It is used to verify that buildings are elevated properly (see page 36).
- Insurance agents use the EC to write and rate flood insurance policies.

By itself, the EC cannot be used to waive the requirement to obtain flood insurance. See page 24 to learn about FEMA's Letter of Map Amendment.


FEMA

NATIONAL FLOOD INSURANCE PROGRAM

ELEVATION CERTIFICATE

U.S. DEPARTMENT OF HOMELAND SECURITY
Federal Emergency Management Agency
National Flood Insurance Program

ELEVATION CERTIFICATE

OMB No. 1660-0008
Expires February 28, 2009

Important: Read the instructions on pages 1-8.

SECTION A - PROPERTY INFORMATION

For Insurance Company Use:
Policy Number
Company NAIC Number

A1. Building Owner's Name
A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.
City State ZIP Code
A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.)
A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.)
A5. Latitude/Longitude: Lat. ____ Long. ____ Horizontal Datum: ☐ NAD 1927 ☐ NAD 1983
A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.
A7. Building Diagram Number
A8. For a building with a crawl space or enclosure(s), provide:
a) Square footage of crawl space or enclosure(s) ____ sq ft
b) No. of permanent flood openings in the crawl space or enclosure(s) walls within 1.0 foot above adjacent grade
c) Total net area of flood openings in A8.b ____ sq in
A9. For a building with an attached garage, provide:
a) Square footage of attached garage ____ sq ft
b) No. of permanent flood openings in the attached garage walls within 1.0 foot above adjacent grade
c) Total net area of flood openings in A9.b ____ sq in

SECTION B - FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

B1. NFIP Community Name & Community Number
B2. County Name
B3. State

B4. Map/Panel Number	B5. Suffix	B6. FIRM Index Date	B7. FIRM Panel Effective/Revised Date	B8. Flood Zone(s)	B9. Base Flood Elevation(s) (Zone AO, use base flood depth)

B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in Item B9.
☐ FIS Profile ☐ FIRM ☐ Community Determined ☐ Other (Describe)
B11. Indicate elevation datum used for BFE in Item B9: ☐ NGVD 1929 ☐ NAVD 1988 ☐ Other (Describe)
B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? ☐ Yes ☐ No
Designation Date ____ ☐ CBRS ☐ OPA

SECTION C - BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

C1. Building elevations are based on: ☐ Construction Drawings* ☐ Building Under Construction* ☐ Finished Construction
*A new Elevation Certificate will be required when construction of the building is complete.
C2. Elevations – Zones A1-A30, AE, AH, A (with BFE), VE, V1-V30, V (with BFE), AR, AR/A, AR/AE, AR/A1-A30, AR/AH, AR/AO. Complete Items C2.a-g below according to the building diagram specified in Item A7.
Benchmark Utilized ____ Vertical Datum
Conversion/Comments
Check the measurement used.
a) Top of bottom floor (including basement, crawl space, or enclosure floor) ____ ____ ☐ feet ☐ meters (Puerto Rico only)
b) Top of the next higher floor ____ ____ ☐ feet ☐ meters (Puerto Rico only)
c) Bottom of the lowest horizontal structural member (V Zones only) ____ ____ ☐ feet ☐ meters (Puerto Rico only)
d) Attached garage (top of slab) ____ ____ ☐ feet ☐ meters (Puerto Rico only)
e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment in Comments) ____ ____ ☐ feet ☐ meters (Puerto Rico only)
f) Lowest adjacent (finished) grade (LAG) ____ ____ ☐ feet ☐ meters (Puerto Rico only)
g) Highest adjacent (finished) grade (HAG) ____ ____ ☐ feet ☐ meters (Puerto Rico only)

SECTION D - SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

This certification is to be signed and sealed by a land surveyor, engineer, or architect authorized by law to certify elevation information. *I certify that the information on this Certificate represents my best efforts to interpret the data available. I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001.*

☐ Check here if comments are provided on back of form.

Certifier's Name
License Number
Title
Company Name
Address
City
State
ZIP Code
Signature
Date
Telephone

PLACE SEAL HERE

Completing the Elevation Certificate

ELEVATION CERTIFICATE (partial)

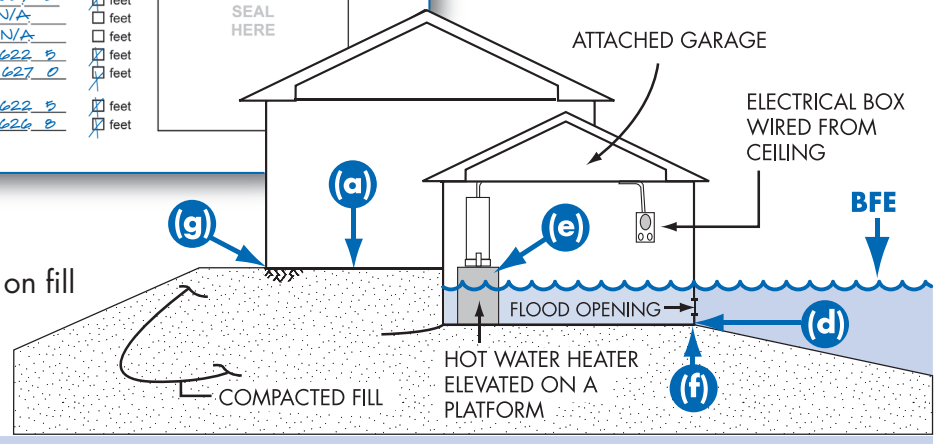
SECTION C - BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

C1. Building elevations are based on: ☐ Construction Drawings* ☐ Building Under Construction* ☒ Finished Construction
*A new Elevation Certificate will be required when construction of the building is complete.

C2. Elevations – Zones A1-A30, AE, AH, A (with BFE), VE, V1-V30, V (with BFE), AR, AR/A, AR/AE, AR/A1-A30, AR/AH, AR/AO. Complete Items C2.a-g below according to the building diagram specified in Item A7.
Benchmark Utilized BM55 Vertical Datum NGVD 1929
Conversion/Comments

a)	Top of bottom floor (including basement, crawl space, or enclosure floor)	627.0	☒ feet
b)	Top of the next higher floor	N/A	☐ feet
c)	Bottom of the lowest horizontal structural member (V Zones only)	N/A	☐ feet
d)	Attached garage (top of slab)	622.5	☒ feet
e)	Lowest elevation of machinery or equipment servicing the building (Describe type of equipment in Comments)	627.0	☒ feet
f)	Lowest adjacent (finished) grade (LAG)	622.5	☒ feet
g)	Highest adjacent (finished) grade (HAG)	626.8	☒ feet

PLACE SEAL HERE



In this example, the BFE is 625.0 feet.

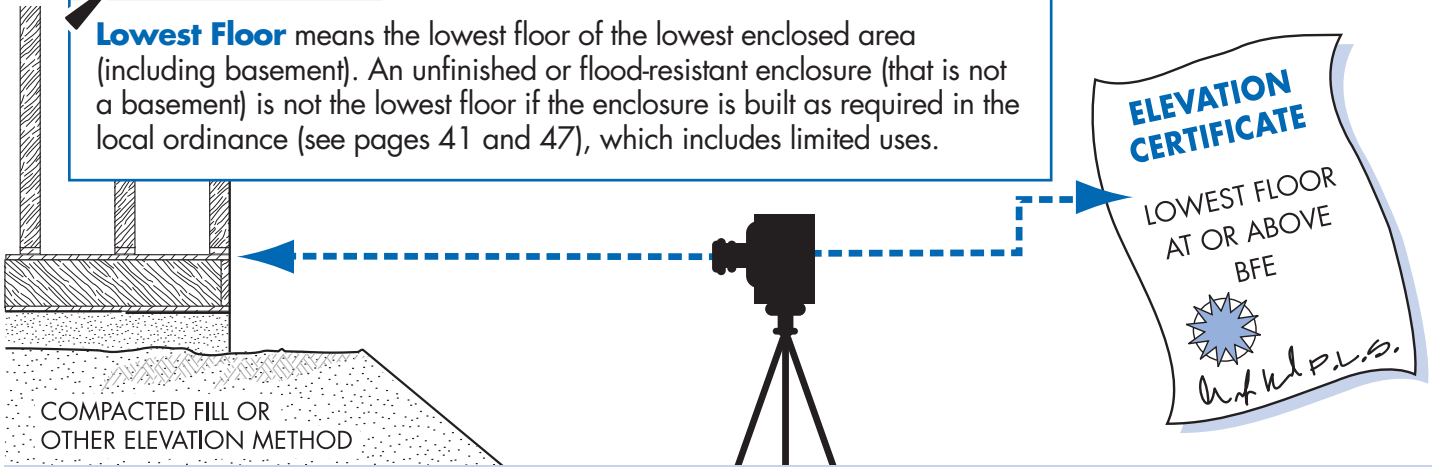
The slab-on-grade house was elevated on fill 2 feet above the BFE, and the vented garage is 2.5 feet below the BFE.

You will get a blank Elevation Certificate form when you get your permit. You **must** have a Land Surveyor or Civil Engineer fill it out and seal it. The Elevation Certificate includes diagrams for eight building types. Several points must be surveyed.

