

SECTION 16: SUBSTANTIAL IMPROVEMENT AND SUBSTANTIAL DAMAGE

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16.1. INTRODUCTION

The previous sections focused on the rules and regulations that prevent or reduce damage from floods to new buildings. This section looks at what happens when the owner wishes to make an improvement, such as an addition, to an existing building and what happens if a building is damaged by a fire, flood, or other cause.

Basic Rule #5

If the cost of improvements or the cost to repair the damage exceeds 50 percent of the market value of the building, it must be brought up to current floodplain management standards.

That means an existing building must meet the requirements for new construction. People who own existing buildings that are being substantially improved will be required to make a major investment in them in order to bring them into compliance with the law. They will not be happy. If the buildings have just been damaged, they will be financially strapped and the elected officials will want to help them, not make life harder for them.

For these reasons, it is easy to see that this basic rule can be difficult to administer. It is also time when a regulatory program can reduce flood damage to existing buildings. That's why this desk reference devotes this section to administering the substantial improvements and substantial damage regulations.

Note: In this desk reference, the term "building" is the same as the term "structure" in the NFIP regulations. Local ordinances may use either term. The terms are reviewed in more detail in Section 12.

16.2. SUBSTANTIAL IMPROVEMENT

16.2.1. NFIP requirements

44 CFR 59.1. Definitions: "Substantial improvement" means any reconstruction, rehabilitation, addition or other improvement to a structure, the total cost of which equals or exceeds 50 percent of the market value of the structure before the start of construction of the improvement.

16.2.2. Projects affected

All building improvement projects worthy of a permit must be considered. These include:

- Remodeling projects
- Rehabilitation projects
- Building additions
- Repair and reconstruction projects (these are addressed in more detail in Section 16.3. on substantial damage)

Note that if part of a building is in the SFHA, the entire building is subject to these provisions.

If a community does not require permits for, say, reroofing, minor maintenance, or projects under a certain dollar amount, then such projects are not subject to the substantial improvement requirements. However, a larger project that includes reroofing, etc., must include the entire cost of the project.

16.2.3. Multiple projects

One problem a floodplain administrator may face is a builder trying to avoid the requirements by applying for a permit for only part of the job and then later applying for another permit to finish the work.

If both applications together are worth more than 50% of the value of the building (and the second permit is applied for a relatively short time after the first), then the combined project should be considered a substantial improvement and subject to the rules. FEMA requires that the entire improvement project be counted as one.

In order to help enforce this, a community may want to count all applications submitted over, say, one year as one project. The community's attorney should be consulted on whether the ordinance clearly gives the floodplain administrator the authority to do this and be sure to spell it out in the permit papers given to the applicant.

Some communities require that improvements be calculated cumulatively over several years. All improvement and repair projects undertaken over a period of 5 years, 10 years, or the life of the structure are added up. When they total 50 percent, the building must be brought into compliance as if it were new construction.

The Community Rating System provides credit for keeping track of improvements to enforce a cumulative substantial improvement requirement. It also credits using a lower threshold than 50 percent. These credits are found under Activity 430, Section 431.c and d in the *CRS Coordinator's Manual* and the *CRS Application*. See also *CRS Credit for Higher Regulatory Standards* for example regulatory language.



The NFIP's Increased Cost of Compliance benefits are explained in section 16.3. There is a provision to provide additional funds for buildings that are repetitively flooded. To make this provision available, the community needs to keep track of multiple repair projects (and have the ordinance language shown in Figure 16-12).

16.2.4. Post-FIRM buildings

The rules do not address only pre-FIRM buildings — they cover *all* buildings, post-FIRM ones included. In most cases, a post-FIRM building will be properly elevated or otherwise compliant with regulations for new construction. However, sometimes a map change results in a higher BFE or change in FIRM zone. A substantial improvement to a post-FIRM building may require that the building be elevated to protect it from the new, higher, regulatory FPE.

It should be remembered that all additions to a post-FIRM building must be elevated at least as high as the FPE in effect when the building was built (The floodplain administrator cannot allow a compliant building to become noncompliant by allowing additions at grade). If a new, higher FPE has been adopted since the building was built, additions that are substantial improvements must be elevated to the new FPE.

16.2.5. The formula

A project is a substantial improvement if:

$$\frac{\text{Cost of improvement project}}{\text{Market value of the building}} \geq 50 \text{ percent}$$

For example, if a proposed improvement project will cost \$30,000 and the value of the building is \$50,000:

$$\frac{\$30,000}{\$50,000} = 0.6 \text{ (60 percent)}$$

The cost of the project exceeds 50 percent of the building's value, so it is a substantial improvement. The floodplain regulations for new construction apply and the building must meet the post-FIRM construction requirements. If the project is an addition that meets the criteria in Examples 3 and 4 later in this section, only the addition has to be elevated.

The formula is based on the cost of the project and the value of the building. These two numbers must be reviewed in detail. Good records must be kept of the applicant's estimates and the administrator's calculations.

16.2.6. Project cost

The cost of the project means all structural costs, including:

- ◆ all materials
- ◆ built-in appliances
- ◆ overhead
- ◆ profit
- ◆ repairs made to damaged parts of the building worked on at the same time
- ◆ labor

Labor is the "true" cost of hiring someone to do the job, e.g., the prevailing rates contractors charge. If the owner does the work or has free help, the "true" cost of that labor must be included. A more detailed list is included in Figure 16-1.

To determine substantial improvement, a detailed cost estimate is required for the project, prepared by a licensed general contractor, professional construction estimator, or the permit office. The permit office must review the estimate submitted by the permit applicant. Professional judgment and knowledge of local and regional construction costs can be used to verify the

estimate, or the building code valuation tables published by the major building code groups can be used. These tables can be used for determining estimates for particular replacement items if the type of structure in question is listed in the tables.

