G284.2—DISCONNECTS BETWEEN NFIP REGULATIONS AND INSURANCE

MODULE 2

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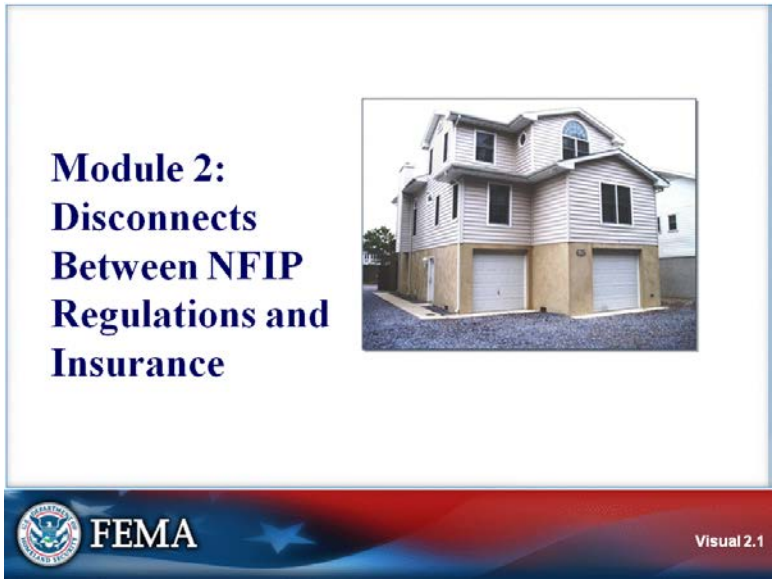
INTRODUCTION

Visual 2.1



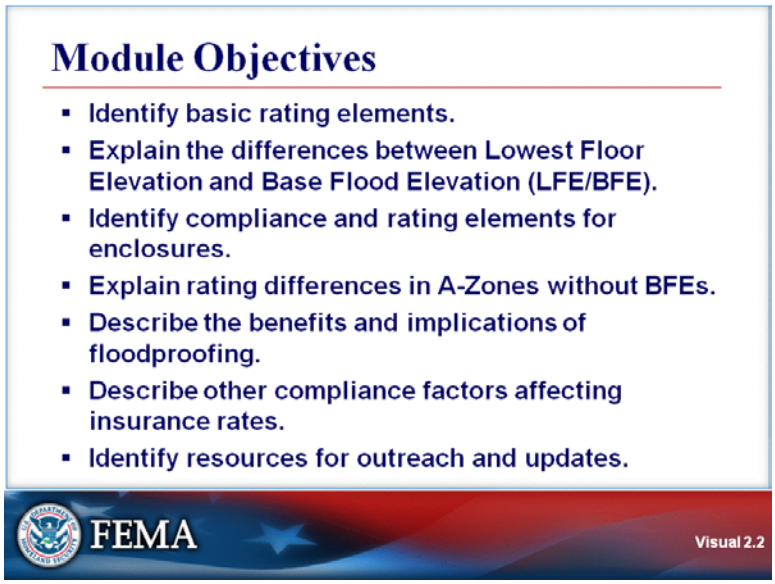
Key Points

Flood insurance guidelines and floodplain management regulations can affect insurance rating.

This module will review the relationship between NFIP insurance and regulations when dealing with specific situations.

INTRODUCTION

Visual 2.2



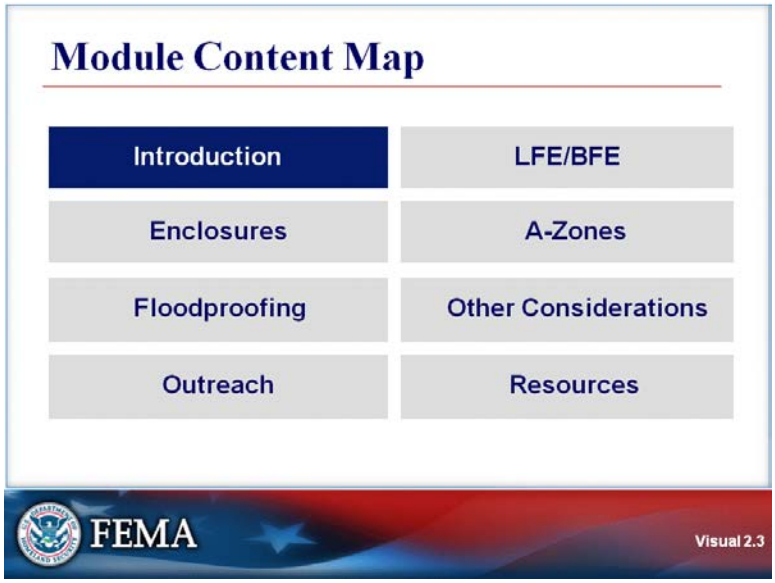
Key Points

After completing this module, you will be able to:

- Identify basic rating elements.
- Explain the differences between Lowest Floor Elevation and Base Flood Elevation (LFE/BFE).
- Identify compliance and rating elements for enclosures.
- Explain rating differences in A-Zones without BFEs.
- Describe the benefits and implications of floodproofing.
- Describe other compliance factors affecting insurance rates.
- Identify resources for outreach and updates.

INTRODUCTION

Visual 2.3



Key Points

This module will present the following topics.

- Introduction
- LFE/BFE
- Enclosures
- A-Zones
- Floodproofing
- Other Considerations
- Outreach
- Resources

INTRODUCTION

Visual 2.4

Key Points

There are provisions in the NFIP floodplain management regulations that when followed can benefit property owners when they apply for flood insurance coverage.

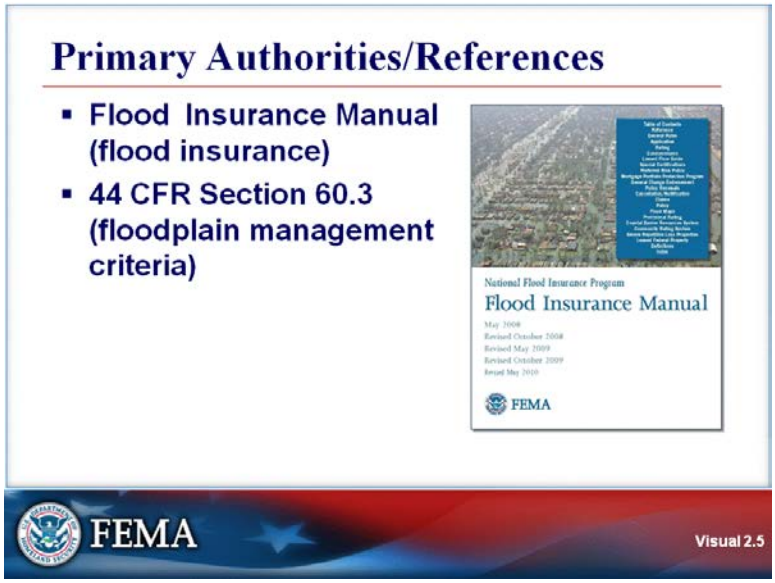
This module will highlight the relationship between the two sides of the NFIP. For example:

- A structure compliant for floodplain management.
- The property owner is paying a higher premium than needed.

The information in this module can guide property owners to make decisions that reduce the costs of flood insurance.

INTRODUCTION

Visual 2.5



Key Points

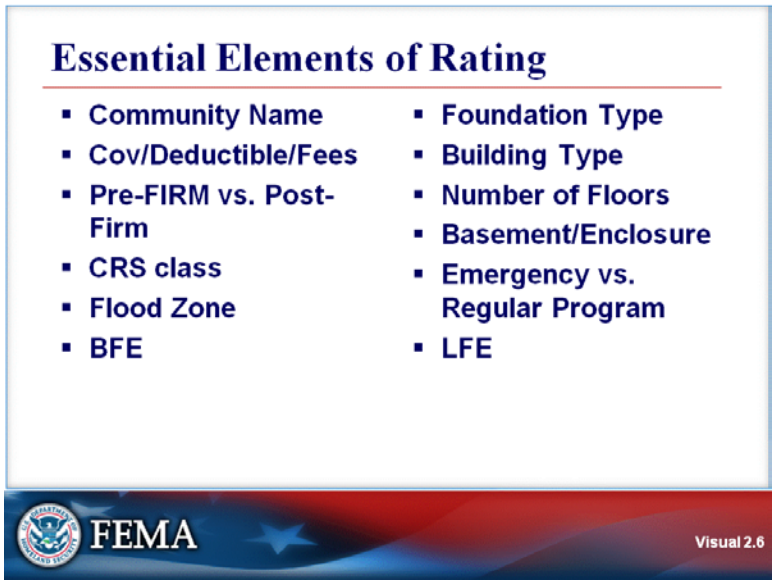
Primary authorities and references for insurance and floodplain management are:

- Flood Insurance Manual (FIM), which provides flood insurance requirements. The FIM is available online.
- Title 44 of the Code of Federal Regulations (CFR) Section 60.3, which contains floodplain management regulations.

Links to other resources and references are provided at the end of this module.

INTRODUCTION

Visual 2.6



Key Points

The cost of flood insurance depends on a combination of factors, called rating elements. The following elements are rating factors:

- Community Name and Number:

  Each community has a unique 6-digit community identification number. When one jurisdiction annexes another, floodplain management ordinance differences may become an issue. The annexed jurisdiction may have lacked an ordinance, or the ordinance may be more or less restrictive.

- Coverage, Deductibles, and Fees:

  This factor includes the amount of coverage and deductibles chosen, and the fees that apply.

- Pre-FIRM vs. Post-FIRM:

  Buildings constructed before the community's initial FIRM date or December 31, 1974, whichever is later, are subject to floodplain management and flood insurance requirements that apply only to pre-FIRM buildings. Elevated pre-FIRM buildings have the option of post-FIRM rating.

  Buildings constructed after that date are classified as post-FIRM are actuarially rated.

  Date of Construction determines whether the building is pre- or post-FIRM.

INTRODUCTION

- CRS Class: Policyholders receive premium discounts depending upon the community's CRS class.

- Flood Zone: The flood zone determines which requirements and rules will apply.

- Elevation Difference:

  The elevation difference is the difference between the lowest floor and the base flood elevation. The difference is a key factor in determining premium for elevation-rated policies. For example, if the lowest floor is one foot above the BFE, it is rated as +1. If the lowest floor is one foot below the BFE, it is rated as -1.

- Foundation Type:

  There are a number of foundation types that affect both floodplain management and the rating of flood insurance. Foundation types include:

  Non-Elevated

  Slab on grade
  Basement/below-grade crawlspace

  Elevated (may include enclosure)

  Piers, posts, pilings, columns
  Solid perimeter walls (above-grade crawlspace)

  The Lowest Floor Guide section in the Flood Insurance Manual is helpful for identifying the Lowest Floor Elevation for insurance purposes.

- Building Type:

  The Building Type rating element is determined by the usage or occupancy of the building. Buildings may be non-residential or a category of residential.

- Number of Floors

- Basement/Enclosure: A basement or enclosure raises floodplain management compliance issues, and may increase flood insurance cost.

- Emergency vs. Regular Program:

  Communities may be placed on the Emergency Program before meeting requirements for full NFIP participation in the Regular Program. Limited flood insurance is available to communities in the Emergency Program.

- Submit for Rate:

  A policy that exceeds standard rate table parameters is submitted for an individual rating. Rates are not published in the NFIP Flood Insurance Manual.

INTRODUCTION

Visual 2.7

Key Points

For purposes of the NFIP, distinctions have been made among the following building types:

Non-Elevated Buildings

Non-elevated buildings may have:

- No basement
- An unfinished basement/sub-grade crawlspace
- A finished basement

Non-elevated buildings may have the following levels:

- One floor
- Split level
- Two or more floors

Elevated Buildings

An elevated building is a building that has no basement and has its lowest floor raised above ground level by foundation walls, shear walls, posts, piers, pilings, or columns.

Elevated buildings may have one or more floors, with or without an enclosure below the lowest floor.

INTRODUCTION

Manufactured Homes

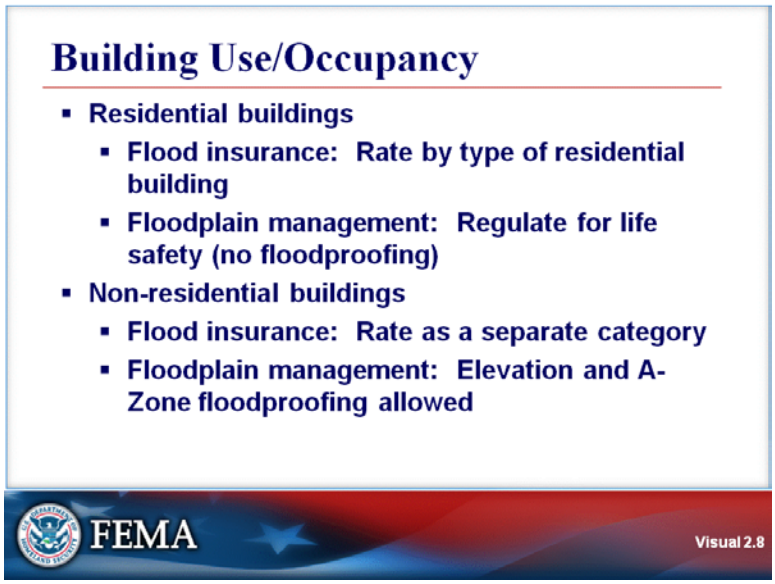
Manufactured homes may be:

- Single-wide
- Double-wide
- Travel trailer

For flood insurance purposes, manufactured homes need to be affixed to a permanent foundation.

INTRODUCTION

Visual 2.8



Key Points

For flood insurance purposes, building occupancy types are generally categorized as:

- Residential
- Non-residential

The type of building use, and the percent of the total building devoted to a particular use, are important flood insurance rating factors.

Flood insurance further divides occupancy types into the following six categories:

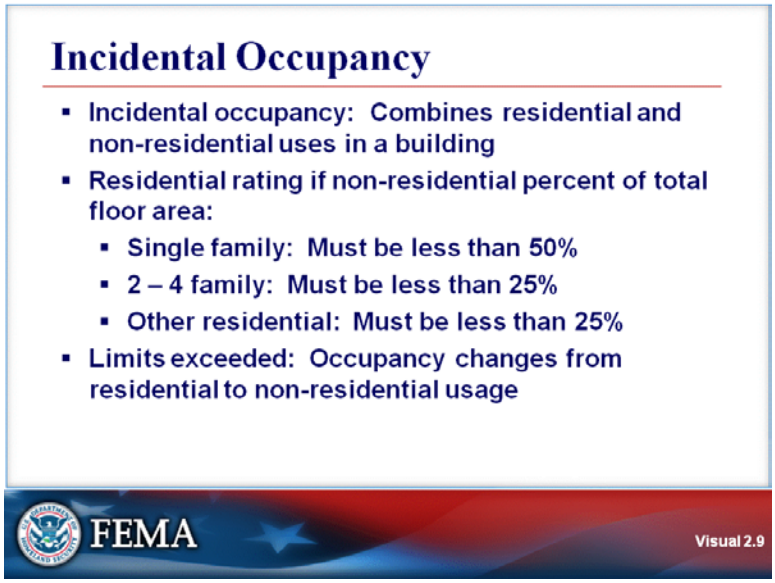
1. Single family dwellings
2. 2 to 4 family dwellings
3. Other residential buildings (facilities such as dormitories and nursing homes)
4. More than 4 family dwellings
5. Non-residential buildings
6. Manufactured homes

Floodplain management regulations also distinguish residential and non-residential buildings.

- Residential buildings are regulated with life safety as a priority. Elevation to or above BFE is required in the Special Flood Hazard Area (SFHA).
- Non-residential buildings are required to be elevated to or above the BFE or be floodproofed to the BFE in all A-Zones (AO, AH, AE, A (without BFE), and A (with BFE). Floodproofing is not allowed in coastal high-hazard areas (V- and VE-Zones).