Paperwork is Important – for You and Your Community

Terms and Definitions

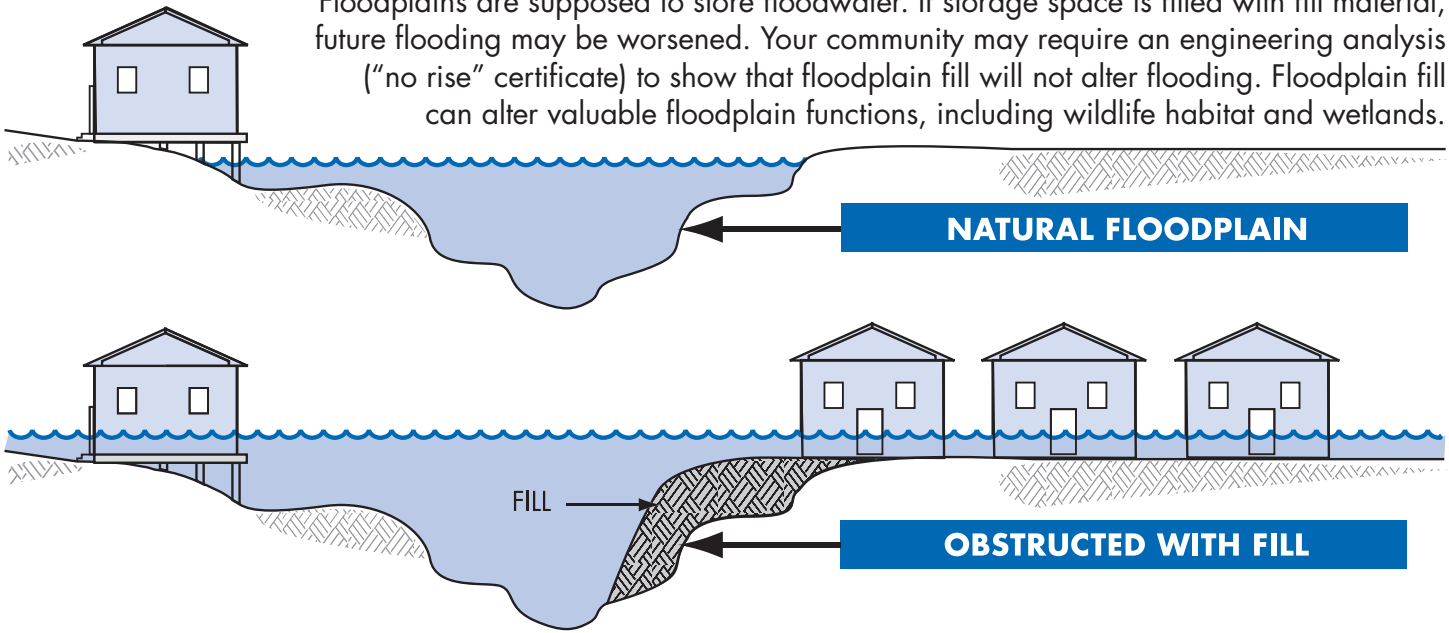
Lowest Floor means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood-resistant enclosure (that is not a basement) is not the lowest floor if the enclosure is built as required in the local ordinance (see pages 41 and 47), which includes limited uses.



If you get a permit to build in the floodplain, you will be given given a FEMA Elevation Certificate or a similar form issued by the community. As soon as your lowest floor is set, get the form filled out and sealed by a Land Surveyor or Civil Engineer. Another "as-built" survey will be required when construction is completed. **This form is important!** It proves that you built correctly, and it can be used to obtain the correct insurance rating.

Floodplain Fill Can Make Things Worse

Floodplains are supposed to store floodwater. If storage space is filled with fill material, future flooding may be worsened. Your community may require an engineering analysis ("no rise" certificate) to show that floodplain fill will not alter flooding. Floodplain fill can alter valuable floodplain functions, including wildlife habitat and wetlands.



Make sure your floodplain fill project won't harm your neighbors. Floodway fill is allowed **only** if an engineering evaluation demonstrates that "no rise" in flood level will occur (see page 38).

Required Floodway "No Rise" Certification

- Floodways can be dangerous because water may flow very fast.
- Development is not allowed unless "no rise" in flood elevations, floodway elevations, and floodway widths is certified.
- An engineer must evaluate the hydraulic impact of proposed development.

ENGINEERING "NO RISE" CERTIFICATION (example)

This is to certify that I am a duly qualified engineer licensed to practice in the State of California. I further certify that the attached technical data support the finding that the proposed (Name of Development) will not cause a rise in the Base Flood Elevations in the floodway 0f (Name of Stream).

National Flood Insurance Program

Signature _____ Seal _____

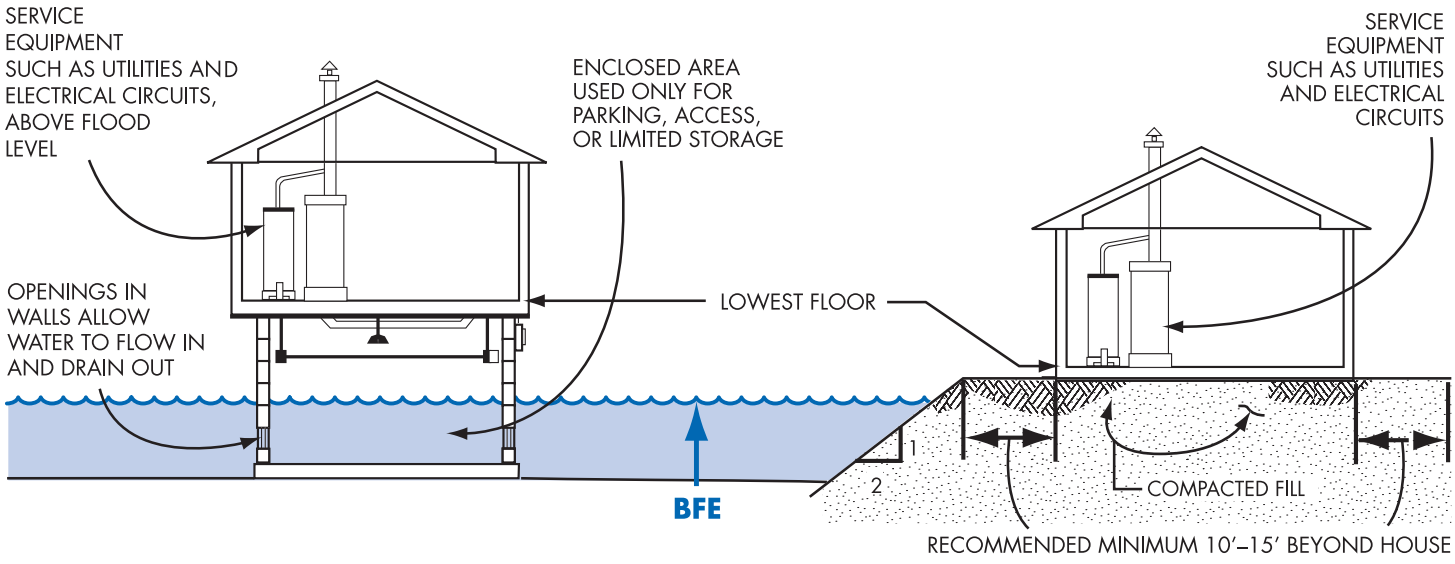
- A "no rise" certification is required and must be signed, sealed, and dated by a registered professional engineer.
- Check with your community for guidance before you decide to work in a floodway.

The engineering analysis must be based on technical data obtained from FEMA.
Save time and money – don't build in the floodway!

How to Elevate Your Floodplain Building (Riverine)

ELEVATE ON FOUNDATION WALLS

ELEVATE ON FILL

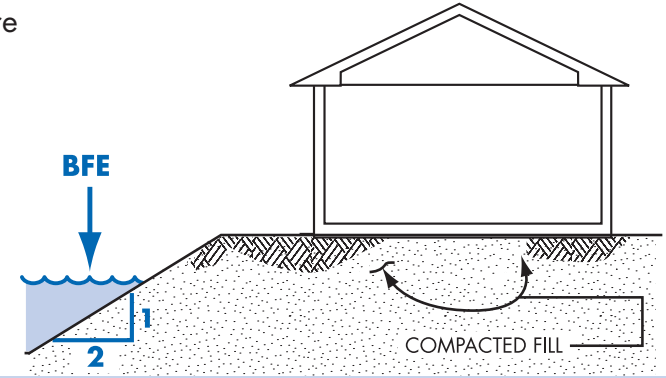


CAUTION! Enclosures (including crawlspaces) have some special requirements (see pages 41 and 47). Note: When the walking surface of the lowest floor is at the BFE, under-floor utilities are not allowed. Fill used to elevate buildings must be placed properly (see page 40).

Compaction of Floodplain Fill

Earthen fill used to raise the ground above the flood elevation must be placed properly so that it does not erode or slump when water rises. For safety and to meet floodplain requirements, floodplain fill should:

- Be good clean soil, free of large rocks, construction debris, and woody material (stumps, roots)
- Be machine-compacted to 95 percent of the maximum density (determined by a design professional)
- Extend 10 to 15 feet beyond the footprint of the structure
- Have graded side slopes that are not steeper than 2:1 (one foot vertical rise for every 2 feet horizontal extent); flatter slopes are recommended
- Have slopes protected against erosion (vegetation for "low" velocities, durable materials for "high" velocities – determined by a design professional)



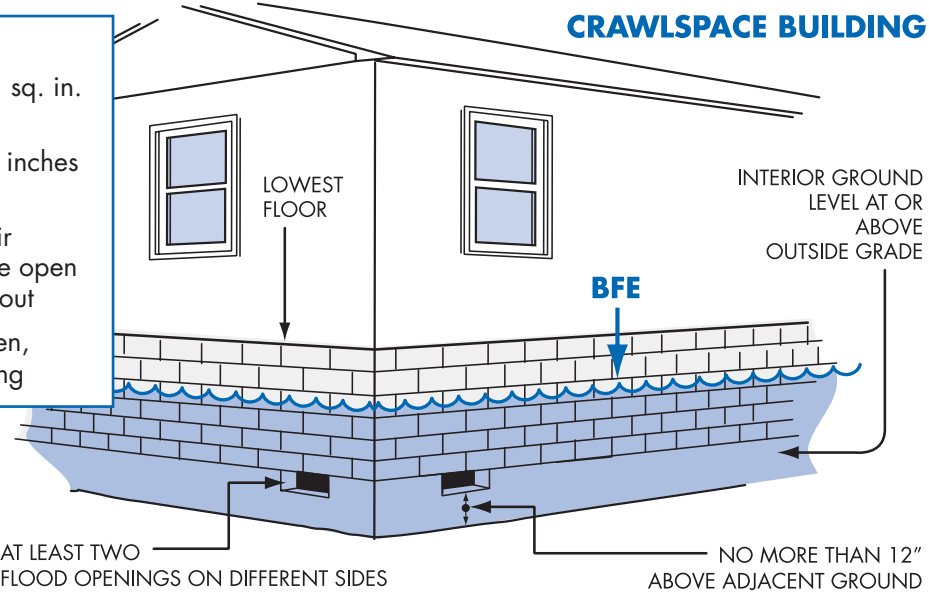
Your community may ask for certification of the elevation, compaction, slope, and slope protection materials. FEMA's MT-1 application includes a certification form for this purpose.