There are two possible exemptions to be aware of: 1) improvements to correct pre-identified code violations do not have to be included in the cost of an improvement or repair project and 2) historic buildings can be exempted from substantial improvement requirements. These are explained in more detail in section 16.4.

16.2.7. Market value

Market value is the price a willing buyer and willing seller agree upon. The market value of a structure reflects its original quality, subsequent improvements, physical age of building components, and current condition.

However, market value for property can be different than that of the building itself. Market value of developed property varies widely due to the desirability of its location. For example, two houses of similar size, quality, and condition will have far different prices if one is on the coast, or in the best school district, or closer to town than the other — but the value of the building materials and labor that went into both houses will be nearly the same.

For the purposes of determining substantial improvement, market value pertains only to the structure in question. It does not pertain to the land, landscaping or detached accessory structures on the property. Any value resulting from the location of the property should be attributed to the value of the land, not the building.

Acceptable estimates of market value can be obtained from these sources:

- ◆ An independent appraisal by a professional appraiser. The appraisal must exclude the value of the land and not use the “income capitalization approach” which bases value on the use of the property, not the structure.
- ◆ Detailed estimates of the structure’s actual cash value — the replacement cost for a building, minus a depreciation percentage based on age and condition. For most situations, the building’s actual cash value should approximate its market value. A community may prefer to use actual cash value as a substitute for market value, especially where there is not sufficient data or enough comparable sales.
- ◆ Property values used for tax assessment purposes with an adjustment recommended by the tax appraiser to reflect current market conditions (adjusted assessed value).
- ◆ The value of buildings taken from NFIP claims data (usually actual cash value).
- ◆ Qualified estimates based on sound professional judgment made by the staff of the local building department or tax assessor’s office.

Some market value estimates are often used only as screening tools (i.e., NFIP claims data and property appraisals for tax assessment purposes) to identify those structures where the substantial improvement ratios are obviously less than or greater than 50 percent (i.e., less than 40 percent or greater than 60 percent). For structures that fall in the 40 percent to 60 percent range, more precise market value estimates are sometimes necessary.

Items to be included

- All structural elements, including:
 - Spread or continuous foundation footings and pilings
 - Monolithic or other types of concrete slabs
 - Bearing walls, tie beams and trusses
 - Floors and ceilings
 - Attached decks and porches
 - Interior partition walls
 - Exterior wall finishes (brick, stucco, siding) incl. painting and moldings
 - Windows and doors
 - Reshingling or retiling a roof
 - Hardware
- All interior finishing elements, including:
 - Tiling, linoleum, stone, or carpet over subflooring
 - Bathroom tiling and fixtures
 - Wall finishes (drywall, painting, stucco, plaster, paneling, marble, etc.)
 - Kitchen, utility and bathroom cabinets
 - Built-in bookcases, cabinets, and furniture
 - Hardware
- All utility and service equipment, including:
 - HVAC equipment
 - Plumbing and electrical services
 - Light fixtures and ceiling fans
 - Security systems
 - Built-in kitchen appliances
 - Central vacuum systems
 - Water filtration, conditioning, or recirculation systems
- Cost to demolish storm-damaged building components
- Labor and other costs associated with moving or altering undamaged building components to accommodate improvements or additions.
- Overhead and profits

Items to be excluded

- Plans and specifications
- Carpeting over a finished floor
- Survey costs
- Permit fees
- Post-storm debris removal and clean up
- Outside improvements, including:
 - Landscaping
 - Sidewalks
 - Fences
 - Yard lights
 - Swimming pools
 - Screened pool enclosures
 - Detached structures (including garages, sheds and gazebos)
 - Landscape irrigation systems

Figure 16-1: Items included in calculating cost of the project

16.2.8. Substantial improvement examples

Note that the following examples use the base flood elevation (BFE). If the community has adopted a freeboard, then the flood protection elevation (FPE) should be used.

Example 1. Minor rehabilitation

A rehabilitation is defined as an improvement made to an existing structure which does not affect the external dimensions of the structure.

If the cost of the rehabilitation is less than 50 percent of the structure's market value, the building does not have to be elevated or otherwise protected. However, it is advisable to incorporate methods to reduce flood damage, such as use of flood-resistant materials and installation of electrical, heating and air conditioning units above the FPE.

Figure 16-2 shows a building that had a small rehabilitation project. Central air conditioning was installed and the electrical system was upgraded. The value of the building before the project was \$60,000. The value of the project was \$12,000:

$\frac{\$12,000}{\$60,000} = 0.2$ (20 percent) The project costs less than 50 percent of the building, so this is not a substantial improvement.

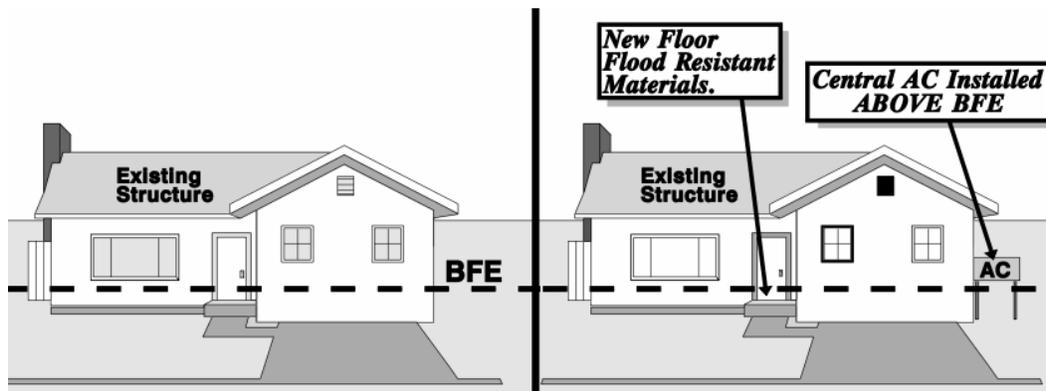


Figure 16-2: Minor rehabilitations use flood-resistant methods and materials. Neither structure would benefit from post-FIRM flood insurance rates because they are not elevated.