INTRODUCTION

Visual 2.9



Key Points

A residential building may have some area devoted to non-residential uses. Such a building is considered to have incidental, or non-residential, occupancy. An increasing number of buildings have mixed uses.

For purposes of flood insurance rating, there is a limit to the percent of non-residential area allowed for a building to retain a residential rating.

The limit varies according to the type of occupancy.

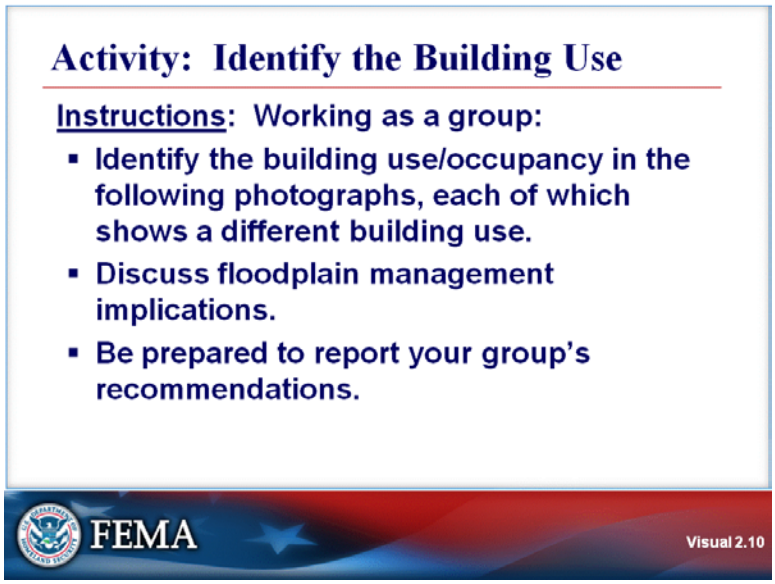
- For a single family building, incidental occupancy should be less than 50 percent of total floor area.
- For 2 to 4 family buildings, incidental occupancy should be less than 25 percent of total floor area.
- For buildings in the Other Residential category, incidental occupancy should be less than 25 percent of total floor area.

If the limit is exceeded, the building occupancy changes from residential to non-residential usage.

Non-residential premiums generally are higher than residential premiums due to a higher coverage limit. Non-residential buildings also have a higher maximum limit.

INTRODUCTION

Visual 2.10



Key Points

Activity Purpose: This activity will enable your group to identify buildings with different uses, and describe the floodplain management and insurance implications for each building.

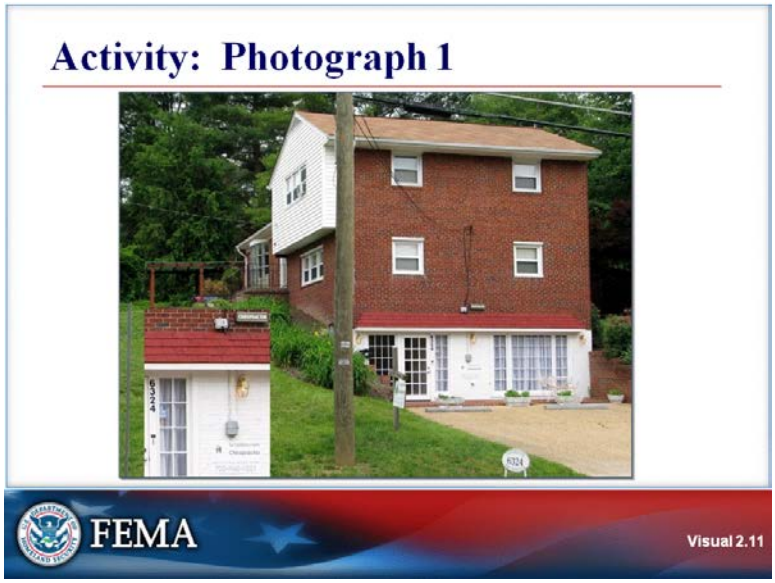
Time: 15 minutes

Instructions:

1. As each of the following photographs is shown, identify the building use or uses.
2. Within your assigned table group, discuss whether the building would be rated residential or non-residential for flood insurance purposes.
3. Discuss floodplain management implications.
4. Be prepared to report your group's recommendations.

INTRODUCTION

Visual 2.11



Key Points

INTRODUCTION

Visual 2.12

Key Points

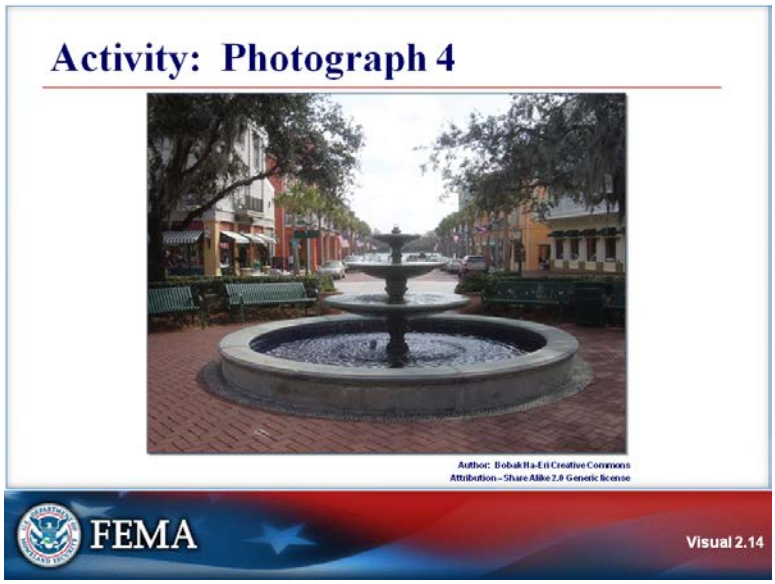
INTRODUCTION

Visual 2.13

Key Points

INTRODUCTION

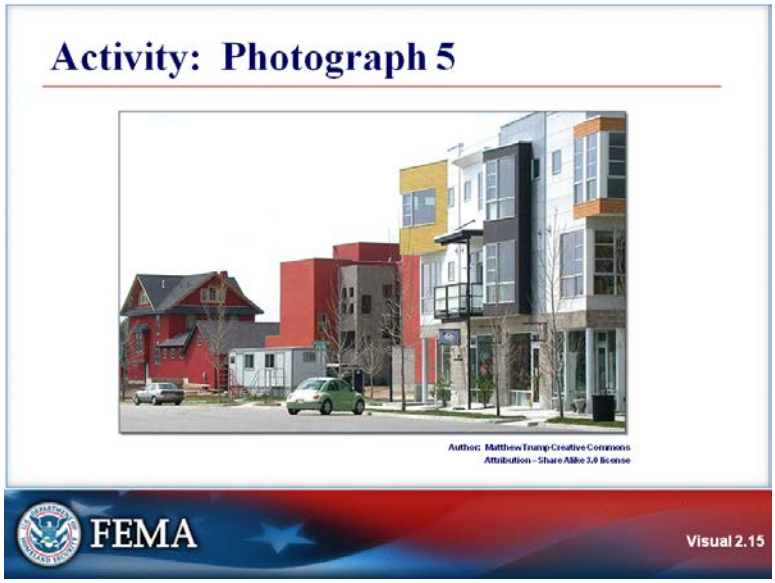
Visual 2.14



Key Points

INTRODUCTION

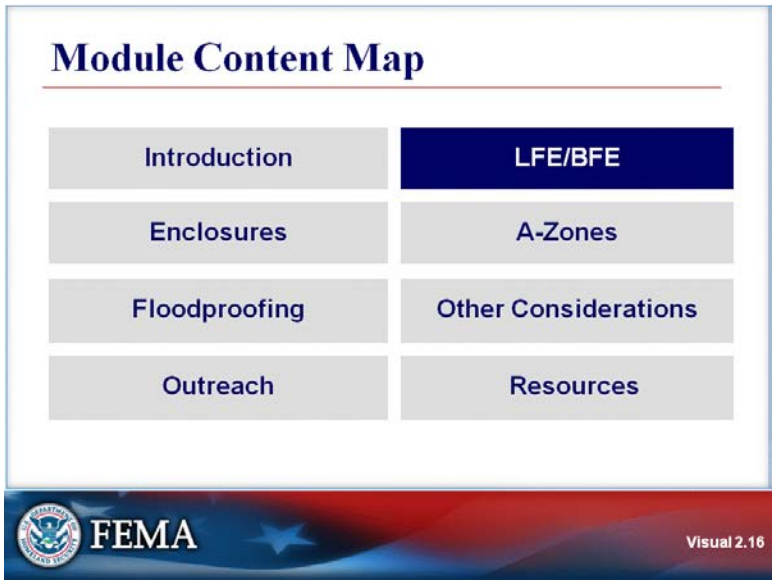
Visual 2.15



Key Points

LFE/BFE

Visual 2.16

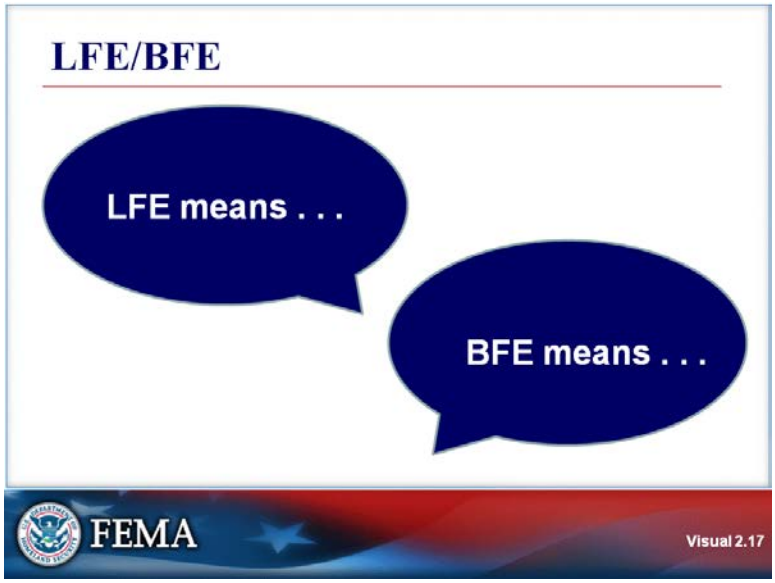


Key Points

The next section of this module will cover the concepts of Lowest Floor Elevation (LFE) used in flood insurance and Base Flood Elevation (BFE) used in floodplain management and flood insurance rating.

LFE/BFE

Visual 2.17



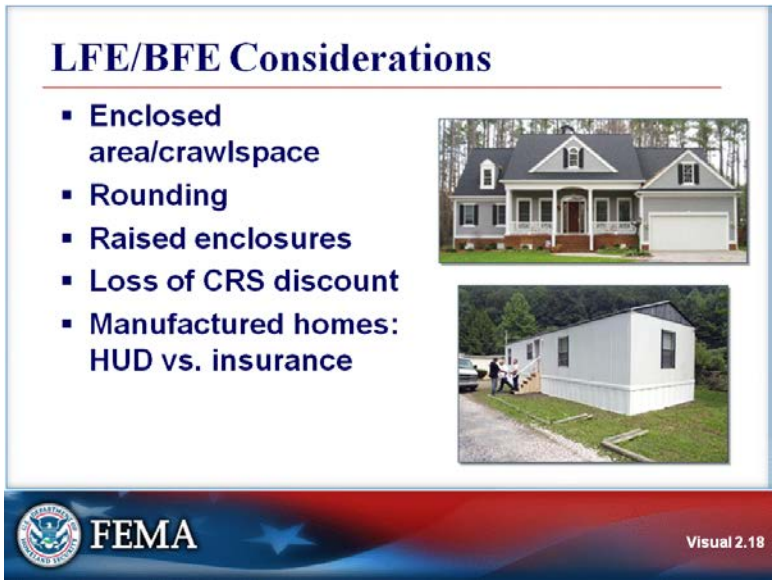
Key Points

Discussion Question: LFE means . . .?

Discussion Question: BFE means . . .?

LFE/BFE

Visual 2.18



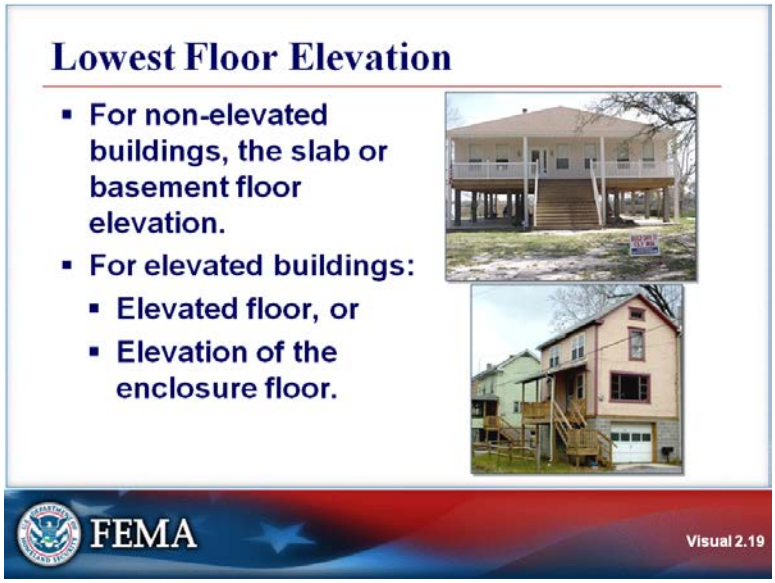
Key Points

This section will cover how the lowest floor elevation is determined and used in floodplain management and flood insurance.

These particular topics can demonstrate the relationship between NFIP regulations and insurance.

LFE/BFE

Visual 2.19



Key Points

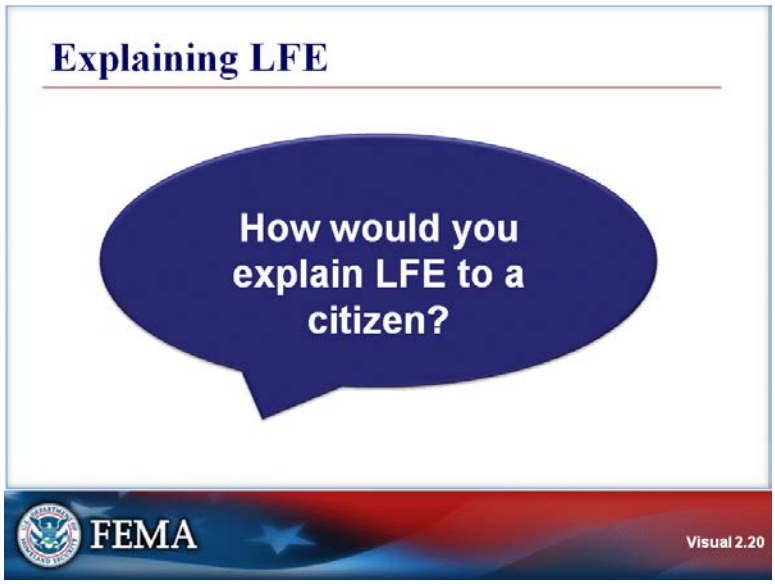
Even though the definition for lowest floor is the same for both floodplain management and flood insurance, the lowest floor used for rating can be different than the floodplain management determination of lowest floor.

Generally for elevated buildings that contain enclosures subject to flooding, the lowest floor does not include an unfinished or flood resistant enclosure, usable solely for parking of vehicles, building access or storage; provided, enclosures meet non-elevation design requirements of 44 CFR §60.3. The LFE is determined by the characteristics of the enclosure.