Enclosures Below the BFE

NOTE:

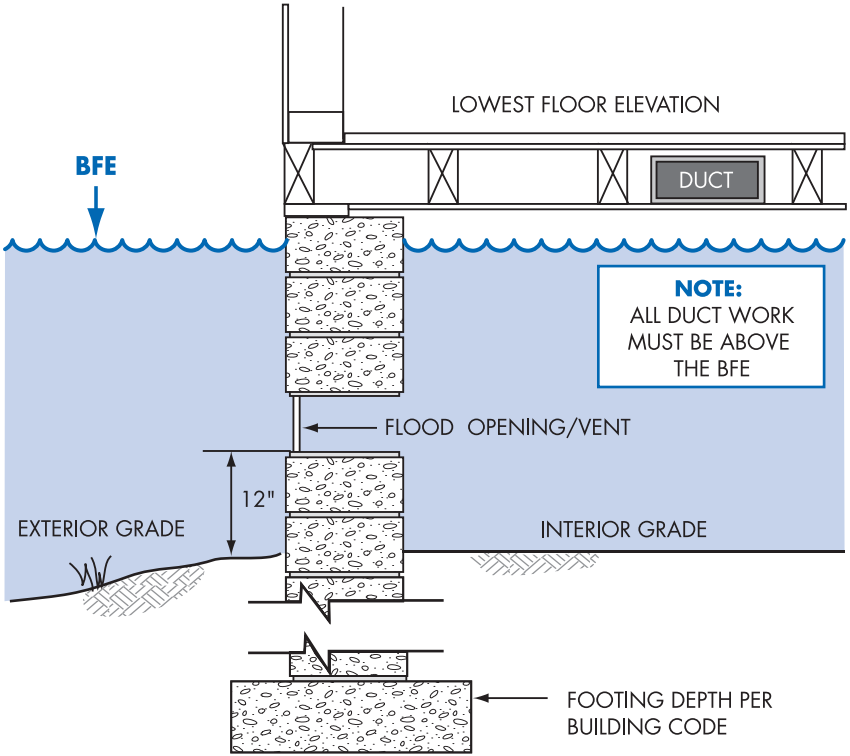
- Total net area of all total openings is 1 sq. in. per sq. ft. of enclosed area
- A 25′ x 45′ building needs 1,125 sq. inches of openings
- If inserted in flood openings, typical air ventilation units must be disabled in the open position to allow water to flow in and out
- A typical air ventilation unit, with screen, provides 42 to 65 sq. inches of opening

ALTERNATIVE: Engineered openings are acceptable **if certified** to allow adequate automatic inflow and outflow of floodwaters.



Solid perimeter wall foundations can enclose flood-prone space. A crawlspace is a good way to elevate just a couple of feet. In all cases, the following are required: flood vents/openings, elevated utilities, flood-resistant materials, and limitations on use.

Crawlspace Details

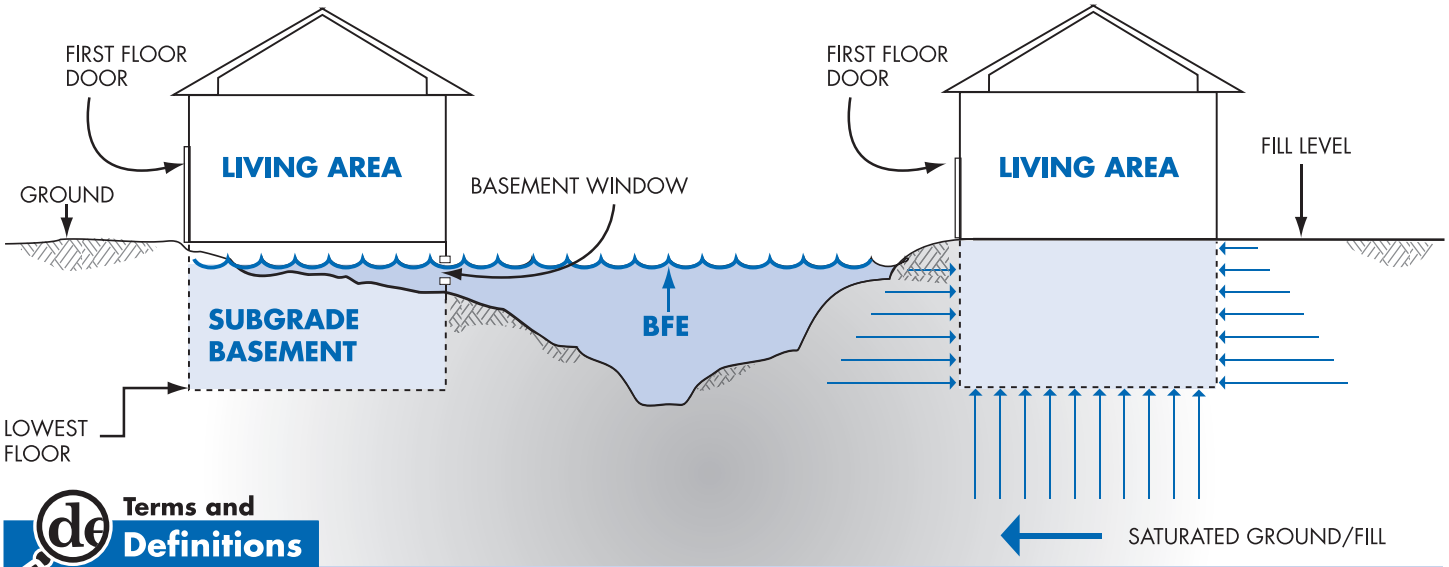


- The Lowest Floor Elevation must be at or above the BFE.
- The bottom of flood openings/vents must be no more than 12 inches above grade.
- Standard ventilation units must be disabled in the "open" position to allow water to flow in and out.
- Interior grade must be equal to or higher than exterior grade on at least one side.

Calculate Net Flood Opening:

A building that measures 25′ x 45′ has 1,125 square feet of enclosed crawlspace. Flood vents must provide 1,125 sq. in. of net open area (or have certified engineered openings). If a standard air vent unit provides 60 sq. in. of net open area, 19 vent units are required to satisfy the flood opening requirement (1,125 divided by 60).

Basements Are Unsafe

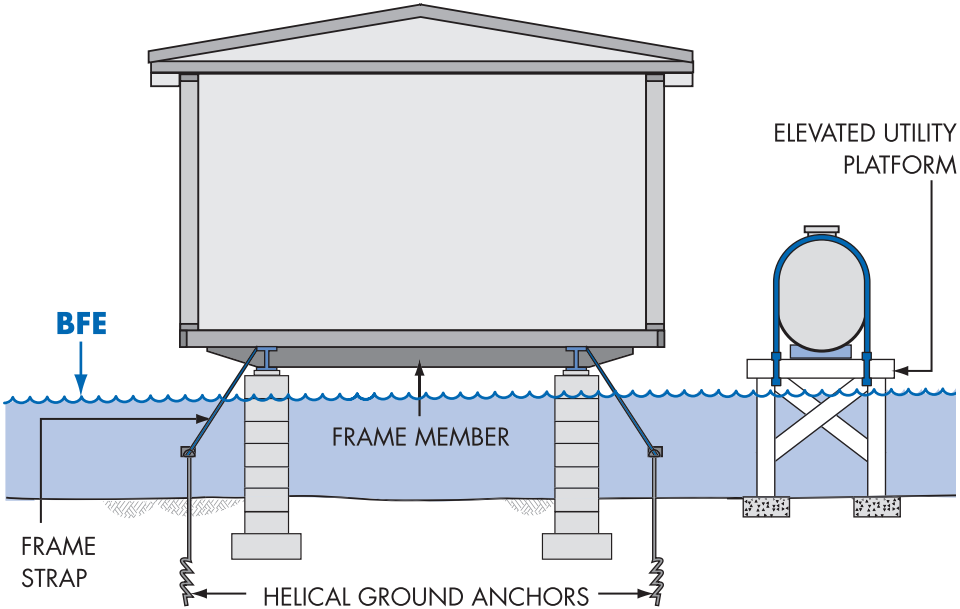


Terms and Definitions

A **basement** is any portion of a building that has its floor sub-grade (below ground level) on all sides.

Basements below the BFE **are not** allowed in new development and flood insurance coverage is very limited in existing basements for a very good reason. It only takes an inch of water over the sill and the entire basement fills up! Excavating a basement into fill doesn't always make it safe because saturated groundwater can damage the walls.

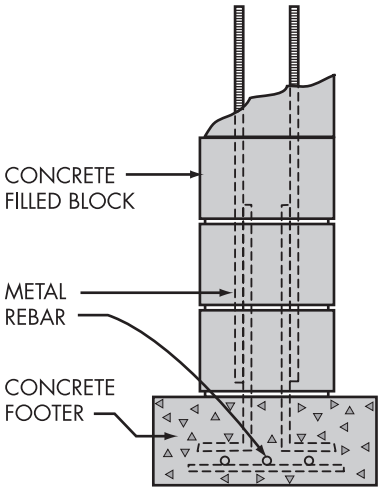
Manufactured Homes Require Special Attention



Manufactured homes must be anchored to resist flotation, collapse, or lateral movement by being tied down in accordance with your community's ordinance or the manufacturers' installation specifications.