Note: To gauge what happens to flood insurance premiums if a substantially improved building is not brought up to post-FIRM standards, see Figure 14-6.

Example 2. Substantial rehabilitation

If the rehab costs more than 50 percent of the value of the building, the ordinance requires that an existing structure be elevated and/or the basement filled to meet the elevation standard.

Figure 16-3 shows a building that has been allowed to run down. Its market value is \$35,000. To rehab it will require gutting the interior and replacing all wallboard, built-in cabinets, bathroom fixtures, and furnace. The interior doors and flooring will be repaired. The house will get new siding and a new roof. The cost of this rehab will be \$25,000:

$\frac{\$25,000}{\$35,000} = 71.4$ percent Because total cost of the project is greater than 50 % the rehab is a substantial improvement

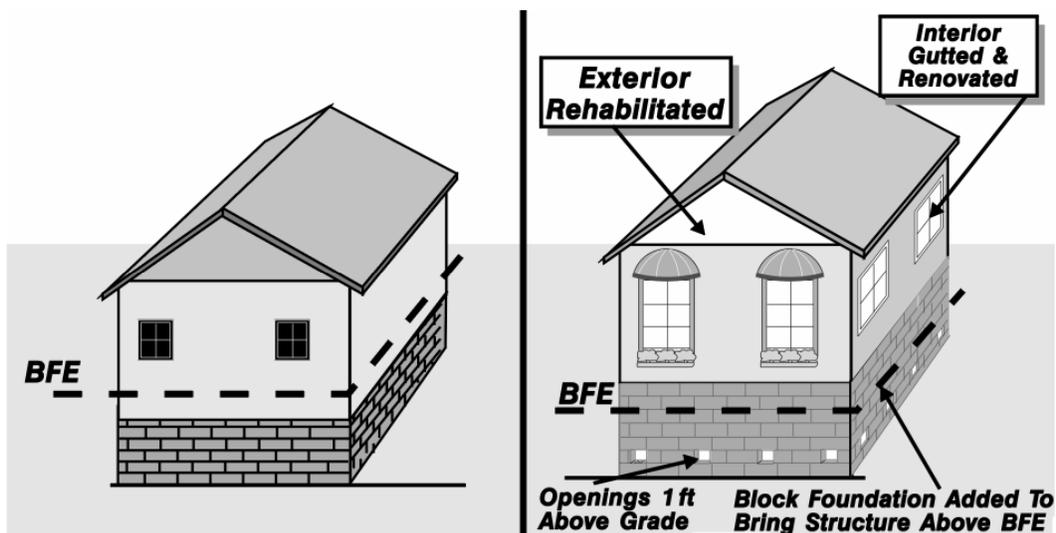


Figure 16-3: Substantially rehabilitated building elevated above the BFE.

The new structure would benefit from post-FIRM flood insurance rates.

Example 3. Lateral addition — residential

Additions are improvements that increase the square footage of a structure. Commonly, this includes the structural attachment of a bedroom, den, recreational room garage, or other type of addition to an existing structure.

Note that if one building is attached to another through a covered breezeway or similar connection, it is a separate building and not an addition.

When an addition is a substantial improvement, the addition must be elevated, providing that improvements to the *existing* structure are minimal. Figure 16-4 illustrates lateral additions that are compliant.

According to FEMA the existing building may not have to be elevated depending on the flood zone and details of the project. The determining factors are the common wall and what improvements are made to the existing structure. If the common wall is demolished as part of the project, then the entire structure must be elevated. If only a doorway is knocked through the common wall and only minimal finishing is done, then only the addition has to be elevated. However, the State model ordinance does not make this distinction and any lateral addition that increases the value by 50% or increases the floor area by 20% is considered a substantial improvement.

In A Zones only, if significant improvements are made to the existing structure (such as a kitchen makeover), both it and the addition must be elevated and otherwise brought into compliance. Some states and many communities require that both the existing structure and lateral additions be elevated in all cases.

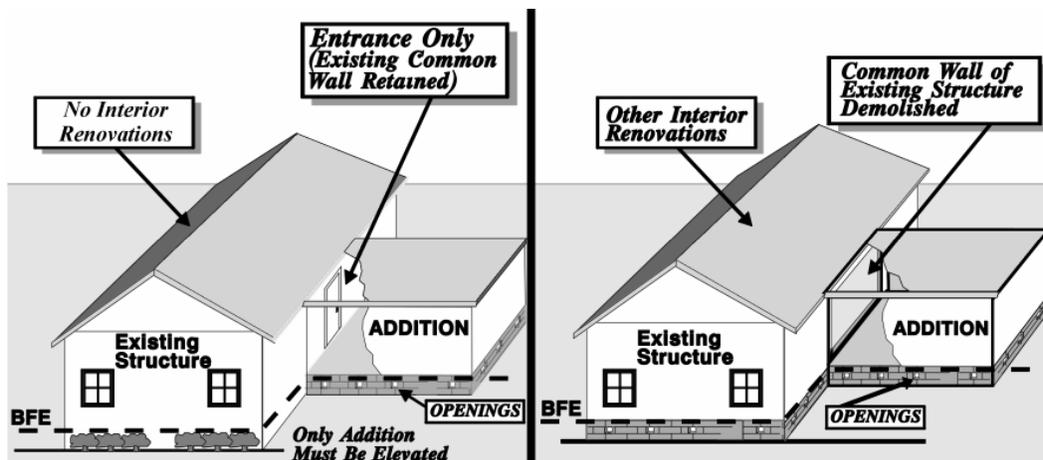


Figure 16-4: Lateral additions to a residential building in an A Zone.