The Lowest Floor Elevation is the measured height of a building's lowest floor above the North American Vertical Datum (NAVD) or other datum specified on the FIRM for that location.

LFE/BFE

Visual 2.20

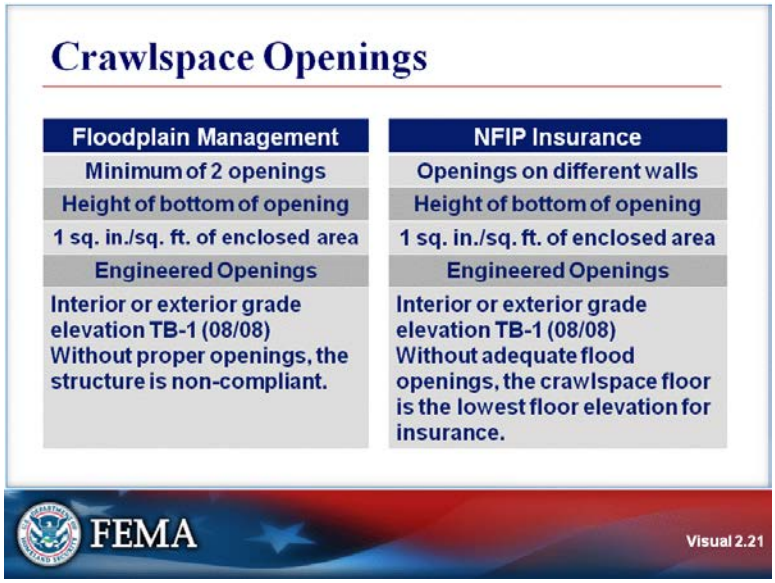


Key Points

Discussion Question: How would you explain LFE to a citizen?

LFE/BFE

Visual 2.21



Key Points

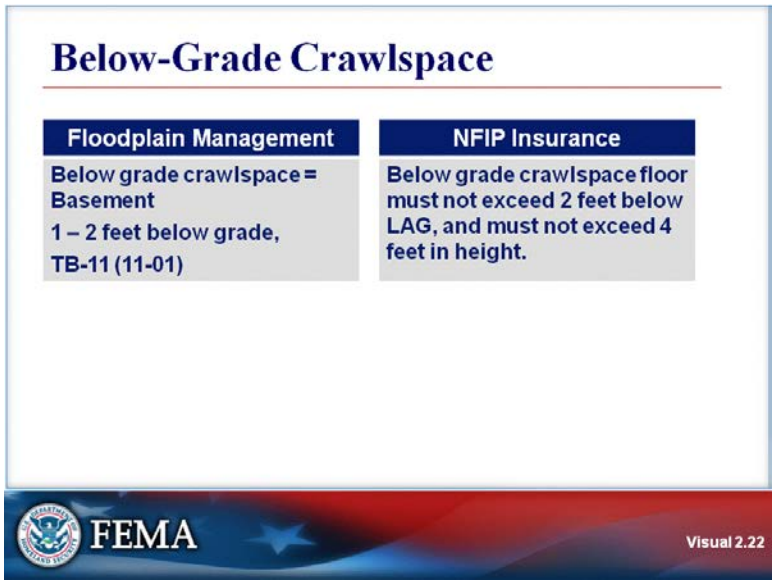
Note the following relationships between floodplain management and flood insurance.

- Openings have to be on different walls for NFIP insurance, while floodplain management requires a minimum of two openings with no specification for their location.
- Flood insurance is available for a building that is non-compliant with floodplain management requirements. The crawlspace floor is the rating floor. The result generally is a higher premium due to increased risk.
- An enclosed area or crawlspace without openings on different walls is a higher risk and results in a higher premium.

Insurance penalizes structures for a lack of openings.

LFE/BFE

Visual 2.22

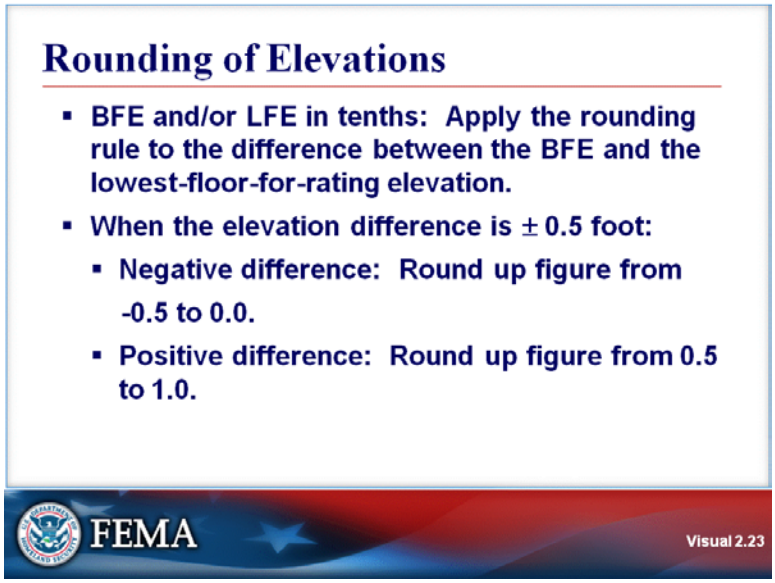


Key Points

Note that floodplain management regulations consider a below-grade crawlspace as a basement. No height limit applies.

LFE/BFE

Visual 2.23



Key Points

For insurance rating, if the BFE and/or the lowest floor elevation is shown in tenths (e.g., 10.5 feet), the agent must apply the rounding rule to the difference between the BFE and the lowest-floor-for-rating elevation.

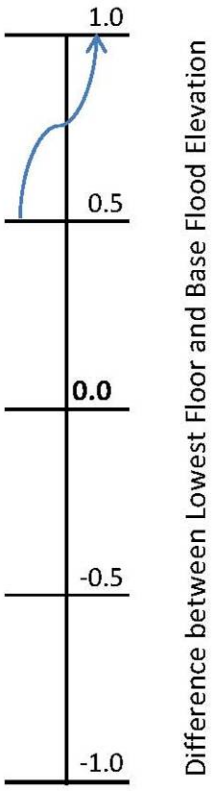
Floodplain Management Regulations: Section 60.3(c)(2) of the NFIP regulations states:

Require that all new construction and substantial improvements of residential structures within Zones A1-A30, AE, AH zones on the community's FIRM: (a) have the lowest floor (including basement) elevated to or above the base flood level, unless the community is granted an exception by the Administrator for the allowance of basements in accordance with Section 60.6(b) or (c).

LFE/BFE

If the difference between the lowest-floor-for-rating and the BFE is +0.5 foot (lowest floor is 0.5 foot below the BFE), the difference is rounded up to +1.0, as if the lowest floor is one whole foot above the BFE. This is illustrated by Example 1 below.

Example 1: Graph Showing +0.5 Foot Difference Between LFE and BFE

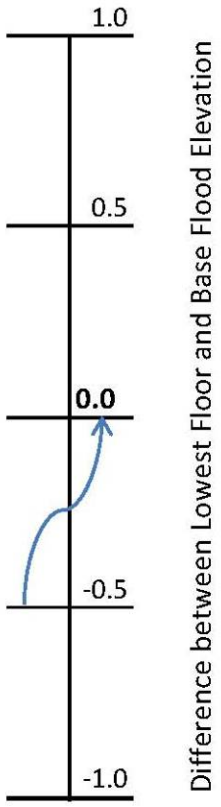


The Base Flood Elevation (BFE) is 12.5 feet NAVD, and the Lowest Floor (LF) if at 13.0 feet NAVD. So, the difference between the LF and the BFE is +0.5 foot. This difference will be rounded up to +1.0. As a result, the insurance policy will be rated as if the LF is one whole foot above the BFE.

LFE/BFE

If the difference between the lowest-floor-for-rating and the BFE is -0.5 foot (lowest floor is 0.5 foot below the BFE), the difference is rounded up to 0.0, as if the lowest floor is exactly the same as the BFE. Note that this is noncompliant with NFIP regulations. Example 2 below provides an illustration.

Example 2: Graph Showing -0.5 Foot Difference Between LFE and BFE

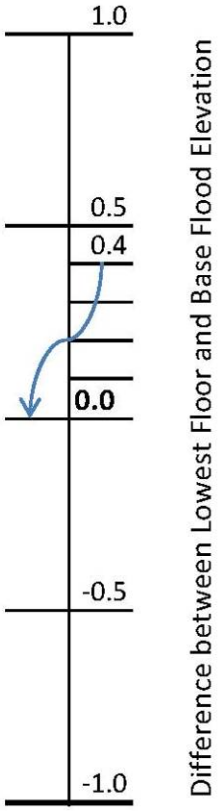


The Base Flood Elevation (BFE) is 12.5 feet NAVD, and the Lowest Floor (LF) is at 12.0 feet NAVD. So, the difference between the LF and the BFE is -0.5 foot. This difference will be rounded up to 0.0. As a result, the insurance policy will be rated as if the LF is at the same elevation as the BFE.

LFE/BFE

If the difference between the lowest-floor-for-rating and the BFE is less than +0.5 foot, it is rounded down to 0.0. This is illustrated in Example 3.

Example 3: Graph Showing Less Than +0.5 Foot Difference Between LFE and BFE

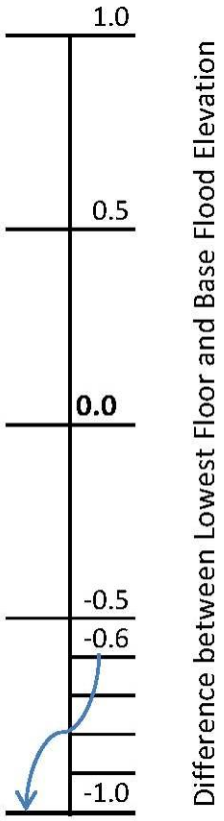


The Base Flood Elevation (BFE) is 12.5 feet NAVD, and the Lowest Floor (LF) is at 12.9 feet NAVD. So, the difference between the LF and the BFE is +0.4 foot (less than +0.5). This difference will be rounded down to 0.0. As a result, the insurance policy will be rated as if the LF is at the same elevation as the BFE.

LFE/BFE

If the difference between the lowest-floor-for-rating and the BFE is less than -0.5 foot, it is rounded down to -1.0. This is illustrated in Example 4 below.

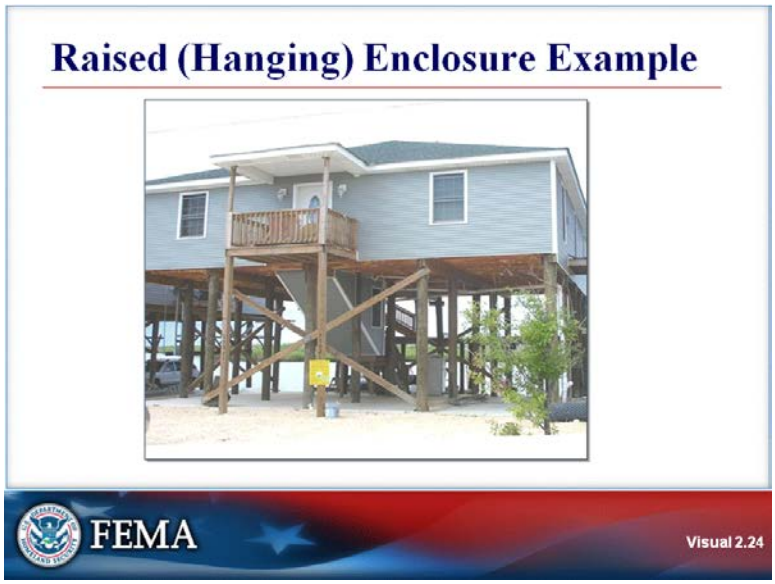
Example 4: Graph Showing Less Than -0.5 Foot Difference Between LFE and BFE



The Base Flood Elevation (BFE) is 12.5 feet NAVD, and the Lowest Floor (LF) is at 11.9 feet NAVD. So, the difference between the LF and the BFE is -0.6 foot (less than -0.5). This difference will be rounded down to -1.0. As a result, the insurance policy will be rated as if the LF is one whole foot below the BFE.

LFE/BFE

Visual 2.24



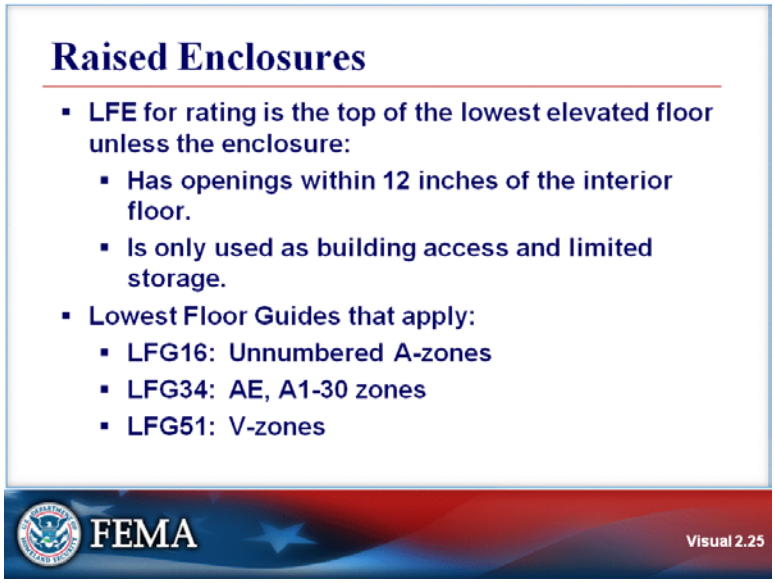
Key Points

Note the stairway that is open up to the landing, and enclosed up to the building entrance. The door is located at the landing, and there is no door at the top of the staircase.

Raised enclosures may be present in V-Zones, coastal A-Zones, AO-Zones, and AH-Zones. If the floor of a raised enclosure is below BFE, insurance consequences are similar.

LFE/BFE

Visual 2.25



Key Points

Raised enclosures are rated and regulated in the same way as enclosures at ground level.

The LFE for rating insurance is the top of the lowest elevated floor of the raised enclosure.

A raised enclosure used only for building access and storage is not considered the lowest elevated floor if the enclosure meets local ordinance requirements for flood openings and/or breakaway walls.

If a raised enclosure fails to meet enclosure requirements, the raised enclosure floor is considered the lowest floor of the building. Insurance coverage is available.

If the raised lowest floor elevation is below the BFE, Special Rates are applied based on the cost to replace the floor.

Policy is being developed for floodplain management regulation of raised enclosures.

LFE/BFE

Visual 2.26

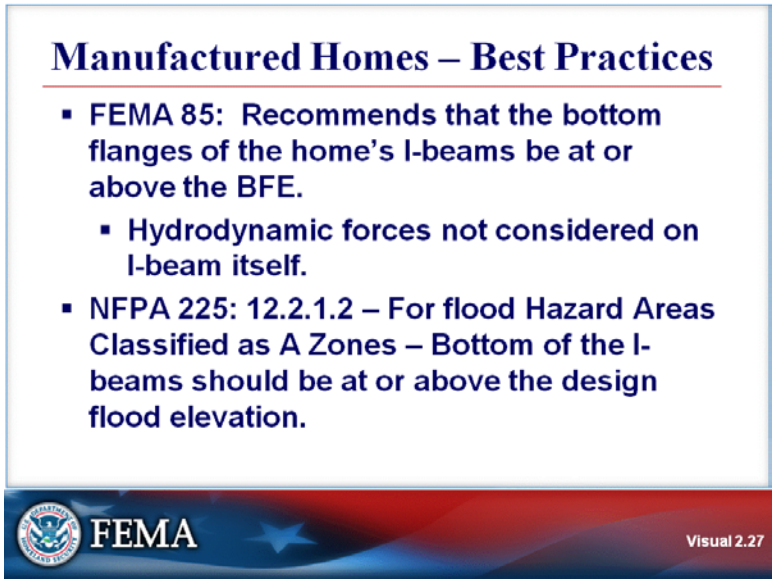
Key Points

HUD has issued 2009 regulations in 24 CFR Parts 3285 and 3286 for new installation of manufactured homes. 24 CFR 3285 cites 44 CFR §60.3. Floodplain management regulations require that the lowest floor to be at or above the BFE.