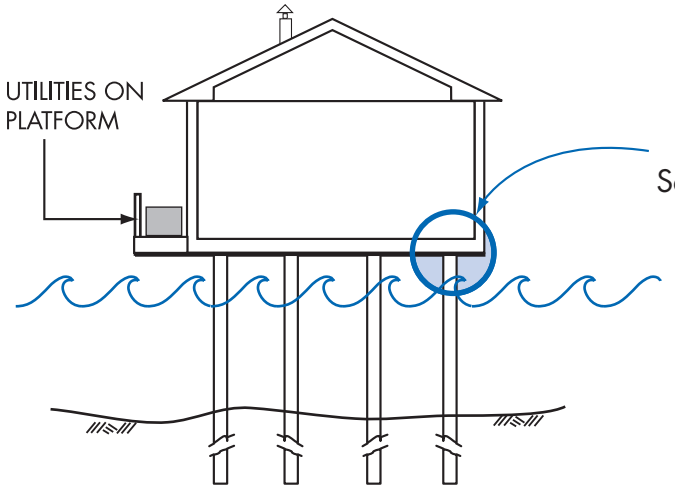
Experience shows that manufactured homes are easily damaged. As little as 1 foot of water can cause substantial damage.

Dry stacked blocks are not acceptable — they will **NOT** withstand a flood.



Typical Elevation Methods for Coastal Buildings

Elevate on Pilings

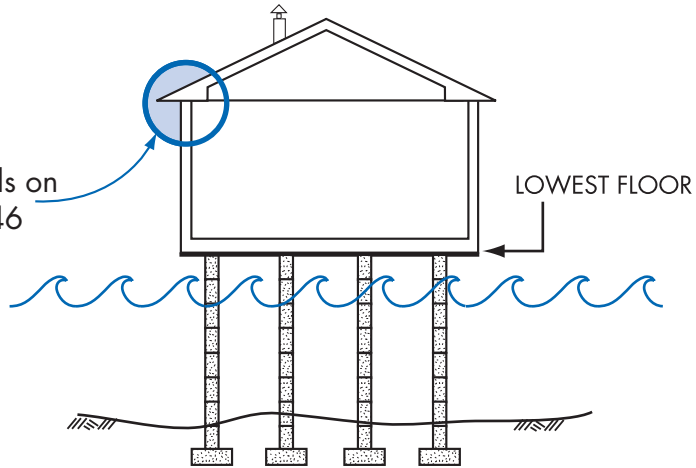


Wood or Metal Piles Installed to Proper Depth

See details on
page 46

BFE

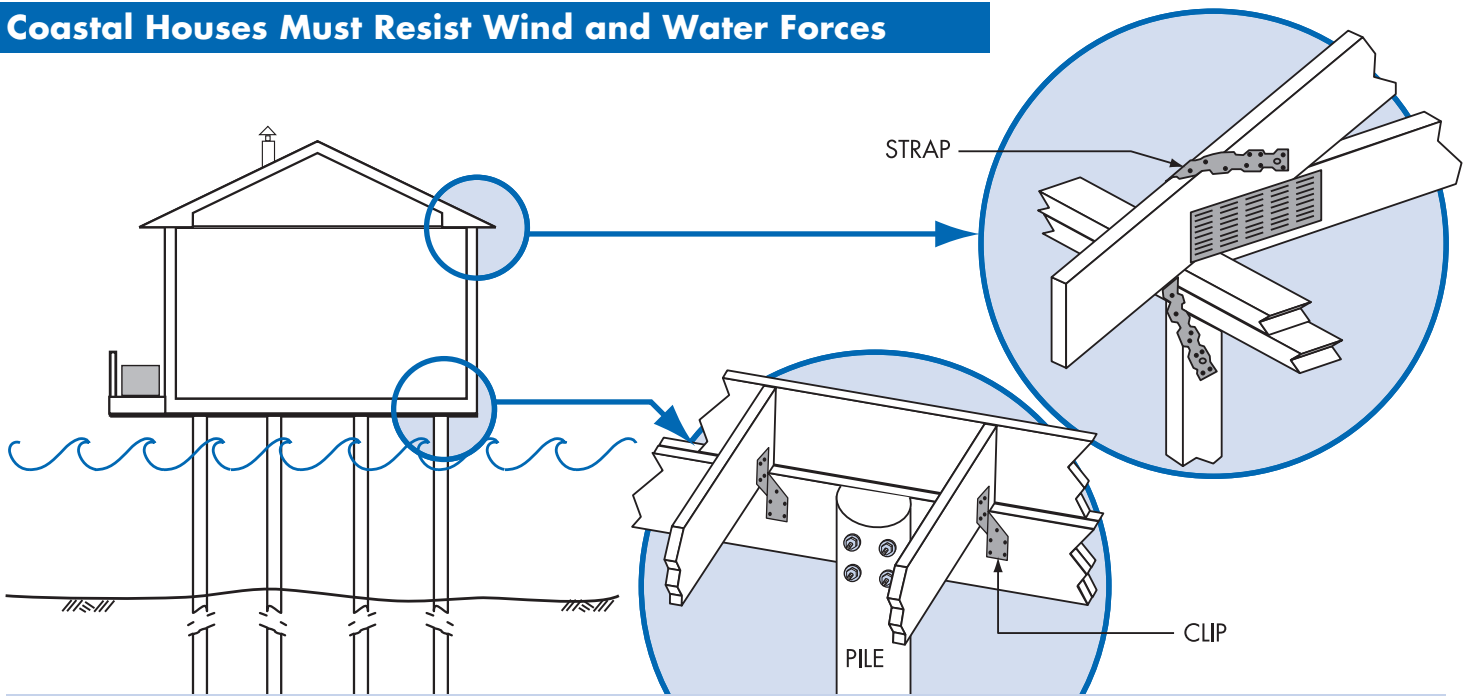
Elevate on Columns



**Reinforced Masonry or
Concrete Columns on Spread Footers**

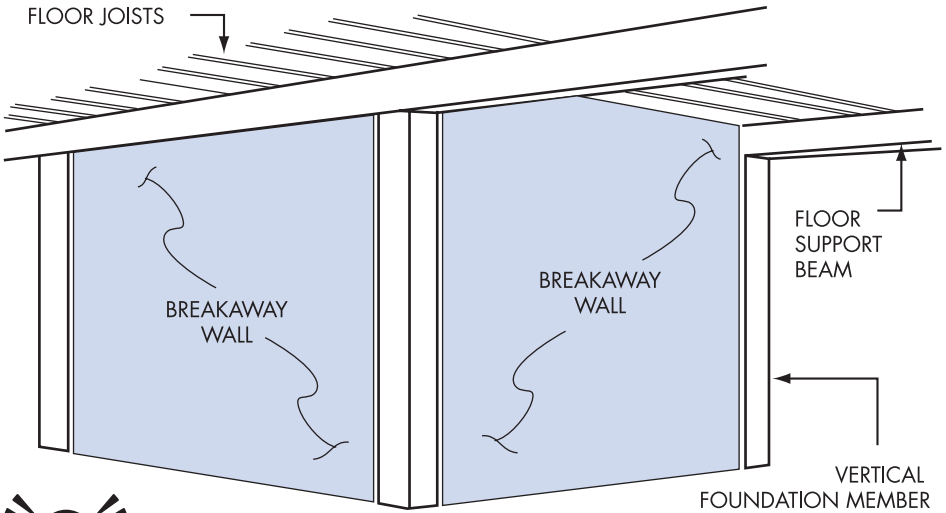
In V Zones the design specifics will be determined by your architect or engineer based on your site, including how your building will be elevated and how deep in the ground the foundation elements will extend. Your community will require certified or sealed building designs and plans (see page 48).

Coastal Houses Must Resist Wind and Water Forces



Coastal buildings may be exposed to both high winds and floodwater, so they must be built to hold together during storms. These details are only examples. Your architect or engineer will specify the type of clips and straps to keep the roof and building connected to the foundation.

Enclosures Below V Zone Buildings



Avoid building an enclosure under your V Zone building. If you must enclose a small area, your community will require:

- Walls must be designed to collapse or "breakaway" under storm and flood conditions
- Must be unfinished and use flood resistant materials
- Utility wires and pipes should not go through or be attached to the breakaway walls
- Enclosed area is to be used only for parking, building access, or limited storage
- No bathrooms, utility rooms, or electric service below BFE
- Size limited to less than 300 square feet (or insurance premiums are higher)

Important Information

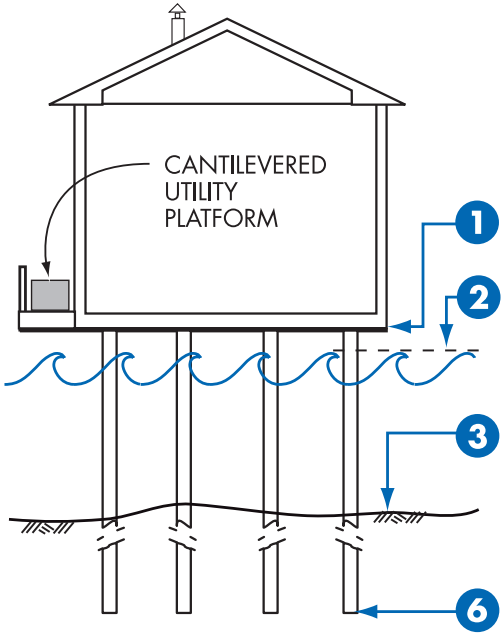
Do not modify an enclosure below an elevated V Zone building (or any zone for that matter)! It is a violation of your community's regulations, and you may have increased damage when it floods. Plus, your flood insurance policy will cost a lot more!

The V Zone Certification (Sample)

V Zone Building and Performance Certification (partial)

Elevation Information

1. Elevation of the Bottom of the Lowest Horizontal Structural Member..... 17 feet
2. Base Flood Elevation (BFE)..... 16 feet
3. Elevation of Lowest Adjacent Grade (LAG)..... 6 feet
4. Foundation type: Piling X / Post __/ Pier __/ Column __/ Fill __/ Shear Wall __/ Enclosed Wall __/
   Foundation Description: DRIVEN WOOD PILES, NO OBSTRUCTIONS EXCEPT OPEN STAIRS
5. Approximate depth of scour/erosion used for foundation design..... 5 feet
6. Embedment depth of pilings or foundation below LAG..... 16 feet



A Registered Professional Engineer or Architect must review or prepare your building design and provide a signed and sealed statement that the design meets minimum design and construction requirements.