The structure on the left would not benefit from post-FIRM flood insurance rates because it was not elevated.

Note: Many communities have adopted language from the IDNR model ordinance that treats “a structural alteration to an existing building that...increases the floor area by more than 20 percent” as a substantial improvement. If an ordinance has this language, this example applies to such projects.

Example 4. Lateral addition — nonresidential

A substantial improvement addition to a nonresidential building may be either elevated or floodproofed (Figure 16.5). Otherwise, all the criteria for residential buildings reviewed in Example 3 must be met.

If floodproofing is used, the builder must ensure that the wall between the addition and the original building is floodproofed.

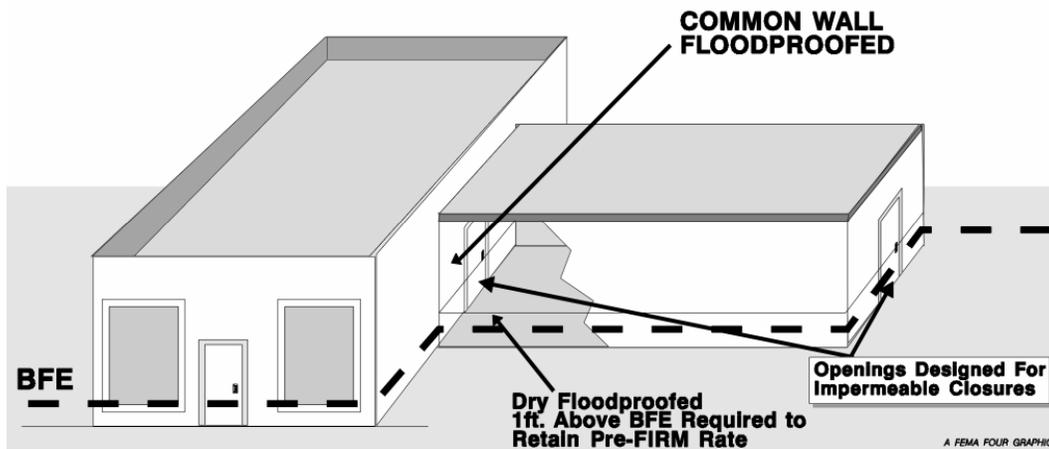


Figure 16-5: Lateral addition to a nonresidential building in an A Zone.

The structure would *not* benefit from post-FIRM flood insurance rates because the original building was not elevated or floodproofed.

Example 5. Vertical addition — residential

When the proposed substantial improvement is a full or partial second floor, the entire structure must be elevated (Figure 16-6). In this instance, the existing building provides the foundation for the addition. Failure of the existing building would result in failure of the addition, too.

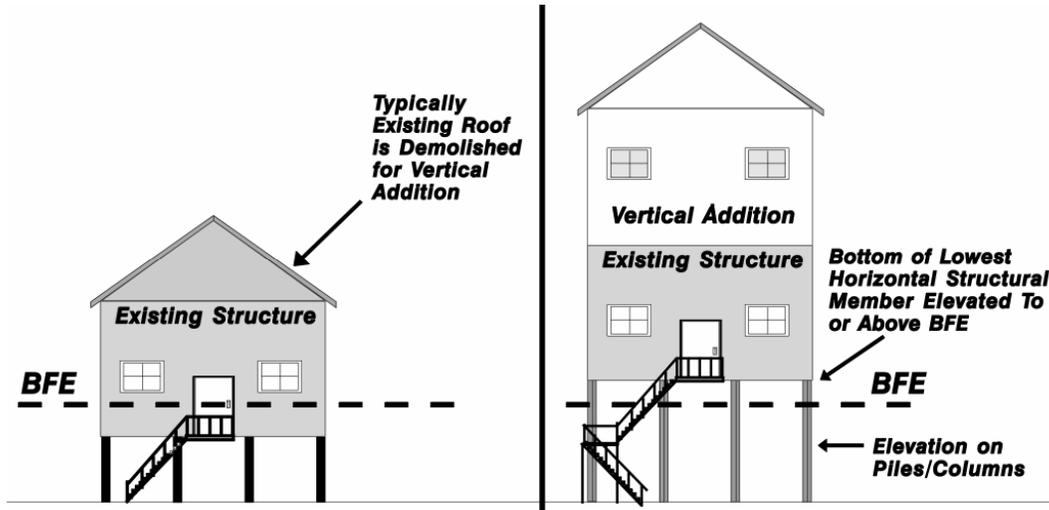


Figure 16-6: Vertical addition to a residential building.
The new structure would benefit from post-FIRM flood insurance rates.

Example 6. Vertical addition — nonresidential

When the proposed substantial improvement is a full or partial second floor on a nonresidential building, the entire structure must be elevated or floodproofed (Figure 16-7).

The owner could obtain post-FIRM rates on the building if it is floodproofed to at least one foot above the BFE and a floodproofing certificate signed by a licensed professional engineer is procured. An optional approach is to elevate the entire building and obtain an elevation certificate.