The minimum requirements for HUD state that the lowest floor should be at the BFE.

LFE/BFE

Visual 2.27



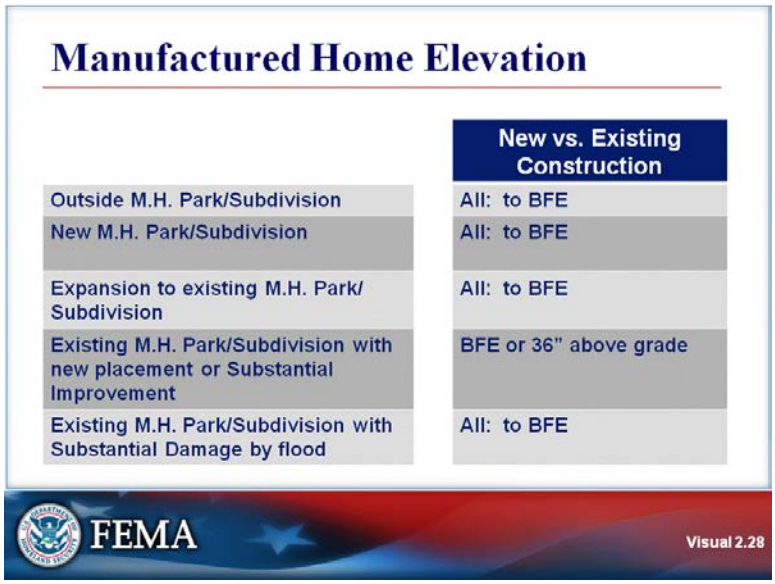
Key Points

FEMA 85: 10.1 – Design Criteria for Recommended Foundations, recommends that the bottom flanges of the home's I-beams be at or above BFE. The reason is that in FEMA 85, the hydrodynamic forces were not considered on the I-beam itself.

NFPA 225 12.2.1.2 – Flood Hazard Areas Classified as A Zones states that homes shall be installed such that the bottom of the longitudinal chassis frame beams are at or above the design flood elevation.

LFE/BFE

Visual 2.28



Key Points

The table in the visual shows how floodplain management regulations apply to manufactured homes. Regulations for new construction that apply to manufactured homes apply to those units:

- Outside of existing manufactured home park or subdivision.
- In a new manufactured home park or subdivision.
- Expansion of an existing manufactured home park or subdivision.
- Located in an existing manufactured home park or subdivision that is substantially damaged by flood.

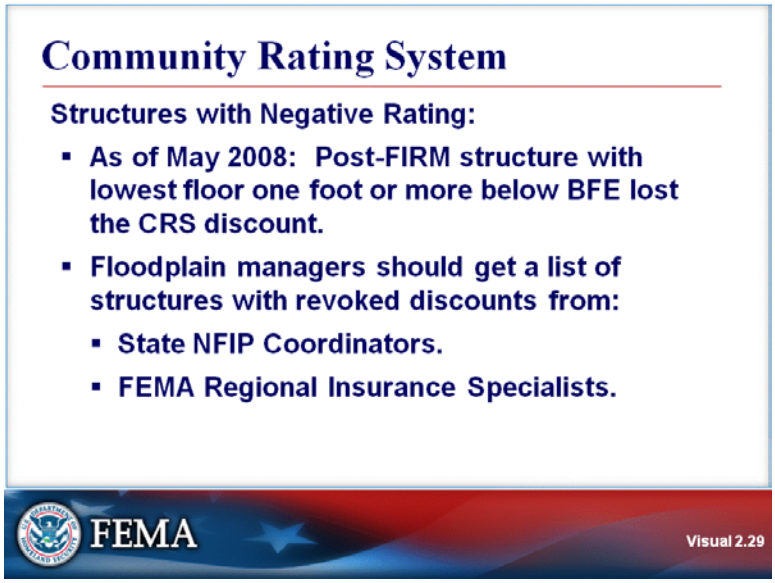
An important distinction is whether the manufactured home park or subdivision is existing or new.

Note that more stringent requirements apply to new manufactured home parks and subdivisions. All placements are required to be elevated to or above BFE.

New construction refers to structures that are built on or after the date the community adopted its initial flood damage prevention regulations. Pre-FIRM refers to the date of the initial FIRM or December 31, 1974, whichever is later.

LFE/BFE

Visual 2.29



Key Points

Encourage property owners to mitigate the impacts that caused the building to be negative rated and to restore the CRS discount.

LFE/BFE

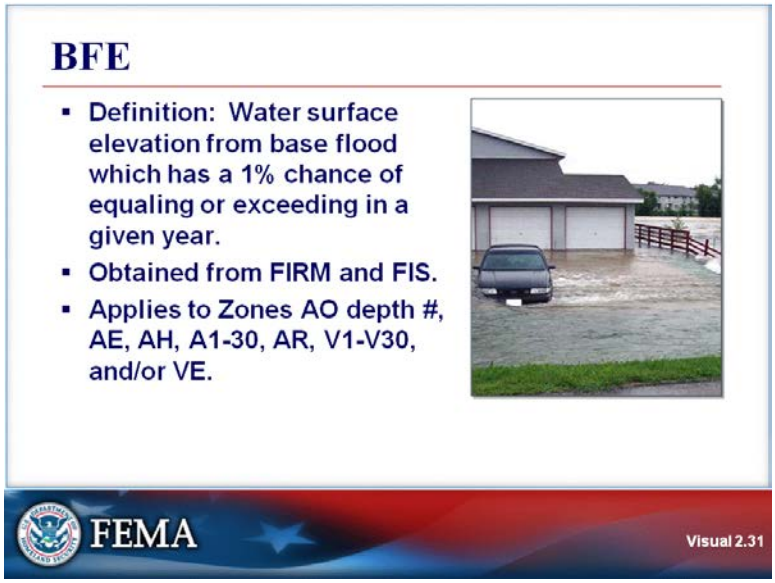
Visual 2.30

Key Points

Discussion Question: Where do you get your BFE?

LFE/BFE

Visual 2.31



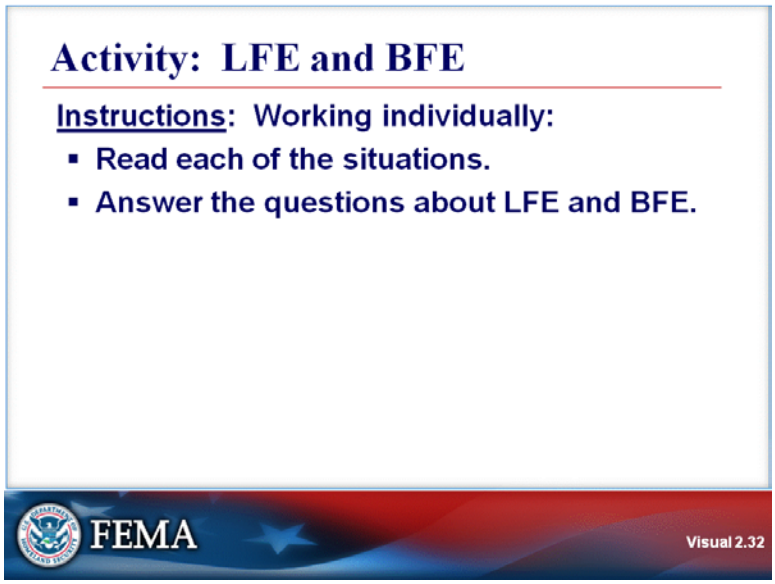
Key Points

Base Flood Elevation (BFE) can be defined as:

The elevation shown on the Flood Insurance Rate Map (FIRM) and found in the accompanying Flood Insurance Study (FIS) for Zones AO depth #, AE, AH, A1-A30, AR, V1-V30, and/or VE that indicates the water surface elevation resulting from the flood that has a 1-percent chance of equaling or exceeding in any given year – also called the Base Flood.

LFE/BFE

Visual 2.32



Key Points

Activity Purpose: This activity will enable you to identify the insurance and floodplain management consequences of a BFE and Lowest Floor Elevation for a structure.

Instructions:

Work individually to answer the following questions.

1. The BFE at the site is 32 feet, and the lowest floor of the structure is 31.6 feet.
   - What elevation will the flood insurance policy use to base the insurance rate?
   - Is the structure compliant with floodplain management regulations?
2. An existing manufactured home park is being expanded.
   - What is the elevation requirement for homes in the expanded portion of the park?
   - How does the requirement compare to HUD's elevation requirement?

LFE/BFE

3. Several structures in a CRS community are more than 1 foot below BFE.

   - What is the significance for the Floodplain Manager?

   - What actions might be required?

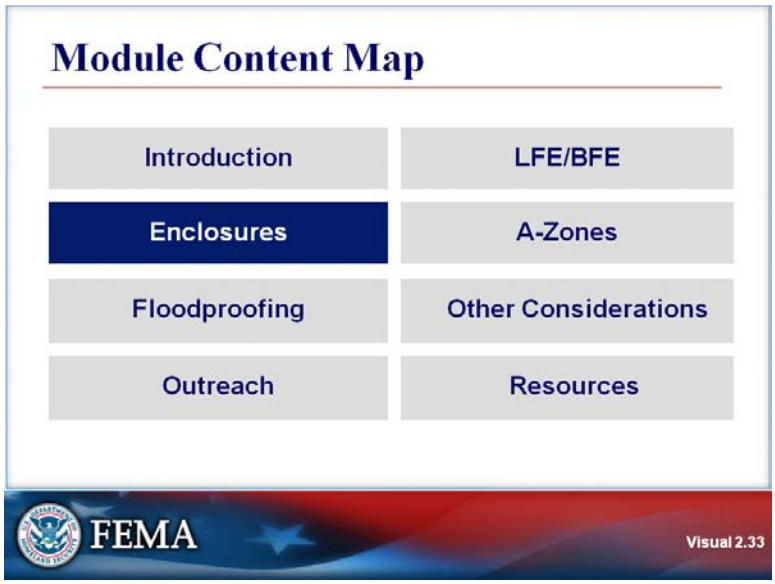
4. A crawlspace foundation does not have adequate flood openings.

   - What are the insurance consequences?

   - What are the floodplain management consequences?

ENCLOSURES

Visual 2.33

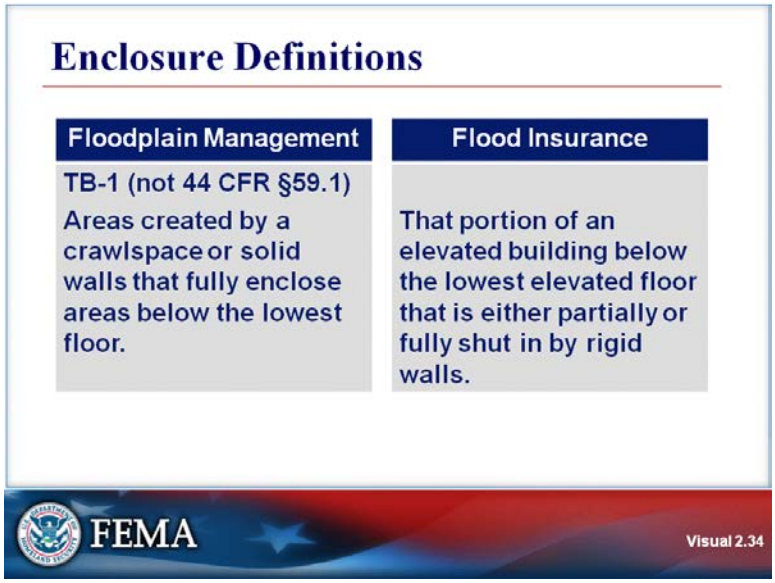


Key Points

The next section of this module will compare how enclosures are dealt with under floodplain management regulations and flood insurance rules.

ENCLOSURES

Visual 2.34



Key Points

The definition of an enclosure varies between floodplain management and flood insurance.

- The floodplain management definition is in Technical Bulletin 1, Openings in Foundation Walls.

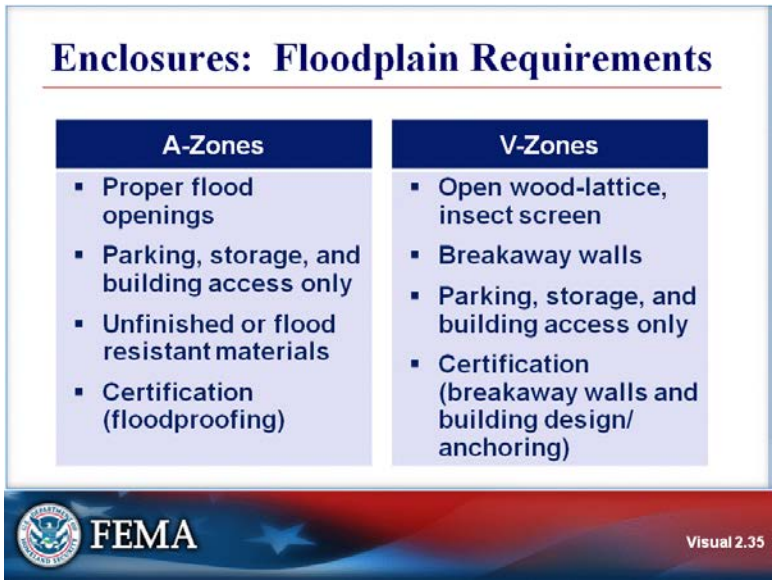
  The definition of an enclosure or enclosed area is: Areas created by a crawlspace or solid walls that fully enclose areas below the lowest floor.

- The flood insurance definition is in the Flood Insurance Manual.

  The definition of an enclosure is: That portion of an elevated building below the lowest elevated floor that is either partially or fully shut in by rigid walls.

ENCLOSURES

Visual 2.35



Key Points

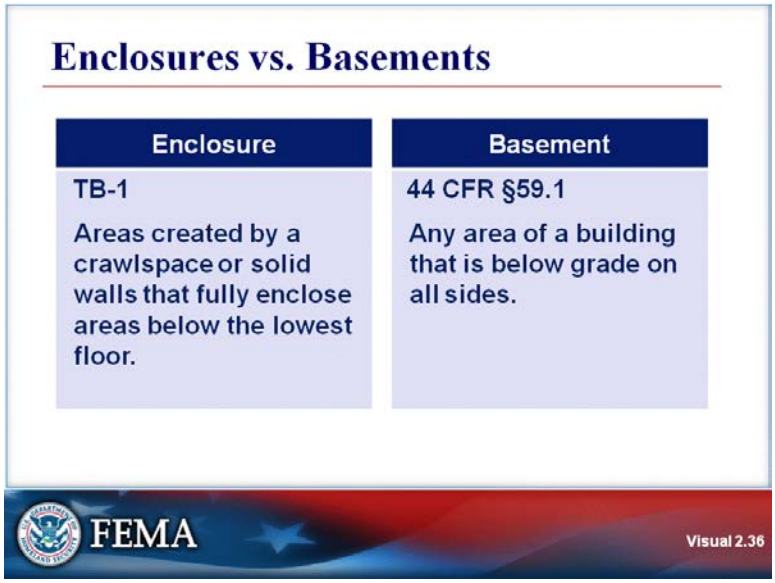
Floodplain requirements for enclosures depend on whether the enclosure is located in an A-Zone or a V-Zone.

In a V-Zone, enclosure walls must be non-supporting, and either designed to be free of obstruction (open wood-lattice or insect screen) or breakaway walls. Insurance rules allow plastic lattice, whereas regulations specifically mention open wood lattice-work.