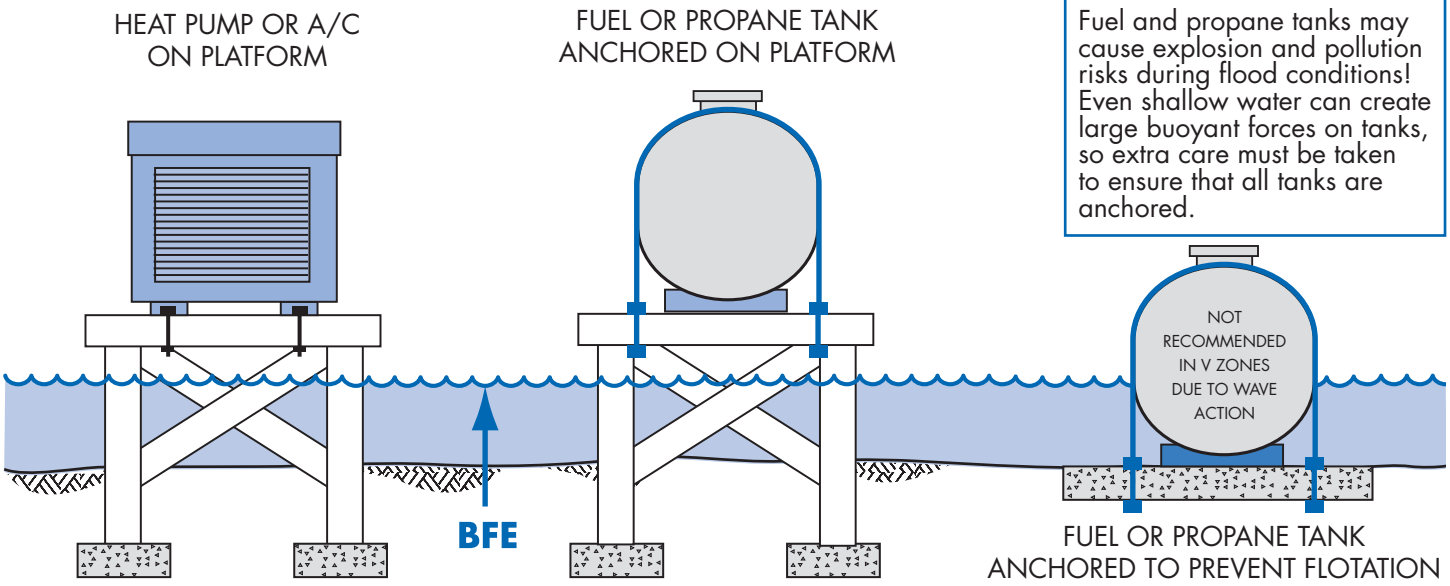
Note: You will also have to submit an "as-built" Elevation Certificiate when construction is finished.

Resource: *Coastal Construction Manual* (FEMA 55C). Revised in 2000, this interactive CD is a useful tool for engineers and architects who design buildings in V zones.

Utility Service Outside Buildings

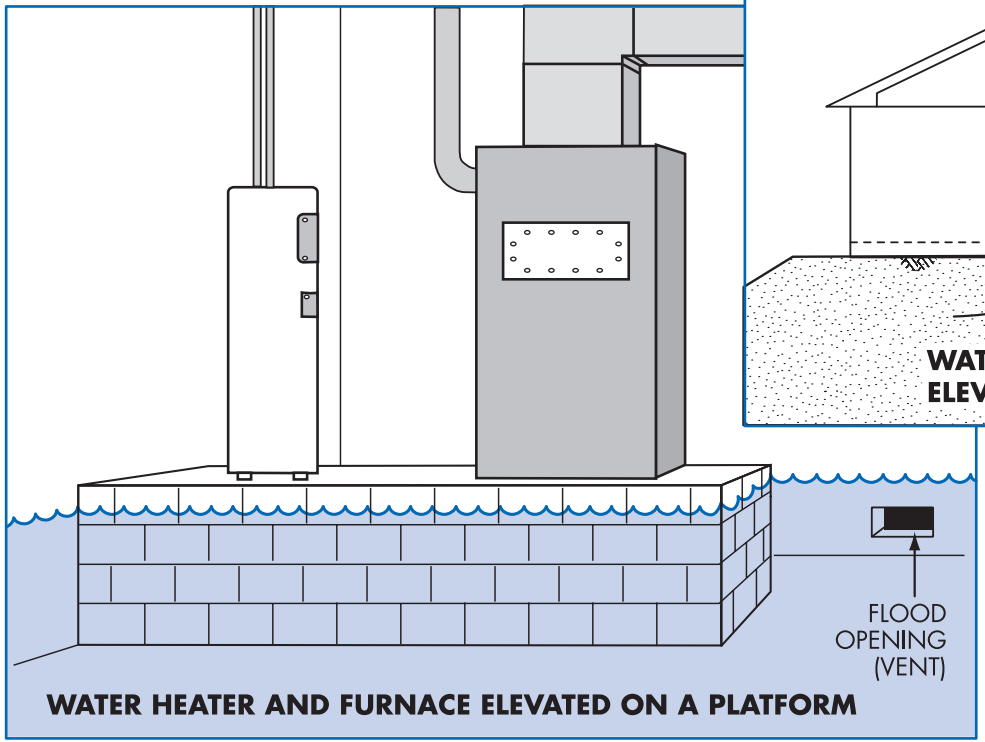
Important Information

Fuel and propane tanks may cause explosion and pollution risks during flood conditions! Even shallow water can create large buoyant forces on tanks, so extra care must be taken to ensure that all tanks are anchored.

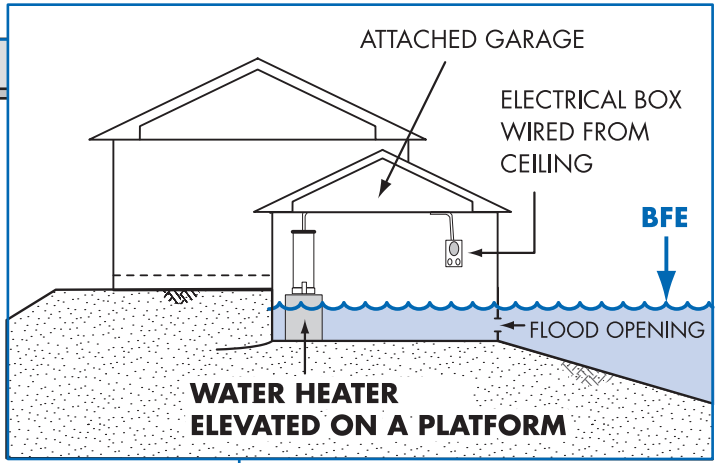


Whether inside an attached garage or outside the building, all utilities, appliances and equipment must be elevated above the BFE or protected against flood damage. Utilities include plumbing, electrical components, gas lines, fuel tanks, and heating and air conditioning equipment.

Utility Service Inside Enclosures



WATER HEATER AND FURNACE ELEVATED ON A PLATFORM

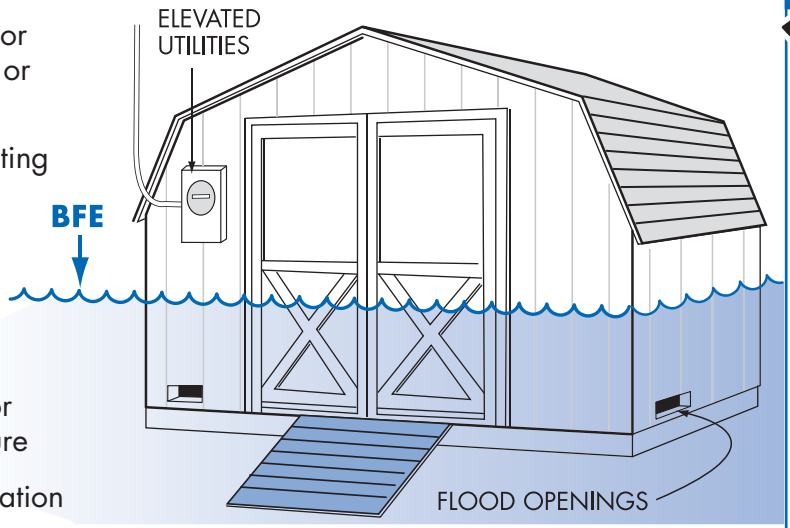


WATER HEATER
ELEVATED ON A PLATFORM

All utilities, appliances, and equipment must be elevated above the BFE or protected. Utilities include plumbing, electrical components, gas lines, and heating and air conditioning equipment.

Accessory (Appurtenant) Structures

- Not habitable
- Used only for parking or storage (not pollutants or hazardous materials)
- Anchored to resist floating
- Flood openings/vents
- Built of flood-resistant materials
- Elevated utilities
- Cannot be modified for different use in the future
- Documented floor elevation



Even small buildings are "development" and permits or variances with noted conditions are required. They must be elevated or anchored and built to withstand flood damage. **Caution!** Remember, everything inside is likely to get wet when flooding occurs.

Terms and Definitions

Accessory (Appurtenant) Structure means a structure that is located on the same parcel of land as a principal structure and its use is incidental to the use of the principal structure. Accessory structures may not be used for human habitation and must be designed to minimize flood damage. Examples: detached garages, carports, storage sheds, pole barns, and hay sheds.

Recreational Vehicles

In a flood hazard area, an RV must:

- Be licensed and titled as an RV or park model (not as a permanent residence)
- Be built on a single chassis
- Have inflated wheels and be self-propelled or towable by light truck
- Have no attached deck, porch, or shed
- Be used for temporary recreational, camping, travel, or seasonal use (no more than 180 days)
- Have quick-disconnect sewage, water, and electrical connectors

Important Information

Camping near the water?
Ask the campground or RV park operator about flood warnings and plans for safe evacuations.