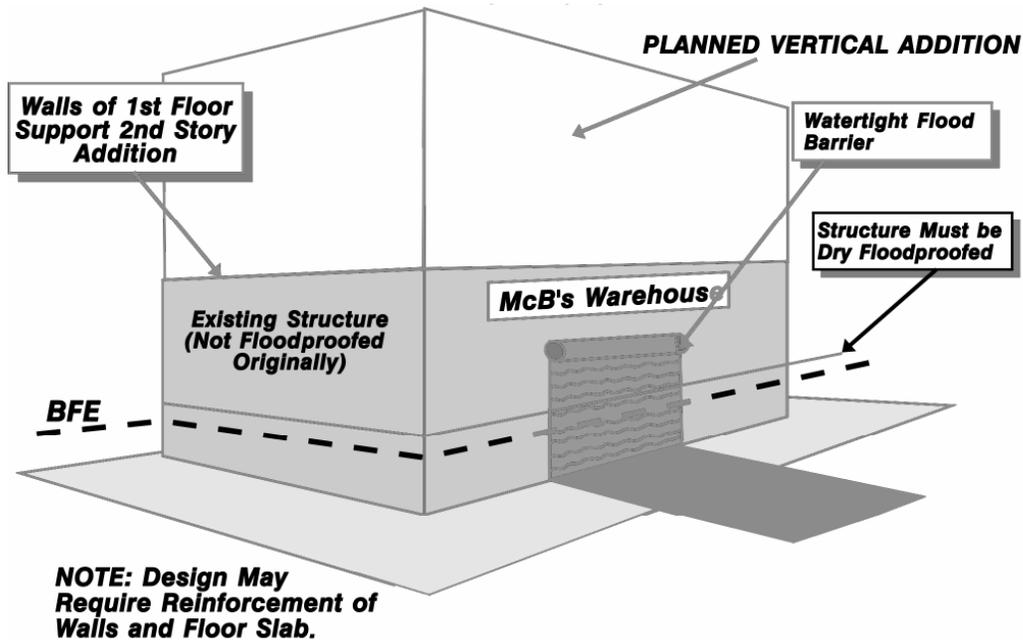


Figure 16-7: Vertical addition to a nonresidential building.

The new floodproofed structure would benefit from post-FIRM flood insurance rates.

Example 7. Post-FIRM building — minor addition

All additions to post-FIRM buildings are defined as new construction and must meet the requirements of the floodplain management ordinance regardless of the size or cost of the addition (Figure 16-8). A small addition to a residential structure that is not a substantial improvement must be elevated at least as high as the BFE in effect when the building was built. Minor additions to nonresidential structures can be floodproofed to the BFE.

If a map revision has taken place and the BFE has increased, only additions that are substantial improvements have to be elevated or floodproofed (nonresidential buildings only) to the new BFE.

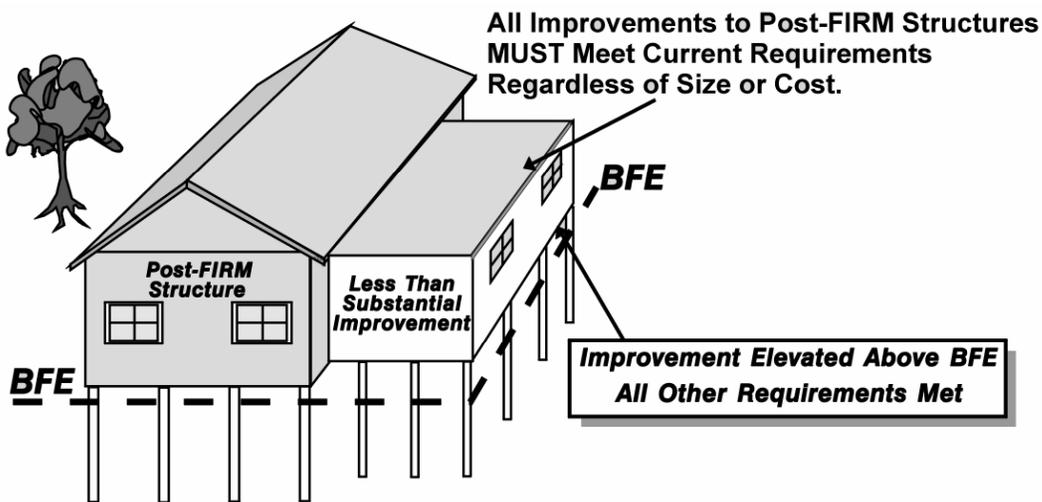


Figure 16-8: Small additions to post-FIRM buildings must be elevated.

Example 8. Post-FIRM building — substantial improvement

Substantial improvements made to a post-FIRM structure must meet the requirements of the current ordinance. Figure 16-9 shows a lateral addition made after a map revision took place and the BFE was increased.

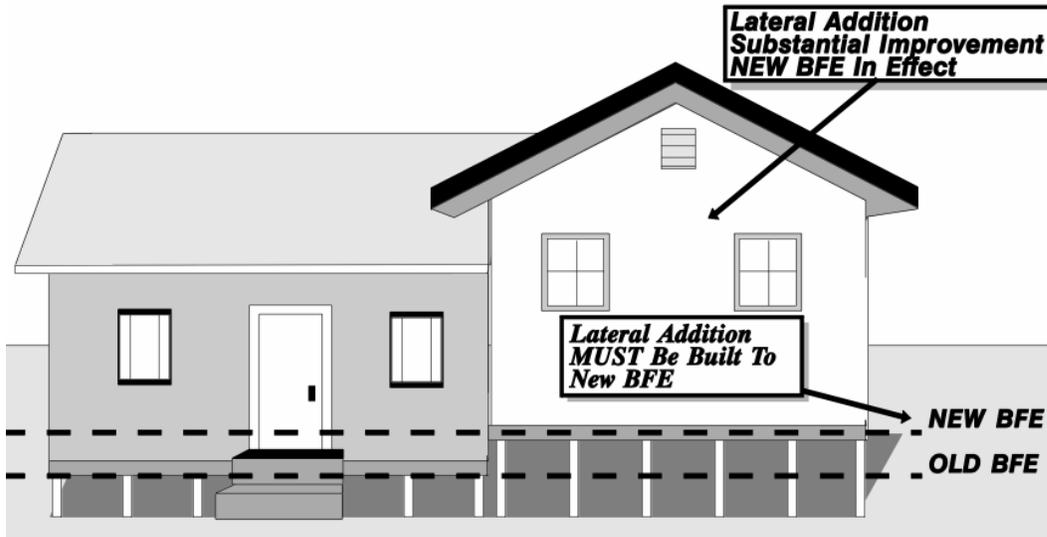


Figure 16-9: Substantial improvements to post-FIRM buildings must be elevated above the new BFE. Nonresidential buildings may be floodproofed.