In both zones, the space should be used only for parking of vehicles, storage, and building access.

ENCLOSURES

Visual 2.36



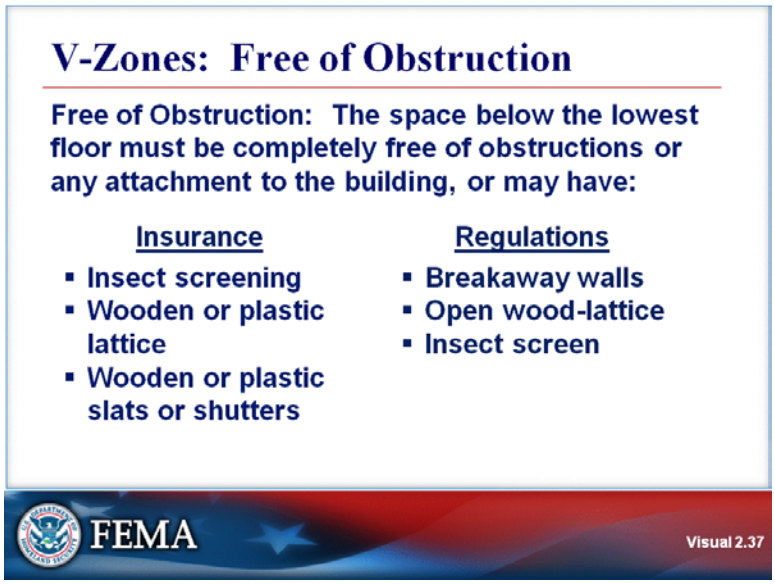
Key Points

The enclosure definition in the visual is only used for floodplain management.

An enclosure is not a basement. A basement is below grade on all sides.

ENCLOSURES

Visual 2.37



Key Points

Free of obstruction is described in the Flood Insurance Manual Rate table for V-Zones and in 44 CFR §60.3(e). Non-risk elements for rating a flood insurance policy are:

- Insect screening,
- Open wood or plastic lattice, and
- Wooden or plastic slats or shutters.

44 CFR §60.3(e) also lists acceptable types of enclosure walls in V-Zones. All references require non-structural items that will meet the obstruction requirement and still allow for security and privacy.

The Flood Insurance Manual V-Zone rate table provides more detail than floodplain management regulations. Following is the full text from the rate table:

Free of Obstruction – The space below the lowest elevated floor must be completely free of obstructions or any attachment to the building, or may have:

(1) Insect screening, provided that no additional supports are required for the screening; or

(2) Wooden or plastic lattice with at least 40 percent of its area open and made of material no thicker than ½ inch; or

(3) Wooden or plastic slats or shutters with at least 40 percent of their area open and made of material no thicker than 1 inch.

(4) One solid breakaway wall or a garage door, with the remaining sides of the enclosure constructed with screening, wooden or plastic lattice, slats, or shutters.

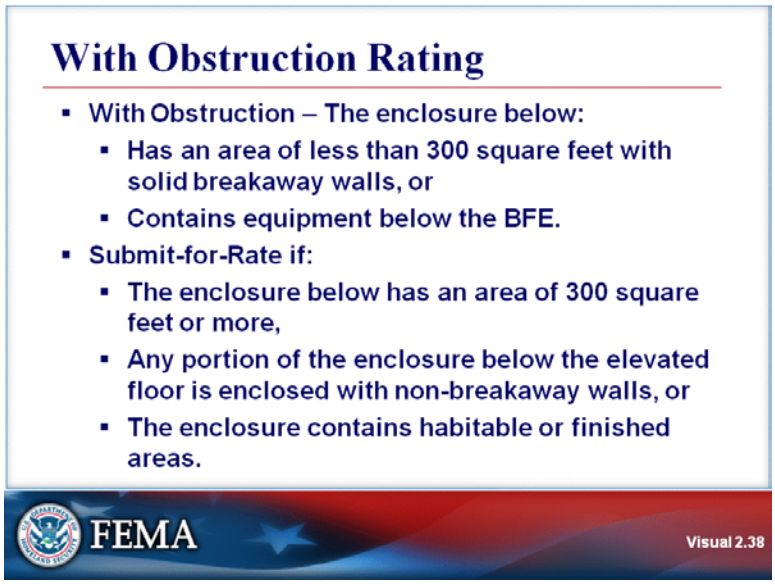
ENCLOSURES

Any of these systems must be designed and installed to collapse under wind and base flood loads without jeopardizing the structural support of the building, so that the impact on the building of abnormally high tides or wind-driven water is minimized.

Any machinery and equipment servicing the building must be at or above the BFE or protected from intrusion of floodwaters.

ENCLOSURES

Visual 2.38



Key Points

As defined in the Flood Insurance Manual, With Obstruction rates carry a premium increase of more than 30 percent.

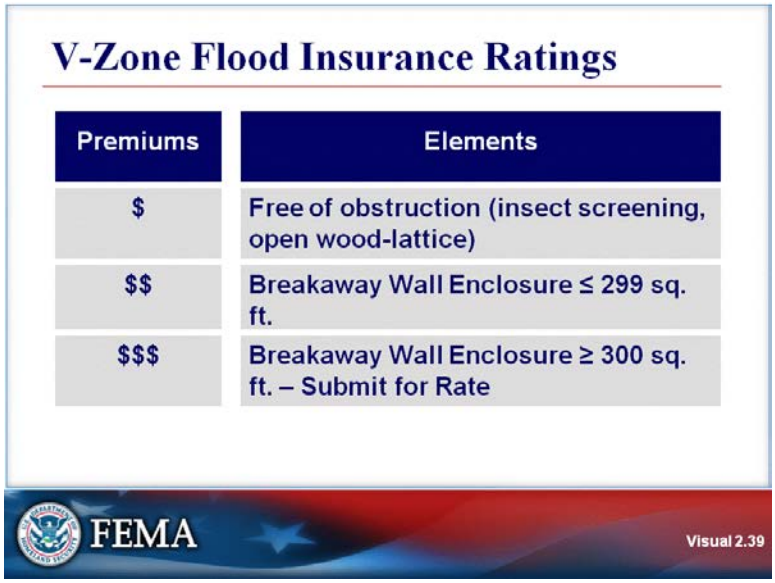
The premium increase recognizes the increased risk and the limited coverage available for an enclosure that is below the lowest elevated floor.

A policy will be categorized as Submit-for-Rate for areas that equal or exceed 300 square feet, if non-breakaway walls are used to enclose the space, or if the enclosure contains habitable or finished areas.

A policy that is a Submit-for-Rate has insurance rates that exceed those of standard rate tables. Premiums will reflect the increased risk due to the lowest floor being two or more feet below the BFE.

ENCLOSURES

Visual 2.39



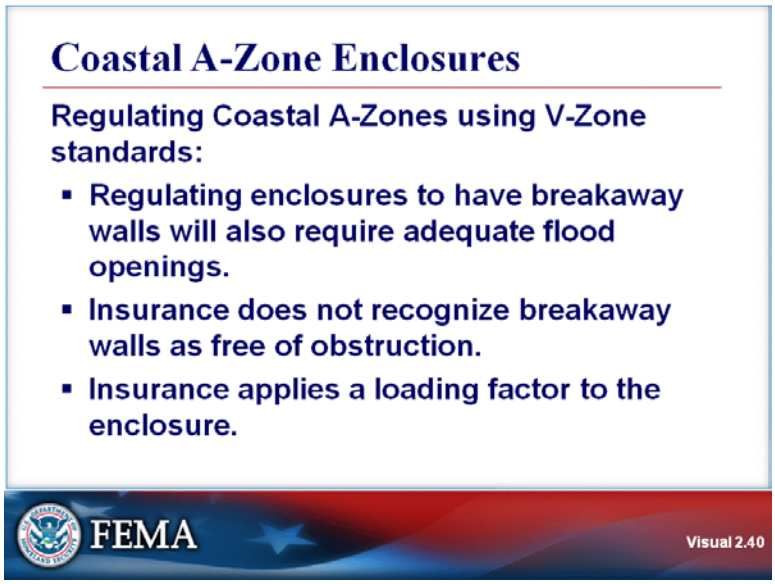
Key Points

Enclosures, regardless of the zone, increase the risk to structures. Enclosure components may become debris that damages other property and needs to be cleaned up after an event.

Some communities have adopted within their ordinances a limitation on enclosure size to less than 300 square feet for both V- and A-Zones.

ENCLOSURES

Visual 2.40



Key Points

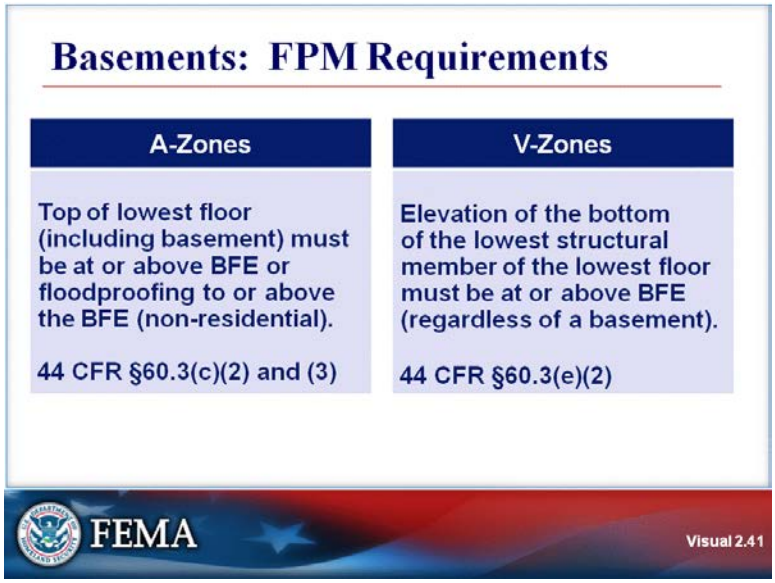
Because of wave action associated with coastal locations, many communities recognize the risk of damage by wave action in coastal A-Zones.

These communities utilize a higher standard through their ordinance to regulate coastal A-Zones using V-Zone standards.

For insurance, enclosures in coastal A-Zones with breakaway walls also must have adequate openings.

ENCLOSURES

Visual 2.41



Key Points

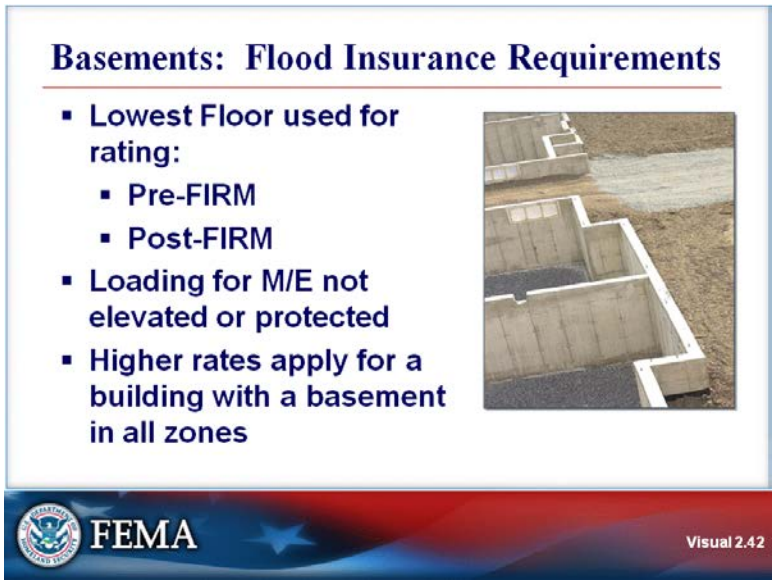
The regulations state that the lowest floor including basement must be at or above the BFE.

There are some communities that have applied for and received a basement exception from FEMA to allow construction of basements in conformance with 44 CFR §60.6(a) and (b). The exemption allows insurance rating as if the basement was not there.

Nonresidential structures in A-Zones floodproofed to one foot above BFE are rated as if they are elevated to BFE. However, the additional foot is not a regulatory requirement.

ENCLOSURES

Visual 2.42



Key Points

A higher premium is charged for both Pre-FIRM and Post-FIRM buildings with basements.

The rate tables include premiums that reflect increased risk. Increased premiums for basements apply regardless of the flood zone. Even Preferred Risk Policies (PRPs) pay increased premiums for structures with basements.

ENCLOSURES

Visual 2.43

Key Points

The Standard Flood Insurance policy under Section III Building Coverage states that items of property in a building enclosure below the lowest elevated floor of an elevated post-FIRM building located in Zones A1-A30, AE, AH, AR, AR/A, AR/AE, AR/AH, AR/A1-A30, V1-V30, or VE, or in a basement, regardless of the zone only covers (FIM page, POL 6):

- Seventeen items on the building.
- Three items on enclosure contents.

Building items covered are:

1. Central air conditioners
2. Cisterns and the water in them
3. Drywall for walls and ceilings in a basement and the cost of labor to nail it, unfinished and unfloated and not taped, to the framing
4. Electrical junction and circuit breaker boxes
5. Electrical outlets and switches
6. Elevators, dumbwaiters, and related equipment, except for related equipment installed below the base flood elevation after September 30, 1987
7. Fuel tanks and the fuel in them
8. Furnaces and hot water heaters
9. Heat pumps
10. Nonflammable insulation in a basement
11. Pumps and tanks used in solar energy systems
12. Stairways and staircases attached to the building, not separated from it by elevated walkways

ENCLOSURES

The remaining building items covered are:

13. Sump pumps
14. Water softeners and the chemicals in them, water filters, and faucets installed as an integral part of the plumbing system
15. Well water tanks and pumps
16. Required utility connections for any item in this list, and
17. Footings, foundations, posts, pilings, piers, or other foundation walls and anchorage systems required to support a building.

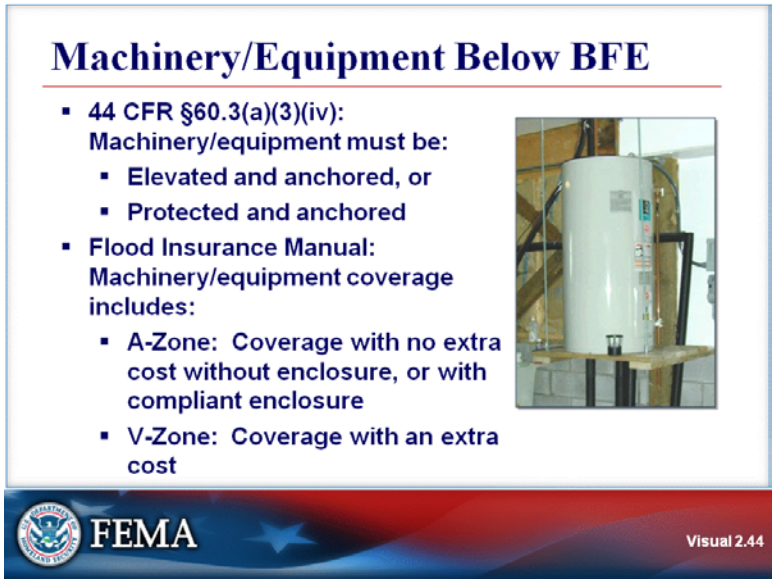
Note that the only contents covered are (FIM page, POL 27):

1. Food freezer, other than walk-in, and food in any freezer
2. Washer and dryer
3. Portable or window type air conditioner

Covered items are listed in the insurance policy.

ENCLOSURES

Visual 2.44



Key Points

Elevating machinery and equipment above the BFE may reduce premiums.

The floodplain management requirement for machinery and equipment below BFE is provided in 44 CFR §60.3(a)(3)(iv). All new construction and substantial improvements shall:

…be constructed with electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

The requirement implies that machinery and equipment be:

- Elevated and anchored, or
- Protected and anchored.