RVs that do not meet these conditions must be installed and elevated like Manufactured Homes, including permanent foundations and tie-downs (see page 44).

Planning to Improve Your Floodplain Building?

To obtain a permit to improve an existing building:

- You must provide a copy of your construction contract or a cost estimate (including estimated market value of your own or donated labor and materials).
- Your community will compare the cost of the proposed work to the market value of your building and check the value of improvements.
- You may submit an independent assessment of the market value of the building, if performed by a licensed appraiser.
- If the cost of the improvement (or if the proposed work plus improvements) equals or exceeds 50% of the market value of the building, you must comply with the NFIP Substantial Improvement requirements.
- If the costs do not trigger Substantial Improvement requirements, then you should still consider ways to reduce future damage (see page 54).

Terms and Definitions

Substantial Improvement means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50% of the market value of the structure before the start of construction of the improvement. This term includes structures which have incurred substantial damage from any cause (flood, fire, earthquake, hurricanes, tornadoes, etc.), regardless of the actual repair work performed (see page 58).

Important Information

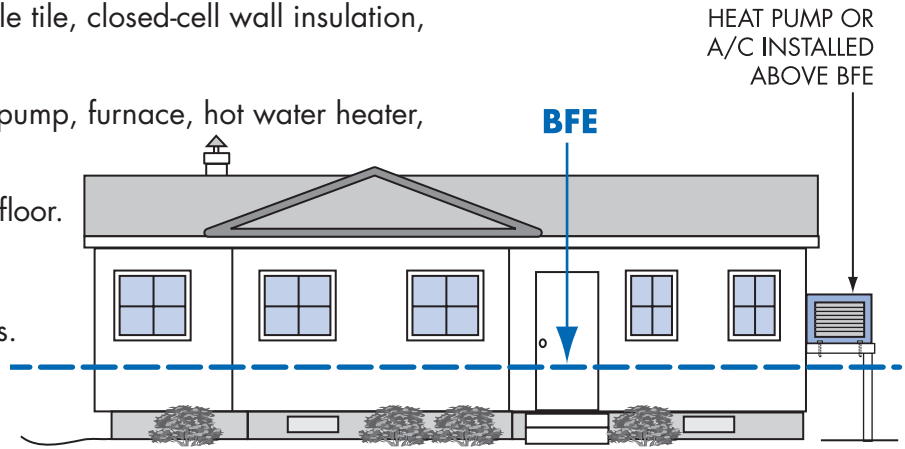
Improvements include:

- Renovation/ rehabilitation of the interior of the existing building (see page 55)
- Lateral addition, without renovation or structural alteration of the existing building (see page 56)
- Lateral addition, with renovation or structural alteration of the existing building (see page 57)
- Vertical addition (add new story).

Non-Substantial Improvements

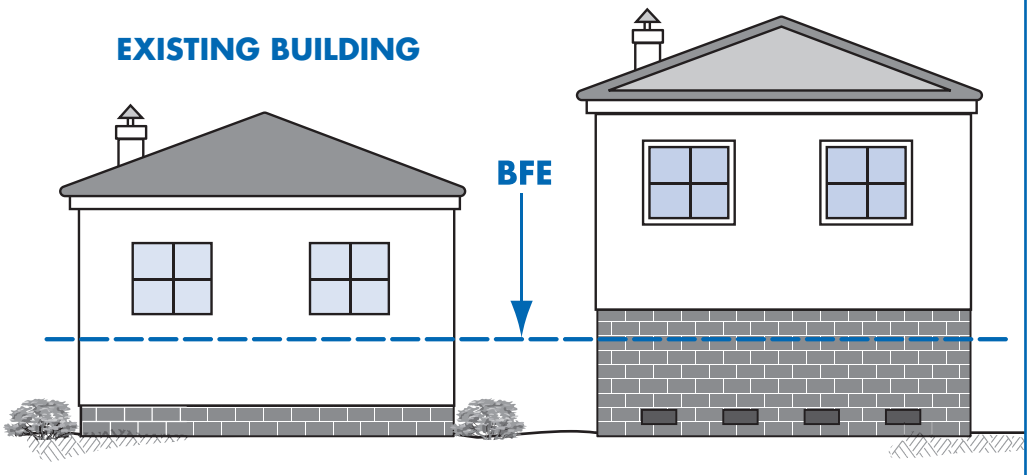
Your proposed improvements are "non-substantial" if the costs of all improvements are less than 50% of the market value of the building. Although you are not required to bring the existing building into compliance, there are many things you can do to reduce future flood damage. Find out the BFE at your location and consider the following:

- Use flood resistant materials, for example tile, closed-cell wall insulation, and polyvinyl wall coverings.
- Raise air conditioning equipment, heat pump, furnace, hot water heater, and other appliances on platforms.
- Install electrical outlets higher above the floor.
- Move ductwork out of crawlspaces.
- Retrofit crawlspaces with flood openings.
- Fill in below-grade crawlspaces/ utility space.



Note! Be sure to include ALL proposed work in your initial permit application. If you add more work after the permit is issued, your community will make another evaluation for Substantial Improvement.

Substantial Improvement: Renovation Only



Important Information

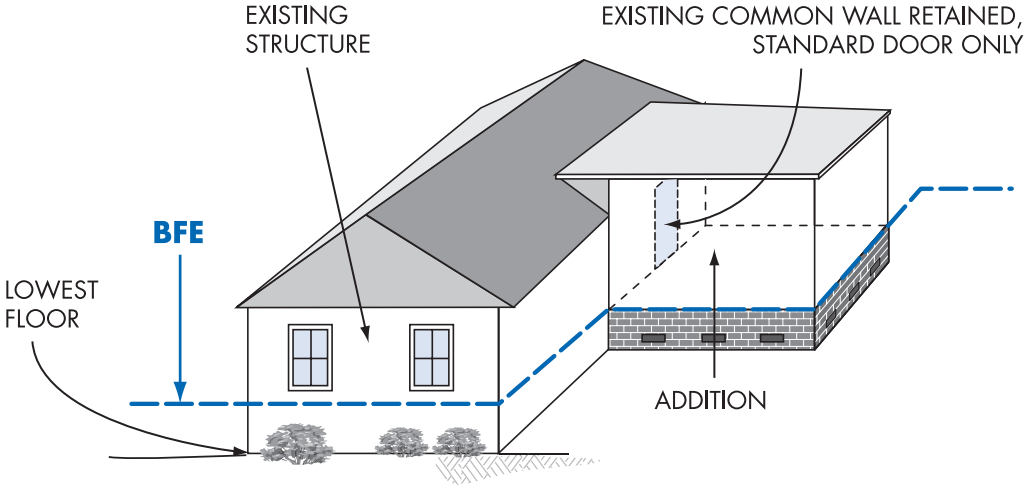
Floodplain buildings can be improved, renovated, rehabilitated or altered, but special rules apply.

Check with your local permit office before you begin. It will be easier to do it right the first time.

The cost to correct previously cited violations of state or local health, sanitary, or safety codes to provide safe living conditions can be excluded from the cost of renovations.

Alteration of a registered historic structure is allowed, as long as it will continue to meet the criteria for listing as a historic structure.

Substantial Improvement: Lateral Addition Only



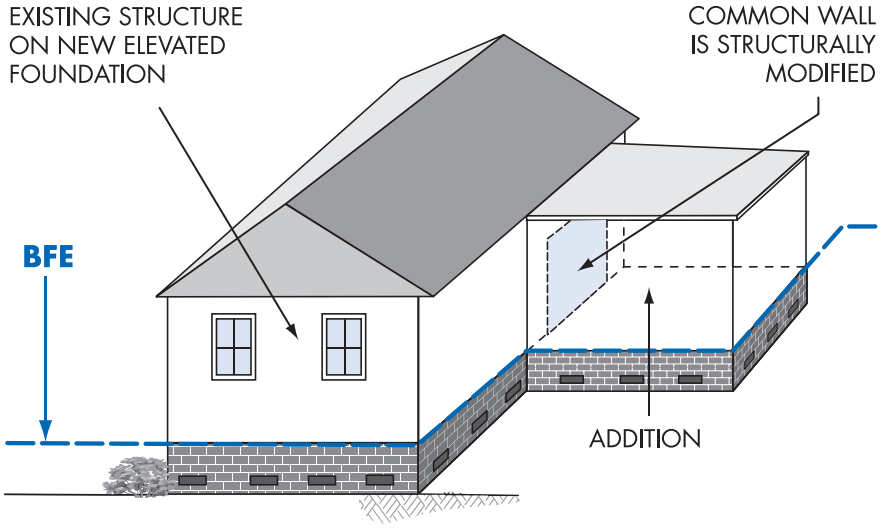
Important Information

See page 57 if your project to add a lateral addition also includes modifying the interior of the existing building or making structural modifications to the existing common wall.

You must get a permit from your community to build an addition to your floodplain building. If the existing building is not already properly elevated, then only the addition must be built with the lowest floor at or above the Base Flood Elevation provided:

- You make no interior modifications to the existing building; and
- You make no structural modifications to the existing common wall other than adding a standard sized door.