16.3. SUBSTANTIAL DAMAGE

16.3.1. NFIP requirements

Rules for regulating substantially damaged buildings are similar to those for substantial improvements. The major difference is calculating the cost to repair, rather than the cost of the improvements.

44 CFR 59.1. Definitions: “Substantial damage” means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

Two key points:

1. The damage can be from any cause — flood, fire, earthquake, wind, rain, or other natural or human-induced hazard.
2. The substantial damage rule applies to all buildings in a flood hazard area, regardless of whether the building was covered by flood insurance or whether disaster assistance is available.

16.3.2. The formula

The formula is essentially the same as for substantial improvements:

$$\frac{\text{Cost to repair}}{\text{Market value of the building}} \geq 50 \text{ percent}$$

Market value is calculated in the same way as for substantial improvements. Use the pre-damage market value.

16.3.3. Cost to repair

The formula uses “cost *to* repair,” and not “cost *of* repairs.” The cost to repair the structure must be calculated for full repair to the building’s before-damage condition, even if the owner elects to do less. It must also include the cost of any improvements that the owner has opted to include during the repair project.

The total cost to repair includes the same items listed in Figure 16-1. As shown in Example 2 in Section 16.3.4., properly repairing a flooded building can be more expensive than people realize. The owner may opt not to pay for all of the items needed. The owner may:

- ◆ Do some of the work, such as removing and discarding wallboard,
- ◆ Obtain some of the materials free,
- ◆ Have a volunteer organization do some of the work, or
- ◆ Decide not to do some repairs, such as choosing to nail down warped flooring rather than replace it.

Substantial damage is determined regardless of the actual cost to the owner. The true cost of bringing the building back to its pre-damage condition must be figured out using qualified labor and materials obtained at market prices.

The permit office and the owner may have serious disagreements over the total list of needed repairs and their cost, as the owner has a great incentive to show less damage than actually occurred in order to avoid the cost of bringing the building into compliance. The following are four steps that can help reduce or avoid disagreements:

1. Get the cost to repair from an objective third-party or non-debatable source, such as:
 - A licensed general contractor.
 - A professional construction estimator.
 - Insurance adjustment papers (exclude damage to contents).
 - Damage assessment field surveys conducted by building inspection, emergency management or tax assessment agencies after a disaster.
 - The floodplain administrator's office.
 - Have the estimate submitted by the permit applicant and reviewed by the floodplain administrator's office. Professional judgment and knowledge of local and regional construction costs or the building code valuation tables published by the major building code groups can be used.
2. Use an objective system that does not rely on varying estimates of market value or different opinions of what needs to be repaired. The Residential Substantial Damage Estimator Program discussed later in this section is one such system.
3. Publicize the need for the regulations and the benefits of protecting buildings from future flooding. A well-educated public won't argue as much as one that sees no need for the requirement.
4. Help the owner find financial assistance to meet the extra cost of complying with the code. If there was a disaster declaration, there may be sources of financial assistance as discussed in Section 20. If the owner had flood insurance and the building was substantially damaged by a flood, the new Increased Cost of Compliance coverage will help.

16.3.4. Substantial damage examples

Example 1. Reconstruction of a destroyed building

Reconstructions are cases where an entire structure is destroyed, damaged, purposefully demolished or razed, and a new structure is built on the old foundation or slab. The term also applies when an existing structure is moved to a new site.

Reconstructions are, quite simply, “new construction.” They must be treated as new buildings.

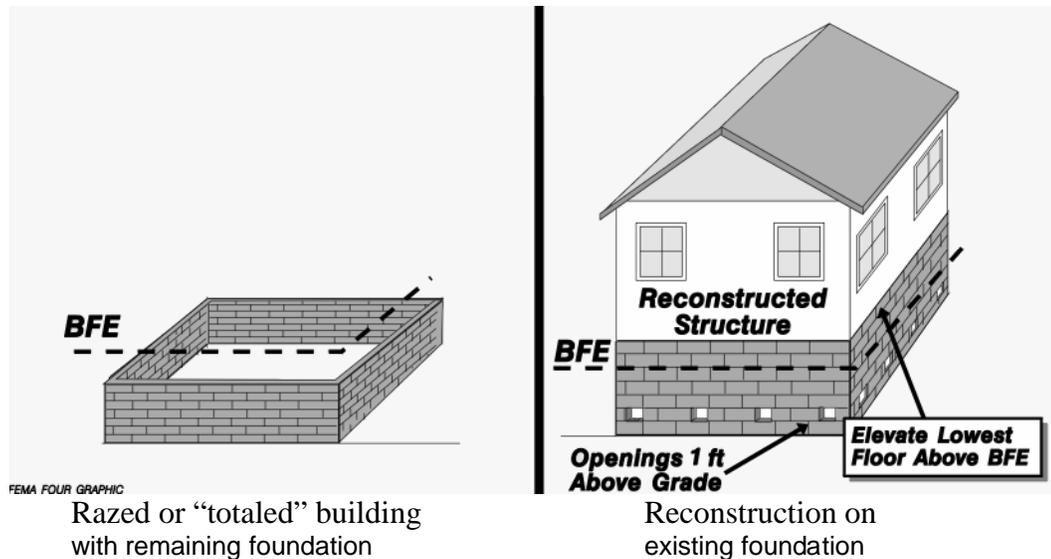


Figure 16-10: A reconstructed house is new construction.