CRS credits are available for communities that require that machinery and equipment be elevated above BFE.

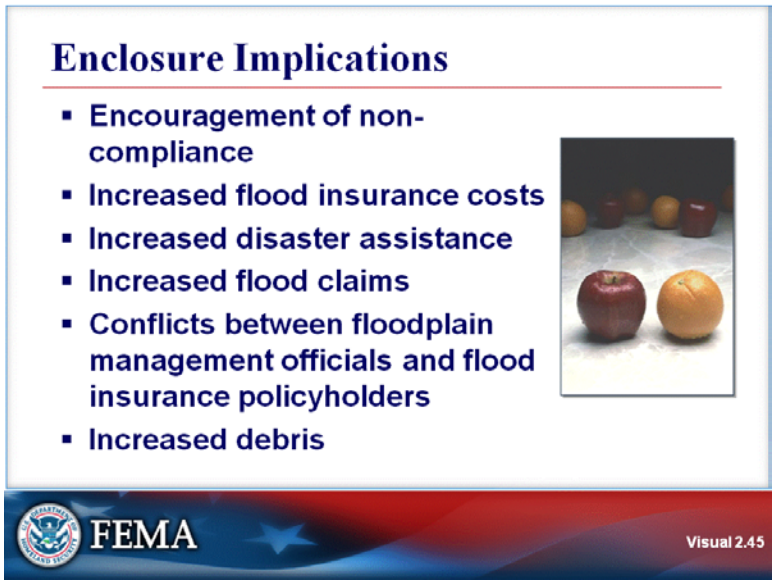
Flood insurance will cover machinery and equipment below BFE:

- In A-Zones at no extra cost if there is no enclosure, or if the enclosure is compliant.
- In V-Zones with an extra cost.

Coverage of machinery and equipment below BFE is a major departure from floodplain management regulations.

ENCLOSURES

Visual 2.45



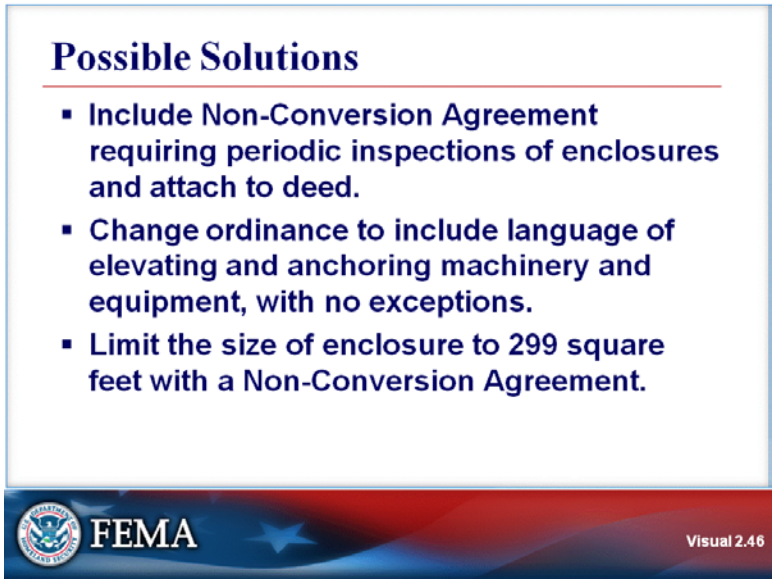
Key Points

Floodplain management decisions regarding how enclosures are built can affect flood insurance premiums. The differences between treatment of enclosures in flood insurance and floodplain management potentially cause problems.

- Property owners are able to obtain affordable insurance even though enclosures are not compliant, mainly in A-Zones. In V-Zones there can be a major difference in premiums.
- Property owners pay higher flood insurance costs that could be avoided by restricting enclosure size or providing adequate flood openings.
- Disaster assistance increases because enclosures are converted to living space, placing residents in harm's way.
- Flood claims increase because items in enclosures are not being elevated or protected, and adequately anchored.
- Policyholders may be confused and upset by the inconsistent requirements, creating conflict with Floodplain Management Officials.
- Damaged or destroyed enclosures become debris.

ENCLOSURES

Visual 2.46



Key Points

Floodplain management and flood insurance deal differently with enclosures, and the differences cause problems.

Possible solutions are:

- Include non-conversion agreements on enclosures so that they can be attached to the deed, allowing community officials to conduct periodic inspections and providing potential buyers of the property caution about noncompliance.

  A non-conversion agreement is a legal document that requires inspection of the enclosure for floodplain management compliance. The agreement is filed with the property deed.

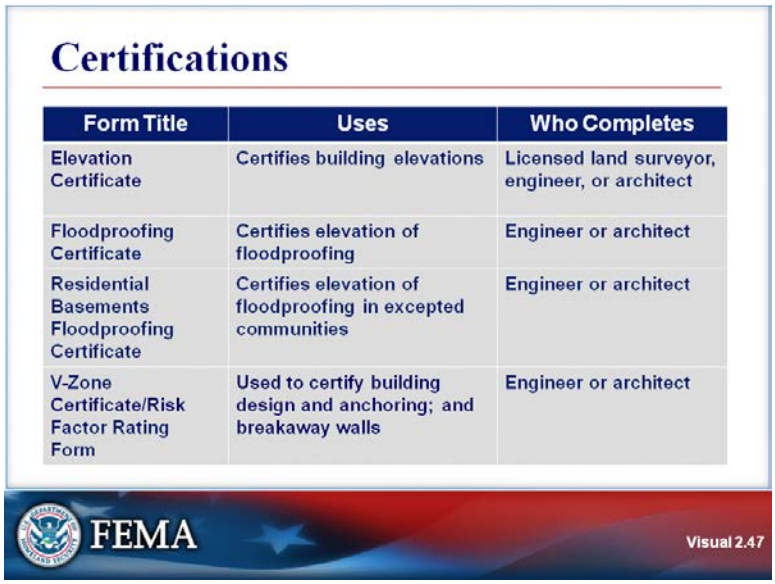
- Limit the size of enclosure to 299 square feet in all flood zones with a non-conversion agreement.

- Change the local ordinance to include language mandating elevation and anchoring of machinery and equipment in enclosures, with no exceptions.

- Establish a relationship between Floodplain Managers and insurance agents, so both can understand the impact of NFIP regulation on insurance premiums.

ENCLOSURES

Visual 2.47



Key Points

The visual lists certifications that are important for both floodplain management and flood insurance purposes.

- The Elevation Certificate (EC) is completed by a licensed professional except in A-Zones with no BFEs and in AO-Zones. Property owners or their representatives can complete Sections E and F of the EC. Photographs of the building are required with the Elevation Certificate. The EC also provides important enclosure and attached garage information that can be used for insurance rating.

- The Floodproofing Certificate is important for ensuring that non-residential structures meet floodproofing requirements. It is strongly recommended that communities require an operational and maintenance plan for continued effectiveness of floodproofing measures. It is critical that the floodproofing measures are installed within the floodwarning time for the site.

- The Residential Basements Floodproofing Certificate certifies elevation of floodproofing of basements in excepted communities. Very few residential basements have been certified.

- V-Zone certification is required by the NFIP regulations for the design and anchoring of foundation and the structure attached to it. Breakaway wall design certification is also required when their design loading resistance equals or exceeds 20 pounds per square foot. V-Zone insurance rating requires the V-Zone Risk Factor Rating Form, which contains similar information as for the V-Zone certification.

- The V-Zone Risk Factor Rating Form is completed after installation of breakaway walls.

ENCLOSURES

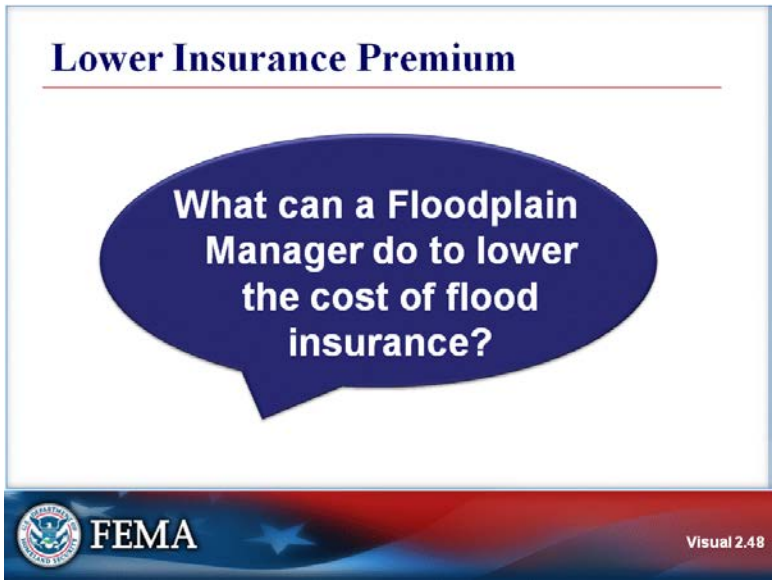
- The V-Zone Risk Factor Rating Form fulfills the essential purposes of community flood hazard mitigation and provides flood hazard insurance protection.

  This certification form can be used to guide designers, owners, local officials, agents, and others as they consider those types of siting, design, and construction activities that exceed the NFIP requirements.

  Another use is to rate buildings and provide insurance premium discounts to those structures that exceed NFIP requirements.

ENCLOSURES

Visual 2.48

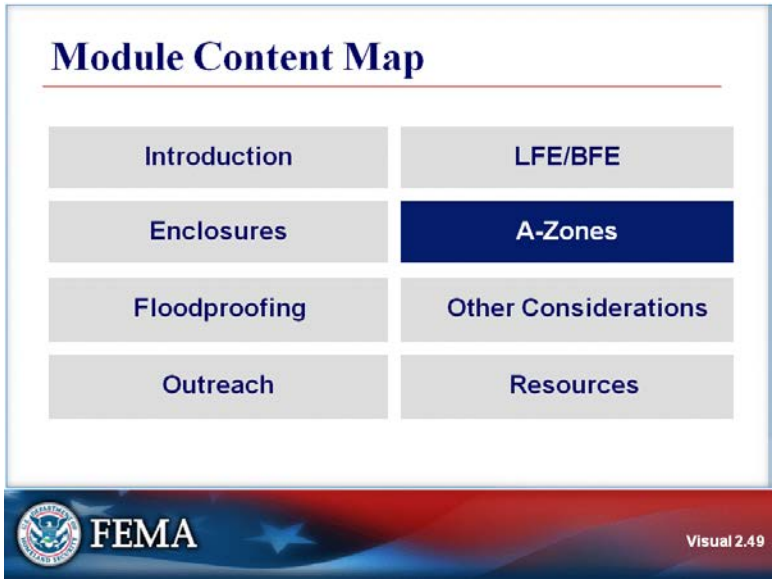


Key Points

Discussion Question: What can a Floodplain Manager do to lower the cost of flood insurance?

A-ZONES

Visual 2.49



Key Points

This section addresses the floodplain management requirements and insurance implications in A-Zones without established BFEs.

The insurance part of the NFIP still uses the term “unnumbered A-Zones” even though AO-, AH-, AE-, and VE-Zones also have no numbers attached to them. They are the SFHAs established using only approximate methods.

The mapping side of the NFIP uses the term “Approximate Zone-A” area.

A-ZONES

Visual 2.50

Key Points

The visual reviews the provisions of 44 CFR §60.3(b), which applies to A-Zones without established BFEs, commonly termed unnumbered or Approximate A-Zones.

44 CFR §60.3(b)(3) contains the following provisions:

- A BFE determination is required for subdivision proposals and other development proposals exceeding 5 acres or 50 lots, whichever is lesser.

- Other available data should be used to establish BFEs.
  - Elevation
  - Floodproofing
  - Floodway
  - Certified elevations

- Stream alterations or relocations require studies to obtain BFEs.
  - Notification of residents, adjoining communities, and FEMA
  - Maintenance of flood carrying capacity

- Manufactured homes
  - Elevation
  - Anchoring

44 CFR §60.3(b) also imposes basic provisions of 44 CFR §60.3(a), including that proposed development be reasonably safe from flooding.

A-ZONES

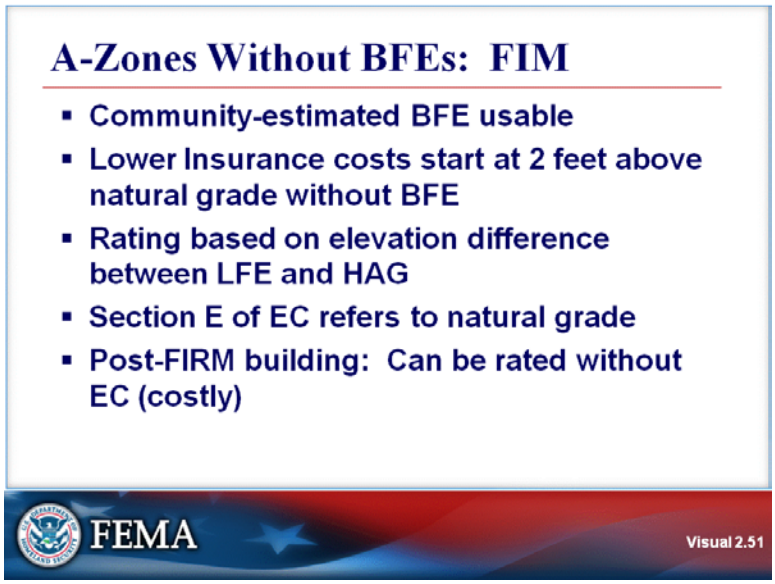
The requirements in 44 CFR §60.3(a) that apply to structures in A-Zones without BFEs are:

- All other applicable permits (Federal, State, and others) must be obtained.
- Flood resistant materials must be used.
- Structures must be anchored to resist flotation, collapse, and lateral movement.
- Flood damage must be minimized by appropriate construction methods.
- Mechanical and electrical equipment must be designed or located to prevent water from entering or accumulating within the components during a flood. The design measure is protecting mechanical and electrical equipment. The location measure is elevating equipment. A drainage requirement needs to be included. A public utilities requirement needs to be included.
- Water and sewer infrastructure and onsite sewage disposal systems must be protected from floodwater interflows.

These requirements are imposed on development in all flood zones within the SFHA.

A-ZONES

Visual 2.51



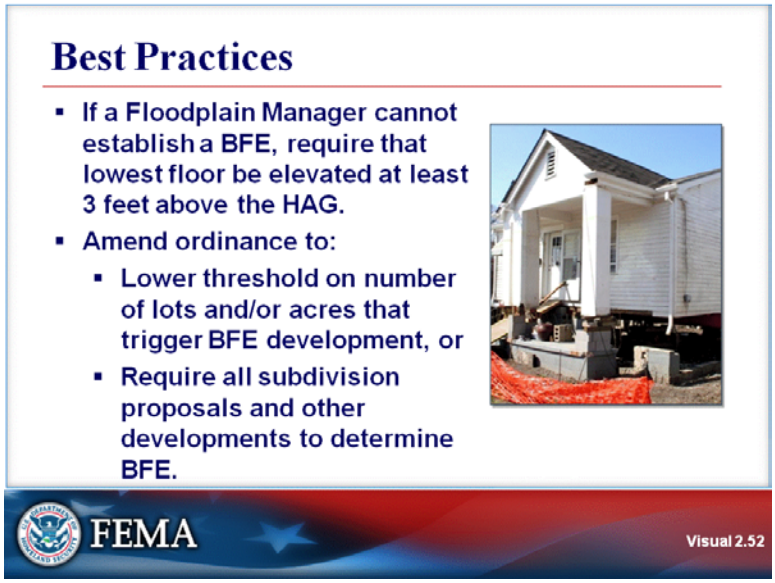
Key Points

The Flood Insurance Manual (FIM) applies the following rules to structures in A-Zones without established BFEs.