Substantial Improvement: Addition Plus Other Work

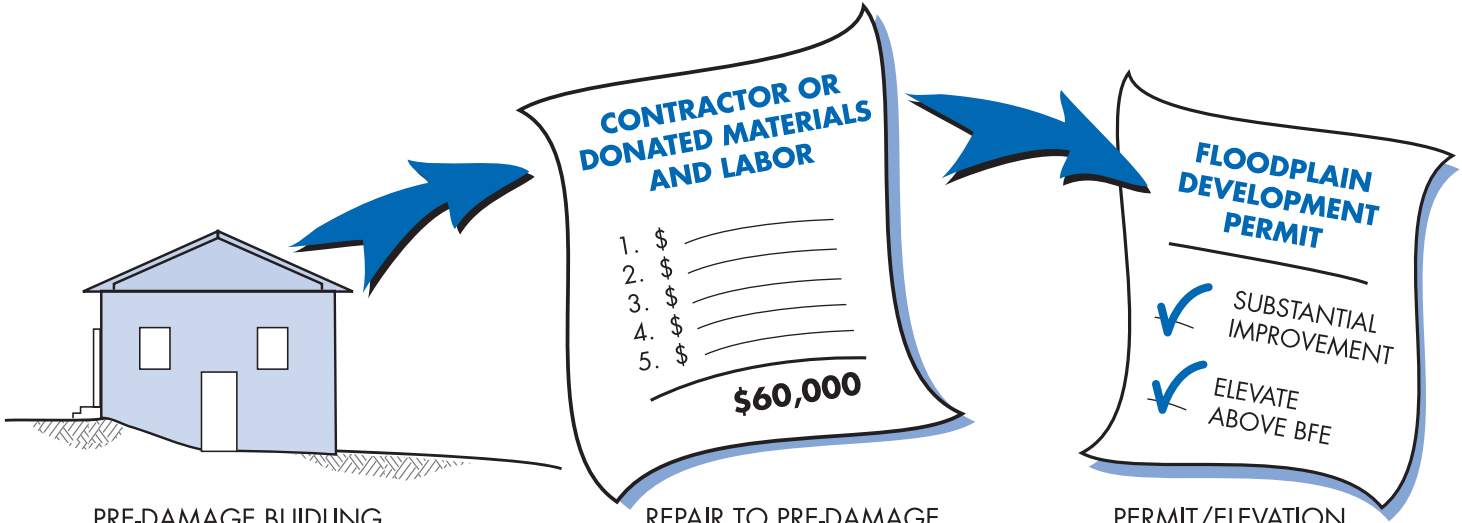


Your community must prepare an evaluation to determine if all of your proposed work will trigger the Substantial Improvement requirement. Substantial Improvement is triggered if:

- The work involves adding a new top floor, modifying the interior of the existing building, or structural modifications to the existing common wall (for lateral addition); and
- The cost of all proposed work plus the cost of improvements equals or exceeds 50% of the market value of the existing building.

Your community's permit office can help you determine which requirements apply. It is always a good idea to request a preliminary review before you get too far along with your plans.

What About After Damages?



PRE-DAMAGE BUIDLING MARKET VALUE=$100,000

REPAIR TO PRE-DAMAGE CONDITION = 60%

PERMIT/ELEVATION REQUIRED

A permit is required to repair substantial damage from any cause — fire, flood, wind, or even a truck running into a building. Check with your community permit office to be sure.
You will be asked to provide a detailed cost estimate for repairs.
See page 60 for more information about elevating an existing building above a crawlspace.

Paying for Post-Flood Compliance

You may be eligible for up to $30,000 to help pay to protect your building from future flood damage – to bring it into compliance with your community's floodplain requirements – if all of the following apply:

USE THE ICC CLAIM TO:

ELEVATE THE HOUSE ON YOUR LOT

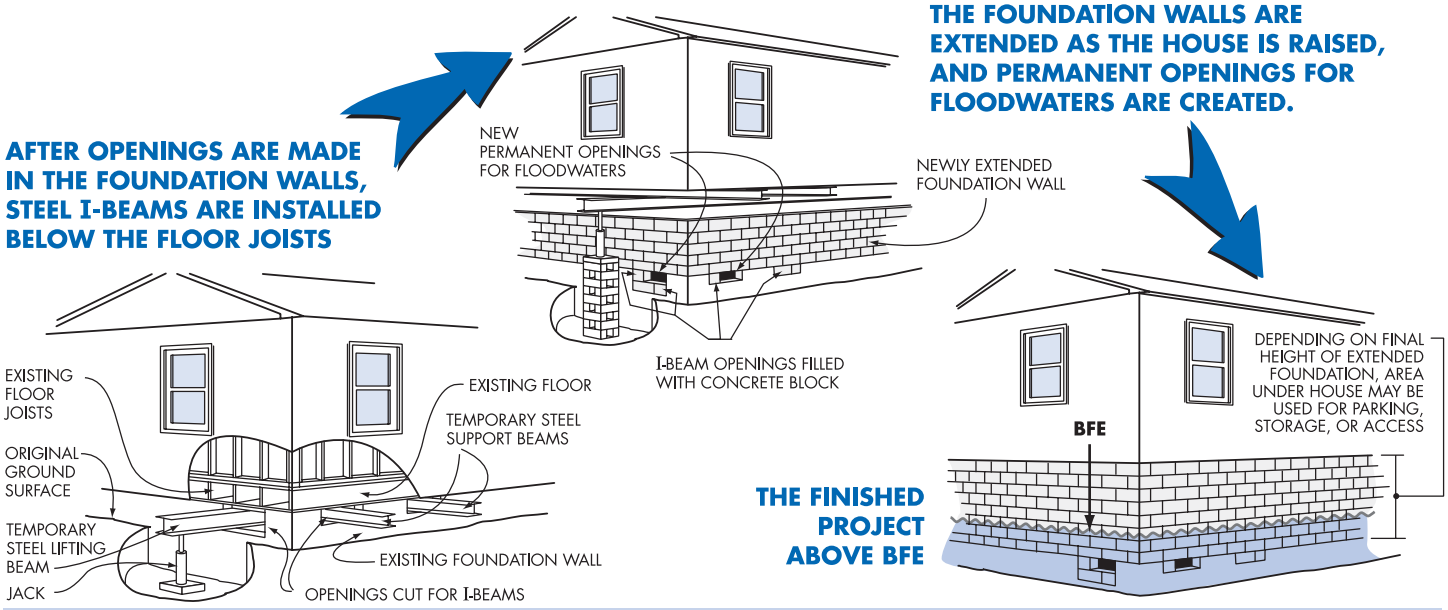
DEMOLISH AND REBUILD THE HOUSE

MOVE THE HOUSE TO HIGH GROUND

- You have NFIP flood insurance – it includes Increased Cost of Compliance (ICC) coverage.
- Your building is in the mapped Special Flood Hazard Area.
- Your community has made an official determination that the building was substantially damaged by flooding.
- You act quickly with your claims adjuster and community official to process all the required paperwork.

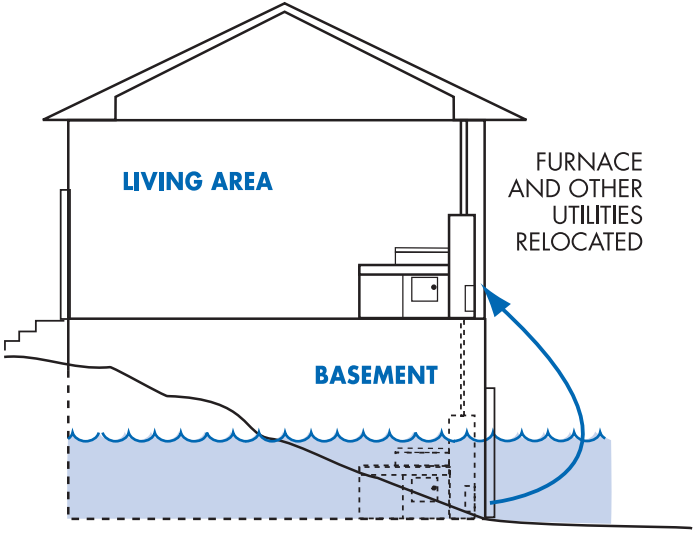
Owners whose buildings are substantially damaged are required to "bring the building into compliance" with floodplain requirements. Substantial damage is a special case of substantial improvement.

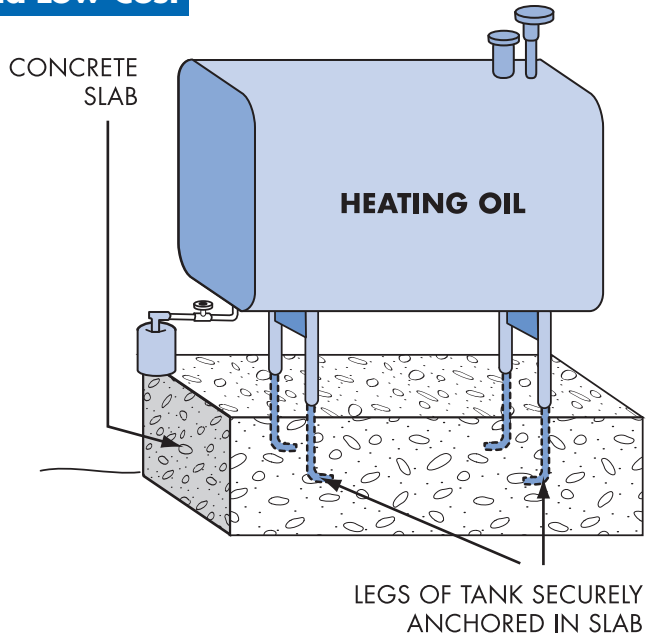
Elevating a Pre-FIRM Building



This is one way to elevate an existing building to comply with floodplain regulations. If your insured building is damaged by flood and your community determines it is substantially damaged, you may be eligible for an **Increased Cost of Compliance** payment. The State and FEMA can help with more information and options.