FLOODPLAIN MANAGEMENT SUCCESS STORY

The Plainfield Tornado

In 1990, Plainfield, Illinois was hit by a tornado. Twenty buildings in the Village’s floodway were destroyed. The village used the substantial damage requirements and funding assistance from FEMA disaster assistance and State programs to encourage residents to not rebuild. Eventually all 20 properties were acquired and the floodway development was converted to public open space.

Example 2. Substantially damaged structure

To determine if a damaged structure meets the threshold for substantial damage, the cost of repairing the structure to its before-damaged condition is compared to the market value of the structure prior to the damage. The estimated cost of the repairs must include all costs necessary to fully repair the structure to its before-damaged condition.

If the cost of repairs is equal to or greater than 50 percent of the structure's market value before damage, then the structure must be elevated (or floodproofed if it is nonresidential) to or above the flood protection elevation, and meet other applicable local ordinance requirements. This is the basic requirement for substantial damage.

Figure 16-11 graphically illustrates the amount of damage that can occur to a building flooded only 2 to 3 feet deep. Even though the structure appears sound and there are no cracks or breaks in the foundation, the total cost of repair can be significant.



Figure 16-11: Even standing floodwater can cause substantial damage.

The cost of repair after a flood that simply soaked the building will typically include the following structural items:

- Remove all wallboard and insulation.
- Install new wallboard and insulation.
- Tape and paint.
- Remove carpeting and vinyl flooring.
- Dry floor, replace warped flooring.
- Replace cabinets in the kitchen and bathroom.
- Replace built-in appliances.
- Replace hollow-core interior doors.
- Replace furnace and water heater.
- Clean and disinfect duct work.
- Repair porch flooring and front steps.
- Clean and test plumbing (licensed plumber may be required).
- Replace outlets and switches, clean and test wiring (licensed electrician may be required).

The longer the water is in the building, the more damage it will cause. It can “wick” up the walls and damage a wallboard ceiling that is several feet above the high water line. Standing water (or the moisture it brings) causes warping, mold, and mildew that adds to the cost of repair.

Note: See also Figure 14-6 for what happens to flood insurance premiums if a substantially damaged building is granted a variance and is not brought up to post-FIRM standards.

16.3.5. Substantial damage software

FEMA has developed a software program to help local officials make substantial damage determinations. The software is based on Microsoft Access but is self-contained and does not require any software in addition to a Windows operating system.

The software comes with a manual, *Guide on Estimating Substantial Damage Using the NFIP Residential Substantial Damage Estimator*, FEMA 311. This includes a user’s manual and worksheets that allow the calculations to be done manually.

Contact the FEMA Regional Office for a copy of the software package and help in using it. Following a major disaster declaration, training sessions and technical assistance may be available.

16.3.6. Increased Cost of Compliance

On June 1, 1997, the NFIP began offering additional coverage to all holders of structural flood insurance policies. This coverage is called Increased Cost of Compliance or ICC.

The name refers to cases where the local floodplain management ordinance requires elevation or retrofitting of a substantially damaged building. Under ICC, the flood insurance policy will not only pay for repairs to the flooded building, it will pay up to \$30,000 to help cover the additional cost of complying with the ordinance. This is available for any flood insurance claim and, therefore, is not dependent on the community receiving a disaster declaration.

There are some limitations to ICC:

- ◆ It is only available if there was a flood insurance policy on the building before the flood.
- ◆ It covers only damage caused by a flood.
- ◆ Claims are limited to \$30,000 per structure.
- ◆ Claims must be accompanied by a substantial damage determination by the floodplain ordinance administrator.

A portion of the rest of the claim payment may help meet the cost of bringing the building up to code. For example, if there was foundation damage, the regular claim will pay for the cost of repairing or replacing the foundation. The ICC funds would only be needed for the extra costs of

raising the foundation higher than it was before. The permit official's help and records are needed for the owner to receive this payment.

An ICC claim cannot be paid unless the community has determined the building to be substantially damaged and requires that the building comply with local ordinance requirements. For further information on how ICC coverage works and how a floodplain administrator can help policyholders in their community qualify for the coverage, refer to *National Flood Insurance Program's Increased Cost of Compliance Coverage: Guidance for State and Local Officials, FEMA 301*.

In certain cases, an ICC claim can be filed if the building is repetitively flooded, and has had two or more claims averaging 25% or more of building value within a ten year period, provided the community has language in the flood damage ordinance that implements the cumulative substantial damage rule in these cases.

Figure 16-12 has example ordinance language. This language exceeds the minimum NFIP requirements, but would be needed if the administrator wanted to trigger the ICC provision for repetitively damaged buildings.



The Community Rating System credits keeping track of improvements to enforce a cumulative substantial improvement requirement. The *CRS Coordinator's Manual* credits the ordinance language in Figure 16-12. These credits are found under Activity 430, Section 431.c in the *CRS Coordinator's Manual* and the *CRS Application*.

16.4. SPECIAL SITUATIONS

As explained in previous sections, the substantial improvement and substantial damage requirements affect all buildings regardless of the reason for the improvement or the cause of the damage. There are three special situations to be aware of: exempt costs, historic buildings, and corrections of code violations.