- The community-estimated BFE is usable for determining base flood elevation and may provide the lowest premium if the LFE is at or above the BFE.
- If no BFE can be established, lower insurance costs can be obtained for structures 2 feet or higher above the Highest Adjacent Grade (HAG).
- The insurance rating is based on the elevation difference between the Lowest Floor Elevation (LFE) and the HAG. Rates drop as this difference rises.
- When there is no BFE, Section E of the Elevation Certificate refers to the highest “natural” elevation of ground surface prior to construction next to the proposed walls of the structure. However, Section C of EC refers HAG to the “finished” grade elevation.
- A post-FIRM building can be rated without an Elevation Certificate (EC), but rates will be high.

A-ZONES

Visual 2.52



Key Points

A Floodplain Manager can apply the following best practices in A-Zones without established BFEs.

One measure is to require that the lowest floor of any structure be elevated to at least 3 feet above the HAG. The property owners can benefit from lower flood insurance rates.

Another approach is to amend the local floodplain management ordinance to:

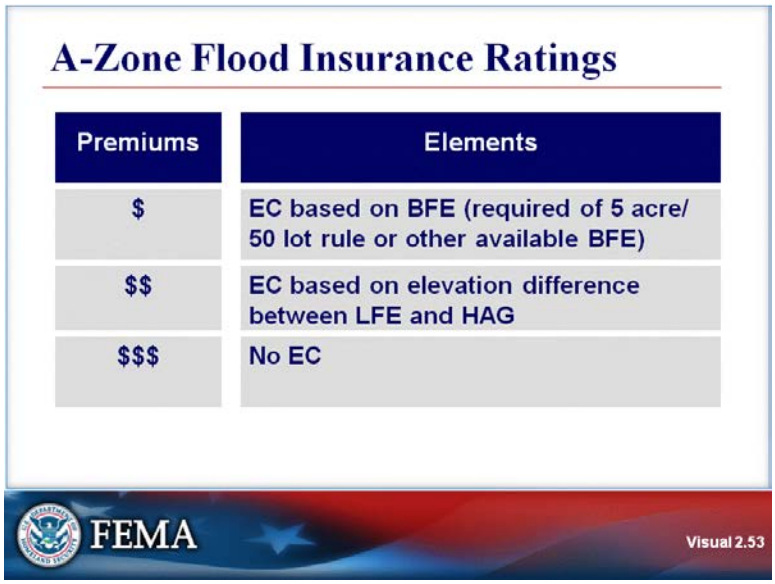
- Lower the threshold on the number or lots or acres that trigger BFE development; or
- Require BFE development for all subdivision proposals and other developments.

  This approach may increase development cost due to increased expenditures for required detailed hydrology and hydraulics studies. However, the flood insurance premiums will realize significant savings.

The insurance agent should receive Estimated BFE information.

A-ZONES

Visual 2.53



Key Points

The cost of insurance is lowest if the BFE is based on:

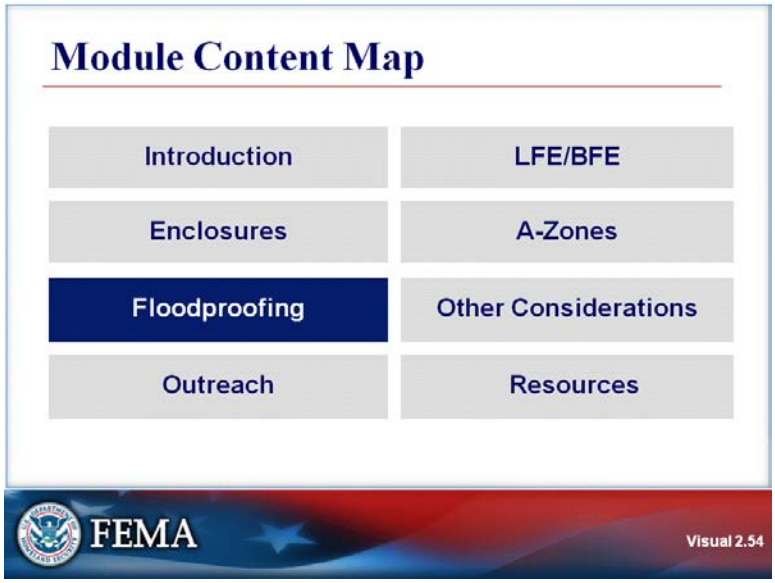
- A detailed Hydrology and Hydraulics (H&H) study (including that required by the 5-acre/50-lot rule),
- A BFE available from Federal, State, or other source, or
- A BFE estimated using approximate methods (contour interpolation, profile extrapolation).

An EC based on the difference between the LFE and the HAG results in higher insurance rates.

Insurance rates increase drastically if there is no EC, as high as $4.45 per $100-coverage for 1 to 4 family buildings, and $3.33 for residential contents, per FIM page Rate 5, effective 1 October 2010.

FLOODPROOFING

Visual 2.54



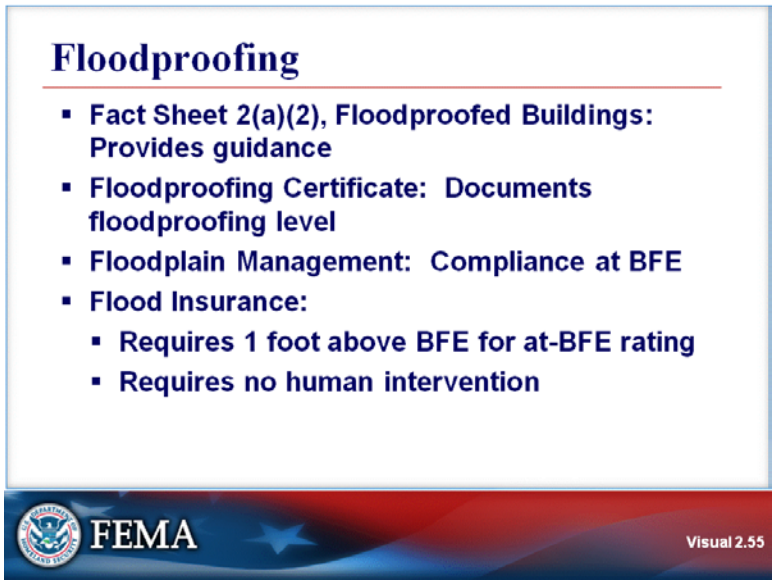
Key Points

The next section of this module will discuss how floodplain management and flood insurance deal with floodproofing of non-residential structures in all A-Zones.

Remember that floodproofing is not a regulatory option in the NFIP for residential structures in all A-Zones and all structures in V-Zones.

FLOODPROOFING

Visual 2.55



Key Points

Guidance for floodproofing is provided in Fact Sheet 2(a)(2), Floodplain Management vs. Flood Insurance Rates: Topic—Floodproofed Buildings. The full text of the Fact Sheet is on the following page.

A floodproofed building requires submission of a Floodproofing Certificate that documents the level to which the building has been floodproofed.

There are differences between floodplain management and flood insurance on floodproofing elevation levels.

- For floodplain management purposes, floodproofing to BFE is compliant.
- Flood insurance requires a building to be floodproofed at least 1 foot above BFE to receive a lower premium. A building floodproofed only to BFE is rated as -1 (the lowest floor is one foot below BFE).
- Flood insurance requires no human intervention.

FLOODPROOFING

Fact Sheet: Floodplain Management vs. Flood Insurance Rates

Topic: Floodproofed Buildings

Floodplain Management Regulations:
Section 60.3(c)(3) of the NFIP regulations state:

Require that all new construction and substantial improvements of non-residential structures within Zones A1-A30, AE, AH zones on the community's FIRM: (a) have the lowest floor (including basement) elevated to or above the base flood level; or (b) together with attendant utility and sanitary facilities, be designed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.

Section 60.3(c)(4) of the NFIP regulations state:

Provide that where a non-residential structure is intended to be made watertight below the base flood level: (a) a registered professional engineer or architect shall develop and/or review structural designs and methods of construction are in accordance with accepted standards of practice for meeting the applicable provisions of floodproofing; and (b) a record of such certificates maintained by the community.

NFIP – INSURANCE RATING

- In accordance with page Rate 31-32 of the Flood Insurance Manual, in order to qualify for floodproofing credit, non-residential buildings in Zones A (with estimated BFE), AE, A1-A30, and AO zones must be floodproofed to at least 1 foot higher than the identified BFE, and one foot higher than the base flood depth, respectively.

- The building must be floodproofed to +1 foot in order to receive a rate equivalent to a building with its lowest floor **elevated to the BFE.**

Page Two – Floodproofing

- The floodproofing must be certified by a registered professional engineer or architect on the Floodproofing Certificate or by a responsible local official with professional certification in a letter containing the same information requested on the Floodproofing Certificate FEMA Form 81-65, attached for reference. [Note: The regulations do not allow certification by a responsible local official, which serves as another example of a disconnect between insurance and regulations.]

- If the building is certified to be floodproofed to 2 feet above the BFE, flood depth, or comparable community approved floodplain management standards, whichever is higher, then it is credited for floodproofing and is to be treated for rating as having a +1 foot elevation.

FLOODPROOFING

So What Does That Mean?

According to the floodplain management criteria, a community can allow a non-residential structure to be elevated to or above the BFE or can be floodproofed in accordance with the NFIP requirements of Section 60.3(c)(3) and (4). However, unless the structure is floodproofed to one foot above the specified BFE, and certified by a registered professional engineer and/or architect on the Floodproofing Certificate, the structure will be negatively rated.

For example, the BFE is 179 feet NAVD, and the floodproofing elevation is 180 feet NAVD. The building will be rated as if it is elevated to the BFE. However, if the floodproofing elevation is the same as the BFE (179 feet NAVD), the building will be rated as if the lowest floor is one foot below the BFE.

FLOODPROOFING

Visual 2.56

Key Points

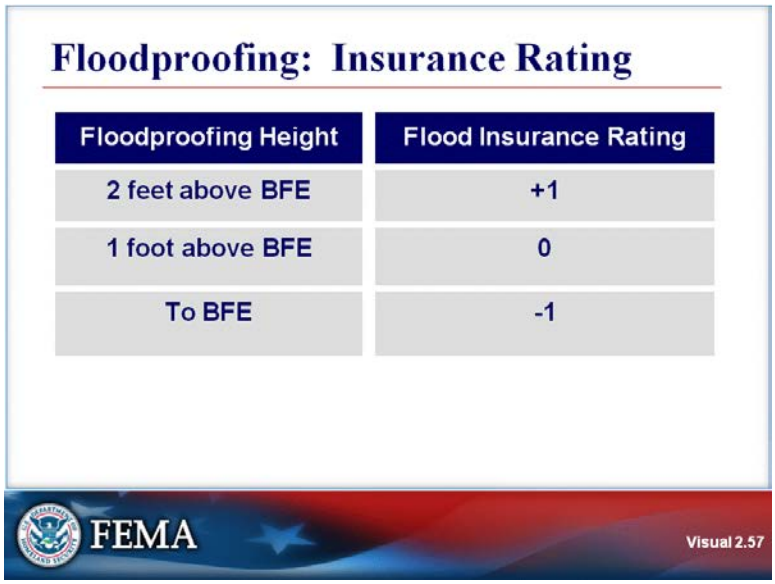
Floodproofing requirements include:

- Only non-residential buildings in A-Zones can be floodproofed.
- An Elevation Certificate is required.
- A Floodproofing Certificate certified by a Registered, professional engineer or architect is required.
- Floodproofing must be extended to at least one foot to or above the BFE to avoid the structure being rated negatively.

A Flood Emergency Operation Plan and a Maintenance and Operational Plan are required.

FLOODPROOFING

Visual 2.57



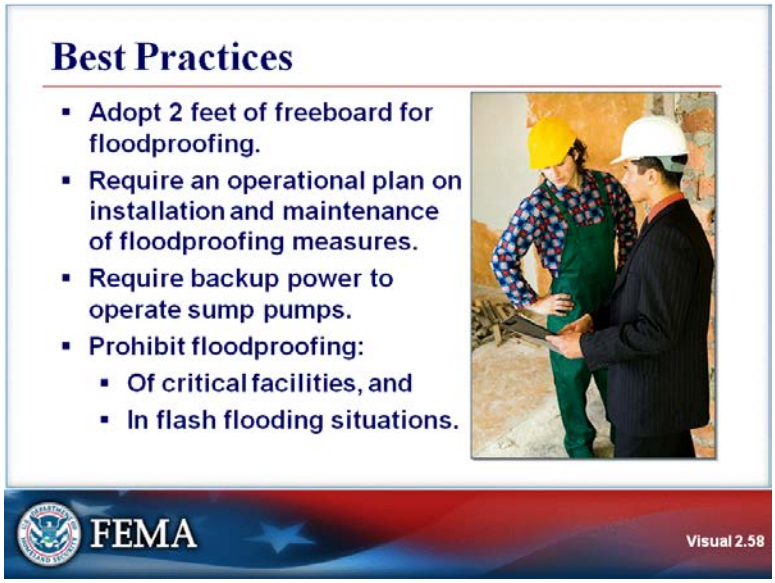
Key Points

The table in the visual shows how the flood insurance rating changes with floodproofing height.

Note that if the building is floodproofed to BFE, the building is rated as -1. A building must be 1 foot above BFE to receive an “at BFE” rating for flood insurance.

FLOODPROOFING

Visual 2.58



Key Points

Practices that a Floodplain Manager can follow in relation to floodproofing include:

- Requiring 2 feet of freeboard for all floodproofed buildings.
- Having an operational plan on the installation and maintenance of floodproofing measures.
- Requiring back up power for sump pumps.
- Prohibiting floodproofing of critical facilities.
- Prohibiting floodproofing in flash flooding situations.

The operational plan on installation and maintenance of floodproofing measures should include:

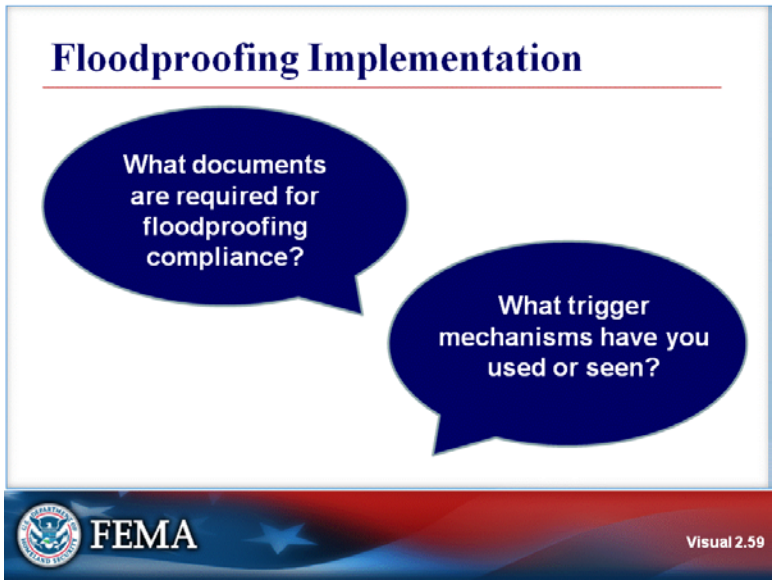
- Where floodproofing measures are stored.
- Who is responsible to bring them to the site.
- Time required to install floodproofing devices and equipment.
- The entity responsible for installation to make building, utilities, and sanitary facilities water-tight.
- Assurance that the installation and personnel evacuation are achieved well within the flood warning time for the site.
- Assurance that the floodproofing measures are designed to withstand hydrostatic, hydrodynamic, buoyancy, and flood-borne debris impacts.