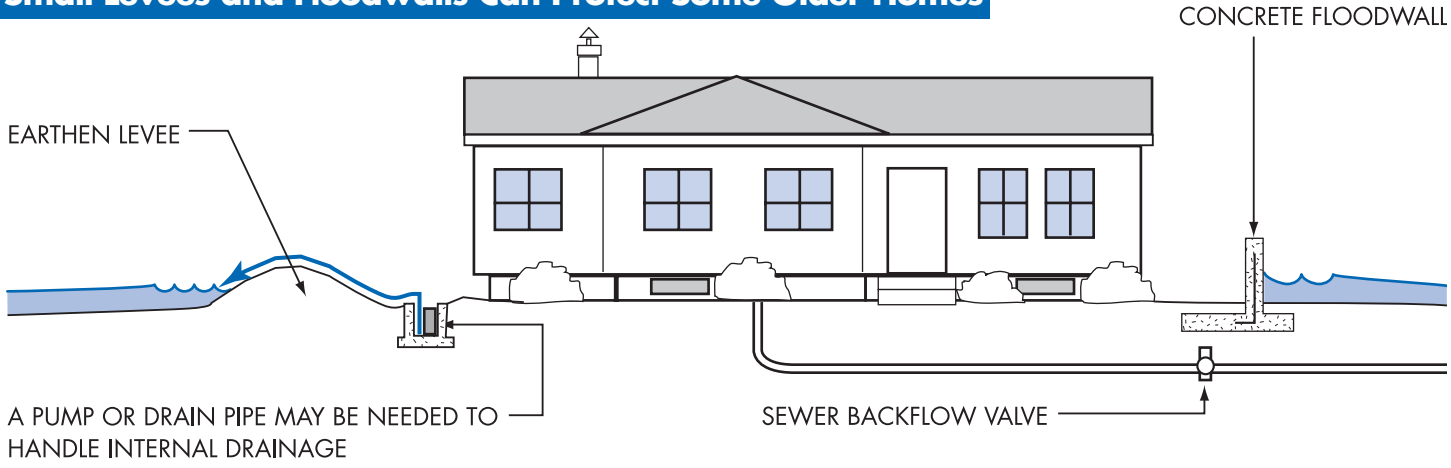
Some Flood Protection for Older Homes is Easy and Low Cost





Move water heaters, furnaces, and ductwork out of basements and crawlspaces. Anchor heating oil and propane gas tanks to prevent flotation. **Do not** store valuables or hazardous materials in a flood-prone crawlspace or basement. Use water-resistant materials when you repair.

Small Levees and Floodwalls Can Protect Some Older Homes

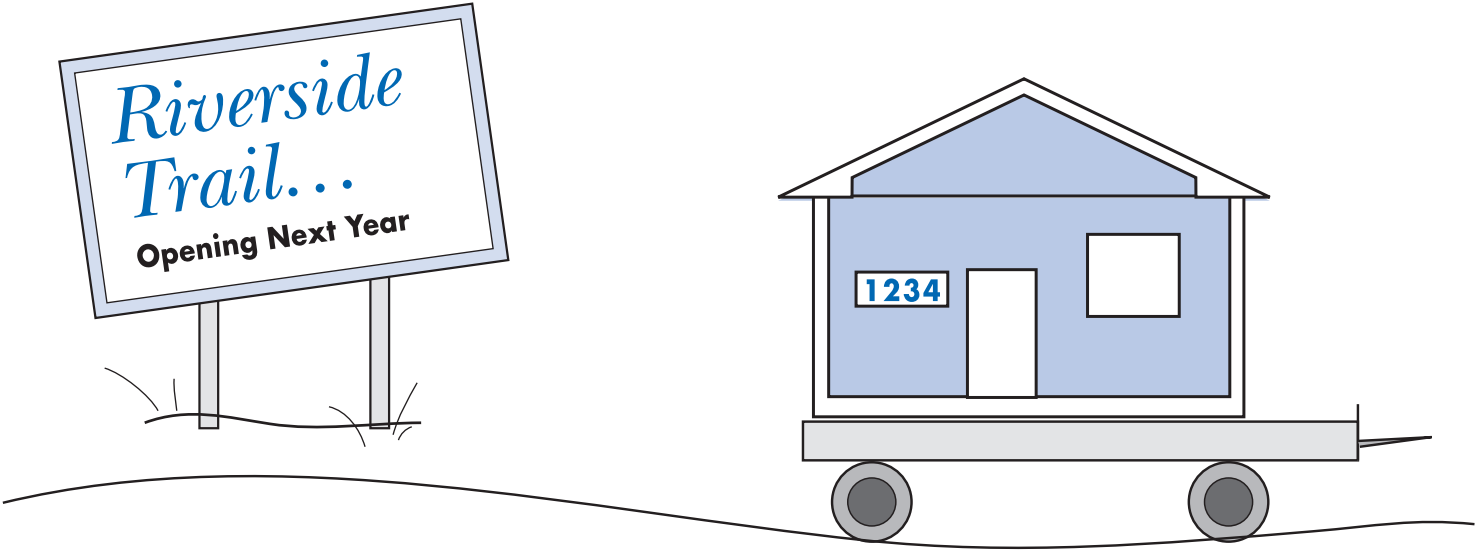


In areas where floodwaters aren't expected to be deep, sometimes individual buildings can be protected by earthen levees or concrete floodwalls. You must get a permit for those protection measures, and extra care must be taken if the site is in a Floodway. A small levee or floodwall cannot be use to achieve compliance for a new or substantially improved building, or one that is repaired after substantial damage.
Important! These protective measures will not reduce your flood insurance premium!

To learn more about flood fighting methods for levees and structures, go to
www.fpm.water.ca.gov/training/floodfight_training.cfm

Some Flood Mitigation Projects are More Costly

But Give You More Protection



After floods, some communities buy out and demolish homes that were severely damaged. The acquired land is dedicated to open space and can be used for recreation or to help restore wildlife habitat and wetlands. Homes have been raised up on higher foundations, and others have been moved to safer high ground.

Be Prepared for Flood Emergencies

Everyone should be prepared for floods and other emergencies. You need to be prepared at home, at work, at school, and in your community.

Sometimes floods and other disasters can strike quickly and without warning. You may have to evacuate your neighborhood, workplace or school, or you may be trapped at home. Ask yourself – what would I do if basic services (water, gas, electricity and telephones) are interrupted, perhaps for several days? Local officials and emergency relief workers will be on the scene after disasters, but they cannot reach everyone right away. You need to be prepared to keep your family safer by preparing now:

- Learn about the risks in your community
- Make a family or workplace emergency plan
- Know where to go if you're told to evacuate
- Put together a disaster kit with supplies to last a couple of days

To learn more about preparing for disasters, visit the American Red Cross at www.redcross.org and click on "Get Prepared."

Turn Around Don't Drown™

Learn about flood risks and follow these safety rules:

- When flooding is expected, stay away from creeks, streams, and rivers.
- NEVER drive through flooded roads – they may be washed out.
- Passenger cars may float in only 18-24 inches of water.
- Be especially cautious at night when it is harder to recognize dangers.
- Just 6 inches of fast-moving water can knock you off your feet.
- www.weather.gov/os/water/tadd/.

State Reclamation Board

Formed in 1911, the State Reclamation Board's mission is to " . . . control flooding along the Sacramento and San Joaquin Rivers and their tributaries in cooperation with the U.S. Army Corps of Engineers." The Board administers a permit and enforcement program to ensure the structural and hydraulic integrity of the flood control system in the Central Valley. The program is authorized by statute and defined in Title 23 of the California Code of Regulations. The regulations provide technical standards for some levee and floodway projects.

Encroachment permits are required for work on any existing or proposed encroachments in "designated floodways" (primarily levee and floodway activities). Examples of projects include pipeline crossings, levee improvements, pumping stations, drainage facilities, environmental restoration projects, and bridges.

The Board's Floodway Protection Section processes applications and formulates permit conditions for approximately 20 projects each month. Each year the section handles about 3,500 non-permit related requests, including determining compliance with the Public Records Act, reviewing of environmental documents, commenting on other projects within the Board's jurisdiction, generating public notices, and responding to other inquiries.

Designated Floodway refers to the channel of the stream and that portion of the adjoining floodplain reasonably required for the passage of a design flood. The term includes the floodway between existing levees as adopted by the Board or the Legislature. For more information about Designated Floodways and the Board's permit program, check online at www.recbd.ca.gov/.

Useful Resources and Common Acronyms

Useful Resources

- The American Red Cross addresses disaster safety, being prepared, and repairing homes (Disaster Services): **www.redcross.org**
- FEMA has developed materials to help families and businesses prepare for floods and recover from disasters: **www.fema.gov/library**
- NFIP regulations (Parts 59, 60, 65, and 70): **www.fema.gov/business/nfip/laws1.shtm**
- CRS Resource Center: **www.training.fema.gov/EMIWeb/CRS**
- Governor's Office of Emergency Services (coordinates hazard mitigation grant programs): **www.oes.ca.gov**
- State Reclamation Board: **www.recbd.ca.gov**
- Association of State Floodplain Managers:**www.floods.org**
- CA/NV/HI Floodplain Management Association: **www.floodplain.org**

Common Acronyms

- BFE = Base Flood Elevation
- DWR = Department of Water Resources
- EC = Elevation Certificate
- FEMA = Federal Emergency Management Agency
- FIRM = Flood Insurance Rate Map
- ICC = Increased Cost of Compliance
- NFIP = National Flood Insurance Program
- SFHA = Special Flood Hazard Area (100-year floodplain)

Want to Learn More?

- For advice on flood information and permits, call your community's building permit office, engineering, or planning department.
- Learn about California's initiatives to improve flood protection and flood safety at **www.floodsafe.water.ca.gov**.
- To order flood maps, call FEMA's Flood Map Service Center – (800) 358-9616 or enter the FEMA Map Store to order online at **http://msc.fema.gov**.
- Consumer information about flood insurance, flood risks, and flood maps is online at **www.floodsmart.gov**. Click on "Related Links" then "Flood Hazard Maps" to learn more about maps and map modernization.
- FEMA's online publications can be found at **http://www.fema.gov/library**. Search by key word, title, or publication number. Order free printed copies at (800) 480-2520.
- To learn about flood insurance, call your insurance agent. Most insurance companies can write an NFIP policy for you. If you need more help, call the National Flood Insurance Program's toll free number to get the name of an agent in your area who does write flood insurance, (888) 356-6329.
- Find online Elevation Certificate training for surveyors by going to **www.fema.gov** and search on "Elevation Certificate." Also visit **www.fpm.water.ca.gov** and click "On-line Training."
- To find out how many NFIP flood insurance policies are in force in your community, or how many claims have been paid since 1978, go to **www.fema.gov/business/nfip/** and click on "Flood Insurance Statistics."