16.4.1. Exempt costs

Certain costs related to making improvements or repairing damaged buildings do not have to be counted toward the cost of the improvement or repairs. These include:

- ◆ Plans and specifications.
- ◆ Surveying costs.
- ◆ Permit fees.
- ◆ Demolition or emergency repairs made for health or safety reasons or to prevent further damage to the building.
- ◆ Improvements or repairs to items outside the building, such as the driveway, fencing, landscaping, and detached structures.

Option 1

A. Adopt the Following Definition:

“Repetitive Loss” means flood-related damage sustained by a structure on two separate occasions during a 10-year period for which the cost of repairs at the time of each such flood event, on the average, equals or exceeds 25 percent of the market value of the structure before the damage occurred.

B. And modify the "substantial improvement" definition as follows:

"Substantial Improvement" means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement. This term includes structures which have incurred "repetitive loss" or "substantial damage", regardless of the actual repair work performed.

Option 2

Modify the substantial damage definition as follows:

"Substantial Damage" means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred. Substantial damage also means flood-related damage sustained by a structure on two separate occasions during a 10-year period for which the cost of repairs at the time of each such flood event, on the average, equals or exceeds 25 percent of the market value of the structure before the damage occurred.

NOTE 1: Communities need to make sure that these definitions are tied to the floodplain management requirements for new construction and substantial improvements and to any other requirements of the ordinance, such as the permit requirements, in order to enforce this provision.

NOTE 2: An ICC Claim Payment is ONLY made for flood-related damage. The substantial damage part of the definition must still include "damage of any origin" to be compliant with the minimum NFIP Floodplain Management Regulations.

Figure 16-12: Sample ordinance language for ICC repetitive loss definitions

Source: *Increased Cost of Compliance Coverage: Guidance for State and Local Officials*, FEMA-301, September 2003.
This language is only needed to trigger an ICC payment for a repetitive loss. No ordinance changes are needed for the ICC coverage for substantial damage.

16.4.2. Historic structures

Historic structures are exempt from the substantial improvement requirements subject to the criteria listed below. The exemption can be granted administratively if the current NFIP definitions of substantial improvement and historic structure are included in the local ordinance, or it can be granted through a variance procedure.

In either case, the historic structure exemption is usually granted subject to conditions.

If the improvements to a historic structure meet the following three criteria and are approved by the community, the building will not have to be elevated or floodproofed. It can also retain its pre-FIRM flood insurance rating status.

1. The building must be a bona-fide “historic structure.” Historic structures are those listed on the National Register of Historic Places or the State Inventory of Historic Places, or that contribute to a historic district.

2. The project must maintain the historic status of the structure. If the proposed improvements to the structure will result in it being removed from or ineligible for the National Register or federally-certified state or local inventory, then the proposal cannot be granted an exemption from the substantial improvement rule.

The best way to make such determinations is to seek written review and approval of proposed plans by the Illinois Historic Preservation Agency. If the plans are approved, the exemption can be granted. If not, no exemption can be permitted.

3. Take all possible flood damage reduction measures. Even though the exemption to the substantial improvement rule means the building does not have to be elevated to or above FPE, or be renovated with flood-resistant materials that are not historically sensitive, many things can and should be done to reduce the flood damage potential. Examples include:

- ◆ Locating mechanical and electrical equipment above the FPE or floodproofing it.
- ◆ Elevating the lowest floor of an addition to or above the FPE with the change in floor elevation disguised externally.

16.4.3. Correction of code violations

The definition of substantial improvement includes another exemption:

44 CFR 59.1 Definitions: *“Substantial improvement” means The term does not, however, include ... Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions*

Note the key words in this exemption: *correct* existing violations, *identified* by the local official, and *minimum* necessary to assure safe conditions. This language was included in order to avoid

penalizing property owners *who had no choice* but to make improvements to their buildings or face condemnation or revocation of a business license.

This exemption was intended for *involuntary* improvements or violations that existed before the improvement permit was applied for or before the damage occurred — for example, a restaurant owner who must upgrade the wiring in his kitchen in order to meet current local and state health and safety codes.

A floodplain administrator can only exempt the items specifically required by code. For example, if a single stair tread was defective and had to be replaced, do not exempt the cost of rebuilding the entire stairway. Similarly, count only replacement in like kind and what is minimally necessary. If the owner chooses to upgrade the quality of a code-required item, the extra cost is not exempt from the formula — it's added to the true cost of the improvement or repairs.

Unfortunately, many property owners and builders pressure local building officials to exclude “code violation corrections” from their voluntary improvement proposals. There are “code violations” in all structures built before the current code was enacted. In many cases, those elements must be brought up to code as part of an improvement project.

This is very different from a code violation citation that forces a property owner to correct those violations and make improvements that were otherwise not planned. The building official must know about and document the violations before or at the time the permit is issued.

Example

A small business in a 40-year old building was damaged by a fire. The building's pre-fire market value was \$100,000. The insurance adjuster and the permit office concluded that the total cost to repair would be \$53,000. The business is in an urban renewal area. The City had inspected it and cited the following violations:

- ◆ Replace unsafe electrical wiring.
- ◆ Install missing fire exit signs, smoke detectors and emergency lighting.
- ◆ Inadequate bathrooms.

The total cost of these code requirements would be \$8,000. However, since the citation was issued before the fire occurred, they would not be counted toward the cost to repair. Based on the basic formula:

$$\$53,000 - \$8,000 = \$45,000 \quad (\text{Cost to Repair}) - (\text{Cost to Correct Code Violation})$$

$$\frac{\$45,000}{\$100,000} = 0.45 \text{ or } 45\% \quad \text{The building is not declared substantially damaged}$$

In this example, the building can be repaired without elevating or floodproofing. However, the permit office should strongly recommend incorporating flood protection measures and flood resistant materials in the repair project (as in the example in Figure 16-2).