The operational plan should specify the trigger for installation of floodproofing measures. Possible triggers are:

- River gauge data from USGS.
- Hurricane warning.
- National Weather Service forecasts.
- River forecasting from the National Oceanic and Atmospheric Administration (NOAA).
- Local government warning procedures.

FLOODPROOFING

Visual 2.59



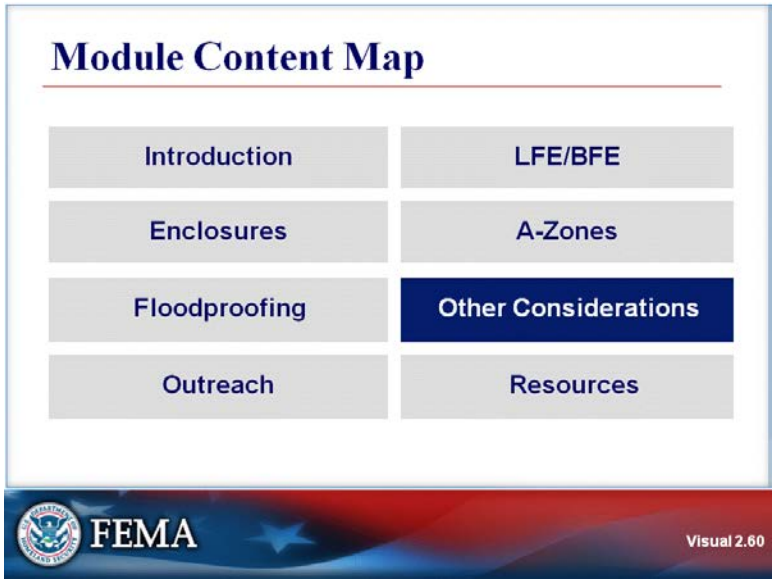
Key Points

Discussion Question: What documents are required for floodproofing compliance?

Discussion Question: What trigger mechanisms have you used or seen?

OTHER CONSIDERATIONS

Visual 2.60

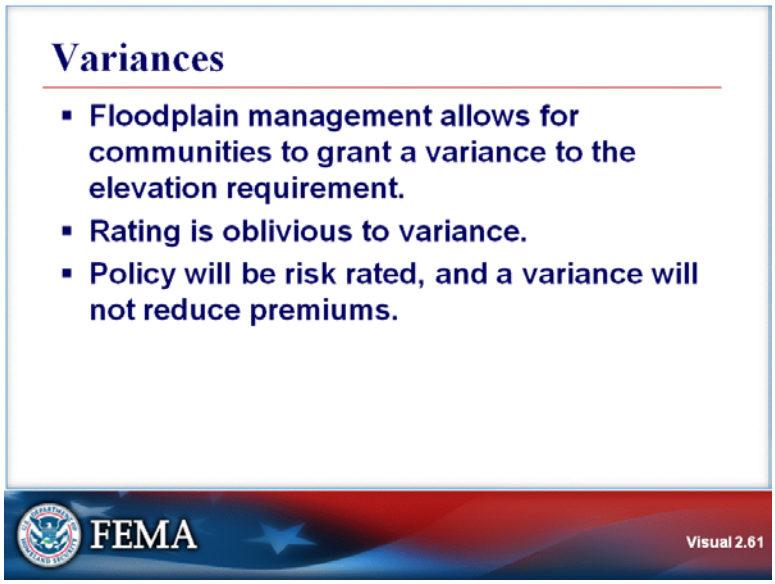


Key Points

The next section of this module will examine diverse topics relating to floodplain management and flood insurance.

OTHER CONSIDERATIONS

Visual 2.61



Key Points

Rates for insuring a building that has been granted an elevation variance will be drastically increased due to the lowest floor being below the BFE.

A variance could put an undue financial burden on the policyholder. Rates could be as high as $25 per $100 of insurance coverage.

Flood insurance requires a copy of the variance for non-compliant buildings.

OTHER CONSIDERATIONS

Visual 2.62

Key Points

Discussion Question: What are examples of accessory buildings?

OTHER CONSIDERATIONS

Visual 2.63

Key Points

Floodplain management and flood insurance have different building definitions.

The major differences are:

- Floodplain management regulates buildings with walls and roof, while flood insurance will insure a structure with two or more walls and roof.
- Floodplain management requires anchoring of accessory buildings. Flood insurance will not cover buildings unless affixed to a permanent foundation or site.
- Unprotected, below-BFE machinery and equipment are noncompliant with floodplain management regulations. However, many items are covered under the insurance policy.
- Floodplain management provides for unfinished or flood-resistant enclosures. However, the insurance side penalizes finished enclosures.

OTHER CONSIDERATIONS

Visual 2.64

Key Points

For accessory structures:

- A permit is required.
- Accessory buildings must be consistent with the definition of "lowest floor."
- A variance to elevation requirements may be allowed by the local ordinance provided it meets all other floodplain management regulations.

As may be provided for in the local ordinance, accessory buildings of minimal size or investment can be compliant without being required to elevate. Such buildings can be wet floodproofed. Refer to the definition of the term "lowest floor."

Wet floodproofing:

- Allows floodwaters into and out of a structure through adequate flood openings.
- Uses flood-resistant building materials and other methods to minimize damage to the building.
- May not be suitable in areas with high-debris potential.
- May not be suitable in high-velocity areas such as floodways and coastal A-Zones.

OTHER CONSIDERATIONS

Visual 2.65

Key Points

The Flood Insurance Manual includes the following rules for accessory buildings.

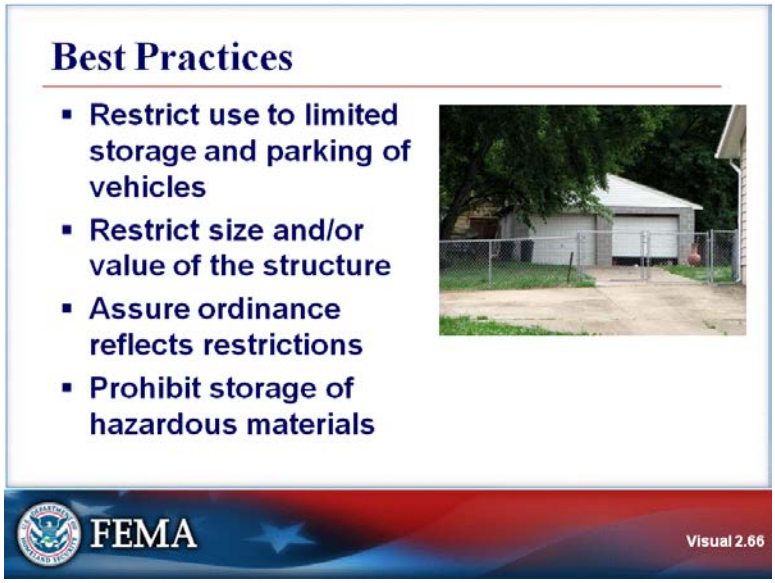
- Accessory buildings are risk rated for flood insurance.
- Accessory buildings are insured separately from the main building.
- The exception is detached garages.

The Standard Flood Insurance Policy Dwelling Form allows up to 10 percent of the building coverage to be moved to cover the detached garage as long as there are no residential, business, or farming uses in the detached garage.

Detached garages also can be insured separately.

OTHER CONSIDERATIONS

Visual 2.66



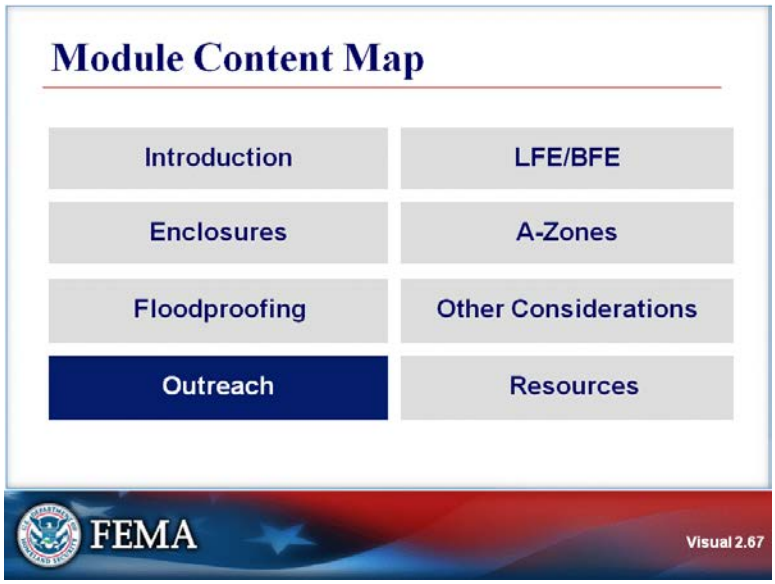
Key Points

Practices that a Floodplain Manager can follow in relation to accessory buildings include:

- Restrict use to limited storage and parking of vehicles.
- Restrict the size and or value of the structure.
- Assure that the local floodplain management ordinance reflects restrictions on accessory buildings.
- Prohibit storage of hazardous materials because they can contaminate floodwaters.

OUTREACH

Visual 2.67



Key Points

The next section of this module will cover outreach initiatives that the Floodplain Manager can undertake to help property owners in the community to obtain reasonable flood insurance rates.

OUTREACH

Visual 2.68

Key Points

Messages that the Floodplain Manager (FPM) can deliver through various outreach avenues include:

- Excess flood insurance may be available for high-dollar structures over the NFIP building coverage limits of $250,000 (residential) and $500,000 (non-residential) through other means.

  An insurance agent or broker is a resource to advise policyholders in this category.

- Increased Cost of Compliance (ICC) insurance coverage is available for structures that suffered substantial damage by flood or were declared a “repetitive loss.”

  ICC will pay for mitigation measures such as elevation of a structure. The trigger that makes ICC available is the substantial damage or repetitive loss declaration from the FPM.

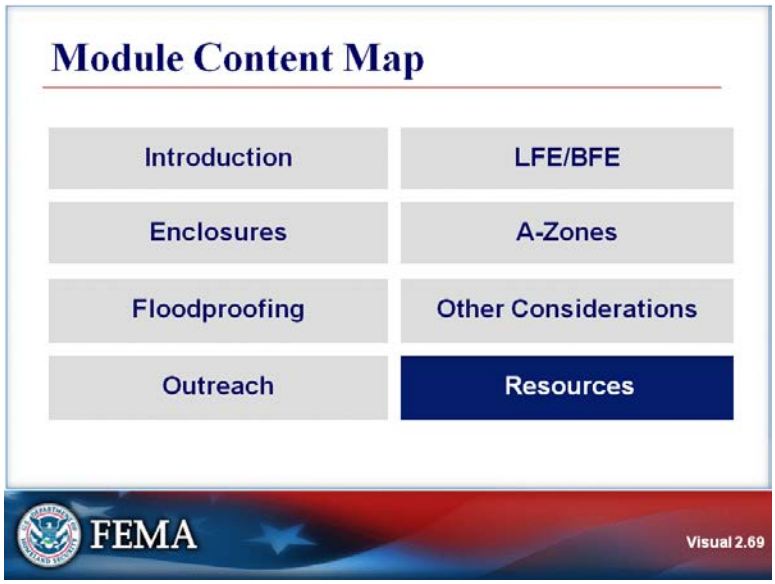
  All policies have 4 years to complete mitigation projects covered under ICC. However, for Hurricanes Katrina, Rita and Wilma, the performance period has been extended to 6 years.

  Claims lists are available from the regional insurance specialist as a screening tool for mitigation projects, drainage projects, or other post-disaster activities.

  The local official should not rely on data from claims lists to substitute for required determinations. All mitigation projects must meet floodplain management requirements.

RESOURCES

Visual 2.69

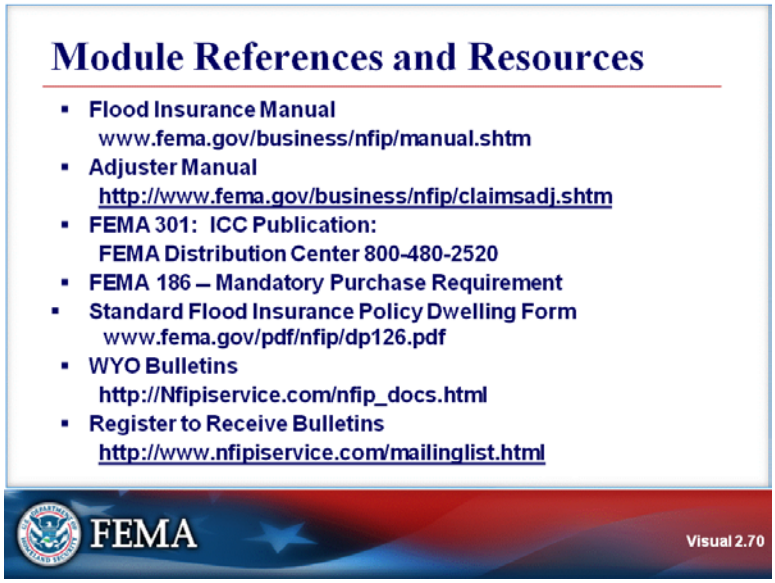


Key Points

The final section of this module will refer you to resources for more information about the differences between flood insurance and floodplain management.

RESOURCES

Visual 2.70



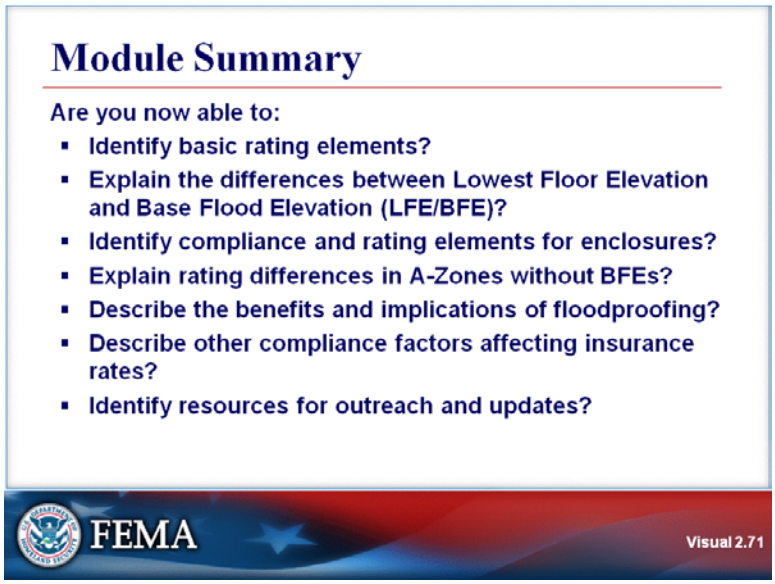
Key Points

The following links provide more information about flood insurance:

- Flood Insurance Manual: www.fema.gov/business/nfip/manual.shtm
- Information for Claims Adjusters: http://www.fema.gov/business/nfip/claimsadj.shtm
- FEMA 301: ICC Publication: FEMA Distribution Center 800-480-2520
- FEMA 186: Mandatory Purchase Requirement
- Standard Flood Insurance Policy Dwelling Form: www.fema.gov/pdf/nfip/dp126.pdf
- Write Your Own (WYO) Program Bulletins and Manuals: http://nfipiservice.com/nfip_docs.html
- Register to Receive Bulletins: http://www.nfipiservice.com/mailinglist.html

MODULE SUMMARY

Visual 2.71



Key Points

After completing this module, are you able to:

- Identify basic rating elements?
- Explain the differences between Lowest Floor Elevation and Base Flood Elevation (LFE/BFE)?
- Identify compliance and rating elements for enclosures?
- Explain rating differences in A-Zones without BFEs?
- Describe the benefits and implications of floodproofing?
- Describe other compliance factors affecting insurance rates?
- Identify resources for outreach and updates?